OCT 2 3 1992

MEMORANDUM TO: Leonard J. Callan, Director
Division of Radiation Safety
and Safeguards, Region IV

FROM: Richard L. Bangart, Director
Division of Low-Level Waste Management
and Decommissioning
Office of Nuclear Material Safety
and Safeguards

SUBJECT: CONTENT AND OUTLINE POSITION FOR URANIUM MILL DECOMMISSIONING AND RECLAMATION ENVIRONMENTAL REPORT

Enclosed is a Content and Outline Position for an Environmental Report (ER) for Decommissioning and Reclamation of uranium mill facilities. This has been reviewed by Mr. Robert Fonner, Office of the General Counsel, and we believe it is the minimum information necessary on which an Environmental Assessment can be based for Nuclear Regulatory Commission licensing actions which require an environmental review. The Position was also reviewed by the Uranium Recovery Field Office and their comments are incorporated.

We request that the Content and Outline Position be sent within the next week to all of the uranium mill licensees that recently received letters from the Uranium Recovery Field Office requesting an ER or a Suprlement to an ER. This guidance should be useful to licensees in addressing the current issues and preventing delays caused by submitting insufficient or inappropriate information, thus delaying NRC's completion of its environmental assessment.

Any questions should be addressed to Allan Mullins of my staff at FTS 8-301-504-2578.

Sincerely, Original Signed By
RICHARD L. BANGART

Richard L. Bangart, Director
Division of Low-level Waste Management
and Decommissioning
Office of Nuclear Material Safety
and Safeguards

Enclosure: As stated

cc: V. Miller, OSP
R. Hall, URFO

Distribution: Central File# NMSS r/f AMullins RBangart WBrach
JAustin PLohaus JSurmeier MFliegel DGillen WBrown
LLUR r/f RHall,URFO
PDR YES X NO ___ Category: Proprietary ____ or CF Only ___
ACNW YES X NO ___
SUBJECT ABSTRACT: CONTENT/OUTLINE FOR UM DECOM & RECLAM ER

* See Previous Concurrence

OFC	LLUR*	LLUR*	LLUR*	LLWM*	LLWM
NAME	AMullins/eb	MFliegel	JSurmeier	bBrach	RBangart
DATE	10/21/92	10/21/92	10/21/92	10/21/92	10/23/92

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OFC	LLUR	LLUR	LLUR	LLWM	LLWM
NAME	AMullins/eb	MFliegel	JSurmeier for	BBrach	RBangart
DATE	10/22/92	10/23/92	10/26/92	10/29/92	/ /92

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ENVIRONMENTAL REPORT
CONTENT AND OUTLINE POSITION
URANIUM MILL DECOMMISSIONING
AND RECLAMATION
(Excluding Groundwater Remediation)

Introduction

The Nuclear Regulatory Commission's regulations implementing the National Environmental Policy Act of 1969 (NEPA) are found in 10 CFR Part 51, "Licensing and Regulatory Policy and Procedures for Environmental Protection." In most cases, licensees will have previously submitted an Environmental Report (ER) and only a supplement will be required for decommissioning and reclamation activities.

Section 51.60 "Environmental Report -- Material licenses," provides the specific requirements for ER's related to Part 40 licensees and the related ER requirement in Criterion 9 of Appendix A to 10 CFR Part 40. Section 51.60 states, in part, that each applicant for a license or other form of permission, or an amendment to or renewal of a license issued pursuant to Part 40, shall submit to the Director of Nuclear Material Safety and Safeguards the number of copies, as specified in Section 51.66, of a separate document, entitled "Applicant's Environmental Report" or "Supplement to Applicant's Environmental Report," as appropriate. Ten of the specified 15 copies should be sent to the Uranium Recovery Field Office. The "Applicant's Environmental Report" shall contain the information specified in Section 51.45. If the licensee has previously submitted an ER, the Supplement to applicant's ER may be limited to incorporating by reference, updating or supplementing the information previously submitted to reflect any significant environmental change, including any significant environmental change resulting from operational experience or a change in operations.

Section 51.45 "Environmental Reports-General Requirements," defines the content of an ER.

The ER or Supplement must discuss the following environmental considerations:

1. The environmental impact of the proposed action. Impacts should be discussed in proportion to their significance.

2. Any adverse environmental effects that cannot be avoided if the proposal were implemented,

3. Alternatives to the proposed action,

4. The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

5. Any irreversible and irretrievable commitments of resources that would be involved in the proposed action if it were implemented.

The discussion of alternatives is the heart of the ER or Supplement and the resulting environmental assessment. Therefore, the discussion of alternatives

Enclosure

to the proposed action in the ER or Supplement must be sufficiently complete to aid the Commission in evaluating " appropriate alternatives...in any proposal which involves unresolved conflicts concerning alternative uses of available resources," in accordance with Section 102(2)(E) of NEPA.

The ER or Supplement should include a benefit-cost analysis that considers and balances the environmental effects of the action and the alternatives available for reducing or avoiding adverse environmental effects, as well as environmental, economic, technical, and other benefits of the remedial action. The benefit-cost analysis should, to the fullest extent practicable, quantify the various factors considered. To the extent that such factors cannot be quantified, they should be discussed in qualitative terms. The ER or Supplement should contain sufficient data to aid the Commission in its development of an independent benefit-cost analysis.

The ER or Supplement should also include a discussion of the current status of compliance of the facility with applicable environmental quality standards and requirements that have been imposed by Federal, State, and regional agencies having responsibility for environmental protection. In addition, the environmental impact of the facility should be fully discussed with respect to matters covered by such standards and requirements irrespective of whether a certification from the appropriate authority has been obtained. While compliance with NRC standards and criteria pertaining to radiological effects will be necessary to meet the licensing requirements of the Atomic Energy Act, the benefit-cost analysis for the purpose of NEPA must consider the radiological effects together with a broad range of other environmental effects of the facility.

Presentation of Information

The licensee should present the information in the ER or Supplement clearly and concisely. Each subject should be treated in sufficient depth and with sufficient documentation* to permit the Commission to independently evaluate the extent of the environmental impact. Tables, line drawings, and photographs should be used wherever they contribute to the clarity and brevity of the report. The number of significant figures stated in numerical data should reflect the accuracy of the data. Descriptive and narrative passages should be brief and concise. If test results are needed to support conclusions, test data, procedures, techniques, and a listing of the equipment used to perform the tests should be included or referenced.

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*"Documentation" means information, supporting data, and statements, and may include (1) references to published information, (2) citations from the licensee's experience, and (3) reference to unpublished information developed by the licensee or the licensee's consultants. Statements not supported by documentation are acceptable provided the licensee identifies them either as information for which documentation is not available or as expressions of belief or judgment.

Pertinent published information relating to the site, the facility, and its surroundings should be referenced. Published information or assumptions that are essential for evaluating specific environmental effects of the proposed activities should be included in summary or verbatim form in the ER or Supplement or as an Appendix to the report.

Some of the information to be included in the ER or Supplement may already have been prepared by the licensee and submitted to the NRC or an Agreement State during earlier phases of the license. In such cases, this information, if still correct, (whether in the form of text, tables, or figures) may be incorporated in the ER or Supplement by reference. Previously submitted information should be revised as necessary to address the current status and conditions of the site.

The FR or Supplement should follow the outline and description of sections below.

1. Purpose and Need or the Mill Decommissioning and Tailings Reclamation Action

In this section the licensee should briefly describe the proposed mill decommissioning and site reclamation plans and the applicable regulatory requirements.

2. Characteristics and Operational History of the Mill Facility and the Tailings

This section should include a description of the mill process and an operating history of the mill facility. A description of the tailings facilities and the quantity and characteristics of the contained tailings should be included. This should include a review of historical records to identify areas of old or unintentional tailings deposition. The baseline and current status of the quality of the groundwater should be identified.

3. Environmental Characteristics of the Mill Site

This section should describe the location of the facility and the geographical, demographical, ecological, meteorological, hydrological, geological, seismological, radiological, historical and cultural, and socioeconomic characteristics of the site and surrounding vicinity. The objective is to describe the environmental baseline characteristics of the site to determine the environmental impacts of decommissioning the mill and reclaiming the mill site. Where applicable, clear references to data provided earlier will avoid unnecessary duplication of information.

a. Geography and Demography: The location of the site and nearby towns relative to prominent geographical features should be indicated. The boundary of the site should be shown along with significant site features. The topography of the site and vicinity should be shown on maps. The residential population density should be shown for communities within 10 km of the site and the distance to the nearest residence should be noted. Land use for a 1 km radius of the site should be shown.

b. Meteorology: Wind, precipitation, and potential storm conditions that influence the design and stability of the reclaimed mill site

should be identified. Sufficient information should be provided to permit an independent evaluation by the NRC of factors which may affect the site. Sources for data should be cited and onsite data should be provided if available.

c. Air Quality: This section should include analyses of onsite air quality for estimating decommissioning and reclamation generated radiological and nonradiological impacts on air quality.

d. Ecology: The terrestrial and aquatic flora and fauna within a 1 km radius of the site should be discussed. Any rare and endangered or threatened with endangerment species within the zone should be identified and the potential impact of the action identified.

e. Hydrology: Lithologic and geologic maps extending radially 5 km from the site boundary should be provided to show hydrologic, geologic, and stratigraphic characteristics of the site. A description should be provided of the hydrology of the region that affects the local groundwater. Detailed descriptions of the major aquifers in the area including background chemical and radiological properties should be provided. Any use of groundwater in the area should be identified. The location, size, use, and general characteristics of surface water bodies in the site vicinity should be described and shown on maps. Information should be provided for determining the extent of the 100 year flood plain in the immediate site vicinity for compliance with Executive Order 11988, "Floodplain Management Guidelines." The baseline quality of water bodies adjacent to the site should be provided.

f. Geology: A detailed description of the geology, geomorphology, and seismicity for the region should be provided for the site vicinity (within 5 km). The potential for seismic disturbance should be assessed for the site. A description of the known or potential mineral resources for the site area should be assessed with a discussion of any active exploitation.

g. Historic and Cultural: Areas valued for their historic, archeological, scenic, cultural, or natural landmark significance should be identified on the site and for a 1 km radius. Identified sites should be assessed for compliance with the National Historic Preservation Act of 1966.

h. Natural Radiation Environment: Data should be provided to assess the natural radiation found on the site and vicinity with a description of the radionuclide source. Additional sources contributing to natural background should be identified.

4. Decommissioning and Reclamation Plan Design

A description of the mill site reclamation plan should be provided in sufficient detail to allow an independent assessment of the environmental impacts associated with its implementation. Compliance with Appendix A to 10 CFR Part 40 should be addressed with particular attention to Criteria 1 and 3.

5. Evaluation of Decommissioning and Reclamation Actions

The information in this section should summarize the important adverse environmental impacts and the overall benefit-cost analysis for the proposed actions. Benefits or adverse impacts which cannot be quantified should be described in appropriate qualitative terms.

a. Alternative Reclamation Actions: Alternatives to the proposed actions should be discussed and assessed

b. Unavoidable Adverse Environmental Impacts: The predicted adverse environmental impacts of the proposed activities which cannot be avoided and for which no mitigative measures are proposed should be identified and described.

c. Potential Accidents: The environmental and potential health effects of possible accidents that may occur during decommissioning and reclamation should be discussed.

d. Irreversible and Irretrievable Commitments of Resources: The irreversible commitment of environmental resources and the irretrievable commitment of material resources associated with closure activities that cannot be avoided by practical means should be identified and described.

e. Relationship Between Short-Term Uses and Long-Term Productivity of Man's Environment. Short-Term Effects: The environmental effects associated with the implementation of the decommissioning and reclamation plans should be identified and an assessment of these effects should be presented covering the period of closure implementation. Long-Term Effects: An assessment of the environmental impacts anticipated after closure should be presented.

f. Socioeconomic Impacts: To the extent practicable, the long-term socioeconomic impacts of the action on local and regional communities should be addressed.

g Cost-Benefit Balance of Environmental Action and Alternatives: This section should provide a general discussion of the closure benefits and project costs. All costs and benefits identified in the report should be included and quantified in monetary or qualitative terms.

6. Environmental Monitoring During Decommissioning and Reclamation Actions

The licensee should describe or reference the proposed monitoring program for the reclamation period including sample collection, procedures, and analysis frequency. The description should include parameter limits, which are not to be exceeded and the actions planned in the event the limits are exceeded.

a. Meteorological Monitoring: The proposed monitoring system should be described with details of maintenance and inspection of the system.

b. Hydrological Monitoring: The proposed operational hydrological monitoring should be described, including that for the piezometric surface and soil moisture variations. The discussion should include how any release of liquid effluent will be monitored.

c. Ecological Monitoring: Ecological monitoring parameters should be described if applicable.

d. Radiological Monitoring: Information should be provided on the types of samples, locations of planned samples, analyses to be performed, type of equipment to be used, collection and analysis frequency, and the lower limit of detection for analyses. Action levels for radionuclide concentrations should be discussed with actions to be taken for exceeding the levels.

7. Permits Needed for Decommissioning and Reclamation Actions

Permits required for Federal, State, and local authorities should be listed with current compliance status indicated for each.

References

1. 10 Code of Federal Regulations, Part 40, Appendix A, Criterion 9

2. 10 Code of Federal Regulations, Part 51, Section 51.45

3. 10 Code of Federal Regulations, Part 51, Section 51.60

4. 10 Code of Federal Regulations, Part 51, Section 51.66

OUTLINE
ENVIRONMENTAL REPORT FOR
URANIUM MILL DECOMMISSIONING AND RECLAMATION

Introduction

1. Purpose and Need for the Mill Tailings Decommissioning and Reclamation Action.
   a. Regulatory requirements and citations
   b. Description of proposed action

2. Characteristics and Operational History of the Mill Facility and Tailings
   a. Operational history of mill facility
   b. Description of mill facility
   c. Description and characteristics of tailings
   d. Description of groundwater

3. Environmental Characteristics of Mill Site.
   a. Geography and Demography
      (1) site location
      (2) site description
      (3) population distribution
      (4) use of adjacent land and waters
   b. Meteorology
      (1) winds
      (2) precipitation
      (3) Storms
   c. Air Quality
   d. Ecology
      (1) terrestrial
      (2) aquatic
      (3) rare and endangered species
   e. Hydrology
      (1) ground water
      (2) surface water
   f. Geology
      (1) regional
      (2) geomorphology
      (3) mineral resources
      (4) seismicity
   g. Historic and Cultural
      (1) archeological
      (2) scenic, cultural, and natural landmarks
   h. Natural radiation ervironment

4. Decommissioning and Reclamation Plan Design
   a. Mill Decommissioning
   b. Tailings Disposal
   c. Assessment of Compliance with Appendix A to 10 CFR Part 40 With Particular Attention to Criteria 1 and 3

5. Evaluation of Decommissioning and Reclamation Actions
   a. Alternative Reclamation Actions
   b. Unavoidable Adverse Environmental Impacts
   c. Potential Accidents
   d. Irreversible and Irretrievable Commitments of Resources
   e. Relationship Between Local and Short-Term Uses of Man's Environment and the Maintenance of Long-Term Productivity
   f. Socioeconomic Impacts
   g. Cost-Benefit Balance of Environmental Action and Alternatives

6. Environmental Monitoring During Decommissioning and Reclamation Action
   a. Meteorological Monitoring
   b. Hydrological Monitoring
   c. Ecological Monitoring
   d. Radiological Monitoring

7. Permits Needed for Decommissioning and Reclamation and Applicable Environmental Standards
   a. Federal, State, and Local
   b. Compliance and Status