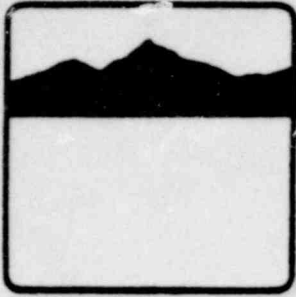


POOR ORIGINAL



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2239 E. Colfax Ave., Denver, CO 80206

321-6522  
393-0466

November 9 1979

Hubert J. Miller  
Office of Material  
Safety and Standards  
NRC  
Washington D.C. 20555

INCKET NUMBER  
PROPOSED RULE PR 30201  
(4452 50012)



Dear Hub:

Enclosed please find the Mering Marks  
written comments on the draft CEIS and  
regulations. Thank you for allowing me  
an extension in preparing these remarks.

If the NRC has issued any information  
regarding the ramifications of the Surface  
Transportation Act, would you please send  
me a copy? Has NRC's testimony to Udall's  
Subcommittee been issued yet?

I hope the enclosed will be helpful to you  
in your final review.

1592 340

Sincerely,

Barbara E. Luce

79121 70 360

Acknowledged by card... dlh 11/30

M-25

COMMENTS ON THE DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT

ON URANIUM MILLING

AND ASSOCIATED PROPOSED NRC REGULATIONS

for The Mining Workshop  
Colorado Open Space Council

prepared by  
Barbara E. Lewis

1592 341

As stated in the draft GEIS, the objectives of the statement on uranium milling and subsequent regulations are twofold: 1) to return milling and disposal sites to near pre-operation conditions and 2) to limit the need for long-term observation and maintenance of these sites. We endorse these objectives and the generic approach as an attempt to go beyond incremental decision-making. As presented, however, the statement and regulations are inadequate to attain the stated objectives and assure adequate and effective management of uranium milling operations.

Specifically, the NRC actions are deficient in the treatment of siting criterion, below-grade disposal, financial surety provisions, Agreement State regulatory programs and in-situ uranium processing. These comments will address these issues and suggest areas where further consideration is warranted.

#### SITING

We support the NRC's recognition of siting considerations as a critical first step in uranium operations regulation. Colorado citizens, concerned about the Cotter Corporation applications in Canon City, were frustrated by the previous relegation of this important factor <sup>to the status of</sup> as a non-binding guideline.

The phrasing in Criterion 1, however, is ambiguous; the meaning of the term "remote" needs to be clarified. Remote from what or whom? How far remote? The Commission should address these questions in the new regulations.

As stated, the purpose of remote siting is "to reduce potential population exposures." This would appear to indicate that sites should be far from population centers and areas of human

activity (such as industrial/commercial centers). In addressing the "how far" question, it is important that the potential for tailings breaks in above-grade systems be considered. In the aftermath of the Church Rock disaster, it is apparent that over 50 miles downgradient might not be sufficiently remote.

Remote siting should also be applied to surface and underground water supplies. This is critical, as the threat to the Arkansas River and contamination of residents' wells by the Cotter Corporation dramatizes. Siting criteria should state that the ramifications of potential contamination of groundwater pathways must be addressed. As an example, in Denver, citizens and officials were alarmed by proposals for in-situ extraction in South Park because of the potential for groundwater contamination to reach Denver's water supply. The GEIS and proposed regulations do not account for the complex water network in the west.

It is important that both direct and indirect exposure pathways be addressed in siting criteria. Biomagnification of radionuclides in the food chain is another indirect pathway which warrants further consideration.

Lastly, siting criteria should distinguish between above-and below-grade deposition systems. The standards should be more stringent for above-grade projects, where the potential for a tailings spill exists. This proposal would reflect the advantages of the "prime option," as is discussed further below.

#### BELOW-GRADE TAILINGS DISPOSAL

The recognition of below-grade deposition as the "prime option" is significant but its treatment in the draft GEIS and

proposed regulations indicates that the Commission is not committed to this conclusion. The GEIS is geared toward consideration of above-grade disposal systems. While these considerations are imperative, given the history of failures with above-grade projects, similar coverage should be allotted to below-grade disposal practices.

As stated, Criterion 3 needs severe revision. Realistically, its only substantive effect will be to require that below-grade be considered as an alternative in environmental reports. The regulation even includes a hogdeodge of ways to avoid employing this technology. This approach is inadequate.

Unless below-grade in any form is considered safe, NRC should propose technical criteria for this option. Criterion 3 should include a definition of below-grade disposal and minimum design standards. Subsequently, the regulations should list as specific as possible geologic and hydrologic conditions under which below-grade tailings disposal plans would be rejected.

Further study of below-grade technologies will be necessary to derive the required technical criteria. Minimally, the "model mill" treatment afforded the not-so-prime option is warranted. The GEIS does not provide sufficient data to support the contention that below-grade disposal is even feasible as a major alternative. The statement should include a detailed study exploring geologic and hydrologic conditions suitable to this technology and the extent to which these conditions exist within the region. These studies would then provide the data necessary to make impact projections based on the percentage of the 82 mills which would employ this option given present regulations. It is irresponsible



to designate priority consideration of a relatively new technology without the development of concomitant baseline data and technical criteria to guarantee safe management practices.

In addition, the GEIS should investigate the possibility of an all below-grade siting regulation and the resulting costs and benefits. This would require examining the average (and range of) distances between ore bodies and designated sites to weigh the environmental costs of ore haulage against the benefits of below-grade disposal. The suggestion in Criterion 1 that small processors ship tailings to large disposal areas could be incorporated into this analysis. In those cases where the company plans a mill removed from the ore supply (as in the Cotter Canon City operation), a below-grade disposal requirement should be easily justifiable.

Regional studies should also identify suitable deep burial sites and abandoned pits. In conjunction with this research, the feasibility of regulations requiring operators to dispose of tailings in qualifying locations within a given radius of the proposed orebody should be considered. The generic review process should incorporate analyses of these and similar alternative regulatory scenarios.

The lack of commitment to the "prime option" is also evident in the NRC's other regulations. If below-grade is, indeed, more reliable, than this fact should be reflected in siting, financial surety and long-term care provisions. As stated earlier, siting criteria should correspond to the conclusions of the GEIS and be more stringent for above-grade proposals. The flaws in financial

provisions in the regulations, including the failure to relate below-grade disposal superiority, are discussed below.

#### FINANCIAL PROVISIONS

The financial provisions in the proposed regulations do not reflect an appreciation for the history of above-grade uranium tailings disposal in this country. Although, the technical requirements delineated in Criterion 4 represent advances in "state of the art" technologies, they do not represent perfection. Additionally, the issuance of the GEIS and new regulations cannot be expected to upgrade corporate and regulatory responsibility and competence to a level which would preclude accidents.

The "walk away" approach is not justified. The regulations should be revised to include funding for both operational and post-operational accidents. Funding levels should be based upon the costs of accidents listed in the GEIS, the regulatory and clean-up costs of the Church Rock dam breach and funding requirements to clean up inactive sites, to cite a few examples.

Operational surety funding should account for a major impoundment breach, such as the accident at Church Rock. For below-grade depositions, this "accident insurance" would be lower, thus reinforcing the statement in Criterion 3. Surety against milling and transportation accidents should also be required.

Long-term surveillance and maintenance funding is also seriously inadequate. Throughout the GEIS, the NRC admits that the state of knowledge in regulating uranium milling is immature, especially with respect to groundwater contamination, and yet the Commission does not allow for problems to surface following the

brief life of a milling operation. This is inconsistent with the conservative approach which the Commission contends it has adopted.

The \$250,000 figure given in the regulations does not even allow for the possibility of erosion of the three meter cover. It assumes that in most instances simply observing the deposition sites and conducting minimal monitoring will assure the public safety. This approach is not warranted. Erosion of the surface is probable; funding should be set aside for the maintenance of the earth, and vegetative covers and fencing, in addition to monies to cover unforeseeable events. The proposed regulations and the GEIS do not account for the thousands of years over which these wastes must be isolated.

Furthermore, in accounting for accidents and maintenance, the funding arrangement should be keyed to the size of the proposed operation and levied on a per pound of yellowcake produced or ton of tailings generated basis. The Continued Care Fund established in New Mexico serves as an excellent example. Financing at 10¢/pound of yellowcake up to \$1,000,000 is a rational system and represents a more reasonable funding level.

Another suggestion is to add advances in state of the art technology to the list of reasons for changing the amount of financial surety. Increased knowledge might also be accounted for; for instance, experiences with inactive sites should provide additional information on reclamation and stabilization requirements and the associated costs. Also, Criterion 9 should specify a maximum period between surety reviews.

Lastly, the financial entries in the GEIS and proposed regulations do not indicate an appreciation for the significant



funding shortages in Agreement States. Under past and present financial arrangements, these states lack adequate financial resources to develop and implement regulatory programs which conform with the need for regulatory control within their boundaries. Alternative funding systems within these states should be examined; grant monies, while necessary, represent only short-term answers.

#### AGREEMENT STATES PROGRAMS

In general, the NRC has not adequately addressed regulatory problems in Agreement States. As proposed, the regulations were based upon the assumption that NRC would have concurrent jurisdiction in licensing uranium milling operations in these states of the next two years. This provision would have allowed the Commission the means for a continuous review of Agreement State regulatory programs and direct input into the upgrading the states' regulations to equivalency with the new federal regulations. With the passage of the Surface Transportation Act, however, concurrent jurisdiction is no longer applicable. Consequently, the Commission should examine alternative provisions to assure that the regulatory programs in Agreement States are reliable and comply with the requirements of the UMTRCA.

As a first step, Agreement States should be required to promulgate regulations "equivalent" to the technical criteria delineated in Appendix A to Part 40 and the regulatory requirements specified in section 150.51 immediately. This action should be coupled with a comprehensive study of the adequacy of both federal and state regulatory programs for uranium milling operations. Such a study would be within the scope of the GEIS since one of its major functions is to "provide information on which to deter-

mine regulatory requirements." Alternatively, to remove the potential bias in this arrangement, an independent party could be contracted to do this assessment, as was suggested at the public hearings in Albuquerque.

The regulations should list specific criteria to be addressed in the annual review of Agreement State programs. This should be regarded as a major tool to bring about adequate management. In the past, the Commission has performed only cursory assessments. Consequently, present requirements that state regulations be "compatible" with the federal counterpart have been interpreted loosely. The Review criteria should list minimal standards for regulatory effectiveness, including personnel, lab facilities and budgeting per level of regulatory activity. The reviews should also address the structure of regulatory programs. For instance, a major problem in Colorado is that many important requirements are not binding because they are incorporated into the process as policies, not regulations. Another problem is that uranium mines are often permitted and operated prior to licensing of associated mills. This constitutes a "hard-to-resist" bias in favor of licensing.

Enforcement is another area demanding additional and immediate attention. Inadequate enforcement is a major failing of Agreement State programs. The states lack the muscle of their federal counterpart and have been reluctant to penalize recalcitrant mill operators. At the licensing stage, the regulatory agency has the threat of license denial as a hedge to assure compliance with the state's regulations and the agency's discretionary requirements. Once the operation is licensed, however, this power is lost. The state relies upon the operators assessment of the risks of noncom-

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pliance, in terms of the cost of a possible accident or potential loss of surety monies. Although fines and shutdown provisions exist, they are not keyed to specific noncompliance actions and thus, are difficult to enforce.

The NRC's experience with the Church Rock disaster should provide ample justification of the need for minimum enforcement standards. For further evidence, the Commission should review the history of noncompliance by the Cotter Corporation in Canon City and the subsequent actions ( or lack, thereof) by the Colorado Department of Health. The Commission should at least initiate a comprehensive study of the feasibility of promulgating enforcement regulations. Flexibility is imperative but it does not preempt the establishment of minimum standards. For example, the effectiveness of Agreement State regulatory control would be increased substantially with the simple addition of a regulation requiring the states to fund and conduct surprise inspections.

The requirements for public participation in both rulemaking and licensing are excellent but there is one missing link. As stated, it appears that there is no state counterpart to the scoping meeting required in federal reviews. Public input prior to the preparation of a written analysis on a proposed project is effective. It reduces the need for revision of a written report and thus, saves the regulating agency time, money and anguish. It also promotes more thorough consideration of public opinions.

We also endorse the provision for \$500,000 to be allocated to the Agreement States as technical support. It is encouraging in that it indicates that the federal government recognizes that

regulatory effectiveness in these states is being severely inhibited by the lack of adequate financial resources. This grant money, however, is only an incremental solution. Given the scope of uranium development in these states and the fact that funding is allocated for just one year, it will not go far. Therefore, grant assistance must be coupled with long-term provisions such as NRC independent assessments and technical aid offers and adequate minimum standards for licensing fees and financial surety arrangements. Where inadequate funding by state governments is at fault, the Commission should suspend or revoke Agreement State status.

How do the GEIS and proposed regulations apply to existing mill operations? It is unclear just how these sites will be treated, especially with the passage of the Surface Transportation Act. While we understand that this is an extremely difficult issue, the brief coverage afforded existing sites on page 24 of the draft GEIS is clearly inadequate.

The regulations should mandate a review of existing structures in Agreement States, effective immediately. An approach similar to that adopted for inactive sites could be initiated. The sites would be rated, and the worst cases examined in terms of their risks and the potential for upgrading the impoundment or relocating the tailings. Cost-benefit analyses would be performed and alternative scenarios for funding, involving both federal and state governments and the mill operator, developed. For less severe cases, the regulations should at least require that cost-effective improvements be made.

The financial sureties for these sites should be reexamined



and, where applicable, revised to reflect that the operations pose greater risks than current "state of the art" projects. Additionally, as long as suboptimal impoundments remain, the GEIS should examine the "state of the art" in accidents management. Minimum clean-up standards are also warranted.

In light of the level of corporate and regulatory irresponsibility revealed by the tailings spill in Church Rock, New Mexico, the safety of existing mill operations is suspect and must be reviewed. The NRC should consider what it would do if faced with reviewing an unstable impoundment, such as the Church Rock structure, attributable to noncompliance on the part of both the operator and the regulatory agency and inadequate Agreement State supervision, subsequent to the issuance of the GEIS and the regulations. The citizens in the uranium mining/milling region should not have to foot the bill for past incompetence on the part of the parties responsible for uranium milling operations.

Lastly, one area where the state regulating agencies seriously need technical assistance and guidance is in regulating in-situ mining/milling projects. The contention by the NRC that they do not have jurisdiction here is questionable, as is expounded below.

#### IN-SITU OPERATIONS

The GEIS and regulations should address in-situ extraction not just for the purpose of "completeness," as stated in the GEIS summary, but as a process requiring regulation under the UMTRCA. In Section 201 of the Act, "byproduct material" is defined as "the tailings or wastes produced by the extraction or concentration

of uranium and thorium from any ore processed for its source material content." (emphasis added) In-situ operations produce such "wastes;" that they are produced underground or "below-grade", to use the terminology of the GEIS, should not preclude their regulation under the UMTRCA.

The GEIS states that in-situ extraction is not covered because of low uranium production from this process. In part, this is to be expected since in-situ technologies are designed for low grade ores. Furthermore, as the cost of conventional milling processes increase and ore grades decrease, in-situ mining/milling is becoming a more attractive option.

One must also question whether production levels are the appropriate criterion for determining whether a process warrants NRC regulation. Under the NEPA process, operations with the potential for significant disruption of the natural environment are to be addressed. Possible groundwater contamination from in-situ processing is significant. At the very least, siting criteria and regulations requiring the employment of "state of the art" technologies should be developed for in-situ extraction operations.

#### CONCLUSIONS

These comments have explored five major subjects which require further consideration prior to the issuance of the final Generic Environmental Impact Statement and associated regulations by the NRC. Our basic conclusions and recommendations are as follows:

Siting: Site selection is the most important consideration in responsible uranium mill and tailings regulation. The regulations, as presented, are a first step in the recognition of this fact but should be expanded to specify stringent siting criteria,

allowing for protection from both direct and indirect exposure pathways.

**Below-grade Tailings Disposal:** The NRC has not indicated that it is committed to the superiority of this technology as concluded in the GEIS. The effects of the proposed regulations will be marginal. The Commission should develop below-grade technical criteria and examine alternative regulations to incite a move away from conventional above-grade systems.

**Financial Provisions:** A major fault in the proposed regulations is the Commission's refusal to account for accidents and long-term maintenance in determining minimum standards for financial sureties. The NRC assumes greater protection from the new regulations than is warranted.

**Agreement State Programs:** The time is right for a comprehensive review of the Agreement State program and the GEIS is an excellent medium for this. By not seizing upon this opportunity and inadequately addressing the problems of enforcement, financial resources and existing sites, the Commission has skirted its responsibility to assure adequate protection under the Agreement State program.

**In-Situ Operations:** The contention that the NRC does not have jurisdiction over these processes does not appear justified. It is critical that sound regulations be developed before more accidents occur.

Notwithstanding the list of criticisms contained herein, the GEIS and regulations do represent significant advances in uranium milling regulations. We feel, however, that the Commission's approach is too limited. The passage of the UMTRCA and preparation of the GEIS present the NRC with a far-reaching opportunity to examine major overhauls in a historically and presently inadequate regulatory system. Although the documents afford thorough study to the specific technical problems of the past, this is a band-aid approach. The immediate symptoms are accounted for, without investigating the underlying causes. This course virtually guarantees future problems.

These comments are presented in a positive spirit. They are an attempt to identify means by which the Commission could make substantive improvements in present regulatory practices.

Far-reaching improvements are essential if the Commission is committed to its stated objectives in the preparation of the GEIS and promulgation of new regulations.

We appreciate this opportunity to participate in the NRC's rulemaking procedures.

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