

JUL 28 1980

Ref: SA/JFK

Thomas E. Baca, Director
Environmental Improvement Division
Department of Health and Environment
P.O. Box 968
Santa Fe, New Mexico 87503

Dear Mr. Baca:

I am writing in reference to the regulation of uranium mills and tailings by Agreement States pursuant to section 274 of the Atomic Energy Act, as amended by the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978. In order for an Agreement State to continue regulating uranium mills after November 8, 1981, the State must enter into an amended agreement with NRC by November 8, 1981. For those States that do not amend their agreement by this date, the authority to regulate uranium mills and tailings will revert to the NRC. (See section 204(h)(3) of the UMTRCA of 1978, as amended). Further, if a program to implement section 274c of the Atomic Energy Act, as amended, is not in place by November 8, 1981 the Commission would under section 274j reassert its authority over source material licensing in uranium mills. We are in the process of reviewing current and potential uranium mill Agreement State programs to provide an early indication of where each State stands in preparing to enter into amended agreements. In entering into an agreement it should be remembered that the State has a continuing obligation to maintain resources and statutes for maintaining the requirements of the criteria after 1981.

In order to complete this assessment we have developed draft criteria which we believe represents the minimum requirement for States to adopt to be able to maintain their authority to license uranium mills. The topics we consider necessary to evaluate State programs consist of the following:

- (1) Statutes
- (2) Regulations
- (3) Technical Criteria/National Standards
- (4) Organizational Structure and Relationships
- (5) Personnel
- (6) Functions to be covered in uranium mill regulatory program
- (7) Instrumentation

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A detailed outline of these topics and subtopics are attached as Enclosure 1.

From information currently available in our files and information developed from the last NRC annual review of the States radioactive materials program, we have evaluated New Mexico's status in comparison to the criteria and our comments are shown in Enclosure 2.

It is important to note that because the NRC has not yet finalized its regulations or technical criteria we have not reviewed in detail the State's existing regulations or technical criteria, although in some instances we did make reference to the regulations in the review of the statutes. Review of the regulations and technical criteria in comparison to final NRC standards will be completed at a later date.

We are aware that New Mexico has been active in preparing for the time when UMTRCA becomes effective (November 3, 1981). Consequently, you may have taken steps which, if formally made known to the NRC, may modify the conclusions in Enclosure 2. If this is the case you should identify those areas and provide appropriate documentation for our review.

I also want to call to your attention that if the State intends to utilize internal procedures rather than amend statutes or regulations to comply with certain mandatory requirements of UMTRCA, e.g., technical criteria/national standards, an opinion of the State Attorney General is required indicating that such procedures (identify) would be practiced and are enforceable.

It is important that you provide this office at the earliest possible date with a written response which states the actions you have taken which will satisfy the criteria, or which the State will take before November 3, 1981. A timetable for completing these actions should be provided.

Sincerely,

G. Wayne Kerr, Acting Director
Office of State Programs

ENCLOSURE 2

NEW MEXICO ASSESSMENT

I. Statutes

- A. As a result of the review of New Mexico's Environmental Improvement Act §§12-12-1 through 12-12-13, and the Radiation Protection Act §§12-9-1 through 12-9-12, several concerns have been raised. These concerns relate to compliance with the requirements of §274o of the Atomic Energy Act of 1954 for Agreement States. They are identified below according to numbered items in the criteria pertaining to statutes, Enclosure 1.

1. No comment.

2. and 3. 274o Financial Requirements Transfer of Funds

- a. UMTRCA provides that if the State has a long term care fund financed by license deposits, and if the transfer of land to the U.S. is required, the agreement must provide that funds paid by the licensee to the State will be transferred to the U.S. In addition to the agreement so providing, the State treasurer must be authorized to make such a transfer.

It is noted that the State does have a long term continued care fund, §12-0-5.1C N.M.S.A., and it may be necessary to transfer land to the U.S. The State statutes do not provide the authority to make the required funds transfer to the U.S. Use of the fund is authorized, however, to remedy or prevent harmful situations involving abandoned wastes or inoperative facilities, §12-9-5.2 N.M.S.A. Additionally, financial requirements are necessary and must be sufficient to ensure compliance with standards established by the NRC to ensure adequate reclamation, as opposed to long term care, of byproduct material and its disposal sites. This is not evident from a reading of the act and regulation. Although this general authority might be sufficient to allow payments to the U.S. for authorized purposes, clear and specific statutory authority to make such transfers would be preferable.

4. and 5. 274o(3)(A)(iii) Written Determination

UMTRCA requires State procedures regarding issuance of licenses to include a written determination based upon findings and evidence. Although the act remains silent to this aspect, a reading of the current State regulations 3-312 (j) provides that parties requesting notice of a decision be notified. It does not require that the decision be rendered in writing as required by UMTRCA. When read

together with State regulation 1-201(I), however, the UMTRCA requirement may be satisfied. Section 1-201(I) 1, provides that any action taken in a hearing be by written order where the Director believes a person is violating or threatens to violate a regulation or license condition pursuant to an NRC agreement. If 1-201 applies to all license determinations, the UMTRCA requirement of a written determination would be met. If State regulation 1-201 does not apply to all license determinations, including those relating to new applications, the UMTRCA written determination requirement would appear not to be fully satisfied, and requires clarification. A written analysis on the environmental aspects must be made available to the public before the hearing 274o.(3)(C) of UMTRCA. Likewise the States statutes or regulations should provide an opportunity for a hearing on a licensing action. UMTRCA requires State procedures whereby license determinations are subject to judicial review. Neither State statutes nor State regulations reviewed provide that decisions of the Director of the Environmental Improvement Division regarding licenses are subject to judicial review.

6. The Act is silent on the requirement that there shall be a ban on construction of a uranium mill prior to completion of a State written assessment.
7. The Act is silent on this requirement.
8. §274o(3)(A)(iii) Judicial Review of Rulemaking.

Provided for in EIA 12-12-13, F.

- B. In the enactment of any supporting legislation the State should take into account those reservations, identified in the criteria, Enclosure 1, of authority to the U.S. in UMTRCA.
 1. The Act is silent on NRC's retaining authority regarding the establishment of minimum standard for reclamation, long-term surveillance or maintenance, and ownership of byproduct material.
 2. The Act is silent on NRC's retaining authority regarding the determination that a licensee has satisfied decontamination, decommissioning and reclamation standards, and ownership requirements prior to termination of the license.
 3. The Act is silent on NRC's retaining authority regarding transfer of title to byproduct material and site to the Federal Government or State provided such option is exercised prior to termination of the license.
 4. The Act is silent on NRC's retaining authority regarding the requirement to undertake monitoring, maintenance, and emergency measures necessary to protect the public health and safety.

C. Variations

1. §274o(3)(c) Environmental Impact Analysis

UMTRCA requires a written environmental impact analysis be prepared by the State which is to include several specific considerations. These considerations are identified in Enclosure 1, VI, B, 1, pages 10 through 13. The Act is silent on this aspect, although we note that current State regulation 3-200 (H) requires that specified license applications be accompanied by an environmental report which addresses the short term and long term environmental, radiological, and public health and safety aspects and alternatives associated with the proposed license activity. The State regulations reviewed do not specifically require waterway or groundwater impacts to be considered as among environmental aspects of the report. It does not appear that this aspect meets the UMTRCA requirement. Similarly the Act along with a reading of the regulations does not specifically require consideration of decommissioning, decontamination, and reclamation. It therefore appears that the State act or regulations do not meet this aspect of the UMTRCA requirement.

General Comments -

1. The Radiation Protection Act 12-9-8, Exemptions, Item C.

The Mine Safety and Health Administration also regulates uranium mills by inspection. Could 12-9-8(C) be interpreted to mean that the State exempts from regulation uranium mills unless this authority is ceded to the State by MSHA?

II. Regulations

Such standards will be provided when the NRC's regulations are finalized.

III. Technical Criteria

Technical Criteria/National Standards will be provided when the NRC has developed same.

IV. Organizational Relationships Within the States

A. Organization

Information from the annual Regulatory Review of November 26-30, 1979 revealed that specific lines of supervision for certain program functions had not yet been fully implemented. Specifically the lines of communication and administrative control between Grants and Santa Fe were not clearly drawn.

Additionally, we understand that other State agencies contribute to the environmental assessments for uranium milling activities. From the organizational chart provided in the November 79 review we are unable to identify these agencies.

Please provide us with an updated organizational chart and a brief description of how these agencies will interface with the Radiation Protection Section in the preparation of the environmental assessment of uranium facilities. In this description also indicate the authorities of these departments as they relate to environmental assessments, their particular area of expertise, and identify what information they will contribute to the environmental assessment.

B. Lead Agencies

Our understanding of the procedures in New Mexico is that the Radiation Protection Section is the lead agency in the preparation of an independent environmental assessment.

Please confirm this understanding.

C. Arrangements with other State and Federal Agencies

Other than arrangements the State has with the NRC in providing support to the State on environmental assessments for specific cases, we are unaware of the specific arrangements the Radiation Protection Section has made with other State, Federal or other governmental agencies.

Please provide this office with copies of procedures, policy statements, or memorandum which reveals how environmental assessment efforts are coordinated with other agencies. Identify the role and scope of the effort of the supporting agency.

D. Use of Consultants

From information obtained during the 1979 review, we have identified two technical advisory committees, "Medical Isotope Advisory Committee" and a "Radiation Technical Advisory Council." Although the NRC has been providing assistance to the States on Environmental Assessments for Uranium Mills, it is evident that such assistance will be on the decline, and of lesser availability by November 1981. Please identify: (1) those areas in uranium mill regulatory operations where the State has identified the need for outside consulting services; and (2) procedures for obtaining these services which allows for funding, avoidance of conflict of interests, and availability during emergencies.

There is no indication from the 1979 review that the State has identified or contracted for medical consultants recognized for their expertise in emergency medical matters relating to the intake and diagnosis of uranium and its daughters.

V. Personnel

A. Number

Information from the annual agreement materials program of November 26-30, 1979 indicates that approximately 1-1/3 person-years are available for both licensing and inspections of uranium mills. Although this is the information obtained from the annual review, we are aware of other staff effort that we believe would show this effort to be greater (State organizational chart dated March 1980). However, we do not have a breakdown that would allow us to estimate your present staff years effort for uranium mill regulatory activities.

The NRC has determined that 2 to 2.75 professional staff years effort is required for processing a new conventional mill license, major renewal, or full scale in situ operation which encompasses an environmental assessment and inplant safety review. For a heap leach facility it is considered that 1.0 to 1.5 professional staff years effort is required for an environmental assessment and inplant safety review. In addition, the NRC has experienced that other post licensing actions which include such things as issuing amendments, conducting inspections and environmental monitoring reviews will require from 0.5-0.75 person years effort per licensed facility per year.

The two individuals on the Legal Bureau staff who are assigned to the Radiation Protection Section appears to be adequate for support of the program.

Information from the 1979 annual review indicates that one secretary serves the radioactive materials program. We believe additional clerical support will be necessary.

We note that laboratory services are provided through the State Laboratory Division. The Radiation Protection Section has experienced problems of getting adequate timely service. If completed in-house sufficient staff must be provided so as to furnish timely results. (See also section VII). To adequately regulate uranium mill licenses, the Radiation Protection Section must have adequate analytical services provided in a timely manner for routine regulatory operations and emergency situations. The Radiation Protection Section needs capability or support for analyzing those radionuclides found in sampling media around a uranium mill.

B. Specialities

Although information obtained during the Office of State Programs annual review indicates that job descriptions of personnel of the Radiation Protection Program appear adequate for evaluating uranium mill licensing application, the State Radiation Protection Section should have access to persons experienced in hydrology, geology and soils and foundation engineering. These individuals must be able to provide written assessments and prescribe appropriate suggestions or corrective measures in their field of expertise in a timely manner to the Radiation Protection Section. We need copies of job descriptions and resumes of incumbents for these specialities.

We note that the State Radiation Protection Program staff is taking advantage of specialized training courses relating to uranium milling.

VI. Functions to be Covered

A. Licensing and inplant occupational radiation safety

1. As guidance in determining the States Licensing Procedures for uranium mills, the NRC reviewed the States Uranium Mill License Application Handbook.

Regarding inplant occupational radiation safety aspects, it is believed the State should incorporate the following items in its licensing guides and evaluations:

- a. Minimum acceptable qualifications for persons responsible for managing and conducting the licensee's radiation safety program.
- b. Procedures for periodic retraining and testing of employees.
- c. Within the next two months the NRC will be using three new regulatory guides for uranium mills:
 - (1) ALARA Guide;
 - (2) Radiation Survey Guide; and
 - (3) Bioassay Guide.

We recommend that when issued, the State incorporate the information in these guides into the States licensing application handbook.⁽¹⁾

B. Environmental Data Review

1. Regarding the States Procedures for evaluating environmental impacts, the States should incorporate the following additional items in its environmental guidelines. The basis for this conclusion and the following comments are a result of our review of the "New Mexico Uranium Mill License Application Handbook", dated April 1980.

(1)

States developing regulatory guides from NRC Regulatory Guides 8-11 and 4.14 should use the following:

- U.S. NRC Regulatory Guide 8.22, "Bioassay at Uranium Mills".
- U.S. NRC Regulatory Guide 4.14, Revision 1, "Radiological Effluent and Environmental Monitoring at Uranium Mills".

a. Groundwater and Geology

These sections should spell out to the maximum extent practicable the kinds of information which will be required to describe the groundwater and geologic environment of the tailings disposal site(s). As an example of the type of information required the applicant/operator should supply information concerning the following:

The characteristics of the underlying soil and geologic formations particularly as they will control transport of contaminants and solutions. This shall include detailed information concerning extent, thickness, uniformity, shape, and orientation of underlying strata. Hydraulic conductivity of the various formations should be determined. This information should be gathered by borings and field survey methods taken within the proposed impoundment area(s) and in surrounding areas where contaminants might migrate to usable groundwater. The information gathered on boreholes should include both geologic and geophysical logs in sufficient number and degree of sophistication to allow determining where there may be discontinuities, fractures, and channeled deposits which are of high hydraulic conductivity. If field survey methods are used, they should be in addition to and calibrated with borehole logging. Hydrologic parameters such as permeability should not be determined on the basis of laboratory analysis of samples alone; a sufficient amount of field testing (e.g., pump tests) should be conducted to assure actual field properties are understood. Testing should be conducted to allow estimating chemi-sorption attenuation properties of underlying soil and rock.

Location, extent, quality, and capacity of any groundwater at and near the site.

b. Tailings Disposal System

This section should make it clear that the primary consideration for disposal of tailings should be placement below-grade (not by the use of above-grade embankments) in mines or specially excavated pits and the evaluation of alternative sites and disposal methods performed by applicants in support of their proposed tailings disposal program should reflect this. Where full below-grade burial is not practicable the size of retention structures and steepness of slopes of associated exposed embankments should be minimized by excavation to the maximum extent reasonably achievable or appropriate given the geologic and hydrogeologic conditions at the site. In instances where below-grade disposal is not the most environmentally sound approach (for example, if a

high quality groundwater formation is close to the surface and not very well isolated by underlying soils and rock), it should be demonstrated that an above-grade disposal program will provide reasonably equivalent isolation of tailings from natural erosional forces. This would require, in addition to the information you have requested, maps showing amounts of upstream catchment and drainage areas. Additionally, siting of tailings should be such that they are remote and isolated from people so that population exposures will be reduced to the maximum extent reasonably achievable.

c. Long-Term Impacts

The performance objectives on tailings management as well as technical criteria for final reclamation should be provided in this section to give guidance to applicants on what criteria an acceptable plan for final reclamation must meet.

Erosion control should not be accomplished by the use of diversion contouring and drainage ditches. Where there are embankments, they should be contoured to grades, which are as close as possible to those which would be provided if tailings were disposed of below-grade; this could for example lead to slopes of about 10 horizontal to 1 vertical (10h:1v) or less steep. In general, slopes should not be steeper than 5h:1v. Where steeper slopes are proposed, reasons why a slope less steep than 5h:1v should be supplied by the applicant and compensating conditions which make such slopes acceptable should be identified. Also where a full self-sustaining vegetative cover can not be maintained, rock cover should be employed on all slopes of the impoundment system. In addition, the impoundment should not be located near a potentially active fault which could significantly damage the impoundment, and where feasible the impoundment should be designed to incorporate features to promote deposition, and seepage of toxic materials to groundwater is eliminated or reduced to the maximum extent reasonably achievable.

C. Inspections

Regarding the States Procedures for conducting inspections of uranium mills, it is believed that the States proposed uranium mill inspection procedures submitted to the Office of State Programs appears adequate.

D. Implementation of Federal Standards

1. EPA Standard 40 CFR 190

Documentation available to the NRC at this time indicates that the State has not yet determined or started its determination that uranium mill licensees are or will be in compliance with the EPA Standard 40 CFR 190. We note, however, that by correspondence dated June 26, 1980 you intend to do so by December 1, 1980. Please provide us your plans for evaluating the information submitted by licensees as stated in your letter of June 26, 1980.

2. Post Operational Data Review

Documentation available to the NRC at this time indicates that the State does not have criteria requiring uranium mill licensees to submit in writing to the State regulatory agency semiannual reports specifying the quantity of each of the principal radionuclides released to unrestricted areas in liquid and in gaseous effluents, and all data from the radiological and non-radiological environmental monitoring program.

VII. Instrumentation

- A. Information obtained from the 1979 annual program review indicates that radiation detection instrumentation and ancillary equipment is available to the staff for inspection and normal investigations.
- B. It is the NRC's understanding that radionuclide laboratory analyses are provided in-house through the State Laboratory Division, and in emergency situations by contract with Eberline Instrument Company. It has been reported by the Radiation Protection Section (RPS) that the RPS has had problems getting adequate service and that the State Laboratory Division is unable to complete analyses of thorium-230 and lead-210, nuclides of environmental importance in uranium milling operations.
- C. The States recent experience with the dam failure of UNC highlights the importance of having capability to process a large number of samples in a variety of sample media in an expeditious manner by "State of Art" analysis. This deficiency should be corrected either by developing in-house capability and/or by contractual arrangements with one or more outside agencies. The State should provide clarification as to whether such expenditures can be made pursuant to the authority of 12-9-5.2, Item C of the Environmental Improvement Act or are to be made pursuant to routine budget of the Division.