Utah!
Where ideas connect
Department of Environmental Quality
Division of Radiation Control

Michael O. Leavitt
Governor
Dianne R. Nielson, Ph.D.
Executive Director
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Executive Secretary
Radiation Control Board

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03 JUL 21 PM 2:46

STP

July 18, 2003

Paul Lohaus, Director
Office of State and Tribal Programs
Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Via Federal Express

Dear Mr. Lohaus:

The following is a list of changes to the final application as a result of comments received from the Nuclear Regulatory Commission (NRC) in a letter dated June 27, 2003. The NRC identified comments using the final application submitted in January 2003. As a result of response to the comments, corrections were made to the final application that resulted in a different pagination. In order to facilitate review of the revised final application, changes will be identified in the "clean copy" of the revised application by page number that may differ from the January 2003 version. In addition, an underline/strikeout version has also been provided to facilitate the review. Following reference to the changes by page number on the clean copy, underline/strikeout changes page numbers will follow in brackets.

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STP-006 Template
RIDS: SP08

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Response: All areas relating to "future adoption" on pages 30 and 31[31 and 32] have been corrected to indicate that necessary rules have been adopted. The reference 150.31(b) was corrected on page 32.

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NRC comment #13: Inspection Manual Chapter 2801 referenced in Appendix D is dated 1998. The revised version (2000) should be referenced and used.

Response to comment #13:
The final application has been revised to reference the 2000 version of IMC 2801 and the 1998 version has been replaced with the 2000 version in Appendix D. The replacement version is located in Tab 5 of the addendum.

NRC comment #14: In section G in the side-by-side regulation comparisons, for Criterion 5B(4), Utah states that their groundwater Class III is "roughly equivalent to an 'exempted aquifer' under the EPA Safe Drinking Water Act/Underground Injection Control Regulations found in 40 CFR 146.4".

Staff does not agree with the above statement and believes that Utah's class III groundwater differs from EPA's definition of an "exempted aquifer." This needs further discussion or the statement should be deleted. [The NRC staff reviewer suggests that Utah delete the statement from the Utah table, since all four classes in Utah require continued protection, whereas the EPA exempt aquifer does not require protection. Therefore, none of the Utah classes are similar to the EPA exempt aquifer.]

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NRC comment #15: The proposed draft Amendment to the Agreement in Appendix K did not address everything necessary for an 11e.(2) agreement. The NRC drafted a revised amendment to the Utah Agreement for your consideration. Please see attached.

Response to comment #15: We concur with the revised agreement and will replace the draft Agreement in Appendix K with the NRC draft Agreement. The replacement draft agreement is located in Tab 7.

Thank you for your assistance in this matter in quickly identifying and resolving issues with the application.

Sincerely,

William J. Sinclair, Executive Secretary
Utah Radiation Control Board

Revisions to final application

Replace Final Application page with Final Revised Application page in Tab 1 of the addendum.

Replace Attached Appendices with updated version in Tab 1 of the addendum.

Replace changes in the final application with NRC Comments and Response to Comments in Tab 1 of the addendum.

Replace Utah Final Application for Uranium Mills and Mill Tailings with the Utah Final Application "clean copy" in Tab 2.

Replace Attachment 7, Appendix D, SA-300 (February 20, 1998) with SA-300 (May 23, 2001) in Tab 4 of the addendum.

Replace NRC Inspection Manual Chapter 2801 (November 11, 1998) in Appendix D. with NRC Inspection Manual Chapter 2901 (August 25, 2000) in Tab 5 of the addendum.

Replace page 8 of 20 in Enclosure 3 (Comparison of Several NRC Groundwater Protection Criteria . . .) in Appendix G with page 8 of 20 in Tab 6 of the addendum.

Replace (Amendment to Agreement. . .), third document of Appendix K with Amendment to Agreement . . .in Tab 6 of the addendum.

Add Appendix L, Regulatory Issues Summary 2000-23 from Tab 8 of the addendum.

FINAL APPLICATION
Addendum

AMENDED AGREEMENT FOR URANIUM RECOVERY REGULATION

STATE OF UTAH

DIVISION OF RADIATION CONTROL
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
JULY 2003

1

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 27, 2003

JUL 2003
Received
Division of
Radiation
Control

Mr. William Sinclair, Director
Division of Radiation Control
Department of Environmental Quality
168 North 1950 West
P.O. Box 144850
Salt Lake City, UT 84114-4850

Dear Mr. Sinclair:

We have conducted a review of the State of Utah application for an amendment to its Agreement for uranium milling and 11e.(2) byproduct material dated January 2, 2003. The review was conducted by an inter-office staff team. The review was based on the Commission Policy Statement that provides the criteria for new agreements and Office of State and Tribal Programs (STP) Procedure SA-700, "Processing New Agreements."

The review was conducted to determine whether the application contained the information necessary to enable staff to prepare an assessment of the amendment application. The team found that the amendment application provided information on the appropriate major program elements for a uranium milling program and reflected significant effort on the part of your staff. The team also identified several areas where additional clarifying information or documentation is needed. Our comments are contained in Enclosure 1. For your reference, the comments are correlated to the pertinent sections of your draft amendment application. We would also appreciate any comments you might have on the usefulness of the procedure and handbook.

The Commission Policy Statement, "Criteria for Guidance of States and NRC in Discontinuance of NRC Regulatory Authority and Assumption thereof by States through Agreements," [Effective January 23, 1981 (46 FR 7540), and amended by Policy Statements published July 16, 1981 (46 FR 36969) and July 21, 1983 (48 FR 33376)], specifies the criteria the Commission will apply in making its finding that a proposed Agreement State program is adequate to protect public health and safety and compatible with NRC's regulatory program, as required by the Atomic Energy Act of 1954, as amended. Under this process, the staff prepares a written assessment of the State's program, based on a review of the State's application against the criteria, to support the Commission's finding.

We have shared the enclosed comments with you as they were being developed but we would welcome an opportunity to meet with you to discuss the comments, if needed, and answer any questions concerning the review, the information needed, or steps involved in processing the amended Agreement. Please contact me at 301-415-3340, or Dennis Sollenberger at 301-415-2819 to arrange a meeting or conference call.

Sincerely,

Paul H. Lohaus

Paul H. Lohaus, Director
Office of State and Tribal Programs

Enclosure:
As stated

Comments on the Utah Application for an Amended Agreement for Uranium Mills and Mill Tailings

1. Page 3, Policy Statement, line 13 of full paragraph. The amendment to the agreement does not include authority for pre-1978 mill tailings and Utah should not imply that this will be included in the new regulatory program. Pre-1978 mill tailings (<0.05 weight percent would be NORM) are not under NRC authority under the AEA, therefore, they cannot be included in an agreement between the NRC and Utah.

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Utah Radiation Control Board

FINAL REVISED APPLICATION

AMENDED AGREEMENT FOR URANIUM RECOVERY REGULATION

STATE OF UTAH

DIVISION OF RADIATION CONTROL
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

JULY 2003

TABLE OF CONTENTS

UTAH RADIATION REGULATORY PROGRAM

I. INTRODUCTION

II. POLICY STATEMENT

III. DESCRIPTION OF ORGANIZATION

IV. GROUNDWATER AUTHORITY

V. STAFFING

VI. FUNDING

VII. STATUTORY CHANGES

VIII. RESERVATION OF AUTHORITY TO THE UNITED STATES

IX. RULEMAKING

X. SUGGESTED STATE LEGISLATION - MODEL STATE ACT

XI. LICENSING PROGRAM

XII. INSPECTION PROGRAM

XIII. RULES EQUIVALENT TO NRC REGULATIONS

XIV. INSTRUMENTATION AND LABORATORY SUPPORT

XV. ARRANGEMENTS FOR DISCONTINUING NRC JURISDICTION

XVI. SUMMARY

ATTACHED APPENDICES

VOLUME 1

APPENDIX A: ORGANIZATIONAL CHARTS

- Utah State Government
- Utah Department of Environmental Quality
- Utah Department of Environmental Quality Mission, Vision, Values, Operating Principles, Executive Director's Office information, How We Do Business
- Utah Division of Radiation Control
- Utah Radiation Control Board membership, general information, Ethics Act and Conflict of Interest
- Utah Department of Environmental Quality Emergency Response Phone List
- Memorandum: Designation of Bill Sinclair as Co-Executive Secretary of the Utah Water Quality Board for Designated Radioactive Material Management Facilities
- Notice of Intent Letter from Governor Leavitt to Chairman Meserve
- "Elements of a Utah Agreement State Program for Uranium Mills Regulation"

APPENDIX B: STAFFING

- Division staff resumes (in alphabetical order)
- Job Descriptions and Job Analysis Questionnaires for New Staff
- Utah Division of Radiation Control Training Policy
- NRC Training Guidance Documents
  - NRC Inspection Manual 1246 A-12 and A-13
    - Section XII: Uranium Recovery Inspector: NRC Inspector Qualifications Journal
    - Section XIII: Training Requirements for Uranium Recovery Project Manager/Technical Reviewer

APPENDIX C: STATUTES/RULES

- Utah Radiation Control Rules (uranium rules in Appendix J)
- Utah Code Annotated 19-1, Environmental Quality Code
- Utah Code Annotated 19-3, Radiation Control Act
- Utah Code Annotated 19-5, Water Quality Act
- Utah Code Annotated 63-46a-4, Utah Administrative Rulemaking Act
- Utah Water Quality Rule R317-6, Ground Water Protection
- NRC STP Procedure Approval, SA-700, Utah Applicable Statutes and Rules
- NRC State Regulation Status: Utah (as of 11/22/2002)
- UDEQ Fee Schedule - Current FY2003 and proposed FY2004

APPENDIX D: INSPECTION PROCEDURES

- Routine Procedures
- Allegations/Investigations
- Closeout Inspections and Closeout Surveys
- Follow-up Inspections

VOLUME 2

APPENDIX E: LICENSING PROCEDURES

Technical Procedures for License Review
Expired License Policy Procedure
NRC Regulatory Guides 3.11, 3.11.1, 3.51, 3.56, 4.14, 8.22. 8.25. 8.30, and 8.31

APPENDIX F: INSTRUMENTATION AND CALIBRATION PROCEDURES

Equipment Inventory
Instrument Calibration Procedures
Procedures for Sample Analysis

APPENDIX G: GROUNDWATER PROGRAM EQUIVALENCY

Cover letter transmitting groundwater program information
Enclosure 1 - Summary of the process used to determine how to best regulate groundwater at Utah uranium mill facilities
Enclosure 2 - Executive Summary - Comparison of NRC Groundwater Protection Criteria in 10 CFR Part 40, Appendix A with Utah Ground Water Quality Protection Rules, R317-6
Enclosure 3 - Detailed Comparison of NRC Groundwater Protection Criteria in 10 CFR Part 40, Appendix A with Utah Ground Water Quality Protection Rules, R317-6

APPENDIX H: FEE SCHEDULE

Updated final approved FY2004 DEQ fee schedule (containing Uranium mills/tailings annual and review fees)

APPENDIX I: 2002 LEGISLATION

Enrolled copy of Senate Bill 96, Uranium Mill Tailings Oversight, 2002 General Session, State of Utah

APPENDIX J: 2002 URANIUM RECOVERY RULEMAKINGS

Cover letter transmitting rulemaking information of October 9, 2002
Copies of all uranium rulemakings filed with Utah Division of Administrative Rules
Response to comments - June 4, 2002
Response to comments - July 2002
Response to comments - September 2002
Utah Administrative Rulemaking rules R15-1-5
NRC letter of November 22, 2002 (rules are compatible)
Nonsubstantive rulemaking request as result of November 22. 2002 letter

APPENDIX K: AGREEMENT/AMENDED AGREEMENT/DRAFT AMENDED AGREEMENT

Original agreement between NRC and State of Utah , effective April 1, 1984

Amended agreement between NRC and State of Utah (low-level waste), effective May 8, 1990

Suggested language for amendment agreement between NRC and State of Utah (uranium mills and tailings)

APPENDIX L: REGULATORY ISSUES SUMMARY (RIS) 2000-23

2

UTAH FINAL APPLICATION
FOR
URANIUM MILLS AND MILL TAILINGS

Introduction (Criterion 29*)

Section 274 of the Atomic Energy Act of 1954, as amended, authorizes the U.S. Nuclear Regulatory Commission (NRC) to enter into agreements, whereby states assume certain regulatory functions that would otherwise be the responsibility of the NRC. Utah Code Annotated (UCA) 19-3-113 authorizes the Governor of Utah to enter into such an agreement. On April 1, 1984, Utah became an Agreement State with regulatory authority over 11e.(1) byproduct material, source material, and special nuclear material in quantities not sufficient to form a critical mass. On May 9, 1990, the agreement was amended to include the regulatory authority for land disposal within the State of source, byproduct, and special nuclear material received from other persons. At this time, the State of Utah wishes to amend its agreement to assume regulatory authority over byproduct material as defined in Section 11.e.(2) of the Atomic Energy Act for uranium mills and mill tailings.

The Utah Department of Environmental Quality (DEQ), Division of Radiation Control (DRC), will be the designated agency for carrying out these responsibilities. William J. Sinclair, Director of the Division of Radiation Control, will be the contact.

*1981/1983 Policy Statement: "Criteria for Guidance of States and NRC in Discontinuance of NRC Regulatory Authority and Assumption Thereof by States Through Agreement"

Policy Statement (Criteria 29 and 35)

The following policy statement for assuming regulatory authority over byproduct material as defined in Section 11.e.(2) of the Atomic Energy Act for uranium mills and mill tailings has evolved through a discussion process involving scoping and task force meetings. During October and November 1999, the Division of Radiation Control conducted a series of stakeholder meetings with potential licensees and a series of public scoping meetings that were held in Salt Lake City, Tooele, Ticaboo, Blanding, and Moab, Utah. At the public scoping meetings, the Division requested comments on the following proposal: "The State of Utah will amend its current agreement with the Nuclear Regulatory Commission to regulate uranium mills and tailings." Thirty-nine persons offered oral comments during the public scoping meetings and approximately 150 persons attended the five scoping meetings. In addition, 8 written comments were received during a public comment period that ran from October 28, 1999 through December 6, 1999.

During the 2000 Utah legislative session, it was determined that it would be beneficial to form an Agreement State/Groundwater Authority task force to examine several issues relating to Agreement State status. The task force was initiated by the Utah Department of Environmental Quality in April 2000. Interested stakeholders that were invited to participate on the task force included licensee representatives, local community representatives, representatives of the Utah Radiation and Water Quality Boards, and a representative of the Utah Mining Association. The task force was jointly sponsored by the Department of Environmental Quality, Divisions of Water Quality and Radiation Control. After several meetings, the task force formulated a paper entitled: "Elements of a Utah Agreement State Program for Uranium Mill Regulation." In July

2000, the task force unanimously supported the Division of Radiation Control in pursuing Agreement State status as established in the "Elements" paper. The "Elements" paper described several aspects of a Utah Agreement State program including the following policy statement:

"The State of Utah recognizes the importance of and supports the uranium mining and milling industry. The State recognizes that to remain viable at this time, uranium mills must be able to engage in activities other than milling conventional mined uranium ores such as processing alternate feed materials for the recovery of uranium alone or together with other minerals. The State also recognizes its responsibility to ensure that all such activities are accomplished in a manner that is protective of human health and the environment. It has been a long-standing policy for the State to seek primacy for environmental programs. In this regard, the State believes that a cooperative uranium mills and tailings regulatory program will be of benefit to both the regulated community and Utah citizens. The advantages that the State can offer over the current Nuclear Regulatory Commission program include better communication with and participation of the public in uranium recovery issues, elimination of duplicative regulatory responsibilities, providing a more cost effective program for the regulated community, and establishing control of materials not currently being regulated (e.g. pre-1978 uranium mill tailings) while maintaining a regulatory program that is adequate and compatible with existing and future NRC regulations and policy. The elements within this application provide the framework for how the State of Utah would regulate uranium mills and tailings as an Agreement State."

Information on the task force, including minutes of each meeting can be found on the Division of Radiation Control website at http://www.deq.state.ut.us/EQRAD/MILLS/ATLAS/Deq_task.htm. Announcement of formation of the task force as well as periodic updates of the task force work were provided to the Utah Radiation Control Board.

Following the formulation of the policy in conjunction with discussions with the NRC, it was realized that the current Commission policy related to pre-1978 uranium mill tailings would have to be followed. This does not prevent the State from exercising regulatory authority under its existing rules of such material as naturally occurring radioactive material. It is also the intent of the State to follow the guidance affirmed by the Commission for review and decision of receipt of alternate feed materials by uranium mills. Each alternate feed amendment will be considered a major amendment for the purposes of licensing and will follow procedures as described in this final application. The alternate feed guidance as described in NRC Regulatory Issues Summary 2000-23 is included in Appendix L of the application.

The State of Utah also wishes to emphasize that this application does not include the former Atlas site in Moab, Utah, now known as the Moab Millsite. In accordance with the Defense Reauthorization Act, this property was transferred to the Department of Energy. The Moab Millsite has converted back to a Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I site with cleanup responsibility delegated to the Department of Energy.

Description of Organization (Criteria: 29, 33, and 35)

[See Appendix A for Organizational Charts]

The Department of Environmental Quality was created within state government on July 1, 1991 with the mission of safeguarding human health and quality of life through the protection and enhancement of the environment. The Governor with the advice and consent of the Senate appoints an Executive Director to administer the Department. The Department is made of six divisions: Division of Air Quality, Division of Drinking Water, Division of Environmental Response and Remediation (Superfund, Underground Storage Tanks, and Emergency Response), Division of Radiation Control, Division of Solid and Hazardous Waste, and the Division of Water Quality. Each Division is under immediate direction and control of a Division Director appointed by the Executive Director. There are five policymaking boards created within the department: the Air Quality Board, Radiation Control Board, the Drinking Water Board, the Water Quality Board, and the Solid and Hazardous Waste Control Board. Division Directors are also appointed as an Executive Secretary to the appropriate Board.

The Utah Division of Radiation Control promotes a mission that protects Utah citizens and the environment from sources of radiation that constitute a significant health hazard. The Division is divided into two sections, Radioactive Materials and X-ray Section and Low-Level Waste and Environmental Monitoring Section. The Sections are supervised by two managers who are under the direction of the Division Director. Upon assumption of the program, the Low-Level Waste and Environmental Monitoring Section will be renamed the Environmental Monitoring, Uranium Recovery, and Waste Management Section. The staff is divided among the following: Radioactive Materials, X-ray, Indoor Radon, Envirocare, Waste Isolation Pilot Plant Transportation Project, and the Generator Site Access permit program. A seventh program,

Uranium Mills, will be added. Division staff carry out the Division's mission and assist customers in complying with the rules.

The Radioactive Material and X-ray Section is responsible for coordinating and managing the use of radiation sources in hospital, clinical, medical, research, academic, and industrial facilities. This section performs the regulatory functions of licensing and inspecting facilities using radioactive material; registering and inspecting medical, academic, research, and industrial radiation producing equipment; and responding to radiation incidents.

The Low-Level Waste and Environmental Monitoring Section is responsible for licensing and inspecting the Envirocare low level waste facility; studying indoor radon concentrations and disseminating information to the public relevant to health risks; directing and overseeing on-site stabilization or relocation of abandonment of uranium mill tailings; and maintaining the integrity and usefulness of radiation survey instruments.

The Radiation Control Board is appointed by the Governor with the consent of the Utah Senate and guides development of state radiation control policy and rules in the state. The board is made up of 13 members, one of whom is the Department of Environmental Quality Executive Director or designee, and are appointed by the Governor with the advice and consent of the Senate. The Department and Division staff submit recommendations for Board members to the Governor for consideration. The appointed members are to be knowledgeable about radiation protection and represent the following interests in the community: a physician; a dentist; a health physicist or other professional employed in the field of radiation safety; three representatives of the regulated

community, at least one whom represents the radioactive waste management industry and one who represents the uranium milling industry; a registrant or licensee representative from academia; one representative of a local health department; one elected county official; and three members of the general public, at least one of whom represents organized environmental interests. The board is required to meet at least quarterly to carry out the duties described in section 19-3-103.5 of the Utah Code Annotated. The Board typically meets on a monthly basis except February and July. The Board also travels, as resources allow, to southeastern Utah and Tooele County for one of the monthly meetings during the year. It may be necessary to consider an increase in the number of times that the Board meets in southeastern Utah as a result of uranium recovery regulation. Board members are subject to the Utah Public Officers' and Employees' Ethics Act. Information regarding disclosure and conflict of interest for Board members are found in Appendix A.

The State of Utah rules were amended to include an environmental report prepared by the licensee that will be reviewed by the Division of Radiation Control.

Outside consultants will not be used but the Division has the ability to contract with outside consultants through its fee schedule with mutual consent of the licensee.

The medical consultant with expertise in emergency medicine that would be used by the Division is the Radiation Emergency Assistance Center/Training Site in Oak Ridge, Tennessee. The Department of Energy Idaho National Engineering and Environmental Laboratory would also be used as a resource.

Legal support is through the Attorney General's Office. The Utah Attorney General's Office provides legal consultation services on all environmental issues that the Division may need to address. The Attorney General's office can provide criminal investigative assistance and prosecution.

Groundwater Authority (Criteria 29, 33, and 35)

The Division of Radiation Control administers both groundwater permitting and radioactive material licensing for disposal facilities and uranium mills. This process has been made more effective by utilizing existing provisions of the Utah Water Quality Act which allows the Water Quality Board and Executive Director to designate the Director of the Division of Radiation Control as a Co-Executive Secretary to administer provisions of the Water Quality Act for the identified facilities [see Utah Code Annotated (UCA) 19-5-106 and 19-5-104 (1),(k)]. The DRC Director has been designated as a Co-Executive Secretary of the Water Quality Board and given legal authority to issue, administer, and enforce specific groundwater permits under the Utah Water Quality Rule UCA R317-6 as applied to the following facilities: Envirocare, Rio Algom, International Uranium Corporation, and Plateau Resources Limited, and as allowed under the provisions of UCA 19-5-104(1)(k). No separate involvement of the Division of Water Quality staff is required although they are available to consult with the DRC Director regarding interpretation of rules and other technical or procedural matters relating to groundwater protection. Appeals of enforcement proceedings and permit issues relating to groundwater would be through the Utah Water Quality Board. The Division has substituted the Administrative Rules for Ground Water Quality Protection, R317-6 for groundwater standards

provided in Appendix A, 10 CFR Part 40 (EPA Rules 40 CFR Part 192). Enclosed in Appendix G is a packet of information previously submitted including:

(1) A cover letter of October 23, 2002 requesting review of information to justify an "alternate standard" under the Uranium Mill Tailings Radiation Control Act (UMTRCA);

(2) Summary of the process used to determine how to best regulate groundwater at Utah uranium mill facilities;

(3) Executive Summary - Comparison of NRC Groundwater Protection Criteria in 10 CFR Part 40, Appendix A with Utah Ground Water Quality Protection Rules (UAC R313-6)

(4) Detailed Comparison of NRC Groundwater Protection Criteria in 10 CFR Part 40, Appendix A with Utah Ground Water Quality Protection Rules (UAC R313-6)

Staffing (Criteria 29, 34, and 35)

(See also Appendix B)

Up to three new positions will be created within the Division for the Uranium Mill Program that will be combined with an existing groundwater hydrologist position within the Division that already coordinates the uranium mill issues. Eventually, this groundwater hydrogeologist will be responsible for the inspection and licensing of groundwater monitoring for the Uranium Mill Program. A health physicist will be responsible for radiation safety license reviews and inspections of mills as well as inspection of all radioactive material licensees in southern Utah (some 28 licensees). An engineer will be responsible for the inspection and licensing of new facilities, upgrading existing facilities, and closing facilities. An Office Technician II will be

responsible for administrative support for the program. Staff currently utilized for licensing and oversight of Envirocare will also assist with the regulation of the Uranium Mill Program.

Management of the Uranium Mill Program will be under the direction of the Low-Level Waste and Environmental Monitoring Section Manager. The 28 radioactive material licensees that the health physicist inspects will be under the direction of the Radioactive Material and X-ray Section Manager.

The Division will staff the program by submitting a request, once it is known when the amended Agreement is to be signed, to the Department of Environmental Quality Human Resource Management Office to recruit the three positions. The positions have already been authorized and established in the Department FY 2003/2004 budgets. It is anticipated that recruitment may commence as early as July 1, 2003 depending on the status of the amended Agreement. This would be in anticipation of an amended Agreement being signed on or before October 1, 2003. Three months of fees collected during January - March 2002 will fund new staff and have them in place prior to signing of the amended Agreement. The new staff will be mentored by existing staff that have been qualified in key areas prior to the new staff being hired. By July 1, 2003, the following existing Division of Radiation Control staff will be qualified in the uranium mill program area:

Speciality Area	Staff Members to be Qualified
Health physics	Gwyn Galloway, John Hultquist, Boyd Imai
Engineering	Steve Palmer, Woody Campbell
Groundwater	Loren Morton, Rob Herbert, Brian Hamos

The qualification process will consist of completion of NRC "core" courses (many of the above staff have accomplished this) in each specialty areas. Training will also be provided through accompaniment of NRC inspectors from NRC Region IV during routine mill inspections of the International Uranium White Mesa Mill, the Rio Algom facility, and the Plateau Resources Shootaring Canyon Mill. Opportunity will also be taken for inspection training during Region IV inspection of the Envirocare facility 11e.(2) operations. In addition, arrangements have been made with the Colorado Department of Public Health and Environment Radiation Services Division to accompany state of Colorado inspectors on a training/tour/routine inspection of the Cotter Corporation Mill in Cañon City, Colorado. As the above staff members are qualified as mentors, they will be available to work with newly hired staff prior to the signed amended Agreement to the point in which newly hired staff achieve uranium mill competency. Once newly hired staff are competent to work independently, the mentors provide adequate backup in this specialty area as needed. As new staff go through the mentoring process, it may have some short-term impact on certain inspection and licensing work, mostly in the low-level waste area. All mentoring will be focused around ongoing activities such that any impact to DRC programs will be minimal. As a result, the expectation will be there will be no impact to the Integrated Materials Performance Evaluation Program (IMPEP) indicators during this short transition phase.

The new staff will also go through program orientation and receive the opportunity to participate in Nuclear Regulatory Commission or equivalent, State, Federal Emergency Management Agency, Department of Energy, and other job related courses. The engineer, health physicist, and hydrogeologist will have the opportunity to take the following NRC or equivalent courses as

needed: Inspection Procedures, Introduction to Licensing Practices and Procedures, Introduction to Health Physics, Nuclear Transportation Course, Radiological Emergency Response Operations Training, and available courses related to uranium mill and mill tailings. They will also review the Radiation Control Rules and become familiar with Regulatory Guides and reference materials. The NRC Training guidance documents (NRC Inspection Manual Reports 1246A-12 and A-13, Section XIII: "Training Requirements for Uranium Recovery Project Manager/ Technical Reviewer" and Section XII "Uranium Recovery Inspector NRC Inspector Qualification Journal") will be utilized by the Division as references for training inspectors and license reviewers for uranium mills. The office technician will be given the opportunity to take State training programs as they become available.

In order to ensure that an adequate number of staff were to be hired to fulfill the requirements of the uranium mill and tailings regulatory program, an evaluation was conducted. As mentioned previously, the staff to be hired are 1 health physicist, 1 engineer, and 1 office technician. The groundwater hydrologist position that was anticipated will be filled by an existing position who has been coordinating uranium mill issues for the Division. It was determined that the professional staff (engineer, health physicist, groundwater hydrologist) would be available for 260 work days (52 weeks/year X 5 days/week). Factors of vacation (10 days assumed), paid holidays (11 days), and sick leave used (5 days) reduced the availability of 1 staff person to 243 days per year. Professional staff consisting of three persons would provide the Division with the availability of 702 staff days. Office technician administrative functions were not factored into the available staff days. This includes such administrative functions as filing, correspondence, GRAMA (similar to FOIA) requests, equipment and supplies, and travel arrangements.

To evaluate the staff availability, inspection and licensing activities were estimated on a yearly basis.

INSPECTION WORKLOAD/YEAR

Average Inspections per year	# of staff involved	Staff days per inspection	Enforcement factor [1]	Inspection days per year [2]
Envirocare - 2	3	5	10	50
Rio Algom - 2	2	3	0	12
IUC - 2	3	5	5	40
Plateau - 2	2	3	0	12
Totals				114 days

[1] Enforcement factor may include Notice of Violation/Order preparation, evaluation of responses regarding corrective actions, final settlement or administrative hearing.

[2] Does not include travel time to and from Southeastern Utah estimated to be 6 hours/each way. Rio Algom and White Mesa trips to be combined, Plateau trips will be single trip.

LICENSING WORKLOAD/YEAR

Licensee	Significant licensing actions/year	Public participation factor [1]	# of staff involved	Staff days per action	Licensing staff days
Envirocare	4	48	3	10	168
Rio Algom	1	12	2	5	22
IUC	4	48	3	10	168
Plateau	1	12	2	5	22
Totals					380 days

[1] Public participation factor: public hearing (1 day), evaluate comments (5 days), final decision (2 days), administrative hearings (4 days) = 12 days

To determine staff availability for a year, the inspection days workload (114 days) was added to the licensing days workload (380 days) for a total of 494 days. A 20% contingency factor (99 days) was also used that would include training, reactive inspection time, construction

inspections, minor amendment processing, response to questions from the public and licensees, guidance/rulemaking development and changes, and other non-direct activities.

In conclusion, staffing appears adequate:

> 494 days (inspection/licensing workload) + 99 days (20 % contingency) = 593 days
> 702 staff availability days estimated = + 109 staff availability days (not including the administrative services provided by the office technician)

Funding (Criteria 29 and 35)

The DRC will use a combination of annual operating fees and hourly review fees. The operating fees were initially established in the Radiation Control Act as a result of the passage of 1 substitute SB96 during the 2002 General Session of the Utah Legislature. The fees, beginning in FY2004 will be established and transferred to the DEQ annual fees document. A copy of the FY2004 proposed fee schedule is included in Appendix H. This fee schedule will be offered for approval during the 2003 General Session of the Utah Legislature. An hourly review fee was established in the DEQ annual fees document during the 2002 legislative session that will be effective upon program transfer. Annual operating fees will differentiate between closed, standby, and operating facilities. Review of NRC generated data regarding review fees and operating fees suggested that there will be sufficient revenue generated to fully fund the state program.

Statutory Changes (Criteria 29 and 35)
(See also Appendix C)

The Radiation Control Act was amended during the 2002 General Session of the Utah Legislature by 1 substitute Senate Bill 96 (enrolled copy provided in Appendix I) to allow the Radiation Control Board to establish rules for licensing, operation, decontamination, decommissioning, including financial assurance, and reclamation of sites, structures, and

equipment used in conjunction with possession, use, transfer, or delivery of source and byproduct material and the disposal of byproduct material (uranium or thorium mill tailings and related wastes). The Radiation Control Act was also amended to add a representative of the uranium milling industry and another member of the public to the Radiation Control Board. Governor Leavitt signed the bill on March 26, 2002. On November 22, 2002, following confirmation by the Utah Senate, Royal I. Hansen (general public) and Robert Pattison (uranium milling industry) were appointed by Governor Leavitt to the two new Board positions established by changes to the Act.

The following statutory changes to the Utah Radiation Control Act to implement an amended Agreement for uranium recovery regulation were accomplished during the 2002 General Session of the Utah Legislature:

19-3-103(3)(d) was modified to include three representatives of the regulated industry, at least one representing the radioactive waste management industry and at least one representing the uranium mill industry; and to modify (h) to include three members of the general public, at least one whom represents organized environmental interests. This change will expand the Board to 13 members. This is to ensure that the Board remains an odd-numbered membership as required by state policy.

19-3-104(d)(i) (ii) was added to give the Radiation Control Board the authority to make rules as necessary regarding the possession, use, transfer, or delivery of source and byproduct material and the disposal of byproduct material to establish requirements, for the licensing, operation,

decontamination, decommissioning, including financial assurance and the reclamation of sites, structures, and equipment used in conjunction with such activities.

19-3-105(a) was added to establish fees under 19-3-105(b)(i)(ii),(c),(d)(i)(ii),(e),(f), and (6)(a)(b) for the regulation of source and byproduct material at uranium mills or commercial waste facilities. From January 1, 2003 through March 30, 2002, fees for uranium mills or commercial sites disposing of or reprocessing byproduct material were established at $6,667 per month and $4,167 per month for uranium mills determined to be on standby status. On or after March 31, 2003, the same fees apply, but only if the NRC has granted an amended Agreement to Utah on or before March 31, 2003. After March 31, 2003, fees are to be paid (same schedule) either beginning October 1, 2003 (if amended Agreement has been achieved), or the beginning the date in which NRC grants the amended Agreement. For payment periods after July 1, 2003, the fees are established under the authority of the Department of Environmental Quality fee schedule approved by the Utah Legislature. Annual fees are deposited in the Environmental Quality Restricted Account.

In addition to the changes described above, administrative changes were made to:

19-1-108(2)(a) which adds the fees collected as described above to the Department of Environmental Quality Restricted Account

19-3-104(1)(a)(b) was added to indicate decommissioning includes financial assurance and source and byproduct material have the same definition as described in the Atomic Energy Act. This resulted in renumbering of subsequent paragraphs - (2)(3)(4).

19-3-104(11)(b) was added to clarify that only commercial low-level waste facilities are subject to siting criteria rules (already established under Utah Radiation Control Rules R313-25-3).

There were other administrative changes that resulted in some renumbering of portions of 19-3. These are best detailed in the enrolled copy of 1 substitute SB96 found in Appendix I in which the changes to the Radiation Control Act, 19-3 are underlined and stricken as appropriate.

Reservation of Authority to the United States

(Criterion 30)

State rules have been modified to reserve the authority to the United States in UMTRCA as stated in 10 CFR 150.15a as follows: establishment of minimum standards for reclamation, long-term surveillance or maintenance, and ownership of byproduct material; prior to license termination, determine that licensee has complied with decontamination, decommissioning, reclamation standards, and ownership standards; prior to license termination, the take title provision will be invoked at option of the State; authority to require monitoring, maintenance and emergency measures after license termination; authority to permit use of surface or

subsurface estate, or both of the land transferred per UMTRCA; and authority to exempt land ownership transfer requirement of Section 83(b)(1)(A).

Rulemaking (Criteria 29 and 35)

(See also Appendix J)

The Division of Radiation Control has adopted applicable parts of 10 CFR 40 by reference (disclaiming any intent to regulate materials or activities over which the NRC retains jurisdiction) with necessary changes to reflect primacy of the Utah program (e.g., recognition of the Executive Secretary, etc.). With the adoption by reference of the NRC regulatory program, it is recognized that guidance has been published that is intended to provide clarification to the various regulatory elements. The Division will follow the published NRC guidance documents unless doing so will compromise protection of human health and the environment.

The DRC recognizes that it cannot make a fundamental change to an Atomic Energy Act provision (e.g., the definition of byproduct material). The DRC further recognizes that pursuant to provisions of the Radiation Control Act [19-3-104 (6) and (7)], it can adopt rules more stringent than federal law only after a public hearing and a written finding based on evidence in the record that the federal regulations are not adequate to protect public health and the environment.

Statutory authority to make rules was granted to the Board during the 2002 Utah legislative session per 19-3-104(4)(d) of the Radiation Control Act. A determination was made that the

following rules would need to be modified or proposed to ensure compatibility with the requirements of 10 CFR Part 40:

R313-22-33(1)(e), "General Requirements for the Issuance of Specific Licenses" [modified]

R313-70-7(2)(b)(c)(d), "License Categories and Types of Fees for Radioactive Material Licensees" [modified]

R313-17-2(1)(a), "Administrative Procedures" [modified]

R313-15-1001, "Waste Disposal - General Requirements"

R313-19-2, "Requirements of General Applicability to Licensing of Radioactive Material" [modified]

R313-22-39, "Executive Secretary Action on Applications to Renew or Amend" [modified]

R313-24, "Uranium Mills and Source Material Mill Tailings Disposal Facility Requirements" [new section incorporating 10 CFR Part 40 by reference with exception of groundwater requirements]

The rulemaking process involves approval by the Radiation Control Board of each proposed rule for filing with the State Division of Administrative Rules. All State Agencies use the rulemaking procedures of the State Division of Administrative Rules and are bound by such procedures. Proposed rules or changes to proposed rules are published in the Utah Bulletin for public comment on the first or fifteenth of each month. The rulemaking process requires a 30-day public comment period. Announcement of the public comment period is made in the two major daily Salt Lake newspapers as well as newspapers in the impacted communities such as Moab

and Blanding. Following the comment period, an assessment of needed changes is made. If no comments are received or the changes are non-substantive, the rules are submitted to the Radiation Control Board for final approval at the next Board meeting, and an effective date is established. The effective date is usually set for one week after the approval date to allow for the filing of the paperwork with the Division of Administrative Rules. Rulemaking has to be completed within 120 days of the initial filing date or the process must commence again. During this rulemaking process, comments were received from stakeholders regarding several of the rules (see Table A). As a result, it was determined that the comments required substantive changes to the initial proposed rule. For those rules, the comments were evaluated and a determination made if changes were needed (summarized in a response document). The rules requiring substantive changes then were re-drafted with the needed changes as a "change to a proposed rule". These modified rules were approved for filing by the Radiation Control Board and submitted to the Division of Administration Rules. The rules were subject to another 30-day public comment period. Table A provides a summary of the rulemaking steps followed for each of the seven rules including when the rules were made effective.

Table A
Summary of Uranium Mills/Tailings Rulemakings
Division of Radiation Control - 2002

Rule	Approved by RCB for pc Published in State Bulletin	Commence Public Comment Period	Public comment period extension	Written comments/ Response to comments	Final approval by RCB Effective Date
R313-22-33(1)(e)	4/5/2002 5/1/2002	5/1/2002	6/5/2002	No	6/7/2002 6/14/2002
R313-70-7(2)(b)(c)(d)	4/5/2002 5/1/2002	5/1/2002	6/5/2002	Yes 6/4/2002	
R313-17-2(1)(a)	4/5/2002 5/1/2002	5/1/2002	6/5/2002	Yes 6/4/2002	
R313-15-1001	4/23/2002 5/15/2002	5/15/2002	6/28/2002	No	7/22/2002 7/22/2002
R313-19-2	4/23/2002 5/15/2002	5/15/2002	6/28/2002	Yes 7/12/2002	
R313-22-39	4/5/2002 5/15/2002	5/15/2002	6/28/2002	No	7/22/2002 7/22/2002
R313-24	4/5/2002 5/1/2002	5/1/2002	6/28/2002	Yes 7/12/2002	

Table A (Continued)
Summary of Uranium Mills/Tailings Rulemakings
Division of Radiation Control - 2002

Rule	Approval by RCB Re-published in State Bulletin	Commence Public Comment Period	Public comment period ends	Written comments/ Response to comments	Final approval by RCB Effective Date
R313-22-33(1)(e)	N/A	N/A	N/A	N/A	N/A
R313-70-7(2)(b)(c)(d)	6/7/2002 7/1/2002	7/1/2002	7/31/2002	No	9/6/2002 9/10/2002
R313-17-2(1)(a)	6/7/2002 7/1/2002	7/1/2002	7/31/2002	No	9/6/2002 9/10/2002
R313-15-1001	N/A	N/A	N/A	N/A	N/A
R313-19-2	7/22/2002 8/15/2002	8/15/2002	9/16/2002	No	10/4/2002 10/7/2002
R313-22-39	N/A	N/A	N/A	N/A	N/A
R313-24	7/22/2002 8/15/2002	8/15/2002	9/16/2002	Yes 9/20/2002	10/4/2002 10/7/2002
R313-15-301	6/6/2003 7/1/2003	7/1/2003	7/30/2003	No	8/1/2003 8/7/2003

Appendix J provides a copy of the rulemaking packet submitted to the NRC on October 9, 2002 which included each of the approved rules in "final" form as filed with the Division of Administrative Rules. Administrative rules adjudicative proceedings are found in R15-5, the entire text of Administrative Rules Procedures (R15) is provided in Appendix J as well. Also provided in Appendix J are copies of the Division response documents to stakeholder comments.

In addition, the NRC suggested in the letter confirming compatibility of the Utah rules of November 22, 2002 (see Appendix J) that a change be made to R313-24-1 by inserting "source material in" following the words "possession and use of" in the first line. This change was accomplished by filing a non-substantive rule change with the Division of Administrative Rules on December 19, 2002. The change to the rule was accepted as a non-substantive change and was made effective January 1, 2003 (See Appendix J).

The Utah Radiation Control rules were modified to include consideration of environmental impacts (see discussion below under **Suggested State Legislation-Model State Act)** (Criterion 31). This was accomplished in R313-24-3.

Suggested State Legislation-Model State Act (Criterion 31)

The Utah Radiation Control Rules will be modified to include consideration of environmental impacts (including radiological or non-radiological impacts, surface and groundwater impacts, consideration of alternatives to the licensed activities, and long-term impacts of licensed activities) for new licenses and major license amendments. The analysis will be included in the safety evaluation report for new licenses and in a statement of basis for major license amendments. New licenses and major license amendments will be available for public comment at least 30 days following the publication of notice. R313-17-2, 3, and 4 of the Utah Radiation Control Rules provides an opportunity for written comment, as well as a public hearing prior to the issuance, or amendment of a license. Once the Executive Secretary of the Utah Radiation Control Board reaches a final decision on a new license or amendment to a license, parties or

individuals may appeal such decisions to the Utah Radiation Control Board. The Board acts as a judge in such matters in accordance with Utah administrative procedures such as determining standing, taking testimony, and rendering a decision to either modify, set aside, or support the final decision of the Executive Secretary. Upon a final agency action determination by the Board, parties under Utah Code Annotated (UCA) 63-46b-14 have 30 days to file an appeal with the Utah Court of Appeals (See UCA 63-46b-60).

Licensing Program (Criteria 29 and 35)

The licensing process will follow the elements of the current radioactive materials program which is subject to periodic program review by the NRC. License renewal, amendments, reclamation plans or revisions to reclamation plans or new licenses may be subject to public comment and/or public hearing. Criteria of R313-17-1 through 4 of the Utah Radiation Control Rules would apply. Rule R313-17 has been modified to add the uranium recovery facility category designation as a category that public comment is applicable. The Division will follow current policy as to the differentiation between minor and major amendments and the need for public comment. This policy established in 1993 applies the following criteria:

> Minor amendments to a license do not require public comment. These amendments do not substantially alter the license conditions or reduce the capability of the licensee to protect human health and the environment.
>
> Major amendments to a license require public notice. These amendments are necessary to enable the licensee to respond in a timely manner to common variations in the types

and quantities of the materials, technological advancements, changes necessary to comply with new rules, and changes that substantially alter the facility or its operations.

Upon application for a license amendment, a determination of major or minor amendments will need to be made.

Existing NRC licenses will be transferred to the State upon program relinquishment by the NRC and will be converted into a "state license" which will include appropriate Utah regulatory citations in lieu of "Part 40" language and will incorporate the Utah administrative process (e.g., Executive Secretary) where necessary. The license conditions will remain unchanged except for the above until a license amendment request or license renewal. The current expiration date of the license will remain the same.

The Division of Radiation Control Technical Procedures for License Review will be followed during the review process (see Appendix E). The NRC Standard Review Plan for Uranium Mills and Mill Tailings as well as the checksheet will be used as guidance documents during the license review process. Licensing evaluations or analyses will include radiological safety aspects in occupational or restricted areas and environmental impacts to population or unrestricted areas surrounding facilities. As necessary, evaluations will include pre-licensing visits to obtain relevant information. Items which will be evaluated include, but are not limited to, the following: general statement of proposed activities; scope of proposed action; specific activities to be conducted; administrative procedures; facility organization and radiological safety responsibilities, authorities, and personnel qualifications; licensee audits and inspections;

radiation safety program, control and monitoring; radiation safety training programs for workers; restricted area markings and access controls; review of monitoring data, exposure records, license audit and inspection records as well as other records for existing mills; environmental monitoring; radiological emergency procedures; product transportation; tailing management facilities and procedures; site and physical plant decommissioning procedures, other than tailings; and employee exposure data and bioassay programs.

The environmental analysis will be part of the license review process and will consist of a detailed and documented evaluation of the following items: topography; geology and seismology; hydrology and water quality; meteorology; background radiation, tailings retention systems; interim stabilization, reclamation, and site decommissioning programs; radiological dose assessments (source terms; exposures pathways; dose commitment to individuals; dose commitment to populations; evaluation of radiological impacts to the public to include determination of compliance with State rules and Federal regulations and comparison with background values; occupational dose; radiological impact to biota other than man; and radiological monitoring programs, pre-operational and operational); impacts to quality and quantity of surface and groundwater; environmental effects of accidents; and evaluation of tailings management alternatives in terms of regulations. The staff will also review the following during preparation of the environmental analyses for a new uranium recovery facility: ecology; environmental effects of site preparation and facility construction on environment and biota; environmental effects of use and discharge of chemicals and fuels; and economic and social effects.

The Division will use the following NRC publications as guidance documents (when applicable) during the license review process: Regulatory Guide 3.11, "Design, Construction, and Inspection of Embankment Retention Systems for Uranium Mills"; 3.11.1, "Operational Inspection and Surveillance of Embankment Retention Systems for Uranium Mill Tailings"; 3.51, "Calculational Models for Estimating Radiation Doses to Man from Airborne Radioactive Materials Resulting from Uranium Milling Operations"; 3.56, "General Guidance for Designing, Testing, Operating, and Maintaining, Emission Control Devices at Uranium Mills"; 4.14, Radiological Effluent and Environmental Monitoring at Uranium Mills"; 8.22, "Bioassays at Uranium Mills"; 8.25 "Air Sampling in the Workplace"; 8.30, "Health Physics Surveys in Uranium Mills"; 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Mills will be As Low As is Reasonably Achievable". Other guidance documents that may also be use as resources are I.C.R.P. Report 29: "Radionuclide Release into the Environment: Assessment of Doses to Man" as well as N.C.R.P. Report 76, "Radiological Assessment: Predicting the Transport, Bioaccumulation, and Uptake by Man of Radionuclides Released to the Environment", NUREG 1620, Standard Review Plan for reclamation plans, RIS 2300-23 relating to alternate feed amendment requests.

The Division's health physicist and hydrogeologist will perform operation data reviews and required the licensee to submit semi-annual radioactive material effluent release reports as well as semi-annual environmental monitoring reports. The written reports will be required to be submitted within 60 days after January and July 1 of each year. The licensee will be required to specify the quantity of each of the principle radionuclides

released to unrestricted areas in liquid and gaseous effluents during the pervious six months of operation. The data for the effluent release will be required in a manner that will permit the physicist and hydrogeologist to confirm the potential annual radiation doses to the public and confirm the dose to receptors.

The State will recognize already established performance-based license conditions for uranium mills and tailings. The State is willing to consider future performance-based license conditions on a case by case basis with each licensee. An issue that will need to be addressed is the appropriate method for substantive involvement of the public while still achieving the operational objectives of performance based licensing.

Inspection Program (Criteria 29 and 35)

There will be at least four facilities that will require inspection: Lisbon (Rio Algom), White Mesa (International Uranium), Shootaring Canyon (Plateau Resources), and Clive (Envirocare of Utah). Currently, Envirocare of Utah in Tooele County is subject to quarterly inspections by the NRC using staff from offices in Arlington, Texas sometimes supplemented by NRC headquarters staff from Rockville, Maryland. Envirocare inspections would be assigned to the "Envirocare team" and incorporated into the overall oversight and inspection schedule now in use for low-level radioactive waste.

A health physicist will be hired to inspect each of the mills at least on a quarterly basis. The mill inspection frequency schedule will be reviewed regularly and adjusted as needed for different circumstances (e.g., good compliance, standby not operating, etc.). The

health physicist will be housed in the DRC office in Salt Lake City but will travel to southern Utah at least one week per month to accomplish both regular (quarterly) and oversight inspections. This health physicist will also be responsible for the inspection of 28 other radioactive material licensees in southeast and southwest Utah. The engineer and groundwater hydrogeologist will provide inspection support as needed to the health physicist in such areas as groundwater sampling evaluations, split groundwater sampling, oversight of new engineering construction or oversight of closing facilities.

he State inspection program will incorporate all the elements of the current radioactive materials inspection program (see Appendix D for Inspection and Enforcement procedures) relevant to Part 40 uranium recovery facilities which is subject to periodic program review by the NRC. Items that will be examined during inspections will be consistent with items evaluated during licensing. The Division inspectors will perform independent surveys and sampling in addition to examining aspects of license performance as follows: administration; milling processes, including any additions, deletions or operational changes; accident and incidents; notices, instructions, and reports to workers in accordance with R313-18 rules; action taken on previous findings; physical plant facilities of the mill tour to determine compliance with regulations and license conditions; tailings waste management to determine compliance with rules and license conditions (NRC Regulatory Guide 3.11.1 see Appendix E); records; respiratory protection and bioassays to determine compliance with license conditions and R313-15 rule; effluent and environmental monitoring; training programs; and transportation and shipping.

A complete inspection will be performed at least annually and will include independent surveys and sampling. The NRC inspection form for Uranium Mills as well as the NRC Inspection Manual, Chapter 2801, "Uranium Mill and 11e.(2) Byproduct Material Disposal Site and Facility Inspection Program" will be utilized as guidance documents by the State inspectors during an inspection. Enforcement actions will be in accordance with the Utah Radiation Control Rules and existing enforcement guidance (used for the radioactive materials and low-level waste program, see Appendix D for Inspection Procedures). All enforcement actions can be appealed through the Utah Radiation Control Board and thereafter, to the appropriate court. The DRC will also conduct periodic split sampling with facilities regarding waste materials or groundwater samples.

Rules Equivalent to NRC Regulations (Criterion 32)

In addition to adoption of applicable parts of 10 CFR 40 by reference (disclaiming any intent to regulate materials or activities over which NRC retains jurisdiction), pending the legislative process, the DRC has the following Utah Administrative Code (UAC) rules equivalent to NRC Regulations:

R313-15, "Standards for Protection Against Radiation"

R313-18, "Notices, Instructions and Reports to Workers by Licensees or Registrants-- Inspections;

R313-19, "Requirements of General Applicability of Licensing of Radioactive Material (Packing and Transportation of Radioactive Material is in this section.)

Part of the regulation for certain portions of 10 CFR 150, "Exemptions and Continued Regulatory Authority in Agreement States and in Offshore Waters under 10 CFR 150.31(b)" is met through the Radiation Control Act, Utah Annotated Code 19-3, and will be met through the adoption of applicable parts of 10 CFR 40 by reference (disclaiming any intent to regulate materials or activities over which the NRC retains jurisdiction). The Utah Radiation Control rules have been modified to include a written environmental impact analysis process.

With the completed adoption of applicable parts of 10 CFR 40 by reference in R313-24 and other necessary modifications to the rules, the DRC has rules that are up-to-date and compatible with the NRC rules (see Appendix C, State Regulation Status form).

Instrumentation (Criterion 36) and **Laboratory Support** (Criterion 34)

The State has sufficient field and laboratory instruments to ensure licensee's control on materials and validate licensee's measurements. Appendix F has a list of the State's instruments and Instrument Calibration Procedures. Instruments are calibrated as necessary but not less than annually except for those used by the Radioactive Material Section which are calibrated semi-annually.

Laboratory instruments are available through the Division of Radiation Control as well as through the State Health Laboratory which have the capabilities for quantitative and qualitative analysis of radionuclides associated with natural uranium and its decay chain, primarily, U-238, Ra-226, Th-230, Pb-210, and Rn-222 in a variety of sample media. If

the State Health Laboratory does not have the analytical capabilities needed, the Division may contract with a commercial laboratory to perform quantitative or qualitative analysis.

The State Health Laboratory has established acceptable criteria for quality assurance and participates in the National Environmental Laboratory Accreditation Program. The Environmental Protection Agency's program for laboratory performance is no longer available. The State Health Laboratory can provide the Division staff analytical reports within approximately 30 days. Arrangements can be made for the State Health Laboratory to handle a large number of samples from a major accident in a timely manner. However, the State Laboratory is limited to the number of samples it is capable of running and may have to contract a commercial laboratory for a timely turn around.

The Division has gamma spectroscopy capabilities in-house and a portable spectroscopy unit for field measurements, both qualitative and quantitative. In-house gamma spectroscopy capabilities include the following media: soil, water, and air (filters). The EG&G Ortec gamma spectroscopy unit is a germanium detector connected to a desk top computer with EG&G gamma vision software. The portable unit is a Berkley Nucleonics Corporation Smart Area Monitor. Employees in the environmental section have extensive experience in dealing with the collection and analysis of naturally occurring radioactive material contaminants in soil, water, and air samples.

Arrangements for Discontinuing NRC Jurisdiction

As stated in the licensing program section of this application, existing NRC licenses will be transferred to the State upon program relinquishment by the NRC and will be converted into a "state license" which will include appropriate Utah regulatory citations in lieu of "Part 40" language and will incorporate the Utah administrative process where necessary. The license conditions will remain unchanged except for the above until a license amendment request or license renewal. The current expiration date of the license will remain the same. The license transfer will not give rise to a requirement to make any changes to existing facilities.

There will be a transition phase for staffing as described in the "staffing" section. Three months prior to signature of the Governor and Chairman of the amendment to the Agreement, recruitment will begin for staff as previously discussed in the staffing section. While staff are being recruited and hired, existing staff as described in the "staffing section" will conduct necessary activities relating to the uranium mill program. Existing Envirocare staff will assume the duties relating to the licensing and inspection of the Envirocare 11e.(2) facility immediately

It is anticipated that the majority of the workload will involve Envirocare and International Uranium White Mesa Mill of which existing staff have good familiarity. On the job training (mentoring) will be provided by existing staff to new staff and it is anticipated that the new staff will be fully functional and independent within the shortest time possible. Core training will be provided as previously discussed to the new staff.

The NRC will transfer the inspection and licensing files of the four facilities to the DRC during the transition period. Any licensing or inspection actions underway or in transition at the time of program transfer will be provided to the DRC. The DRC recommends that the NRC Headquarters and Region IV representatives schedule (as an amendment Agreement appears imminent) a meeting to discuss the transition tasks that will be needed. The NRC is encouraged to complete Utah work prior to the transfer. Discussion of tasks to be deferred to the DRC should be discussed as part of the transition meeting and scheduling process. The DRC recommends that the NRC archive the license and inspection documents in accordance with federal record management prior to the transfer of site files.

DRC has provided in Appendix K copies of the original Agreement of 1984, the amended Agreement for low-level waste authority in 1990, and a draft amended Agreement for uranium mills and tailings authority for 2003.

Summary

The State of Utah is committed to administering a high quality Agreement State Program that will protect public health, public safety, and the environment. The Division has been granted statutory authority and has undertaken activities in preparation for regulating uranium mills and mill tailings. The Division has trained professional staff and will be hiring new personnel in areas of administration, technology, and operational support. Utah has obtained the necessary statutory authority to assume Agreement State responsibilities regarding the regulation of uranium mills and mill tailings and has

proposed adoption of regulation compatible, pending the State legislative process, with those developed and adopted by the NRC. Sufficient instrumentation to detect and measure radiation is available within the Division as well as other State agencies. Emergency response capabilities have been demonstrated and exercised. The Division has obtained necessary fiscal support to fund the Agreement State Program, including the regulation of uranium mills and mill tailings. The State is committed to full administrative support to the Agreement State program and has demonstrated its competency in control of radiation as evidenced by the adequate and compatible rating achieved during the last Integrated Material Performance Evaluation Program review.

The Department of Environmental Quality remains committed to its mission of safeguarding human health and quality of life through the protection and enhancement of the environment. The Utah Division of Radiation Control will continue to protect Utah citizens and the environment from sources of radiation that constitute a significant health hazard through its radiation control programs. The State of Utah is prepared and qualifies to assume the responsibilities that would be transferred to the State upon amendment of Section 274 Agreement to include regulation of byproduct material as defined in Section 11e(2) of the Atomic Act.

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TABLE OF CONTENTS

UTAH FINAL APPLICATION FOR URANIUM MILLS AND TAILINGS
[REPLACED IN ITS ENTIRITY]
Underline/Strikeout Version

I. INTRODUCTION

II. POLICY STATEMENT

III. DESCRIPTION OF ORGANIZATION

IV. GROUNDWATER AUTHORITY

V. STAFFING

VI. FUNDING

VII. STATUTORY CHANGES

VIII. RESERVATION OF AUTHORITY TO THE UNITED STATES

IX. RULEMAKING

X. SUGGESTED STATE LEGISLATION - MODEL STATE ACT

XI. LICENSING PROGRAM

XII. INSPECTION PROGRAM

XIII. RULES EQUIVALENT TO NRC REGULATIONS

XIV. INSTRUMENTATION AND LABORATORY SUPPORT

XV. ARRANGEMENTS FOR DISCONTINUING NRC JURISDICTION

XVI. SUMMARY

UTAH FINAL APPLICATION
FOR
URANIUM MILLS AND MILL TAILINGS

Introduction (Criterion 29*)

Section 274 of the Atomic Energy Act of 1954, as amended, authorizes the U.S. Nuclear Regulatory Commission (NRC) to enter into agreements, whereby states assume certain regulatory functions that would otherwise be the responsibility of the NRC. Utah Code Annotated (UCA) 19-3-113 authorizes the Governor of Utah to enter into such an agreement. On April 1, 1984, Utah became an Agreement State with regulatory authority over 11e.(1) byproduct material, source material, and special nuclear material in quantities not sufficient to form a critical mass. On May 9, 1990, the agreement was amended to include the regulatory authority for land disposal within the State of source, byproduct, and special nuclear material received from other persons. At this time, the State of Utah wishes to amend its agreement to assume regulatory authority over byproduct material as defined in Section 11.e.(2) of the Atomic Energy Act for uranium mills and mill tailings.

The Utah Department of Environmental Quality (DEQ), Division of Radiation Control (DRC), will be the designated agency for carrying out these responsibilities. William J. Sinclair, Director of the Division of Radiation Control, will be the contact.

*1981/1983 Policy Statement: "Criteria for Guidance of States and NRC in Discontinuance of NRC Regulatory Authority and Assumption Thereof by States Through Agreement"

Policy Statement (Criteria 29 and 35)

The following policy statement for assuming regulatory authority over byproduct material as defined in Section 11.e.(2) of the Atomic Energy Act for uranium mills and mill tailings has evolved through a discussion process involving scoping and task force meetings. During October and November 1999, the Division of Radiation Control conducted a series of stakeholder meetings with potential licensees and a series of public scoping meetings that were held in Salt Lake City, Tooele, Ticaboo, Blanding, and Moab, Utah. At the public scoping meetings, the Division requested comments on the following proposal: "The State of Utah will amend its current agreement with the Nuclear Regulatory Commission to regulate uranium mills and tailings." Thirty-nine persons offered oral comments during the public scoping meetings and approximately 150 persons attended the five scoping meetings. In addition, 8 written comments were received during a public comment period that ran from October 28, 1999 through December 6, 1999.

During the 2000 Utah legislative session, it was determined that it would be beneficial to form an Agreement State/Groundwater Authority task force to examine several issues relating to Agreement State status. The task force was initiated by the Utah Department of Environmental Quality in April 2000. Interested stakeholders that were invited to participate on the task force included licensee representatives, local community representatives, representatives of the Utah Radiation and Water Quality Boards, and a representative of the Utah Mining Association. The task force was jointly sponsored by the Department of Environmental Quality, Divisions of Water Quality and Radiation Control. After several meetings, the task force formulated a paper entitled: "Elements of a Utah Agreement State Program for Uranium Mill Regulation." In July

2000, the task force unanimously supported the Division of Radiation Control in pursuing Agreement State status as established in the "Elements" paper. The "Elements" paper described several aspects of a Utah Agreement State program including the following policy statement:

"The State of Utah recognizes the importance of and supports the uranium mining and milling industry. The State recognizes that to remain viable at this time, uranium mills must be able to engage in activities other than milling conventional mined uranium ores such as processing alternate feed materials for the recovery of uranium alone or together with other minerals. The State also recognizes its responsibility to ensure that all such activities are accomplished in a manner that is protective of human health and the environment. It has been a long-standing policy for the State to seek primacy for environmental programs. In this regard, the State believes that a cooperative uranium mills and tailings regulatory program will be of benefit to both the regulated community and Utah citizens. The advantages that the State can offer over the current Nuclear Regulatory Commission program include better communication with and participation of the public in uranium recovery issues, elimination of duplicative regulatory responsibilities, providing a more cost effective program for the regulated community, and establishing control of materials not currently being regulated (e.g. pre-1978 uranium mill tailings) while maintaining a regulatory program that is adequate and compatible with existing and future NRC regulations and policy. The elements within this application provide the framework for how the State of Utah would regulate uranium mills and tailings as an Agreement State."

Information on the task force, including minutes of each meeting can be found on the Division of Radiation Control website at http://www.deq.state.ut.us/EQRAD/MILLS/ATLAS/Deq_task.htm. Announcement of formation of the task force as well as periodic updates of the task force work were provided to the Utah Radiation Control Board.

Following the formulation of the policy in conjunction with discussions with the NRC, it was realized that the current Commission policy related to pre-1978 uranium mill tailings would have to be followed. This does not prevent the State from exercising regulatory authority under its existing rules of such material as naturally occurring radioactive material. It is also the intent of the State to follow the guidance affirmed by the Commission for review and decision of receipt of alternate feed materials by uranium mills. Each alternate feed amendment will be considered a major amendment for the purposes of licensing and will follow procedures as described in this final application. The alternate feed guidance as described in NRC Regulatory Issues Summary 2000-23 is included in Appendix L of the application.

The State of Utah also wishes to emphasize that this application does not include the former Atlas site in Moab, Utah, now known as the Moab Millsite. In accordance with the Defense Reauthorization Act, this property was transferred to the Department of Energy. The Moab Millsite has converted back to a Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I site with cleanup responsibility delegated to the Department of Energy.

Description of Organization (Criteria: 29, 33, and 35)

[See Appendix A for Organizational Charts]

The Department of Environmental Quality was created within state government on July 1, 1991 with the mission of safeguarding human health and quality of life through the protection and enhancement of the environment. The Governor with the advice and consent of the Senate appoints an Executive Director to administer the Department. The Department is made of six divisions: Division of Air Quality, Division of Drinking Water, Division of Environmental Response and Remediation (Superfund, Underground Storage Tanks, and Emergency Response), Division of Radiation Control, Division of Solid and Hazardous Waste, and the Division of Water Quality. Each Division is under immediate direction and control of a Division Director appointed by the Executive Director. There are five policymaking boards created within the department: the Air Quality Board, Radiation Control Board, the Drinking Water Board, the Water Quality Board, and the Solid and Hazardous Waste Control Board. Division Directors are also appointed as an Executive Secretary to the appropriate Board.

The Utah Division of Radiation Control promotes a mission that protects Utah citizens and the environment from sources of radiation that constitute a significant health hazard. The Division is divided into two sections, Radioactive Materials and X-ray Section and Low-Level Waste and Environmental Monitoring Section. The Sections are supervised by two managers who are under the direction of the Division Director. Upon assumption of the program, the Low-Level Waste and Environmental Monitoring Section will be renamed the Environmental Monitoring, Uranium Recovery, and Waste Management Section. The staff is divided among the following: Radioactive Materials, X-ray, Indoor Radon, Envirocare, Waste Isolation Pilot Plant

Transportation Project, and the Generator Site Access permit program. A seventh program, Uranium Mills, will be added. Division staff carry out the Division's mission and assist customers in complying with the rules.

The Radioactive Material and X-ray Section is responsible for coordinating and managing the use of radiation sources in hospital, clinical, medical, research, academic, and industrial facilities. This section performs the regulatory functions of licensing and inspecting facilities using radioactive material; registering and inspecting medical, academic, research, and industrial radiation producing equipment; and responding to radiation incidents.

The Low-Level Waste and Environmental Monitoring Section is responsible for licensing and inspecting the Envirocare low level waste facility; studying indoor radon concentrations and disseminating information to the public relevant to health risks; directing and overseeing on-site stabilization or relocation of abandonment of uranium mill tailings; and maintaining the integrity and usefulness of radiation survey instruments.

The Radiation Control Board is appointed by the Governor with the consent of the Utah Senate and guides development of state radiation control policy and rules in the state. The board is made up of 13 members, one of whom is the Department of Environmental Quality Executive Director or designee, and are appointed by the Governor with the advice and consent of the Senate. The Department and Division staff submit recommendations for Board members to the Governor for consideration. The appointed members are to be knowledgeable about radiation protection and represent the following interests in the community: a physician; a dentist; a health physicist or

other professional employed in the field of radiation safety; three representatives of the regulated community, at least one whom represents the radioactive waste management industry and one who represents the uranium milling industry; a registrant or licensee representative from academia; one representative of a local health department; one elected county official; and three members of the general public, at least one of whom represents organized environmental interests. The board is required to meet at least quarterly to carry out the duties described in section 19-3-103.5 of the Utah Code Annotated. The Board typically meets on a monthly basis except February and July. The Board also travels, as resources allow, to southeastern Utah and Tooele County for one of the monthly meetings during the year. It may be necessary to consider an increase in the number of times that the Board meets in southeastern Utah as a result of uranium recovery regulation. Board members are subject to the Utah Public Officers' and Employees' Ethics Act. Information regarding disclosure and conflict of interest for Board members are found in Appendix A.

The State of Utah rules were amended to include an environmental report prepared by the licensee that will be reviewed by the Division of Radiation Control.

Outside consultants will not be used but the Division has the ability to contract with outside consultants through its fee schedule with mutual consent of the licensee.

The medical consultant with expertise in emergency medicine that would be used by the Division is the Radiation Emergency Assistance Center/Training Site in Oak Ridge, Tennessee. The

Department of Energy Idaho National Engineering and Environmental Laboratory would also be used as a resource.

Legal support is through the Attorney General's Office. The Utah Attorney General's Office provides legal consultation services on all environmental issues that the Division may need to address. The Attorney General's office can provide criminal investigative assistance and prosecution.

Groundwater Authority (Criteria 29, 33, and 35)

The Division of Radiation Control administers both groundwater permitting and radioactive material licensing for disposal facilities and uranium mills. This process has been made more effective by utilizing existing provisions of the Utah Water Quality Act which allows the Water Quality Board and Executive Director to designate the Director of the Division of Radiation Control as a Co-Executive Secretary to administer provisions of the Water Quality Act for the identified facilities [see Utah Code Annotated (UCA) 19-5-106 and 19-5-104 (1),(k)]. The DRC Director has been designated as a Co-Executive Secretary of the Water Quality Board and given legal authority to issue, administer, and enforce specific groundwater permits under the Utah Water Quality Rule UCA R317-6 as applied to the following facilities: Envirocare, Rio Algom, International Uranium Corporation, and Plateau Resources Limited, and as allowed under the provisions of UCA 19-5-104(1)(k). No separate involvement of the Division of Water Quality staff is required although they are available to consult with the DRC Director regarding interpretation of rules and other technical or procedural matters relating to groundwater protection. Appeals of enforcement proceedings and permit issues relating to groundwater

would be through the Utah Water Quality Board. The Division has substituted the Administrative Rules for Ground Water Quality Protection, R317-6 for groundwater standards provided in Appendix A, 10 CFR Part 40 (EPA Rules 40 CFR Part 192). Enclosed in Appendix G is a packet of information previously submitted including:

(1) A cover letter of October 23, 2002 requesting review of information to justify an "alternate standard" under the Uranium Mill Tailings Radiation Control Act (UMTRCA);

(2) Summary of the process used to determine how to best regulate groundwater at Utah uranium mill facilities;

(3) Executive Summary - Comparison of NRC Groundwater Protection Criteria in 10 CFR Part 40, Appendix A with Utah Ground Water Quality Protection Rules (UAC R313-6)

(4) Detailed Comparison of NRC Groundwater Protection Criteria in 10 CFR Part 40, Appendix A with Utah Ground Water Quality Protection Rules (UAC R313-6)

Staffing (Criteria 29, 34, and 35)

(See also Appendix B)

Up to three new positions will be created within the Division for the Uranium Mill Program that will be combined with an existing groundwater hydrologist position within the Division that already coordinates the uranium mill issues. Eventually, this groundwater hydrogeologist will be responsible for the inspection and licensing of groundwater monitoring for the Uranium Mill Program. A health physicist will be responsible for radiation safety license reviews and inspections of mills as well as inspection of all radioactive material licensees in southern Utah

(some 28 licensees). An engineer will be responsible for the inspection and licensing of new facilities, upgrading existing facilities, and closing facilities. An Office Technician II will be responsible for administrative support for the program. Staff currently utilized for licensing and oversight of Envirocare will also assist with the regulation of the Uranium Mill Program.

Management of the Uranium Mill Program will be under the direction of the Low-Level Waste and Environmental Monitoring Section Manager. The 28 radioactive material licensees that the health physicist inspects will be under the direction of the Radioactive Material and X-ray Section Manager.

The Division will staff the program by submitting a request, once it is known when the amended Agreement is to be signed, to the Department of Environmental Quality Human Resource Management Office to recruit the three positions. The positions have already been authorized and established in the Department FY 2003/2004 budgets. It is anticipated that recruitment may commence as early as July 1, 2003 depending on the status of the amended Agreement. This would be in anticipation of an amended Agreement being signed on or before October 1, 2003. Three months of fees collected during January - March 2002 will fund new staff and have them in place prior to signing of the amended Agreement. The new staff will be mentored by existing staff that have been qualified in key areas prior to the new staff being hired. By July 1, 2003, the following existing Division of Radiation Control staff will be qualified in the uranium mill program area:

Speciality Area	Staff Members to be Qualified
Health physics	Gwyn Galloway, John Hultquist, Boyd Imai
Engineering	Steve Palmer, Woody Campbell
Groundwater	Loren Morton, Rob Herbert, Brian Hamos

The qualification process will consist of completion of NRC "core" courses (many of the above staff have accomplished this) in each specialty areas. Training will also be provided through accompaniment of NRC inspectors from NRC Region IV during routine mill inspections of the International Uranium White Mesa Mill, the Rio Algom facility, and the Plateau Resources Shootaring Canyon Mill. Opportunity will also be taken for inspection training during Region IV inspection of the Envirocare facility 11e.(2) operations. In addition, arrangements have been made with the Colorado Department of Public Health and Environment Radiation Services Division to accompany state of Colorado inspectors on a training/tour/routine inspection of the Cotter Corporation Mill in Canon City, Colorado. As the above staff members are qualified as mentors, they will be available to work with newly hired staff prior to the signed amended Agreement to the point in which newly hired staff achieve uranium mill competency. Once newly hired staff are competent to work independently, the mentors provide adequate backup in this specialty area as needed. As the above staff members are qualified as mentors, they will be available to work with newly hired staff prior to the signed amended Agreement to the point in which newly hired staff achieve uranium mill competency. Once newly hired staff are competent to work independently, the mentors provide adequate backup in this specialty area as needed. As new staff go through the mentoring process, it may have some short-term impact on certain inspection and licensing work, mostly in the low-level waste area. All mentoring will be focused around ongoing activities such that any impact to DRC programs will be minimal. As a

result, the expectation will be there will be no impact to the Integrated Materials Performance Evaluation Program (IMPEP) indicators during this short transition phase.

The new staff will also go through program orientation and receive the opportunity to participate in Nuclear Regulatory Commission or equivalent, State, Federal Emergency Management Agency, Department of Energy, and other job related courses. The engineer, health physicist, and hydrogeologist will have the opportunity to take the following NRC or equivalent courses as needed: Inspection Procedures, Introduction to Licensing Practices and Procedures, Introduction to Health Physics, Nuclear Transportation Course, ~~Radiation Protection Engineering,~~ Radiological Emergency Response Operations Training, and available courses related to uranium mill and mill tailings. They will also review the Radiation Control Rules and become familiar with Regulatory Guides and reference materials. The NRC Training guidance documents (NRC Inspection Manual Reports 1246A-12 and A-13, Section XIII: "Training Requirements for Uranium Recovery Project Manager/ Technical Reviewer" and Section XII "Uranium Recovery Inspector NRC Inspector Qualification Journal") will be utilized by the Division as references for training inspectors and license reviewers for uranium mills. The office technician will be given the opportunity to take State training programs as they become available.

In order to ensure that an adequate number of staff were to be hired to fulfill the requirements of the uranium mill and tailings regulatory program, an evaluation was conducted. As mentioned previously, the staff to be hired are 1 health physicist, 1 engineer, and 1 office technician. The groundwater hydrologist position that was anticipated will be filled by an existing position who has been coordinating uranium mill issues for the Division. It was determined that the

professional staff (engineer, health physicist, groundwater hydrologist) would be available for 260 work days (52 weeks/year X 5 days/week). Factors of vacation (10 days assumed), paid holidays (11 days), and sick leave used (5 days) reduced the availability of 1 staff person to 243 days per year. Professional staff consisting of three persons would provide the Division with the availability of 702 staff days. Office technician administrative functions were not factored into the available staff days. This includes such administrative functions as filing, correspondence, GRAMA (similar to FOIA) requests, equipment and supplies, and travel arrangements.

To evaluate the staff availability, inspection and licensing activities were estimated on a yearly basis.

INSPECTION WORKLOAD/YEAR

Average Inspections per year	# of staff involved	Staff days per inspection	Enforcement factor [1]	Inspection days per year [2]
Envirocare - 2	3	5	10	50
Rio Algom - 2	2	3	0	12
IUC - 2	3	5	5	40
Plateau - 2	2	3	0	12
Totals				114 days

[1] Enforcement factor may include Notice of Violation/Order preparation, evaluation of responses regarding corrective actions, final settlement or administrative hearing.

[2] Does not include travel time to and from Southeastern Utah estimated to be 6 hours/each way. Rio Algom and White Mesa trips to be combined, Plateau trips will be single trip.

LICENSING WORKLOAD/YEAR

Licensee	Significant licensing actions/year	Public participation factor [1]	# of staff involved	Staff days per action	Licensing staff days
Envirocare	4	48	3	10	168
Rio Algom	1	12	2	5	~~72~~ 22
IUC	4	48	3	10	168
Plateau	1	12	2	5	~~72~~ 22
Totals					~~480~~ 380days

[1] Public participation factor: public hearing (1 day), evaluate comments (5 days), final decision (2 days), administrative hearings (4 days) = 12 days

To determine staff availability for a year, the inspection days workload (114 days) was added to the licensing days workload (~~480~~ 380 days) for a total of ~~594~~ 494 days. A ~~15%~~ 20% contingency factor (~~89~~ 99 days) was also ~~included which~~ used that would include training, reactive inspection time, construction inspections, minor amendment processing, response to questions from the public and licensees, guidance/rulemaking development and changes, and other non-direct activities.

In conclusion, staffing appears adequate:

> ~~594~~ 494 days (inspection/licensing workload) + ~~89~~ 99 days (~~15~~ 20% contingency) = ~~683~~ 593 days
> 702 staff availability days estimated = + ~~19~~ 109 staff availability days (not including the administrative services provided by the office technician)

Funding (Criteria 29 and 35)

The DRC will use a combination of annual operating fees and hourly review fees. The operating fees were initially established in the Radiation Control Act as a result of the passage of 1 substitute SB96 during the 2002 General Session of the Utah Legislature. The fees, beginning in FY2004 will be established and transferred to the DEQ annual fees document. A copy of the FY2004 proposed fee schedule is included in Appendix H. This fee schedule will be offered for

approval during the 2003 General Session of the Utah Legislature. An hourly review fee was established in the DEQ annual fees document during the 2002 legislative session that will be effective upon program transfer. Annual operating fees will differentiate between closed, standby, and operating facilities. Review of NRC generated data regarding review fees and operating fees suggested that there will be sufficient revenue generated to fully fund the state program.

Statutory Changes (Criteria 29 and 35)
(See also Appendix C)

The Radiation Control Act was amended during the 2002 General Session of the Utah Legislature by 1 substitute Senate Bill 96 (enrolled copy provided in Appendix I) to allow the Radiation Control Board to establish rules for licensing, operation, decontamination, decommissioning, including financial assurance, and reclamation of sites, structures, and equipment used in conjunction with possession, use, transfer, or delivery of source and byproduct material and the disposal of byproduct material (uranium or thorium mill tailings and related wastes). The Radiation Control Act was also amended to add a representative of the uranium milling industry and another member of the public to the Radiation Control Board. Governor Leavitt signed the bill on March 26, 2002. On November 22, 2002, following confirmation by the Utah Senate, Royal I. Hansen (general public) and Robert Pattison (uranium milling industry) were appointed by Governor Leavitt to the two new Board positions established by changes to the Act.

The following statutory changes to the Utah Radiation Control Act to implement an amended Agreement for uranium recovery regulation were accomplished during the 2002 General Session of the Utah Legislature:

19-3-103(3)(d) was modified to include three representatives of the regulated industry, at least one representing the radioactive waste management industry and at least one representing the uranium mill industry; and to modify (h) to include three members of the general public, at least one whom represents organized environmental interests. This change will expand the Board to 13 members. This is to ensure that the Board remains an odd-numbered membership as required by state policy.

19-3-104(d)(i) (ii) was added to give the Radiation Control Board the authority to make rules as necessary regarding the possession, use, transfer, or delivery of source and byproduct material and the disposal of byproduct material to establish requirements, for the licensing, operation, decontamination, decommissioning, including financial assurance and the reclamation of sites, structures, and equipment used in conjunction with such activities.

19-3-105(a) was added to establish fees under 19-3-105(b)(i)(ii),(c),(d)(i)(ii),(e),(f), and (6)(a)(b) for the regulation of source and byproduct material at uranium mills or commercial waste facilities. From January 1, 2003 through March 30, 2002, fees for uranium mills or commercial sites disposing of or reprocessing byproduct material were established at $6,667 per month and $4,167 per month for uranium mills determined to be on standby status. On or after March 31, 2003, the same fees apply, but only if the NRC has granted an amended Agreement to Utah on or

before March 31, 2003. After March 31, 2003, fees are to be paid (same schedule) either beginning October 1, 2003 (if amended Agreement has been achieved), or the beginning the date in which NRC grants the amended Agreement. For payment periods after July 1, 2003, the fees are established under the authority of the Department of Environmental Quality fee schedule approved by the Utah Legislature. Annual fees are deposited in the Environmental Quality Restricted Account.

In addition to the changes described above, administrative changes were made to:

19-1-108(2)(a) which adds the fees collected as described above to the Department of Environmental Quality Restricted Account

19-3-104(1)(a)(b) was added to indicate decommissioning includes financial assurance and source and byproduct material have the same definition as described in the Atomic Energy Act. This resulted in renumbering of subsequent paragraphs - (2)(3)(4).

19-3-104(11)(b) was added to clarify that only commercial low-level waste facilities are subject to siting criteria rules (already established under Utah Radiation Control Rules R313-25-3).

There were other administrative changes that resulted in some renumbering of portions of 19-3. These are best detailed in the enrolled copy of 1 substitute SB96 found in

Appendix I in which the changes to the Radiation Control Act, 19-3 are underlined and stricken as appropriate.

Reservation of Authority to the United States

(Criterion 30)

State rules ~~will be~~ have been modified to reserve the authority to the United States in UMTRCA as stated in 10 CFR 150.15a as follows: establishment of minimum standards for reclamation, long-term surveillance or maintenance, and ownership of byproduct material; prior to license termination, determine that licensee has complied with decontamination, decommissioning, reclamation standards, and ownership standards; prior to license termination, the take title provision will be invoked at option of the State; authority to require monitoring, maintenance and emergency measures after license termination; authority to permit use of surface or subsurface estate, or both of the land transferred per UMTRCA; and authority to exempt land ownership transfer requirement of Section 83(b)(1)(A).

Rulemaking (Criteria 29 and 35)

(See also Appendix J)

The Division of Radiation Control has adopted applicable parts of 10 CFR 40 by reference (disclaiming any intent to regulate materials or activities over which the NRC retains jurisdiction) with necessary changes to reflect primacy of the Utah program (e.g., recognition of the Executive Secretary, etc.). With the adoption by reference of the NRC regulatory program, it is recognized that guidance has been published that is intended to provide clarification to the

various regulatory elements. The Division will follow the published NRC guidance documents unless doing so will compromise protection of human health and the environment.

The DRC recognizes that it cannot make a fundamental change to an Atomic Energy Act provision (e.g., the definition of byproduct material). The DRC further recognizes that pursuant to provisions of the Radiation Control Act [19-3-104 (6) and (7)], it can adopt rules more stringent than federal law only after a public hearing and a written finding based on evidence in the record that the federal regulations are not adequate to protect public health and the environment.

Statutory authority to make rules was granted to the Board during the 2002 Utah legislative session per 19-3-104(4)(d) of the Radiation Control Act. A determination was made that the following rules would need to be modified or proposed to ensure compatibility with the requirements of 10 CFR Part 40:

R313-22-33(1)(e), "General Requirements for the Issuance of Specific Licenses" [modified]

R313-70-7(2)(b)(c)(d), "License Categories and Types of Fees for Radioactive Material Licensees" [modified]

R313-17-2(1)(a), "Administrative Procedures" [modified]

R313-15-1001, "Waste Disposal - General Requirements"

R313-19-2, "Requirements of General Applicability to Licensing of Radioactive Material" [modified]

R313-22-39, "Executive Secretary Action on Applications to Renew or Amend" [modified]

R313-24, "Uranium Mills and Source Material Mill Tailings Disposal Facility Requirements" [new section incorporating 10 CFR Part 40 by reference with exception of groundwater requirements]

The rulemaking process involves approval by the Radiation Control Board of each proposed rule for filing with the State Division of Administrative Rules. All State Agencies use the rulemaking procedures of the State Division of Administrative Rules and are bound by such procedures. Proposed rules or changes to proposed rules are published in the Utah Bulletin for public comment on the first or fifteenth of each month. The rulemaking process requires a 30-day public comment period. Announcement of the public comment period is made in the two major daily Salt Lake newspapers as well as newspapers in the impacted communities such as Moab and Blanding. Following the comment period, an assessment of needed changes is made. If no comments are received or the changes are non-substantive, the rules are submitted to the Radiation Control Board for final approval at the next Board meeting, and an effective date is established. The effective date is usually set for one week after the approval date to allow for the filing of the paperwork with the Division of Administrative Rules. Rulemaking has to be completed within 120 days of the initial filing date or the process must commence again. During this rulemaking process, comments were received from stakeholders regarding several of the rules (see Table A). As a result, it was determined that the comments required substantive changes to the initial proposed rule. For those rules, the comments were evaluated and a determination made if changes were needed (summarized in a response document). The rules requiring substantive changes then were re-drafted with the needed changes as a "change to a proposed rule". These modified rules were approved for filing by the Radiation Control Board and submitted to the Division of Administration Rules. The rules were subject to another 30-day public comment period.

Table A provides a summary of the rulemaking steps followed for each of the seven rules including when the rules were made effective.

Table A
Summary of Uranium Mills/Tailings Rulemakings
Division of Radiation Control - 2002

Rule	Approved by RCB for pc Published in State Bulletin	Commence Public Comment Period	Public comment period extension	Written comments/ Response to comments	Final approval by RCB Effective Date
R313-22-33(1)(e)	4/5/2002 5/1/2002	5/1/2002	6/5/2002	No	6/7/2002 6/14/2002
R313-70-7(2)(b)(c)(d)	4/5/2002 5/1/2002	5/1/2002	6/5/2002	Yes 6/4/2002	
R313-17-2(1)(a)	4/5/2002 5/1/2002	5/1/2002	6/5/2002	Yes 6/4/2002	
R313-15-1001	4/23/2002 5/15/2002	5/15/2002	6/28/2002	No	7/22/2002 7/22/2002
R313-19-2	4/23/2002 5/15/2002	5/15/2002	6/28/2002	Yes 7/12/2002	
R313-22-39	4/5/2002 5/15/2002	5/15/2002	6/28/2002	No	7/22/2002 7/22/2002
R313-24	4/5/2002 5/1/2002	5/1/2002	6/28/2002	Yes 7/12/2002	

Table A (Continued)
Summary of Uranium Mills/Tailings Rulemakings
Division of Radiation Control - 2002

Rule	Approval by RCB Re-published in State Bulletin	Commence Public Comment Period	Public comment period ends	Written comments/ Response to comments	Final approval by RCB Effective Date
R313-22-33(1)(e)	N/A	N/A	N/A	N/A	N/A
R313-70-7(2)(b)(c)(d)	6/7/2002 7/1/2002	7/1/2002	7/31/2002	No	9/6/2002 9/10/2002
R313-17-2(1)(a)	6/7/2002 7/1/2002	7/1/2002	7/31/2002	No	9/6/2002 9/10/2002
R313-15-1001	N/A	N/A	N/A	N/A	N/A
R313-19-2	7/22/2002 8/15/2002	8/15/2002	9/16/2002	No	10/4/2002 10/7/2002
R313-22-39	N/A	N/A	N/A	N/A	N/A
R313-24	7/22/2002 8/15/2002	8/15/2002	9/16/2002	Yes 9/20/2002	10/4/2002 10/7/2002
R313-15-301	6/6/2003 7/1/2003	7/1/2003	7/30/2003	No	8/1/2003 8/7/2003

Appendix J provides a copy of the rulemaking packet submitted to the NRC on October 9, 2002 which included each of the approved rules in "final" form as filed with the Division of Administrative Rules. Administrative rules adjudicative proceedings are found in R15-5, the entire text of Administrative Rules Procedures (R15) is provided in Appendix J as well. Also provided in Appendix J are copies of the Division response documents to stakeholder comments.

In addition, the NRC suggested in the letter confirming compatibility of the Utah rules of November 22, 2002 (see Appendix J) that a change be made to R313-24-1 by inserting "source material in" following the words "possession and use of" in the first line. This change ~~has been~~ was accomplished by filing a non-substantive rule change ~~(see Appendix J)~~ with the Division of Administrative Rules on December 19, 2002. ~~If accepted as a non-substantive change, it may be effective as early as January 1, 2003. If Administrative Rules rejects the non-substantive change explanation, the Division will proceed with normal rulemaking at either the January or March 2003 Radiation Control Board meeting.~~ The change to the rule was accepted as a non-substantive change and was made effective January 1, 2003 (See Appendix J).

The Utah Radiation Control rules were modified to include consideration of environmental impacts (see discussion below under **Suggested State Legislation-Model State Act)** (Criterion 31). This was accomplished in R313-24-3.

Suggested State Legislation-Model State Act (Criterion 31)

The Utah Radiation Control Rules will be modified to include consideration of environmental impacts (including radiological or non-radiological impacts, surface and groundwater impacts, consideration of alternatives to the licensed activities, and long-term impacts of licensed activities) for new licenses and major license amendments. The analysis will be included in the safety evaluation report for new licenses and in a

statement of basis for major license amendments. New licenses and major license amendments will be available for public comment at least 30 days following the publication of notice. R313-17-2, 3, and 4 of the Utah Radiation Control Rules provides an opportunity for written comment, as well as a public hearing prior to the issuance, or amendment of a license. Once the Executive Secretary of the Utah Radiation Control Board reaches a final decision on a new license or amendment to a license, parties or individuals may appeal such decisions to the Utah Radiation Control Board. The Board acts as a judge in such matters in accordance with Utah administrative procedures such as determining standing, taking testimony, and rendering a decision to either modify, set aside, or support the final decision of the Executive Secretary. Upon a final agency action determination by the Board, parties under Utah Code Annotated (UCA) 63-46b-14 have 30 days to file an appeal with the Utah Court of Appeals (See UCA 63-46b-60).

Licensing Program (Criteria 29 and 35)

The licensing process will follow the elements of the current radioactive materials program which is subject to periodic program review by the NRC. License renewal, amendments, reclamation plans or revisions to reclamation plans or new licenses may be subject to public comment and/or public hearing. Criteria of R313-17-1 through 4 of the Utah Radiation Control Rules would apply. Rule R313-17 ~~will be~~ has been modified to add the uranium recovery facility category designation as a category that public comment is applicable. The Division ~~would~~ will follow current policy as to the differentiation between minor and major amendments and the need for public comment. This policy established in 1993 applies the following criteria:

Minor amendments to a license do not require public comment. These amendments do not substantially alter the license conditions or reduce the capability of the licensee to protect human health and the environment.

Major amendments to a license require public notice. These amendments are necessary to enable the licensee to respond in a timely manner to common variations in the types and quantities of the materials, technological advancements, changes necessary to comply with new rules, and changes that substantially alter the facility or its operations.

Upon application for a license amendment, a determination of major or minor amendments will need to be made. Existing NRC licenses will be transferred to the State upon program relinquishment by the NRC and will be converted into a "state license" which will include appropriate Utah regulatory citations in lieu of "Part 40" language and will incorporate the Utah administrative process (e.g., Executive Secretary) where necessary. The license conditions will remain unchanged except for the above until a license amendment request or license renewal. The current expiration date of the license will remain the same.

The Division of Radiation Control Technical Procedures for License Review will be followed during the review process (see Appendix E). The NRC Standard Review Plan for Uranium Mills and Mill Tailings as well as the checksheet will be used as guidance documents during the license review process. Licensing evaluations or analyses will

include radiological safety aspects in occupational or restricted areas and environmental impacts to population or ~~restricted~~ unrestricted areas surrounding facilities. As necessary, evaluations will include pre-licensing visits to obtain relevant information. Items which will be evaluated include, but are not limited to, the following: general statement of proposed activities; scope of proposed action; specific activities to be conducted; administrative procedures; facility organization and radiological safety responsibilities, authorities, and personnel qualifications; licensee audits and inspections; radiation safety program, control and monitoring; radiation safety training programs for workers; restricted area markings and access controls; review of monitoring data, exposure records, license audit and inspection records as well as other records for existing mills; environmental monitoring; radiological emergency procedures; product transportation; tailing management facilities and procedures; site and physical plant decommissioning procedures, other than tailings; and employee exposure data and bioassay programs.

The environmental analysis will be part of the license review process and will consist of a detailed and documented evaluation of the following items: topography; geology and seismology; hydrology and water quality; meteorology; background radiation, tailings retention systems; interim stabilization, reclamation, and site decommissioning programs; radiological dose assessments (source terms; exposures pathways; dose commitment to individuals; dose commitment to populations; evaluation of radiological impacts to the public to include determination of compliance with State rules and Federal regulations and comparison with background values; occupational dose; radiological impact to biota

other than man; and radiological monitoring programs, pre-operational and operational); impacts to quality and quantity of surface and groundwater; environmental effects of accidents; and evaluation of tailings management alternatives in terms of regulations. The staff will also review the following during preparation of the environmental analyses for a new uranium recovery facility: ecology; environmental effects of site preparation and facility construction on environment and biota; environmental effects of use and discharge of chemicals and fuels; and economic and social effects.

The Division will use the following NRC publications as guidance documents (when applicable) during the license review process: Regulatory Guide 3.11, "Design, Construction, and Inspection of Embankment Retention Systems for Uranium Mills"; ~~3.111~~ 3.11.1, "Operational Inspection and Surveillance of Embankment Retention Systems for Uranium Mill Tailings"; 3.51, "Calculational Models for Estimating Radiation Doses to Man from Airborne Radioactive Materials Resulting from Uranium Milling Operations"; 3.56, "General Guidance for Designing, Testing, Operating, and Maintaining, Emission Control Devices at Uranium Mills"; 4.14, Radiological Effluent and Environmental Monitoring at Uranium Mills"; 8.22, "Bioassays at Uranium Mills"; 8.25 "Air Sampling in the Workplace"; 8.30, "Health Physics Surveys in Uranium Mills"; 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Mills will be As Low As is Reasonably Achievable". Other guidance documents that may also be use as resources are I.C.R.P. Report 29: "Radionuclide Release into the Environment: Assessment of Doses to Man" as well as N.C.R.P. Report 76, "Radiological Assessment: Predicting the Transport, Bioaccumulation, ~~Utake~~ Uptake

by Man of Radionuclides Released to the Environment", NUREG 1620, Standard Review Plan for reclamation plans, RIS 2000-23 relating to alternate feed amendment requests, and The Division's health physicist and hydrogeologist will perform operation data reviews and required the licensee to submit semi-annual radioactive material effluent release reports as well as semi-annual environmental monitoring reports. The written reports will be required to be submitted within 60 days after January and July 1 of each year. The licensee will be required to specify the quantity of each of the principle radionuclides released to unrestricted areas in liquid and gaseous effluents during the pervious six months of operation. The data for the effluent release will be required in a manner that will permit the physicist and hydrogeologist to confirm the potential annual radiation doses to the public and confirm the dose to receptors.

The State will recognize already established performance-based license conditions for uranium mills and tailings. The State is willing to consider future performance-based license conditions on a case by case basis with each licensee. An issue that will need to be addressed is the appropriate method for substantive involvement of the public while still achieving the operational objectives of performance based licensing.

Inspection Program (Criteria 29 and 35)

There will be at least four facilities that will require inspection: Lisbon (Rio Algom), White Mesa (International Uranium), Shootaring Canyon (Plateau Resources), and Clive (Envirocare of Utah). Currently, Envirocare of Utah in Tooele County is subject to quarterly inspections by the NRC using staff from offices in Arlington, Texas sometimes

supplemented by NRC headquarters staff from Rockville, Maryland. Envirocare inspections would be assigned to the "Envirocare team" and incorporated into the overall oversight and inspection schedule now in use for low-level radioactive waste.

A health physicist will be hired to inspect each of the mills at least on a quarterly basis. The mill inspection frequency schedule will be reviewed regularly and adjusted as needed for different circumstances (e.g., good compliance, standby not operating, etc.). The health physicist will be housed in the DRC office in Salt Lake City but will travel to southern Utah at least one week per month to accomplish both regular (quarterly) and oversight inspections. This health physicist will also be responsible for the inspection of 28 other radioactive material licensees in southeast and southwest Utah. The engineer and groundwater hydrogeologist will provide inspection support as needed to the health physicist in such areas as groundwater sampling evaluations, split groundwater sampling, oversight of new engineering construction or oversight of closing facilities.

he State inspection program will incorporate all the elements of the current radioactive materials inspection program (see Appendix D for Inspection and Enforcement procedures) relevant to Part 40 uranium recovery facilities which is subject to periodic program review by the NRC. Items that will be examined during inspections will be consistent with items evaluated during licensing. The Division inspectors will perform independent surveys and sampling in addition to examining aspects of license performance as follows: administration; milling processes, including any additions, deletions or operational changes; accident and incidents; notices, instructions, and reports to workers in accordance with R313-18 rules; action taken on previous findings; physical

plant facilities of the mill tour to determine compliance with regulations and license conditions; tailings waste management to determine compliance with rules and license conditions (NRC Regulatory Guide 3.11.1 see Appendix E); records; respiratory protection and bioassays to determine compliance with license conditions and R313-15 rule; effluent and environmental monitoring; training programs; and transportation and shipping.

A complete inspection will be performed at least annually and will include independent surveys and sampling. The NRC inspection form for Uranium Mills as well as the NRC Inspection Manual, Chapter 2801, "Uranium Mill and 11e.(2) Byproduct Material Disposal Site and Facility Inspection Program" will be utilized as guidance documents by the State inspectors during an inspection. Enforcement actions will be in accordance with the Utah Radiation Control Rules and existing enforcement guidance (used for the radioactive materials and low-level waste program, see Appendix D for Inspection Procedures). All enforcement actions can be appealed through the Utah Radiation Control Board and thereafter, to the appropriate court. The DRC will also conduct periodic split sampling with facilities regarding waste materials or groundwater samples.

Rules Equivalent to NRC Regulations (Criterion 32)

In addition to ~~future~~ adoption of applicable parts of 10 CFR 40 by reference (disclaiming any intent to regulate materials or activities over which NRC retains jurisdiction), pending the legislative process, the DRC has the following Utah Administrative Code (UAC) rules equivalent to NRC Regulations:

R313-15, "Standards for Protection Against Radiation"

R313-18, "Notices, Instructions and Reports to Workers by Licensees or Registrants-- Inspections;

R313-19, "Requirements of General Applicability of Licensing of Radioactive Material(Packing and Transportation of Radioactive Material is in this section.)

Part of the regulation for certain portions of 10 CFR 150, "Exemptions and Continued Regulatory Authority in Agreement States and in Offshore Waters under 10 CFR ~~50.31(b)~~ 150.31(b)" is met through the Radiation Control Act, Utah Annotated Code 19-3, and will be met through the adoption of applicable parts of 10 CFR 40 by reference (disclaiming any intent to regulate materials or activities over which the NRC retains jurisdiction). The Utah Radiation Control rules ~~will be~~ have been modified to include a written environmental impact analysis process.

~~Pending~~ With the completed adoption of applicable parts of 10 CFR Part 40 by reference in R313-24 and other necessary modifications to ~~of~~ the rules, the DRC has rules that are up-to-date and compatible with the NRC rules (see Appendix C, State Regulation Status form).

Instrumentation (Criterion 36) and **Laboratory Support** (Criterion 34)

The State has sufficient field and laboratory instruments to ensure licensee's control on materials and validate licensee's measurements. Appendix F has a list of the State's instruments and Instrument Calibration Procedures. Instruments are calibrated as necessary but not less than annually except for those used by the Radioactive Material Section which are calibrated semi-annually.

Laboratory instruments are available through the Division of Radiation Control as well as through the State Health Laboratory which have the capabilities for quantitative and qualitative analysis of radionuclides associated with natural uranium and its decay chain, primarily, U-238, ~~Ra-266~~ Ra-226, ~~Th-320~~ Th-230, Pb-210, and Rn-222 in a variety of sample media. If the State Health Laboratory does not have the analytical capabilities needed, the Division may contract with a commercial laboratory to perform quantitative or qualitative analysis.

The State Health Laboratory has established acceptable criteria for quality assurance and participates in the National Environmental Laboratory Accreditation Program. The Environmental Protection Agency's program for laboratory performance is no longer available. The State Health Laboratory can provide the Division staff analytical reports within approximately 30 days. Arrangements can be made for the State Health Laboratory to handle a large number of samples from a major accident in a timely manner. However, the State Laboratory is limited to the number of samples it is capable of running and may have to contract a commercial laboratory for a timely turn around.

The Division has gamma spectroscopy capabilities in-house and a portable spectroscopy unit for field measurements, both qualitative and quantitative. In-house gamma spectroscopy capabilities include the following media: soil, water, and air (filters). The EG&G Ortec gamma spectroscopy unit is a germanium detector connected to a desk top computer with EG&G gamma vision software. The portable unit is a Berkley Nucleonics Corporation Smart Area Monitor. Employees in the environmental section have extensive experience in dealing with the collection and analysis of naturally occurring radioactive material contaminants in soil, water, and air samples.

Arrangements for Discontinuing NRC Jurisdiction

As stated in the licensing program section of this application, existing NRC licenses will be transferred to the State upon program relinquishment by the NRC and will be converted into a "state license" which will include appropriate Utah regulatory citations in lieu of "Part 40" language and will incorporate the Utah administrative process where necessary. The license conditions will remain unchanged except for the above until a license amendment request or license renewal. The current expiration date of the license will remain the same. The license transfer will not give rise to a requirement to make any changes to existing facilities.

There will be a transition phase for staffing as described in the "staffing" section. Three months prior to signature of the Governor and Chairman of the amendment to the Agreement, recruitment will begin for staff as previously discussed in the staffing section. While staff are being recruited and hired, existing staff as described in the

"staffing section" will conduct necessary activities relating to the uranium mill program. Existing Envirocare staff will assume the duties relating to the licensing and inspection of the Envirocare 11e.(2) facility immediately

It is anticipated that the majority of the workload will involve Envirocare and International Uranium White Mesa Mill of which existing staff have good familiarity. On the job training (mentoring) will be provided by existing staff to new staff and it is anticipated that the new staff will be fully functional and independent within the shortest time possible. Core training will be provided as previously discussed to the new staff.

The NRC will transfer the inspection and licensing files of the four facilities to the DRC during the transition period. Any licensing or inspection actions underway or in transition at the time of program transfer will be provided to the DRC. The DRC recommends that the NRC Headquarters and Region IV representatives schedule (as an amendment Agreement appears imminent) a meeting to discuss the transition tasks that will be needed. The NRC is encouraged to complete Utah work prior to the transfer. Discussion of tasks to be deferred to the DRC should be discussed as part of the transition meeting and scheduling process. The DRC recommends that the NRC archive the license and inspection documents in accordance with federal record management prior to the transfer of site files.

DRC has provided in Appendix K copies of the original Agreement of 1984, the amended Agreement for low-level waste authority in 1990, and a draft amended Agreement for uranium mills and tailings authority for 2003.

Summary

The State of Utah is committed to administering a high quality Agreement State Program that will protect public health, public safety, and the environment. The Division has been granted statutory authority and has undertaken activities in preparation for regulating uranium mills and mill tailings. The Division has trained professional staff and will be hiring new personnel in areas of administration, technology, and operational support. ~~It is obtaining~~ Utah has obtained the necessary statutory authority to assume Agreement State responsibilities regarding the regulation of uranium mills and mill tailings and has proposed adoption of regulation compatible, pending the State legislative process, with those developed and adopted by the NRC. Sufficient instrumentation to detect and measure radiation is available within the Division as well as other State agencies. Emergency response capabilities have been demonstrated and exercised. The Division has obtained necessary fiscal support to fund the Agreement State Program, including the regulation of uranium mills and mill tailings. The State is committed to full administrative support to the Agreement State program and has demonstrated its competency in control of radiation as evidenced by the adequate and compatible rating achieved during the last Integrated Material Performance Evaluation Program review.

The Department of Environmental Quality remains committed to its mission of safeguarding human health and quality of life through the protection and enhancement of the environment. The Utah Division of Radiation Control will continue to protect Utah citizens and the environment from sources of radiation that constitute a significant health hazard through its radiation control programs. The State of Utah is prepared and qualifies to assume the responsibilities that would be transferred to the State upon amendment of Section 274 Agreement to include regulation of byproduct material as defined in Section 11e(2) of the Atomic Act.

4

STP Procedure Approval

Reporting Material Events - SA-300

Issue Date: May 23, 2001

Review Date: May 23, 2003

Paul H. Lohaus *Director, STP*	*Original signed by:* *Paul H. Lohaus*	*Date: 05/23/01*
Kathleen Schneider *Acting Deputy Director, STP*	*Original signed by:* *Kathleen Schneider*	*Date: 05/23/01*
Patricia M. Larkins *Procedure Contact, STP*	*Original signed by:* *Patricia M. Larkins*	*Date: 04/19/01*

NOTE

The STP Director's Secretary is responsible for the maintenance of this master copy document as part of the STP Procedure manual. Any changes to the procedure will be the responsibility of the STP Procedure Contact. Copies of STP procedures will be distributed for information.

I. INTRODUCTION

This procedure establishes a process for the collection, control, and preliminary review of material events that have been reported to NRC by the Agreement States.

II. OBJECTIVES

A. To provide guidance for use by the Agreement States on reporting material events to NRC.

B. To provide guidance to NRC staff in the collection, coordination, and preliminary review of material events reported by the Agreement States.

III. BACKGROUND

A. The Atomic Energy Act (AEA) allows the Commission to enter an Agreement with a State to transfer regulatory authority over certain nuclear materials. In accordance with provisions contained in the AEA and the Energy Reorganization Act, and compatible Agreement State regulations, NRC and Agreement State licensees are required to report the occurrence of incidents and events involving the use of nuclear materials to the appropriate regulatory agency. For purposes of compatibility, the Agreement States report incidents and events involving the use of nuclear materials that have been reported by Agreement State licensees, to NRC.

B. The information collected on exposures, medical events, lost material, equipment failures, etc., that have occurred involving the licensed and unlicensed use of nuclear materials is invaluable in assessing trends or patterns, identifying generic issues, and recognizing any inadequacies or unreliability of specific equipment or procedures. The reported information will significantly aid in understanding why the event occurred and identifying any actions necessary to improve the effectiveness of NRC and Agreement State regulatory programs. The information is also used in preparation of NRC's annual performance report to Congress.

C. Nuclear Materials Events Database (NMED)

NMED contains the official agency historical collection of information on the occurrence, description, and resolution of events involving the use of radioactive material in the United States (source, byproduct, special nuclear material, naturally occurring, and accelerator-produced radioactive material). NMED accommodates the sharing of material event data submitted by Agreement States, non-Agreement States, and NRC licensees. NMED is maintained by the NRC's Office of Nuclear

Material Safety and Safeguards (NMSS). The NMSS contractor, Idaho National Engineering and Environmental Laboratory (INEEL), is responsible for coding and quality control of information.

IV. ROLES AND RESPONSIBILITIES

A. The Director, Office of State and Tribal Programs (STP), is responsible for the collection, coordination and, in cooperation with NMSS and the Office of Research (RES), the review of reports of incidents and events that have occurred involving the use of nuclear materials received from the Agreement States. NMSS is the designated agency lead office for review and evaluation of material events.

B. The Director, STP, participates in NRC management review and evaluation of Agreement State response to material events that have been identified by NRC as ***significant*** in relation to public health and safety.

C. The Deputy Director, STP, is responsible for assigning a staff member to serve as lead material events project manager.

D. The STP-designated Project Manager is responsible for coordination with the Agreement States and, in collaboration with NMSS and RES, review of material event reports submitted to STP.

E. The STP Director's Secretary is responsible for controlling STP distribution of Agreement State material event reports.

F. The Regional State Agreements Officer (RSAO) is a designated staff member, in an NRC regional office, who serves as the point of contact for the region and STP regarding Agreement State radiation control programs. STP staff should coordinate with the appropriate Regional State Agreement Officer (RSAO), regarding the receipt of a **significant** event report.

G. STP staff should coordinate with the appropriate STP Agreement State Project Officer (ASPO), responsible for providing back-up staff support to the RSAO (see STP Procedure SA-117), regarding the receipt of a **significant** event report.

V. GUIDANCE

A. Guidance for Agreement States

Agreement States should follow the guidance presented in the Appendix to this procedure entitled, *Handbook on Nuclear Material Event Reporting in the Agreement States.*

B. Guidance for STP Staff and Regional State Agreements Officers (RSAOs)

1. Reports of Significant Events Received from Agreement States by Phone.

   a. The following actions should be taken upon receipt of a report of a significant event from an Agreement State (i.e., events requiring 24-hour notification to the Operations Center by Agreement States). Receipt of such reports should occur infrequently since guidance to the Agreement States stipulates that reports of ***significant*** events should be provided directly to the NRC Operations Center.

   b. If the State has contacted you by phone, dial in the NRC Operations Center Headquarters Operations Officer (HOO) and have the State representative calling in -- provide the event notification information directly to the HOO.

   c. Inform the Project Manager, or the Project Manager backup, the STP Director and Deputy Director. STP staff should inform the RSAO.

2. E-mail, FAX, or Written (Hard Copy) Event Reports

   a. A copy of the event report should be provided to the Director and Deputy Director, STP, the appropriate Agreement State Project Officer (ASPO), and the Project Manager. A copy should also be sent to the NMED contractor, INEEL, through the STP Directors Secretary.

   b. Agreement State event reports shall be reviewed by the Project Manager, to identify any events that may be **significant** from the standpoint of health and safety (i.e., reportable by the licensee within 24 hours). If the event is identified as **significant** and it was not previously reported to the NRC by the Agreement State under the 24-hour reporting requirement, the Project Manager should notify the NRC Operations Center (HOO), and the appropriate regional RSAO. If an event indicates the possibility of a generic

issue, the Project Manager will provide notification to the Deputy Director, Division of Industrial and Medical Nuclear Safety, NMSS. NOTE: Hard copy event reports received by the RSAO shall be reviewed by the RSAO in accordance with regional procedures. The RSAO should provide a copy of the event report to the STP Project Manager. The RSAO will keep the STP Project Manager informed of the status of events that have been identified as ***significant***.

3. Electronic Event Reports (E-mail or PC diskette)

The Agreement States send electronic copies of event reports (via Internet e-mail or PC diskette) directly to the NMED contractor, INEEL, for entry into NMED. INEEL, in coordination with NMSS, conducts reviews of Agreement State material event reports that have been electronically provided to INEEL for safety significance. Information on any events identified as ***significant*** that were not previously identified by the Agreement State under the 24-hour reporting requirement or events that could pose possible generic issues are provided to STP and NMSS by INEEL.

4. NMSS Generic Assessment Panel (GAP)

a. The NMSS materials staff conduct a weekly GAP review of all material events received and entered into NMED from both Agreement States and NRC licensees. Events are reviewed for safety significance and generic implications, against the abnormal occurrence criteria, and as candidates for the quarterly Operational Events Briefing. Information on any possible generic issues identified in Agreement State events will be shared with the STP Project Manager. Any safety significant concerns and possible generic issues will also be shared with the Agreement States.

b. Based on the results of the review, it may be necessary to request additional clarifying information. Agreement State staff may be contacted by the RSAO, or a designee, when the event has been identified as safety significant.

3. For events that have not been identified as safety significant, when necessary, the RSAO, or a designee, may contact Agreement States for additional information within 30 days for a 15 day LER[1], and within 60 days for a 30 day LER after NRC receipt of the initial

[1]Licensee Event Report (LER)

notification of the occurrence of the event from the State. This schedule provides reasonable time for State review and evaluation, and voluntary submission of the follow-up information by the State. A request for follow-up information may also be sent routinely via email by the NMED contractor, (e.g., when the NMED record is incomplete after 60 days from receipt of the initial record).

5. NMSS Operational Events Briefing

   a. The Deputy Director, STP, and the Project Manager, or a designee, serve as the designated STP representatives for reporting on Agreement State events at the interoffice quarterly NMSS Operational Events Briefing. In some cases, Agreement State staff also participate and report on events that have occurred in their State. Staff of NMSS, STP, RES, the Regions, and the Office of the General Counsel, meet quarterly to discuss any NRC or Agreement State licensee material events that have occurred during the period covered that NRC has identified for review based on the "significance of the event and/or possible generic implications." The quarterly briefings track **significant** events, that have been identified for review, through closure and entry of the final complete record into NMED.

   b. The Project Manager is responsible for coordinating telephone (bridge) participation of an Agreement State in the briefing, when necessary, for discussion of ***significant*** events that have occurred in their respective State, and coordinates with the States on requests for additional information.

6. The designated Project Manager coordinates with the Agreement States, and participates, in cooperation with NMSS and RES, in the identification and review of Agreement State abnormal occurrence reports.

7. Periodically, the Project Manager may be requested by management to provide statistical information regarding the status of event reporting by the Agreement States. Information provided by the Agreement State and collected and maintained in NMED, should be used by the Project Manager, the ASPO, the RSAO, and the designated IMPEP[2] reviewer, to evaluate the effectiveness and completeness of Agreement State event information provided for entry into the NMED database.

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[2]See STP Procedure SA-100, Implementation of the Integrated Materials Evaluation Program (IMPEP) and SA-105, Reviewing Common Performance Indicator #5 Response to Incidents and Allegations

VI. APPENDIX

Handbook on Nuclear Material Event Reporting in the Agreement States.

VII. REFERENCES

NRC Management Directive 8.1, *Abnormal Occurrence Reporting Procedure*, August 21, 1997.

Policy Statement on Adequacy of and Compatibility of Agreement State Programs, published in the Federal Register, 62 FR 46517 (September 3, 1997).

NRC Management Directive 5.6 *Integrated Material Performance Evaluation Program (IMPEP)*.

STP Procedure SA-100, *Implementation of the Integrated Performance Evaluation Program (IMPEP)*

STP Procedure SA-105, *Reviewing Common Performance Indicator #5 Response to Incidents and Allegations*

STP Procedure SA-117, *Agreement State Project Officers (ASPO)*

SA-300 Reporting Material Events
Appendix (Rev. 1)

Handbook on Nuclear Material Event Reporting in the Agreement States

Final Report

April 24, 2001

Office of State and Tribal Programs
U.S. Nuclear Regulatory Commission

Contact: Patricia M. Larkins

AVAILABILITY OF REFERENCE MATERIAL

NRC documents: Event Notifications, Preliminary Notifications, Inspection Manuals and Procedures, NUREG Series technical reports, Regulatory Guides, etc. are available at the NRC external Website under References at: http://www.nrc.gov/NRC/reference.html. The Office of State and Tribal Programs (STP) documents are available at the STP external Website at: http://www.hsrd.ornl.gov/nrc/.

Paperwork Reduction Act Statement

The information collections contained in this report are covered by the requirements of NRC regulations contained in Title 10 of the U.S. Code of Federal Regulations. The Agreement States collect this information under compatible Agreement State regulations.

The collection of event information has been approved by the U.S. Office of Management and Budget, as follows.

"This information request has been approved by OMB 3150-0178 expiration date 08/31/2003. The estimated burden per response to comply with this collection request is 1.25 hours. Forward any comments regarding the burden estimate to the Information and Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0052), Office of Management and Budget, Washington, DC 20503."

Public Protection Notification

If a document does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

Abstract

The review and analysis of operational event information increases the effectiveness of the U.S. Nuclear Regulatory Commission (NRC) and Agreement State regulatory programs by identifying safety-significant events and concerns, and their causes. The information from reports of medical misadministrations, overexposures, equipment failures, and other events that have occurred involving the use of nuclear materials licensed by either the NRC or the Agreement States is invaluable in assessing trends or patterns and identifying possible inadequacies or unreliability of specific equipment or procedures. The reported information will significantly aid in understanding why the events occurred and identifying any actions necessary to improve the effectiveness of NRC and Agreement States regulatory programs. The information is also used in preparation of NRC's performance report to Congress. This handbook, which supercedes the previous February 20, 1998-version, has been developed to provide information to the staff of the Agreement and non-Agreement States that are responsible for the preparation of event reports for incidents and events involving the use of nuclear materials that have occurred in their State. Reporting of Agreement State material events to NRC is mandatory for purposes of compatibility. The handbook describes the procedure to be followed in reporting material events to NRC. Guidance is provided on what information should be reported, the level of detail, and where to report. Information is also provided on obtaining Federal assistance for radiological emergencies. Procedures for identifying and reporting Abnormal Occurrences (AOs) are also included. The objective of the handbook is to:

- Improve technical information
- Standardize format
- Ensure consistency
- Facilitate information retrieval

Table of Contents

Page

Abstract iii

1. Introduction 1

   1.5 Why do we collect event information? 1
   1.6 What is the governing regulatory authority? 2
   1.7 How do you determine if an event is reportable? 3
   1.8 What is the Nuclear Materials Events Database? 3
   1.9 Reporting Lost, Stolen and Abandoned Sources 4

2. Reporting Material Events 4

   2.1 Reporting Significant Events (24 hr. licensee notification) 4
   2.2 Initial NMED Record for Significant Events 5
   2.3 Radiological Emergency Response Assistance Available to the States for Significant Material Events 5
   2.4 30 - 60 Day Event Notification 7
   2.5 Reporting Follow-up Event Information 8

3. Minimum Basic Event Information for a Complete Report 9

4. Regulatory Reporting Requirements 11

5. NRC Publication and Distribution of Event Notifications 16

   5.1 Event Notifications (ENs) are Available on Internet 16
   5.2 Preliminary Notifications (PNs) are Used to Distribute Event Information 16

6. NRC Safety Reviews of Material Event Reports 16

   6.1 NRC Review of Material Events for Safety Significance and Generic Issues ... 16
   6.2 Quarterly Operational Events Briefing Review of "Significant" Events 17

7. Abnormal Occurrence Guidelines and Criteria 18

   7.1 Introduction 18
   7.2 AO Policy Information 18
   7.3 AO Criteria 19
   7.4 Guidelines for AO Write Ups 24

Appendix:

Glossary 31
References 33

List of Tables

Table 1. Sample FAX to NRC Operations Center 6

Table 2. Event Report Cover Page 10

Table 3. Examples of Reportable Events 14

Table 4. Sample Industrial Radiography AO Report 26

Table 5. Sample Medical AO Report 28

1. Introduction

This handbook contains guidance for Agreement States on reporting material event information to the Nuclear Regulatory Commission (NRC) for events that have occurred in their State. It also provides guidance for use by non-Agreement States when reporting events involving lost, stolen or found sources of naturally occurring and accelerator-produced radioactive materials. The reported information aids in understanding why the events occurred and in identifying actions to help ensure safety and improve the overall effectiveness of the NRC and Agreement State regulatory programs. Guidance is provided on (1) reporting significant events to the NRC Operations Center; (2) providing 30-60 day notification and follow-up event information; (3) schedule for event reporting; (4) reporting formats (i.e., electronic reporting to the Nuclear Materials Events Database (NMED) or written reports (mail, Fax, or email) to the Director, Office of State and Tribal Programs (STP); and (5) reporting event information for events meeting the abnormal occurrence (AO) criteria. An appendix to the Handbook contains (1) a glossary of terms, and (2) a listing of reference materials. NOTE: This procedure does not contain guidance on NMED data entry (coding). For guidance on data entry, an electronic copy of the NMED users guide has been included under the *Help* support icon in the upgraded Microsoft Access 97/2000 version of the NMED software program.

1.1 *Why do we collect event information?*

Operating experience is an essential element in the regulatory process for insuring that licensed activities are conducted safely. Reporting operating incidents and events helps to identify deficiencies in the safe use of AEA radioactive material and to ensure that corrective actions are taken to prevent recurrence. The *Government Performance Results Act of 1994 (GPRA)*, required the Agency to establish measurable outcome oriented performance goals linked to Agency programs and activities in a strategic plan. An annual performance report to Congress is prepared that evaluates the materials program against the metric performance goals. The metric goals are based on current and historical event reporting data. A 1993 General Accounting Office (GAO) report identified the compilation and presentation of national materials data as an area for improvement and recommended that NRC take appropriate action to ensure that the information on radiation events is reported completely and accurately. Further, reliable information should be available to NRC, the Congress, and the States to identify patterns and trends and determine appropriate changes for the programs.[3] NRC conducts reviews of all operating experience reports, from both NRC licensees and Agreement States, to identify safety concerns early, and to further evaluate individual safety concerns for any *generic safety issues* (GSIs) that could apply to a broader class of licensees. Prompt reporting of event information, including 30 day report information, helps the staff identify or detect possible safety concerns as early as possible. An event or condition could, by itself appear

[3] Nuclear Regulation: Better Criteria and Data Would Help Ensure Safety of Nuclear Materials, GAO/RCED-93-90.

insignificant, but when compared with national information, could become a generic concern. In-depth analysis of event report data may result in the identification of actions that could lead to improvements in the effectiveness of NRC and Agreement State regulatory programs. Event analysis may also result in the issuance of information notices warning of possible safety concerns and assessment of the need for regulatory changes or revisions. Feedback is provided to Agreement State regulators, the industry, and the public.

NRC publishes a quarterly report that presents information on the results of statistical analysis of event data and any significant or generic issues or concerns. The *Nuclear Materials Events (NMED) Database Quarterly Report* is available in electronic form at the NMED Internet Website: http://nmed.inel.gov. A nuclear material newsletter is also published quarterly by NRC's Office of Nuclear Material Safety and Safeguards (NMSS) that includes information on safety concerns identified during that quarter.

1.2 What is the governing regulatory authority?

- Under Section 274 of the AEA, Agreement States have assumed regulatory authority over byproduct source and certain quantities of special nuclear materials. The AEA directs NRC to cooperate with the States in the formulation of standards to protect employees or the general public against hazards of radiation and to assure that State and Commission programs will be coordinated and compatible. Article VI of the Agreement Between the State and the USNRC states that "the State and the Commission agree to keep each other informed of events, accidents, and licensee performance that may have generic implications or otherwise be of regulatory interest."

- Under the AEA and the Energy Reorganization Act of 1974 (ERA), as amended, the NRC evaluates material event reports for both NRC and Agreement State licensees, and AOs that have occurred in licensed facilities. In addition, the ERA requires NRC to provide to Congress on an annual basis, information on significant events that meet the AO criteria.

- Due to the importance of operating experience as an essential element in the regulatory process for ensuring that licensed activities are conducted safely, the Commission directed the staff to make Agreement State reporting of events to NRC's NMED database an item of compatibility (See Reference section, June 30, 1997, SECY-97-054). The implementing procedures are contained in STP Procedure SA-200 (See Reference section).

- The guidance contained in this handbook is to assist NRC and Agreement State staff in the joint sharing and analysis of event information. It does not address evaluation of Agreement State programs. The AEA directs the Commission to periodically review actions taken by the States under the Agreements to insure adequacy and compatibility with the provisions of the Act. NRC conducts periodic evaluations of Agreement State programs under the *Integrated Materials Performance Evaluation*

Program (IMPEP), which includes an evaluation of event response, reporting, follow-up, and close-out. (See Reference for STP Procedure SA-100 (IMPEP))

1.3 How do you determine if an event is reportable?

Agreement States should report to NRC all events reported to their State by State licensees under State regulations equivalent to NRC's reporting requirements. Section 4 of this guide contains a listing of the *U.S. Code of Federal Regulations (10 CFR)* regulatory reporting requirements for material event information. The 10 CFR reporting requirements form the basis for equivalent reporting requirements in Agreement State regulations. The listing references the specific 10 CFR reporting requirements, followed by a brief description of the types of events that fall under the reporting requirement, and the periodicity for reporting. This list begins on page 11 of the "Handbook."

New Please note the new reference in All Agreement State Letter SP-98-038, dated May 5, 1998, regarding expansion of the Federal Bureau of Investigation (FBI) criminal investigative jurisdiction to include byproduct material. A revision to the U.S. Code assigns lead responsibility for material events involving ***theft or terrorist activities*** to the FBI.

The States are encouraged to voluntarily report an occurrence that actually happened (event) or something that may happen (condition) that does not meet the regulatory reporting criteria that the State believes might be of safety significance or of generic interest or concern, or involves media interest.

1.4 What is the Nuclear Materials Events Database (NMED)?

The NMED database contains a historical collection of information on the occurrence, description, and resolution of events involving the use of radioactive material in the United States (source, byproduct, special nuclear material, naturally occurring, and accelerator-produced radioactive material). NMED accommodates the sharing of material event data submitted by Agreement and non-Agreement States and the NRC. The data includes information on material events from January 1990 through the present. The database is maintained by NMSS through a contractor, Idaho National Engineering and Environmental Laboratory (INEEL).

1.5 Reporting Lost, Stolen and Abandoned Sources

New The NMED database has been expanded to include additional information on ***lost, stolen, and abandoned sources*** in coordination with a national effort led by the *Conference of Radiation Control Program Directors, Inc., (CRCPD)* to track lost and found radioactive

material (including non-AEA and unlicensed material) found in both Agreement and non-Agreement States. The data will be collected from all States, and in some cases non-licensee organizations and members of the public. Non-Agreement States should follow the guidance provided in Section 2 ."Reporting Material Events," to report any lost, stolen and abandoned non-AEA and unlicensed material. (See All Agreement State Letter SP-98-018, March 17, 1998).

NOTE: FBI notification should be considered if the event involves the possibility of theft or terrorist activities. Based on health and safety significance the issuance of a press release should also be considered.

2. Reporting Material Events

In accordance with the provisions of compatible Agreement State regulations, Agreement State licensees are required to report the occurrence of material incidents and events to the Agreement State regulatory agency. As an item of compatibility, the Agreement States provide reports of incidents and events involving the use of nuclear materials by Agreement State licensees to NRC. Non-Agreement States have been requested by CRCPD to voluntarily report any lost, stolen and abandoned non-AEA and unlicensed material. This section presents information on reporting (1) significant events to the NRC Operations Center, (2) 30-60 day reportable events, and (3) follow-up event information.

2.1 Reporting Significant Events (Reportable within 24 hrs, by Agreement State licensee)

Agreement States should report significant events to the NRC Operations Center within 24 hours of notification by an Agreement State licensee. Significant events are those requiring prompt notification as determined under applicable Agreement State regulations. Information should be reported to the NRC Operations Center via voice at (301) 816-5100 or (301) 951-0550 or by FAX at (301) 816-5151. A Sample FAX page has been included at the end of Section 2, see Table 1. (For reference, NRC reporting requirements for significant events are presented in Section 4.)

2.2 Initial NMED Record for Significant Events

A copy of the initial event notification information received from an Agreement State on significant events is used by INEEL to establish an initial record in the national NMED database. INEEL will use the *Event Report Identification No.*, consisting of the State ID, year, and a sequential ID No., e.g., (TN-00-001) when entering the initial event record into NMED. The State should use that Event Report Identification number when providing updates to the initial NMED event record using the State's local Microsoft Access, NMED

database. (See Section 2.5, of this Handbook for guidance on reporting follow-up event information to NMED.)

2.3 Radiological Emergency Response Assistance Available to the States for Significant Material Events

States may request Federal assistance through the NRC Operations Center staff. The Federal government, upon request, has the capability to provide assistance to States in responding to radiological emergencies. Under the Federal Radiological Emergency Response Plan (FRERP), NRC is the lead Federal agency (LFA) for radiological emergencies involving AEA material where the material can be traced back to an individual NRC or Agreement State licensee. As the LFA, NRC is responsible for coordination of the Federal response, including providing assistance from NRC and arranging for assistance from other agencies, e.g., FEMA, DOE, etc., as requested by the States. Federal assistance is available to provide ground and aerial radiological monitoring (e.g., missing source), medical advice on radiation effects and treatment, consequence projection, and protective action assessment.

FAX TO: NRC OPERATIONS CENTER

Agreement State Agency:	**[State]** Dept. of Health, Division of Radiation Protection
Event Report ID No.:	State ID, YR, No., e.g. WA-00-002
License No.:	CL-Z00X-1
Licensee:	County Inspection Inc.
Event date and time:	April 6, 2001, between 4:00 and 5:00 am
Event location:	City, State
Event type:	Stolen Radiography Device
Notifications:	**[State]** Dept. of Health has notified local police, and the FBI due to possibility of unlawful criminal activity. Press release has not been issued at this time.
Event description:	**[State]** Dept. of Health was notified on **[date]**, by a representative from **[licensee]**, of the theft of a radiography camera from a locked equipment trailer on Thursday morning, April 6, 2001. The locked camera and the keys to the camera were stolen. The radiography camera is identified as XYZ Company, Model 160B, serial No. B-3333, containing **[isotope]** **[activity, when known]** 88.3 curies of Iridium-192. The device cables were not stolen. The State has an inspector on site and will continue to keep NRC informed of the status of our investigation.
Transport vehicle description:	N/A
Media attention:	**[State]** Dept. of Health has received inquiries from the media
Point of contact:	Bob Brown, 301-415-0001

Table 1. Sample FAX Sheet to NRC Operations Center

2.4 30 - 60 Day Event Notifications

Agreement States should report events requiring greater than 24 hours notification by Agreement States licensees, as determined under applicable Agreement State regulations, to NRC on a monthly basis. (For reference, NRC reporting requirements for events are presented in Section 4.) Reports may be made either electronically or in written form. NRC staff encourages Agreement States to electronically report all events using the NMED database software and entry screens.

The following paragraphs provide additional information on reporting events and NMED. For guidance on data entry (coding), an electronic copy of the NMED users guide has been included under the *Help* support icon in the upgraded Microsoft Access 97/2000 version of the NMED software program. The upgrade NMED software program also contains downloadable sample NMED data entry screen (previously included in this Handbook).

a. ***Assign Event Report Identification No.***

This number should appear on all reports, including preliminary, initial notification reports, and any follow-up reports. The Event Report Notification No. should consist of the State or State agency ID, year, and a sequentially assigned ID number, e.g., **(NYDOL-99-001), (NYC-99-001), (TX-00-001), (GA-00-001), (NE-00-001), (CA-00-001)** for each agency in your State. NOTE: The Agreement State ID number field in NMED can accommodate up to four characters for the State or agency identifier. The "Agreement State ID No." should be specified by the State for all telephone, electronic or written notification involving each specific event.

b. ***Basic Event Information***

Section 3 provides a listing of the minimum event information that should be provided. When submitting an initial event report, please provide as much information as is known at the time the report is prepared regarding the items indicated in Section 3. Updated information should be subsequently provided in follow-up reports (see Section 2.5).

c. ***Electronic Reporting to NMED***

Provide an electronic NMED report via E-mail or PC diskette to the NMED contractor, based on the information provided by the Agreement State licensee in the 5, 15, 30 or 60 day report. If you need additional help, you may contact the INEEL NMED Project Manager, Dante Huntsman, electronically via Internet email at: dhun@inel.gov, or by telephone at 208-526-2741, or the NRC NMED Project Manager, Sam Pettijohn, via e-mail SLP@nrc.gov or telephone: 301-415-6822.

d. *Internet Access to NMED*

An Internet (query only) version of NMED with several drop-down point-and-click menus is available. The Internet version of the NMED program eliminates the need for INEEL to provide users with periodic diskette updates of the national NMED data. Users may download the latest NMED national database information via Internet file transfer. Internet access to the NMED is currently controlled either by a user -ID and password, or a user -ID and Internet Protocol (IP) Addresses. If passwords are required contact Dante Huntsman, INEEL by e-mail message at: dhun@inel.gov or by telephone at 208-526-2741. Future plans include upgrading the Internet version of NMED to provide open public access to material event information. *NOTE: Agreement States should continue to use the Microsoft Access data entry program for maintaining a local events database and for submitting NMED event reports to INEEL.*

e. *Written Event Reports*

Written event reports, including e-mail or fax, should be sent to the Director, STP. Written report information should be comparable to the minimum basic information identified in Section 3. Reports should be provided in an optical character recognition (OCR) scannable format. Please include an ***Event Report Cover Page*** for all written form event information provided to NRC. Use of the Event Report Cover Page helps ensure our Document Control staff can readily identify, classify and appropriately record the document. A sample cover page is provided on page 10 of this Handbook.

2.5 Reporting Follow-up Event Information

Follow-up material event reports--providing the results of investigations into what, where, when and how the event or conditions occurred--through resolution and close out, should be provided for all events, both significant (24 hr. reportable) and 30-60 day reportable events.

a. Follow-up reports through a closeout of the event should be provided electronically or in writing to NRC on a monthly basis. Enter any new or supplemental information to the initial NMED record. A complete event report should include all investigative and medical information through closeout. (See minimum basic event information in Section 3.)

b. The initial event report identification number (**State\Yr.\No.**) should be included whenever additional follow-up event information is provided. Indicate that it is a follow-up report.

c. Additionally, when providing follow-up NMED event information, provide clear reference to documents on file that the State used to generate the NMED event report, e.g., a licensee inspection report dated mm/dd/yr., if applicable and appropriate.

d. Any follow-up information that revises earlier information or provides additional information on a given event should be provided to ensure a complete historical NMED record.

3. Minimum Basic Event Information for a Complete Report

The following listing identifies the minimum basic information that should be provided for all events.

a. What happened, and when?	
1. Agreement State, Event Report ID No.	7. Sealed source, device, etc, (make, model #, serial #)
2. Licensee (Name, address), License No.	8. Leak test information, when applicable
3. Event date and time of occurrence	9. Equipment (make, model #, serial #), and clear description of any equipment problems.
4. Date notified of event by licensee or non-licensee	10. Persons involved, consequences
5. Radionuclide, activity	11. Transportation, identify shipper, package type and ID No.
6. Any exposures (indicate short and long-term effects.)	12. Abnormal occurrence (Y/N)
b. Why did it happen?	
13. Cause, and contributing factors	
c. What actions did the licensee take to prevent recurrence?	
14. Notifications: patient, physician	15. Licensee corrective actions
d. Events involving lost, stolen or abandoned material	
16. Provide status through resolution (update record when found)	
e. What actions did the State take?	
17. Notifications: local police, FBI, and other States; as needed	18. Enforcement actions
f. Describe any generic implications	
19. Identify any possible generic safety concerns	20. Potential for others to experience the same event

EVENT REPORT COVER PAGE

AGREEMENT STATE

EVENT REPORT ID NO. __ - __ - ___
(State\Yr.\No.)

DATE:

TO:

Director
Office of State and Tribal Programs

SUBJECT:

STATE:

Signature and Title: _____

_____

_____

_____

Public Availability of Event Information: Any event information that is considered preliminary predecisional information by the State should be clearly identified on the cover page as follows: "Preliminary, Not for Public Disclosure." For event information in NRC's possession, the final determination on whether to withhold from public disclosure will be made by NRC on a case-by-case basis in accordance with the requirements of 10 CFR Part 9.

Table 2. Event Report Cover Page

4. Regulatory Reporting Requirements

NRC reporting requirements are contained in multiple Parts of Title 10 of the Code of Federal Regulations (10 CFR). The following provides a complete listing of the current 10 CFR material reporting requirements for which Agreement States should have compatible regulations.

10 CFR Part	Reporting Category		Reporting Requirement	Notification
	Significant	30-60 Day		
20, Standards for Protection Against Radiation	20.1906(d)(1)		reports of removable contamination on package >limits in 10 CFR 71.87.	Immediate
	20.1906(d)(2)		radiation levels on package > limits in 10 CFR 71.47	Immediate
	20.2201(a)(1)(i)		reports of theft or loss of licensed material > 1000 X App C value	Immediate
		20.2201(a)(1)(ii)	reports of theft or loss of licensed material > 10 X App. C value	30 days
	20.2202(a)(1)		exposure (real or threatened) ≥ TEDE of 25 rem (.25 Sv), or eye or lens dose equiv. of 75 rem (.75 Sv) or shallow dose equiv. (skin\extremities) of 250 rads (2.5 Gy).	Immediate
	20.2202(b)(1)		exposure (real or threatened) ≥ TEDE of 5 rem (.05 Sv), or eye or lens dose equiv. of 15 rem (.15 Sv), or shallow dose equiv. (skin\extremities) of 50 rads (.5 Gy).	24 hours
	20.2202(a)(2)		release where individual could have intake > 5 X ALI over 24 hours.	Immediate
	20.2202(b)(2)		release where individual could have intake > 1 X ALI over 24 hours	24 hours
		20.2203(a), (b)	radiation exposures, releases or concentrations of radioactive material that exceed the limits.	30 days
21, Reporting of Defects & Noncompliance		21.21(a)(1-2)	reporting of defect in basic component, structure or system.[4]	60 days

[4] Not a compatibility requirement for Agreement States, but States voluntarily provide information on equipment failure and defects.

4. Regulatory Reporting Requirements

NRC reporting requirements are contained in multiple Parts of Title 10 of the Code of Federal Regulations (10 CFR). The following provides a complete listing of the current 10 CFR material reporting requirements for which Agreement States should have compatible regulations.

10 CFR Part	Reporting Category		Reporting Requirement	Notification
	Significant	30-60 Day		
30, Rules of General Applicability to Domestic Licensing of Byproduct Material	30.50(a)		events involving prevention of immediate protective action, involving exposures or releases that could exceed regulatory limits	4 hours
	30.50(b)(1)		event involving unplanned contamination restricting access >24 hours (no isotopes with half-lives <24 hrs)	24 hours
	30.50(b)(2)		event involving equipment failure or disability to function as designed when equipment is required to be available and operable and no redundant equipment is available and operable	24 hours
	30.50(b)(3)		event involving unplanned medical treatment of contaminated person	24 hours
	30.50(b)(4)		event involving fire, explosion affecting integrity of material, device or container, and material exceeds 5Xs ALI	24 hours
31, General Domestic Licenses for Byproduct Material		31.5(c)(5)	failure or damage to shielding, on-off mechanism or indicator, or ≥ 0.005 microcuries (185 Bq) removable radioactive material for generally licensed device	30 days
34, Licenses for Radiography & Radiation Safety Requirements for Radiographic Operations	34.27(d)		reporting of leaking sources, leak test results ≥ 0.005 microcurie (185 Bq)	5 days
		34.101(a)	radiography source disconnect, inability to retract source, or component failure (critical to safe operation of device)	30 days

4. Regulatory Reporting Requirements

NRC reporting requirements are contained in multiple Parts of Title 10 of the Code of Federal Regulations (10 CFR). The following provides a complete listing of the current 10 CFR material reporting requirements for which Agreement States should have compatible regulations.

10 CFR Part	Reporting Category		Reporting Requirement	Notification
	Significant	30-60 Day		
35, Medical Use of Byproduct Material	35.33(a)		notifications and reports of misadministrations[5]	Next day (24 hours)
	35.59(e)(2)		leak testing sealed sources and brachytherapy sources	5 days
36, Licenses & Radiation Safety Requirements for Irradiators	36.83		irradiator events, release of material, defective components, systems or structures; (if not reported under other 10 CFR reporting requirements)	24 hours
39, Licenses & Radiation Safety Requirements for Well-Logging	39.35		leaking sealed sources found during periodic leak testing requirement	5 days
	39.77 (a)		well logging source rupture	Immediate
		39.77(b)	theft or loss, exposures, excessive concentration of rad material	30 days
		39.77(c) and (d)	when apparent recovery impossible, irretrievable source, abandonment	60 days
40, Domestic Licensing of Source Material	40.26(c)(2)		tailings or waste retention system failure that results in a release of material into unrestricted areas, or unusual conditions	Immediate
	40.60(a) (b)(1)-(b)(4) (c)(1)-(c)(2)		requirements for domestic licensing of source material to receive, possess, use, transfer, or deliver source and byproduct material (NOTE: Same as 30.50 above)	
70, Domestic Licensing of Special Nuclear Material	70.50(a)	70.50 (b) (c)	events involving special nuclear material (SNM)	(a) 24 hours (b) 30 days (c) 60 days

[5] Misadministration events require 15 day licensee event report and 24 hour notification to referring physician and patient.

4 Regulatory Reporting Requirements

NRC reporting requirements are contained in multiple Parts of Title 10 of the Code of Federal Regulations (10 CFR). The following provides a complete listing of the current 10 CFR material reporting requirements for which Agreement States should have compatible regulations.

10 CFR Part	Reporting Category		Reporting Requirement	Notification
	Significant	30-60 Day		

Table 3. EXAMPLES OF REPORTABLE EVENTS

This Table provides examples of reportable material events or occurrences that are required to be reported by both NRC and Agreement State material licensees. The Table addresses specific reporting requirements for either immediate notification (within 24 hours or less) or 30 day written reports.

Immediately reportable under 10 CFR 20.2201	**Stolen Portable Moisture Density Gauge** Licensee reported that a [Manufacturer] [Model #] [serial #] portable gauge containing 10 millicuries of Cesium-137 and 50 millicuries of Americium-241:Beryllium was stolen from the licensee's vehicle parked at the licensee's facility. The gauge was padlocked in its original carrying case. The State is following the incident and working with local authorities to develop a press release. Local law enforcement and the FBI have been notified. Follow-up information will be provided to NRC on the recovery of the stolen gauge and entered into NMED.
Reportable within 24 hours under 10 CFR 30.50(b) (2) and 20.2201	**Possible Loss of Control and Damage to Portable Gauge** Licensee reported that a [Manufacturer] [Model #] [serial #] moisture density gauge had been damaged on March 28, 2001. The gauge contained 7.9 millicuries of Cesium-137 and 40 millicuries of Americium-241. A technician left the gauge unattended for a brief time and upon returning found that a construction vehicle had run over the gauge. The source rod was broken but the source was undamaged and remained in the shielded position. Wipe tests and instrument survey verified no leakage. The gauge was returned to the manufacturer for repair. The licensee was cited for not keeping licensed material under constant surveillance in an unrestricted area. Report has been entered in NMED.
Reportable within 30 days under 20.1906	**Shipment of Brachytherapy Sources Received with Radiation Levels Exceeding Regulatory Limits** A medical licensee reported receiving a shipment of two packages containing cesium-137 brachytherapy sources. Radiation surveys of the packages with an ion chamber detector found radiation levels of 250 millirem per hour on one package, which exceeds the State and Federal limit at the external surface of a package of 200 millirem per hour. The third and final package was received two days later with radiation levels of 400 millirem per hour at the surface of the package. The shipper has retained a consultant to determine the cause of the elevated radiation levels. The State will keep NRC informed of the results of the consultants review of the event, and the information will be entered into NMED.
Reportable within 24 hours under 10 CFR 20.1301, 20.2203	**Exposure to Nonradiation Worker at a Licensed Facility** A licensee reported to the State that a nonradiation worker had received an exposure as a result of picking up a 5 curie Americium-241:Beryllium neutron source used for well logging and placing it in his pocket. The worker, a temporary contractor employee, was cleaning a well logging tool at the licensee facility. (The licensee was under the assumption that all of the source material had been removed from the equipment.) While cleaning the tool, the source fell out, and the worker picked it up and placed it his pocket. The worker was not a radiation worker and had no knowledge of what the object was. Preliminary calculations performed by [identify Consultant/Contractor] indicate that the individual may have received a dose of 4-6 Rem. The licensee's RSO is investigating the incident. The State plans to keep NRC informed of the ongoing results of the investigation, and the information will be entered into NMED.

Reportable within 24 hours under 10 CFR Part 35 and 30.50(b)(2)	**Possible Misadministration involving a Teletherapy Unit Malfunction** A patient undergoing a Cobalt-60 Teletherapy treatment with a [Manufacturer][Model #] received an unintended exposure. The RSO estimated that the patient received an exposure of 138 centiGray (Rads) to a depth of 0.5 centimeters to the wrong treatment site, based on a possible total treatment time of 1.5 minutes. The exposure occurred as a result of two power disruptions during a thunderstorm. The loss of electrical power caused the unit table to move which resulted in treatment to the wrong site. The patient received 0.35 minutes of the intended fractionated treatment time of 1.5 minutes. The patient was prescribed a total dose of 5040cGy to be given in 28 fractions of 180 cGy per day at the rate of 5 fractions per week. The prescribing physician elected not to make up the missed dose. The prescribing physician indicated that the patient is not expected to have any adverse effects from the misadministration. The patient and referring physician were notified of the event. The licensee was able to recreate the event to demonstrate how the event occurred. The licensee has contacted the manufacturer. The State will keep NRC informed of the results of the review for any generic implications.
Reportable within 24 hours under 10 CFR 36.83(a)(9)	**Possible Loss of Water or Leakage from Source Water Pool at Irradiator Facility** Licensee notified the State that the controls at a Co-60 irradiator facility were indicating that the water level was low, circulating pump off, and fill valves were open. The pool water level gauge indicated a pool water level of 93 inches, well below the normal level of 137 inches. Previous incidents indicated that a loss of compressed air pressure to the water level gauge could result in an erroneously low water level gauge reading, causing the automatic pool fill valves to open, and the pool water circulating pump to turn off. The compressed air system pressure was found to be in the normal range, but the operator found water and congealed oil in the air line supplying the pool water level gauge, and the air line supplying the elevator control valve. Further investigation found that the compressed air line water traps were full of water. A past similar incident resulted in a failure to raise the elevator. The operator then verified that the pool water level was in fact normal. The licensee requested the building maintenance personnel to diagnose and repair the compressed air supply immediately, to prevent the conductivity in the pool water from reaching abnormal levels as a result of the resin filter circulating pump being automatically turned off by the false low pool water level meter reading. Maintenance personnel responded and replaced a failed compressed air dryer, and monitored the open air lines to clear the lines of water. A float activated automatic water drain was installed in the air line to prevent a possible recurrence by allowing any water to automatically drain from the air line.

5. NRC Publication and Distribution of Event Notifications

5.1 Event Notifications (ENs) are Available on Internet

All events reported to the NRC Operations Center are currently entered into the NRC Event Notification (EN) database. ENs are publicly available through Internet on NRC's external home page at (http://www.nrc.gov/opa) under *Event Reports*, within one work day of notification. As a result of public access to this information, Agreement and non-Agreement States may receive contacts from the public or media regarding events and requesting additional information.

5.2 Preliminary Notifications (PNs) are Used to Distribute Event Information

Preliminary Notifications (PNs) are brief summary reports of significant events issued by the NRC staff to notify the Commission of the occurrence of a significant event. PNs are based on information provided by State radiation control program staff. PNs are usually issued within approximately two hours of notification of the occurrence of a significant event. The PN will be publicly available through Internet on NRC's external home page under PN Reports at (http//www.nrc.gov/OPA/pn). Updates to PNs occur when significant additional information about an event is provided to NRC. When preparing PNs, NRC staff may contact the State for additional information on the event.

6. NRC Safety Reviews of Material Event Reports

6.1 NRC Review of Material Events for Safety Significance and Generic Issues (New)

A. A *Generic Assessment Panel (GAP)* has been established within NRC to review all material event information. A weekly review of all new NRC or Agreement State licensee event information that has been entered into NMED is conducted by NRC staff. The objective of the review is to identify any events that may be safety significant or may involve GSIs, i.e., equipment malfunction or failure, significant exposures, etc. GSI's are defined as a safety concern that may affect the design, construction, operation, or decommissioning of all, several, or a class of regulated operations, and may have the potential to require licensees or certificate holders to make safety improvements and/or require new or revised requirements or guidance.

B. ***Requests for additional information***: Based on the results of the GAP review, Agreement State staff may be contacted by the Regional State Agreements Officer (RSAO) by voice or email to discuss the event. Additional information may be requested to help determine the safety significance and any possible generic implications (e.g., equipment malfunction or failure, significant exposures). Specific issues identified as a result of the review are tracked through close-out of the event. To provide the States reasonable time for review and investigation of reported events, any requests for additional information to States will be conducted within the following schedule.

1. Schedule for requesting additional information:

If necessary, NRC staff may contact Agreement States for additional information on ***significant events*** that pose or could pose public health and safety risks. Such requests would occur on an as needed basis, possibly within hours to a few days of notification of the occurrence of the event, based on the safety significance.

For events that have not been identified as safety significant, when necessary, the RSAO, or a designee, may contact Agreement States for additional information within 30 days for a (15 day event notification)) and within 60 days for a (30 day event notification) after NRC's receipt of the initial notification from the State. A request for follow-up information may also be sent routinely via email by the NMED contractor, (e.g., when the NMED record is incomplete after 60 days from receipt of the initial record).

6.2 Quarterly Operational Events Briefing Review of "Significant" Events

A. Events identified as having a "significant" potential risk to public health and safety may receive additional NRC management review at the quarterly NRC Operational Events Briefing. The quarterly briefing, attended by managers and staff from the offices of NMSS, STP, Incident Response Operations (IRO), Nuclear Regulatory Research (RES), and the Regions is convened to review and assess health and safety-related issues, e.g., cause, effects, generic implications, mitigating actions, etc. NRC headquarters and region staff continue to follow-up and review material events discussed at the *operational events briefing* through closure of the event, which includes checking to see that the final report information has been entered into NMED. Based on potential safety risks identified as a result of event review and analyses, NRC may take actions to reduce potential health and safety risks to the public by issuing safety-related notifications to licensees, concerning software problems, equipment modifications, etc. Further research and analysis may result in regulatory or programmatic changes.

B. Agreement State staff may be requested to participate in the briefings by telephone to discuss specific events, the status, results of licensee or State investigation activities and licensee corrective actions, and the potential generic significance of the event. Agreement State participation helps in the exchange of event information and in follow-up actions if generic implications are identified.

7. Abnormal Occurrence Guidelines and Criteria

7.1 Introduction

This section presents the guidelines and criteria to be followed when assessing the significance of an event or occurrence to see if it meets the criteria established to identify an abnormal occurrence (AO). Section 208 of the Energy Reorganization Act of 1974 (ERA) (Public Law 93-438, 42 USC 5848) identifies an abnormal occurrence as an unscheduled incident or event that the Commission determines to be significant from the standpoint of public health or safety. Section 208 of the Act also requires that the Commission inform Congress of any abnormal occurrences. The Agreement States support the NRC in their effort to keep Congress apprised of any significant events that may directly affect public health or safety by providing information on proposed AOs that have occurred in their State.

7.2 AO Policy Information

The Commission submits a report to Congress identifying any AOs. The Federal Reports Elimination and Sunset Act of 1995 requires that AOs be reported to Congress on an annual basis (see "Report to Congress on Abnormal Occurrences, Fiscal Year 1996," NUREG-0090, Vol. 19). Section 208 of the ERA indicates that each report shall contain:

(1) The date and place of each occurrence;
(2) The nature and probable consequence of each occurrence;
(3) The cause or causes of each; and
(4) Any action taken to prevent recurrence.

As specified in Section 208, within 15 days of receiving information of each AO, the Commission shall provide as wide dissemination to the public as reasonably possible as soon as such information becomes available.

A final AO policy statement containing criteria for determining an AO was published in the *Federal Register* on December 19, 1996, (61 FR 67072). Revised AO criteria were published in the *Federal Register* on April 17, 1997 (62 FR 18820) to incorporate minor changes and to revise criterion III covering Fuel Cycle Licensees.

An incident or event will be considered an AO if it involves a major reduction in the degree of protection of the public health or safety. This type of incident or event would have a moderate or severe impact on the public health or safety and could include, but need not be limited to the following:

(1) Moderate exposure to, or release of, radioactive material licensed by or otherwise regulated by the Commission;
(2) Major degradation of essential safety-related equipment; or
(3) Major deficiencies in design, construction, use of, or management controls for facilities or radioactive material licensed by or otherwise regulated by the Commission.

7.3 AO Criteria

Agreement State staff should routinely screen events against the AO criteria as part of their routine program. Any events identified as potential AOs should be reported to NRC. Additionally, Agreement States are requested to prepare a special written report for potential AOs. Agreement State staff should follow the guidelines for preparing AO write-ups contained in Section 7.4 of this Handbook. When questions arise on a given event, it may sometimes be necessary for NRC to directly contact an Agreement State representative and request additional information.

The criteria for determining an AO and the guidelines for "Other Events of Interest" were stated in an NRC Policy Statement. The following AO criteria was published in the *Federal Register* on December 19, 1996, (61 FR 76072). The policy statement was revised to include criteria for gaseous diffusion plants and published in the *Federal Register* on April 17, 1997, (62 FR 18820).

The guidelines were revised for Appendix C "Other Events of Interest" by the Commission in a Staff Requirements Memorandum, SECY-98-175, dated September 4, 1998.

AO Criteria

As published in the Federal Register on December 19, 1996 (61 FR 67072) and as revised and published on April 17, 1997 (62 FR 18820) to incorporate gaseous diffusion plants.

Criteria by types of events used to determine which incidents or events will be considered for reporting as AOs are as follows:

I. For All Licensees.

A. Human Exposure to Radiation from Licensed Material.

1. Any unintended radiation exposure[6] to an adult (any individual 18 years of age or older) resulting in an annual total effective dose equivalent (TEDE) of 250 millisievert (mSv) (25 rem) or more; or an annual sum of the deep dose equivalent (external dose) and committed dose equivalent (intake of radioactive material) to any individual organ or tissue other than the lens of the eye, bone marrow and the gonads, of 2500 mSv (250 rem) or more; or an annual dose equivalent to the lens of the eye, of 1 Sv (100 rem) or more; or an annual sum of the deep dose equivalent and committed dose equivalent to the bone marrow, and the gonads, of 1 Sv (100 rem) or more; or an annual shallow-dose equivalent to the skin or extremities of 2500 mSv (250 rem) or more.

2. Any unintended radiation exposure to any minor (an individual less than 18 years of age) resulting in an annual TEDE of 50 mSv (5 rem) or more, or to an embryo/fetus resulting in a dose equivalent of 50 mSv (5 rem) or more.

3. Any radiation exposure that has resulted in unintended permanent functional damage to an organ or a physiological system as determined by a physician.

B. Discharge or Dispersal of Radioactive Material from its Intended Place of Confinement.

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[6] An "unintended radiation exposure" includes any occupational exposure, exposure to the general public, or exposure as a result of a medical misadministration (as defined in §35.2) involving the wrong individual that exceeds the reporting values established in the regulations.

All other reported medical misadministrations will be considered for reporting as an AO under the criteria for medical licensees. In addition, unintended radiation exposures include any exposure to a nursing child, fetus, or embryo as a result of an exposure (other than an occupational exposure to an undeclared pregnant woman) to a nursing mother or pregnant woman above specified values.

1. The release of radioactive material to an unrestricted area in concentrations which, if averaged over a period of 24 hours, exceed 5000 times the values specified in Table 2 of Appendix B to 10 CFR Part 20, unless the licensee has demonstrated compliance with §20.1301 using §§20.1302(b)(1) or 20.1302(b)(2)(ii).

2 Radiation levels in excess of the design values for a package, or the loss of confinement of radioactive material resulting in one or more of the following: (a) a radiation dose rate of 10 mSv (1 rem) per hour or more at 1 meter (3.28 feet) from the accessible external surface of a package containing radioactive material; (b) a radiation dose rate of 50 mSv (5 rem) per hour or more on the accessible external surface of a package containing radioactive material and that meet the requirements for "exclusive use" as defined in 10 CFR 71.47; or (c) release of radioactive material from a package in amounts greater than the regulatory limits in 10 CFR 71.51(a)(2).

C. Theft, Diversion, or Loss of Licensed Material, or Sabotage or Security Breach.[7]

1. Any lost, stolen, or abandoned sources that exceed 0.01 times the A_1 values, as listed in 10 CFR Part 71, Appendix A, Table A-1, for special form (sealed/nondispersible) sources, or the smaller of the A_2 or 0.01 times the A_1 values, as listed in Table A-1, for normal form (unsealed/dispersible) sources or for sources for which the form is not known. Excluded from reporting under this criterion are those events involving sources that are lost, stolen, or abandoned under the following conditions: sources abandoned in accordance with the requirements of 10 CFR 39.77(c); sealed sources contained in labeled, rugged source housings; recovered sources with sufficient indication that doses in excess of the reporting thresholds specified in AO criteria I.A.1 and I.A.2 did not occur during the time the source was missing; and unrecoverable sources lost under such conditions that doses in excess of the reporting thresholds specified in AO criteria I.A.1 and I.A.2 were not known to have occurred.

2. A substantiated case of actual or attempted theft or diversion of licensed material or sabotage of a facility.

[7] Information pertaining to certain incidents may be either classified or under consideration for classification because of national security implications. Classified information will be withheld when formally reporting these incidents in accordance with Section 208 of the Energy Reorganization Act of 1974, as amended. Any classified details regarding these incidents would be available to the Congress, upon request, under appropriate security arrangements.

3. Any substantiated loss of special nuclear material or any substantiated inventory discrepancy that is judged to be significant relative to normally expected performance, and that is judged to be caused by theft or diversion or by substantial breakdown of the accountability system.
4. Any substantial breakdown of physical security or material control (i.e., access control containment or accountability systems) that significantly weakened the protection against theft, diversion, or sabotage.

D. Other Events (i.e., those concerning design, analysis, construction, testing, operation, use, or disposal of licensed facilities or regulated materials).

1. An accidental criticality [10 CFR 70.52(a)].

2. A major deficiency in design, construction, control, or operation having significant safety implications requiring immediate remedial action.

3. A serious deficiency in management or procedural controls in major areas.

4. Series of events (where individual events are not of major importance), recurring incidents, and incidents with implications for similar facilities (generic incidents) that create a major safety concern.

II. For Commercial Nuclear Power Plant Licensees.

A. Malfunction of Facility, Structures, or Equipment.

1. Exceeding a safety limit of license technical specification (TS) [§50.36(c)].

2. Serious degradation of fuel integrity, primary coolant pressure boundary, or primary containment boundary.

3. Loss of plant capability to perform essential safety functions so that a release of radioactive materials, which could result in exceeding the dose limits of 10 CFR Part 100 or 5 times the dose limits of 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 19, could occur from a postulated transient or accident (e.g., loss of emergency core cooling system, loss of control rod system).

B. ***Design or Safety Analysis Deficiency, Personnel Error, or Procedural or Administrative Inadequacy.***

1. Discovery of a major condition not specifically considered in the safety analysis report (SAR) or TS that requires immediate remedial action.

2. Personnel error or procedural deficiencies that result in loss of plant capability to perform essential safety functions so that a release of radioactive materials, which could result in exceeding the dose limits of 10 CFR Part 100 or 5 times the dose limits of 10 CFR Part 50, Appendix A, GDC 19, could occur from a postulated transient or accident (e.g., loss of emergency core cooling system, loss of control rod system).

III. ***For Fuel Cycle Facilities.***

1. A shutdown of the plant or portion of the plant resulting from a significant event and/or violation of a law, regulation, or a license/certificate condition.

2. A major condition or significant event not considered in the license/certificate that requires immediate remedial action.

3. A major condition or significant event that seriously compromises the ability of a safety system to perform its designated function that requires immediate remedial action to prevent a criticality, radiological or chemical process hazard.

IV. ***For Medical Licensees.***

A medical misadministration that:

(a) Results in a dose that is (1) equal to or greater than 1 gray (Gy) (100 rad) to a major portion of the bone marrow, to the lens of the eye, or to the gonads, <u>or</u> (2) equal to or greater than 10 Gy (1000 rad) to any other organ; and

(b) Represents either (1) a dose or dosage that is at least 50 percent greater than that prescribed in a written directive <u>or</u> (2) a prescribed dose or dosage that (i) is the wrong radiopharmaceutical,[8] or (ii) is delivered by the wrong route of administration, or (iii) is delivered to the wrong treatment site, or (iv) is delivered by the wrong treatment mode, or (v) is from a leaking source(s).

[8] The wrong radiopharmaceutical as used in the AO criterion for medical misadministrations refers to any radiopharmaceutical other than the one listed in the written directive or in the clinical procedures manual.

New, revised:

V. *Guidelines for "Other Events of Interest"*

The Commission may determine that events other than AOs may be of interest to Congress and the public and should be included in an Appendix to the AO report as Other Events of Interest. Guidelines for events to be included in the AO report for this purpose may include, but not necessarily be limited to, events that do not meet the AO criteria but that have been perceived by Congress or the public to be of high health and safety significance, have received significant media coverage, or have caused the NRC to increase its attention to or oversight of a program area, or a group of similar events that have resulted in licensed materials entering the public domain in an uncontrolled manner.[9]

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7.4 Guidelines for AO Write-ups

All AO write-ups should be complete, up-to-date, and written using text that is understandable to non-technical readers. Please do not use **bold** or *italics* in writeups; use underline instead. Any special fonts will be added during the publishing stage by the NRC Technical Publications Specialist using the Kodak Ektaprint Electronic Publishing System.

NOTE: Agreement States may use INTERNET E-Mail capability to electronically send their AO information to STP via Internet using WordPerfect or an ASCII text file. NRC is currently using WordPerfect 8. The file may be attached to an e-mail transmission. The STP AO coordinator, Patricia Larkins, may be reached at (PML@NRC.GOV).

Margin notation - Include at the beginning of the report the Original Event Report Identification No., State ID-YR., - ITEM NO. (XX-00-01).

First paragraph - State the AO criteria for the event by citing the appropriate section of the AO criteria.

Date and Place - Provide the date the event occurred, the licensees name, and the city and State address of the licensee.

Nature and Probable Consequences - Briefly explain what happened and what were the circumstances. Provide the specific details of the event, i.e., exposure (where applicable), source, indicate the specific isotope(s), quantity, dose (where applicable), treatment plan (where applicable), equipment, manufacturer and Model No. Describe any immediate actions taken by the licensee or the State (confirmatory action

[9] Staff Requirements Memorandum, SECY-98-175, dated September 4, 1998.

letter, special inspection, enforcement conference, enforcement action(s), etc.). The write-up should answer where, when, how, why, and efforts to prevent recurrence.

For occupational, medical, or public overexposures identify whether the person was notified. For medical misadministrations, include the intended and actual treatment plan, identify any health effects. Mention if a medical consultant has been contracted to review the event. Include the consultant's conclusions and identify the effects on the patient. Never mention any health effects on a patient without attributing the statement to the licensee or medical consultant. Indicate whether the primary physician was notified.

NRC policy states that all documents must be published in dual units (Metric and English).

Cause or Causes - Self explanatory

Action(s) taken to prevent recurrence - Briefly explain what actions were taken to prevent recurrence by the licensee, and indicate whether or not the State was satisfied with the licensee's corrective actions. Were there any enforcement actions, penalties, etc.?

Last paragraph - Indicate the status by stating whether the AO is closed or remains open waiting for additional significant information from the Agreement State licensee. An item should only be identified as open if the State expects additional significant action may take place that will be covered in a follow-up report. The new information contained in the follow-up report should be provided to NRC for inclusion in the AO report under the section entitled "Update to Previously Reported AOs."

The following pages contain two sample AO write-ups.

Table 4: Sample Industrial Radiography AO Report

State ID-Yr.-No (XX-00-001)

Industrial radiography exposure at **(Name of facility, City, State).**

In accordance with the AO criteria an annual shallow-dose equivalent to the skin or extremities greater than 2500 mSv (250 rem) is considered an AO.

Date and Place: **[Date]; [Facility/Licensee]; [location]** City, State.

Exposure Source/Quantity Equipment/Device (Manuf./Model #)

Nature and Probable Consequences: A radiography trainer (#2) received an extremity exposure of at least 500 rem to the left-hand thumb and index finger during a source disconnect involving a 96 curie iridium-192 radiography source, contained in the licensee's Gamma Century radiography camera. While radiographing welds on a 12 inch pipe line in a five foot deep ditch, the trainer began experiencing difficulty with the source exiting from and retracting into the camera. Survey meter readings indicated a source disconnect. Radiographer (#1) shielded the source in the guide tube with a one inch thick lead sheet while the radiographer helper (#2) roped off a larger area and stayed a distance from the source. The radiographer trainee (#2) (employee of the radiography manufacturer) asked the (Licensee) radiographer to notify the radiography company RSO, and indicate everything was under control. As the trainer disconnected the guide tube, the source assembly fell into the mud at the bottom of a ditch. While picking up the source assembly from the mud with channel lock pliers, the source slipped. He instinctively reached for and straightened the source assembly (pigtail) with his hand, apparently touching the source in the process. He placed the pigtail into the camera, intending to place the source capsule in first. He noticed the survey meter reading high, indicating the source was outside of the camera. Radiographer (#2) then removed the source from the camera and placed it under the lead sheet. He then secured the source in the shielded position. The company did not notify the Agency of the disconnect.

About 10 days later, the radiographer started experiencing discomfort in his left thumb and index finger and made several visits to a doctor for treatment. Approximately 30 days later the RSO and the radiographer reported the incident to the State. An Agency investigation found the radiographer's film badge read 1.06 rem whole body. An inspection of the camera was performed by the company RSO the day after the incident. The Licensee and the State Agency determined that the company had ordered

two model #22 pigtails and sources from (Manufacturer, City, State), for the Century radiography cameras, and the (Manufacturer) inadvertently sent an incorrect Model #23 pigtail instead of the two model #22's ordered. The two models appear similar, but the model #22 is manufactured with 1/8 inch aircraft cable and a 3/4 inch connector, and the model #23 is manufactured with teleflex cable, the same as the drive cable material, and a one inch connector. The radiography company assumed the two pigtails sent to them were model #22's. The #23 was mistakenly placed in the Gamma century camera and is apparently the cause of the disconnect. The Agency investigation determined that the trainer had received at least a 1500 rem exposure to the thumb and index finger of the left hand. The **(State)** Radiation Control Program, in which the manufacturer was licensed, was informed of the incident and investigated the manufacturer's **(Licensee)** error in sending the two different pigtails to the radiography company.

Cause or Causes - The manufacturer's mistaken delivery of a pigtail model number different than the one ordered and the radiography company's assumption that the pigtails they received were the models they ordered, resulted in a pigtail being used in a camera for which it was not manufactured. The disconnect resulted from the difference in the length of the connectors between the two models. Also, the radiographer attempted an unauthorized recovery of the disconnected source. The radiographer was not trained in source recovery and had no previous experience with source disconnects.

Actions Taken to Prevent Recurrence

Licensee - Actions will be given at the enforcement conference.

State Agency - The Licensee and radiographer were cited for violations of the **(State)** Regulations for Control of Radiation. The Licensee was cited for the extremity exposure, unauthorized retrieval of a disconnected source, failure to immediately notify the Agency of the incident, and failure to notify the Agency in writing within thirty days of the incident. The radiographer was cited for unauthorized retrieval of a disconnected source. The incident has been referred for escalated enforcement.

Status This file is **(open\closed)** in **(State)**. The event will remain open for additional information from the State of **(State)**.

NOTE: Emphasis added **[bold]** to clarify specific information that should be included in the report

Table 5. Sample Medical AO Report

State ID-YR.-NO. (XX-00-002)	Radiopharmacy Medical Misadministration at (Name of Facility, City, State) location.
Criteria	In accordance with the AO criteria, administering a dose equal to or greater than 10 gray (Gy) (1000 rad) to any organ (other than a major portion of the bone marrow, the lens of the eye, or to the gonads) and, the administered dose or dosage is at least 50 percent greater than that prescribed in a written directive is considered an abnormal occurrence.
	Date and Place - [Date]; [Facility/Licensee], [City, State]
Procedure/dose (actual vs. intended)	Nature and Probable Consequences - a patient was prescribed a dose of 3.7 megabecquerel (MBq) (0.1 millicurie [mCi]) of Iodine-131 (I-131) for a thyroid scan and uptake procedure. However, the patient was administered a dosage of 262.7 MBq (7.1 mCi) of I-131. As a result the patients thyroid received a dose of about 9100 centiGray (cGy) (9100 rad) instead of the prescribe dose of 130Gy (130 rad).
Health effect to patient	Licensee stated that the administered dose of I-131 may induce a hypothyroid state requiring the patient to take thyroid hormone.
	Cause or causes - the wrong dosage was administered on the assumption that the patient was prescribed a whole body thyroid scan for a cancer metastatic disease evaluation.
	Actions taken To Prevent Recurrence
	Licensee - Procedures for scheduling a whole body scan for thyroid cancer and metastasis were revised to include a detailed patient preparation and history. The revised procedures required that the approving radiologist sign the Iodine-131 administration policy before ordering a radiopharmaceutical. The nuclear medicine technologist attended a continuing education program at a local hospital, which included a session on the effects of studies involving therapy dosages.
	State Agency - The State agency conducted numerous follow-up inspections to ensure that the licensee's actions taken to prevent recurrence had been implemented.
	This event is closed for the purpose of this report.

Appendix

Glossary

DPC	The Document Processing Center (DPC) is an internal NRC automated document search and retrieval system, indexed by a unique identification (Accession) No. for use by the staff of the NRC.
EN	The Event Notification (EN) system is an internal NRC automated event tracking system used by the NRC Operations Center to track information on incoming notifications of the occurrence of significant material events that have or may affect public health and safety. Significant material events are reported to the NRC Operations Center by NRC licensees, staff of the Agreement States, other Federal agencies, and the public. The EN's are published each work day through the Internet.
Gray	Gray (Gy) is the SI unit of absorbed dose. One gray is equal to an absorbed dose of 1 joule/kilogram (100 rads).
Metric System	The metric system is now included in all Federal documents. All event reports should include the dual system of Units (SI) in the following order. First use the International System of Units (SI) with the English System unit equivalent following in parentheses. Spell out the first time it appears, continue with an abbreviation, (see examples below). 1000 centiGray (cGy) (1000 rad) the first time, and continue with 1000 cGy (1000 rad). 50 millisieverts (mSv) (5 rem) 730 megabecquerel (MBQ) (20.4 mCi)
NMED	The Nuclear Materials Events Database (NMED), maintained by NRC, is a historical collection of incidents and events that have occurred throughout the United States involving the use of radioactive material covered under the Atomic Energy Act. This excludes events occurring at nuclear power plants.
NRC Ops Center	The NRC Operations Center in Rockville, Maryland, serves as the focal coordination point for communicating with NRC licensees, State agencies, and other Federal agencies about operating events in both the nuclear reactor and nuclear material industry. The Operations Center is staffed 24 hours a day by an NRC Headquarters Operations Officer (HOO), who is trained to receive, evaluate, and respond to events reported to the Operations Center.
PN	Preliminary Notifications (PN) are brief summary reports of significant events issued by the NRC staff to notify the Commission of the occurrence of a significant event that appears to have health and safety significance or major public or media interest. PNs are based on information provided by State radiation control program staff. These reports are publicly available through Internet on NRC's external home page under PN Reports at (http//www.nrc.gov/OPA/pn).

RSAO The Regional State Agreements Officer (RSAO) is a designated staff member, in an NRC regional office, who serves as the point of contact for the region and the Office of State and Tribal Programs regarding Agreement State radiation control programs, and who participates in technical reviews of Agreement State radiation control programs.

Rad Rad is the special unit of absorbed dose. One rad is equal to an absorbed dose of 100 ergs/grams or 0.01 joule/kilogram (0.01 gray)

Rem Rem is the special unit of any of the quantities expressed as dose equivalent. The dose equivalent in rem. is equal to the absorbed dose in rads multiplied by the quality factor (1 rem = 0.01 sievert).

Sievert Sievert is the SI unit of any of the quantities expressed as dose equivalent. The dose equivalent in sieverts is equal to the absorbed dose in grays multiplied by the quality factor (1 Sv = 100 rem.).

References

The following is a list of NRC manuals and procedures that contain additional information on event response and AOs. Additionally information is provided on the NRC Region contact for Agreement State issues, the Federal Radiological Emergency Response Plan (FRERP), the Federal Bureau of Investigations (FBI) expansion into byproduct material, and the Radiation Emergency Assistance Center/Training Site (REACTS) along with a telephone number.

NRC Policy

June 30, 1997 Staff Requirements Memorandum, Procedures for *Statement of Principles and Policy for the Agreement State Program and Policy Statement on Adequacy and Compatibility of Agreement State Programs.*

NRC Management Directives

8.1	Abnormal Occurrence Reporting Procedures
8.10	NRC Medical Event Assessment Program

NRC Inspection Manual (Series 1300, Incident Response)

1300	Incident Response Actions - Responsibility and Authority (84-080)
1301	Response to Non-Emergency Incidents Involving Radioactive Material (96-022)
1302	Action Levels for Radiation Exposures and Contamination Associated with Material Events Involving Members of the Public (94-004)
1303	Requesting Emergency Acceptance of Radioactive Material by the U.S. Department of Energy (DOE) (95-009)
1330	Response to Transportation Accidents Involving Radioactive Materials (84-22)
1360	Use of Physician and Scientific Consultants in the Medical Consultant Program (94-013)

NRC Inspection Procedures Manual (Series 8700, Material Safety Inspection)

87103	Inspection of Materials Licensees Involved in an Incident Bankruptcy Filing (97-008)

NRC Emergency Response Manuals

NUREG/BR-0230	Response Coordination Manual - Contains procedures for requesting Federal assistance during an emergency.
NUREG/BR-0150	Contains procedures for assessing the consequences of an emergency.

STP Procedures

SA-100	Implementation of the Integrated Materials Performance Evaluation Program
SA-200	Compatibility Categories and Health and Safety Identification for NRC Regulations and Other Program Elements

Event Notification and Response

FBI A recent revision to Section 831 of Chapter 39 of Title 18 of the U.S. Code regarding criminal activity, includes a significant expansion of Federal Bureau of Investigation jurisdiction to initiate criminal investigations and pursue prosecutions when radioactive materials are involved. In instances involving the suspected criminal misuse of nuclear material and byproduct material, your notification of the FBI is warranted. However, the U.S. Attorney's Office and the FBI will determine whether or not a criminal investigation is to be conducted by the FBI or deferred to State or local authorities for investigation and prosecution. The Commission also requests that Agreement States inform NRC of reports of events involving theft or terrorist activities warranting FBI notification.

FRERP The Commission is the lead Federal agency (LFA) for response to any event involving NRC and Agreement State-licensed Atomic Energy Act material under the Federal Radiological Emergency Response Plan (FRERP), which includes other Federal agencies, i.e., Department of Energy (DOE), Environmental Protection Agency (EPA), Federal Emergency Response Administration (FEMA). FRERP covers any peacetime radiological emergency that has actual, potential or perceived radiological consequences within the United States. The FRERP is reproduced in Section V of NUREG/BR-0230.

DOT/NRC The National Response Center is a Department of Transportation, Coast Guard service that serves as a national point of contact for reporting all oil, chemical, non-AEA radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories. In addition to gathering and distributing spill data for Federal On-Scene Coordinators and serving as the communications and operations center for the National Response Team, the Center maintains agreements with a variety of federal entities to make additional notifications regarding incidents meeting established trigger criteria. The Center maintains a 24 hour call line at 1-800-424-8802. The Center's Website address is: www.nrc.uscg.mil/.

REACTS The Radiation Emergency Assistance Center/Training Site (REACTS), is a Department of Energy (DOE) resource headquartered in Oak Ridge, Tennessee, telephone (865) 576-1005. REACTS is available 24 hours a day to provide medical and radiological assistance either from the REACTS facility or the accident site. Additionally, REACTS maintains a listing of other professionals throughout the country who are recognized as having highly specialized expertise and equipment to manage a particular area of concern.

AVAILABILITY OF REFERENCE MATERIAL
NRC documents: Event Notifications, Preliminary Notifications, Inspection Manuals and Procedures, NUREG Series technical reports, Regulatory Guides, etc., are available at the NRC external Website under References at: http://www.nrc.gov/NRC/reference.html. The Office of State and Tribal Programs (STP) documents are available at the STP external Website at: http://www.hsrd.ornl.gov/nrc/.

(Cut out page for handy reference)

Event Reporting Schedule Reference Sheet

Reportable Event Notification	Reporting Schedule	Reporting Method
Events requiring 24 hours or less notification by Agreement State licensees (**significant** reportable event).	Agreement State should report to NRC within 24 hours of notification by an Agreement State licensee. (See Hndbk. Table 1, Sample FAX to Ops. Center) for sample initial information to be reported.	Initial information should be reported to NRC Operations Center* Telephone (voice): (301) 816-5100 or (301) 951-0550 NRC Operations Center FAX # (301) 816-5151
Events requiring greater than 24 hour notification by Agreement State licensees (e.g., **30-60 days**) and follow-up reports.	Agreement State should provided 30-60 day notification and any follow-up reports to NRC-NMED on a monthly basis. NOTE: Licensee reports received within less than 30 days of the date of the monthly report may be included in the next month's report. See Section 3. "Minimum Basic Event Information for a Complete NMED Report" for sample information needed.	**Information may be reported by:** Email: DHUN@INEL.GOV Tel. 208-526-2741 Disk: INEEL Attn: Dante Huntsman P.O. Box 1625 Idaho Falls, ID 83415 Written: Director of STP US NRC Washington, DC 20555

Personal or sensitive information, e.g., names, personal address, social security #, should not be included in event descriptions.

***The NRC Operations Center staff will promptly notify the appropriate Region Duty Officer (RDO) and Headquarters staff of Agreement State events. Therefore, no separate notification to other NRC staff by an Agreement State is necessary.**

5

URANIUM MILL AND 11e.(2) BYPRODUCT MATERIAL DISPOSAL SITE AND FACILITY INSPECTION PROGRAM

2801-01 PURPOSE

This chapter establishes the safety inspection program for uranium mills and 11e.(2) byproduct material disposal sites and facilities (11e.(2) sites) licensed and regulated under 10 CFR Part 40 including mills authorized to take 11e.(2) byproduct material. The disposal sites include both commercial disposal facilities and sites associated with licensed uranium mills. Included in the program are inspection procedures related to all phases of activities: construction and pre-operations, operations, and reclamation/closure. Procedures presented cover those facilities licensed and regulated in their entirety by U.S. Nuclear Regulatory Commission (NRC). The primary purpose of the inspection program is to obtain sufficient information through observations, personnel interviews, independent measurements, and review of facility records and procedures, to ascertain, in a timely manner, whether facility operations, and radiological and non-radiological programs regulated by NRC conform with regulatory requirements and the conditions of the applicable license. As a result, the inspection program determines that uranium mills and 11e.(2) sites are managed throughout their entire life cycle in a manner that provides protection from radioactivity to employees, members of the public, and the environment.

2801-02 OBJECTIVES

02.01 To establish general policy and priorities for inspection of uranium mills and 11e.(2) byproduct material disposal sites.

02.02 To establish a uniform process for inspection of uranium mills and 11e.(2) byproduct material disposal sites.

02.03 To define specific requirements for inspection of uranium mills and 11e.(2) byproduct material disposal sites.

2801-03 DEFINITIONS

03.01 11e.(2) Byproduct Material. As defined in Section 11 of the Atomic Energy Act of 1954, as amended, byproduct material means tailings or waste produced by the extraction or concentration of

uranium or thorium from any ore processed primarily for its source material content.

03.02 Closure. As defined in Appendix A to 10 CFR Part 40, closure means the activities, after operations, to decontaminate and decommission the buildings and site used to produce byproduct materials and reclaim the tailings and/or waste disposal area(s). Also, commonly referred to as decommissioning or reclamation.

03.03 Decommission. As defined in 10 CFR 40.4, decommission means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits release of the property for unrestricted use and termination of the license; or release of the property under restricted conditions and termination of license. A Decommissioning Plan usually details the demolition and/or cleanup of the mill buildings and large equipment, tanks, etc.

03.04 Reclamation Plan. As defined in Appendix A to Part 40, for the purposes of Criterion 6A, reclamation plan means the plan detailing activities to accomplish reclamation of the tailings or waste disposal area in accordance with the technical criteria of Appendix A.

03.05 Operation. Operation for a mill is the process of extracting uranium from ore. For an 11e.(2) disposal facility, operation means that a uranium or thorium mill tailings pile or impoundment is being used for the continued placement of byproduct material or is in standby status for such placement.

03.06 Performance-Based License. A performance based license (PBL) allows the licensee to make changes to the facility without prior NRC approval if the conditions specified in the PBL are met.

2801-04 PROGRAM APPLICABILITY

This program has been developed to respond to needs for inspection procedures related to construction, pre-operation, operations, and reclamation/closure for sites licensed by NRC. Where 11e.(2) byproduct material disposal sites are operating under Agreement State regulation, it is expected that responsibility for regulation and inspection activities at those sites will continue to reside with the Agreement States. It is noted that existing inspection procedures from other NRC programs can be applied, in full or in part, to many aspects of uranium mill and 11e.(2) byproduct material disposal site inspections, and that additional inspection procedures specific to disposal technology, and on-site activity can be developed and employed incrementally, as needed. Tables 1 and 2 provide a listing of procedures that are currently available and include comments concerning their applicability. Minimum and normal frequencies of inspection are listed; adoption of the minimum frequency of inspection should be tailored to both the level of site activity and to the performance of the licensee.

2801-05 PROGRAM DESCRIPTION

05.01 General. The inspection program for sites specifically licensed for 11e.(2) byproduct material disposal, and for uranium mills has been divided into three parts. The parts are designed to be responsive to the various inspection needs during the different phases of facility life: construction/pre-operations, operations, and reclamation/closure. Each phase of the inspection program varies with respect to applicable inspection procedures, inspection frequency, and degree to which a given procedure may be applied. The inspection programs for each phase are discussed in narrative form in Section 2801-08. Tables 1 and 2 present information for the pre-operations, operations, and closure phases.

This chapter identifies requirements for the inspection of the health, safety, and environmental aspects of licensee activities. The inspector should be completely familiar with the current regulatory requirements and commitments associated with the license. These include the comparable parts of title 10, U.S. Code of Federal Regulations, the license application, applicable guides, and other codes to which licensees may commit by reference. In the case that NRC guidance documents are updated after a license or amendment is issued, the licensee is generally only committed to follow the original guidance. Thus, the particular revision of the guidance to which the licensee has been committed is of importance.

The scope of inspection procedures (IPs), taken as a whole, is not intended to be limited to only those elements discussed in the procedures. The descriptions and examples contained in the procedures are provided primarily for illustrative purposes, as examples of things that should be examined. Examination of other safety-significant activities not expressed or implied in a procedure is left to the inspector's judgment, in consideration of the relative degree of safety risk posed by the subject activity.

As a result of reviews conducted under the authority of the National Environmental Policy Act, the NRC placed license conditions on facility operations involving environmental issues. Environmental inspections would be conducted at the same time as health and safety inspections.

05.02 Program Adjustments. This program provides the responsible regional office and the Headquarters flexibility to adjust the frequencies, and scope of inspections for different functional areas at a facility, as well as the periodicity of specific areas of inspections. (Suggested frequencies for various procedures are specified in Tables 1 and 2. There is no maximum frequency expressed in Tables 1 and 2. It is expected that any level of effort above that specified as the normal frequency would be established at a level commensurate with whatever is needed to resolve identified problems and their importance to safety.) Periodic inspection interval adjustments should be based on inspection history, licensee performance and safety significance of findings, as delineated in sections 05.03-05.04. Occasional adjustments may also occur in response to other events or activities, as determined by the responsible regional office or the Headquarters. A reasonable allowance for responding to these events or activities should be incorporated in the inspection plan for the facility. Necessary adjustments may be difficult to

implement within the constraints imposed by limited inspection resources within the regional office and the Headquarters. In such cases, implementation may involve a shift in the focus of already scheduled inspection resources for the subject facility, or a shift in allocated inspection resources from other facilities in the region that have exhibited superior performance. Resources may also be utilized from other regions or the Headquarters in a coordinated response to address significant safety or environmental issues that cannot otherwise be deferred.

Inspections during the construction and pre-operational phase of a facility will be conducted on a case-by-case basis. Pre-operational inspections will be conducted at least once before startup of facility operations. The inspection procedures for the construction/pre-operational phase are indicated in the appendix, as applicable.

Substantial adjustments in the planned inspection schedule for a facility (i.e., those that involve shifts in resources which may affect other facilities or result in exceeding a "normal" inspection frequency) should be coordinated between the responsible regional office and the Headquarters.

05.03 Extension of Inspection Interval

a. The interval between inspections may be extended (lengthened) on the basis of good licensee performance. The main consideration in extending the inspection interval should be evidence of well-managed and effective radiation safety and environmental protection programs which shows a history of compliance. Specifically, the inspection interval may be extended, for licensees meeting the following conditions:

   1. The violations identified during the licensee's current and preceding inspections were of a low safety significance and no more than two violations per inspection are Severity Level IV; and

   2. The licensee has not had a significant program change since the preceding inspection. Significant program changes should relate to changes in the scope or type of operations, changes in the authorized materials or possession limits, changes in key personnel, or changes in locations of use. (NOTE: Extension should not be considered for licensees who have undergone significant program changes to ensure the licensee can maintain adequate performance over the next inspection period.)

b. To document the extension in the interval between inspections, a note (e.g., a memorandum or section within the inspection report) should be written by the inspector, approved and signed by the inspector's immediate supervisor, and placed in the licensing file.

c. The decision to extend the inspection should be made after each routine inspection. The project manager for the site should be informed and the master inspection plan updated.

05.04 Reduction of Inspection Interval

a. The interval between inspections may be reduced (shortened) and inspections conducted more frequently than specified in the priority system on the basis of poor licensee performance. The main consideration in reducing the inspection interval should be evidence of moderate to severe problems in the licensee's radiation safety or environmental protection programs. Poor compliance history is one indicator of such problems, while lack of management involvement or control over the radiation safety program is another indicator. Specifically, licensees that meet the following conditions shall be considered for reduction in inspection interval:

1. A Severity Level I, II, or III violation on the most recent inspection; or

2. Issuance of an Order or escalated enforcement on the most recent inspection; or

3. If a "management paragraph" appears in the cover letter transmitting the notice of violation on the most recent inspection (i.e., a paragraph that requires the licensee to address adequate management control over the licensed program); or

4. An event requiring a reactive inspection; or

5. Repetitive violations.

The above list is not exhaustive. The inspection interval may be reduced for any other reason deemed pertinent by the regional or the Headquarters management. An example would be an enforcement conference where the outcome did not include escalated enforcement action, but did indicate a need for the licensee to improve certain aspect(s) of its compliance program.

Licensees which meet the above criteria may have their inspection interval reduced by any length. For instance, licensee with a nominal annual inspection frequency and a poor performance record could be rescheduled for its next inspection in 6 months. The reduction may be valid only until the next inspection or another duration specified, but the regional or the Headquarters management shall consider the results of the next inspection when determining whether the reduced frequency should be continued, changed, or returned to normal.

b. To document the reduction in the interval between inspections, a note (e.g., a memorandum or section within the inspection report) should be written by the inspector, approved and signed by the inspector's immediate supervisor, and placed in the licensing file.

c. The decision to reduce the inspection interval may be made at any time, but consideration should be given immediately after

each routine inspection. The project manager for the site, and the licensee should be informed and the master inspection plan updated.

05.05 Inspections After Escalated Enforcement. If escalated enforcement action has taken place for a particular licensee, a follow-up inspection should be scheduled and conducted within 6 months of the last inspection or sooner, in accordance with the guidance in this IP regarding reduction of inspection frequency (Section 05.04), after completion of the escalated enforcement action, to assess the licensee's follow-up actions in response to the previous violations. Regions may perform this followup inspection as a part of a routine inspection.

05.06 Performance-Based License. At sites operating under a PBL, the inspector should ensure that changes authorized under the PBL do not erode the basis for NRC's licensing decision. In evaluating the changes made to the facility, inspectors should recognize that the reviews conducted by the licensee's evaluation panel are reviews of neither safety nor environmental acceptability; rather, the evaluation panel reviews under the PBL are a determination of whether the proposed changes require prior NRC review. Licensees are obligated to ensure that any change considered to the facility should be safe and environmentally acceptable. Then the evaluation panel is responsible for determining if the proposed changes need to be submitted to NRC. There will be circumstances where the licensee finds that the proposed changes are acceptable; however, the change may still require an NRC review.

As a general set of guidelines, NRC review will be required for changes to:

1. The items described in the application or subsequent submittals that would reduce the safety basis of the facility;

2. The procedures conditioned in the license or outlined, summarized, or included in the application; and

3. Any of the license conditions.

2801-06 REVIEW OF EVENTS

All inspections should include, as appropriate, a review of licensee reportable and non-reportable events that involve contamination, releases, equipment malfunctions, or other similar events that have generic significance. The review should cover corrective actions taken by the licensee and follow-up actions taken to prevent recurrence. In the case of reports received by NRC involving radiological health and safety, the region is responsible for determining the seriousness of the reported incident and whether an immediate reactive inspection is necessary. When such reports involve programmatic or technical areas normally addressed by Headquarters programs, the region shall confer with

Headquarters, to jointly determine what response, if any, is required.

Non-reportable events are those determined by the licensee to fall outside criteria requiring them to be reported to NRC. Although, these events are not reported formally to NRC, licensees occasionally may contact regional staff informally to describe the event and explain the basis why it is considered a non-reportable event. Often, licensees are required, by the license conditions, to maintain records of non-reportable events onsite. Non-reportable events should be examined during inspections, to determine appropriate corrective actions or follow-up to preclude recurrence. Such events may relate to safety issues requiring follow-up actions by the Occupational Safety and Health Administration, or the Mine Safety and Health Administration. These events may also relate to existing or potential operational concerns, not otherwise reportable, such as biointrusion in disposal units, erosion or sloughing of trench walls, or uncontrolled wind erosion. Additional guidance on non-reportable events is contained in individual inspection procedures.

2801-07 INDEPENDENT INSPECTION EFFORT

Each inspector should spend some onsite inspection time performing independent inspection effort. The amount of time spent should be commensurate with the level of risk, the complexity of the facility, and the degree to which inspection resources have already been committed to significant safety and environmental issues that have already been identified in the facility. This effort may include more in-depth inspection in selected technical areas than that normally called for by the formal procedures. The major objective of this effort should be to gain increased understanding of potential safety and environmental hazards of particular activities of interest, such as those that may have been involved in a series of recent non-reportable events.

Comparison of the findings from this type of effort with the licensee's findings may uncover unresolved safety and environmental concerns, improper maintenance practices, and other problems that may not be discovered through other means. Discovered hazards outside the scope of NRC's regulatory authority should be conveyed to the licensee at the exit interview (as set forth in IP 88002), described to regional management during debriefing, and included in the formal inspection report. In cases where regulatory jurisdiction for the observed potential hazard is clear, the finding shall be reported to the responsible agency for action (i.e., State, Mine Safety and Health Administration, Environmental Protection Agency, etc.). In all cases where the finding involves a potential effect on radiological health and safety, the finding shall be followed up during subsequent inspections until the licensee has resolved the concern. However, special follow-up inspections solely on the basis of Mine Safety and Health Administration issues are not required unless the potential hazard poses a radiological health or safety concern.

2801-08 RANDOM SELECTION AND EXAMINATION OF RECORDS

Many of the inspection procedures normally require the inspector to select certain types of records at random for closer examination. However, random selection is not always required. The inspector may seek out certain records of interest when so inclined.

Random selection is a technique that recognizes the fact that NRC does not have the resources to inspect every detail of plant. The NRC inspection program is predicated on the fact that the licensee is ultimately responsible for the safety of the licensed facility. Random selection, where specified in a procedure, allows the inspector to sample specific aspects of the licensee's safety and environmental program to be studied at a level of detail that would be impractical if exercised uniformly across the entire safety program. When random selection is specified in a procedure, the inspector should select records corresponding to activities that relate to the NRC's regulatory role, such as effluent monitoring records or ground-water restoration records. Also included should be records required to be retained for later decommissioning.

To reasonably verify that activities are conducted safely and in an environmentally acceptable manner, the inspector also should randomly select personnel for interviews. The extent and depth to which random selections or examinations are needed are left to the inspector's judgment, depending on how satisfactorily the licensee's operational, and safety and safeguards procedures are being followed.

2801-09 REGIONAL RESPONSIBILITY FOR LICENSEES

The responsibility for inspection resides with the regional office in which the licensee operation is located. For efficiency in resource use, the regional office may request another regional office or Headquarters to assist in the conduct of inspections when specialized technical expertise is needed and is not available within the responsible region. In some cases, a region may wish to transfer all or part of the inspection responsibility to another region or to Headquarters. These arrangements may be made with mutual agreement between the offices involved. If a permanent transfer of total inspection responsibility is involved, the affected regional offices should ensure that the appropriate changes are made to the computerized license data file by informing the Headquarters of the change in inspection responsibility for the license and requesting a change in the file. The regional office assuming inspection responsibility will be credited with the caseload in budgeting and allocating resources.

2801-10 INSPECTION DURING VARIOUS PHASES OF FACILITY LIFE

10.01 Part I - Inspection During the Construction and Pre-Operational Phase.

a. Purpose. The purpose of this instruction is to provide guidance for planning and conducting inspections during the

construction/pre-operations phase of facility life. Activities encompassed during the construction/pre-operations phase of a uranium mill or disposal site include disposal trench construction: liner placement: observation and verification of placement and compaction of cover materials: equipment use: fire protection program (equipment and training procedures):, and compliance with applicable construction specifications requirements in accordance with applicable management controls and quality assurance procedures. Activities encompassed during start-up of a mill that has been on stand-by, would include equipment operation/function and safety.

b. Implementation. This inspection program begins on issuance of the license, or license amendment to restart the mill, and continues until the site begins active receipt and disposal of waste, or processing of ore at a mill. Situations may arise in which inspection requirements specified for other phases may apply concurrently with those specified here for the pre-operational phase. For example, certain requirements contained under Parts I and II may apply in the construction, pre-operational checks, and start-up of a major modification to the site.

The uranium mill or 11e.(2) byproduct material disposal site pre-operational inspection program is defined by selection from among the list of procedures in Table 1. The areas covered during an inspection need not be limited only to those elements discussed in the procedures, but may need to include examination of other activities not expressly delineated or covered in existing procedures. In such cases, the inspector must exercise good professional judgment in modifying the inspection and in identifying to the Headquarters the possible need for development of supplemental guidance. Conformance with the principles of reducing radiation exposure to as low as is reasonably achievable (ALARA) should be a principal concern at all times.

For the normal inspection frequency, each procedure should be executed for each specific frequency. In practice, part or all of the procedure element may need to be examined during each inspection visit.

During inspections, emphasis should be placed on physical examinations, observation of conduct of operations, independent measurements, and personnel interviews. Attention should be directed toward the availability of written procedures, the degree to which they are being followed, and the state of training of on-site personnel. Effort should be concentrated on areas of perceived concern (highest safety risk) and site activities performed since the last inspection.

Review of records should involve only a sampling of those records important to safety of personnel and the general public. For example, if the organizational structure has not changed with respect to personnel and assigned functions and responsibilities, the inspector should not pursue the subject of organization in any detail, unless there is reason to believe that such is not the

case. Discretion in such areas is left to the inspector's judgement.

c. Regulatory Considerations. The inspector should be familiar with current license requirements; previous inspection reports; applicable codes, standards and guides; and the following regulations:

10 CFR Part 19, "Notices, Instructions, and Reports to Workers: Inspection and Investigations."

10 CFR Part 20, "Standards for Protection against Radiation."

10 CFR Part 21, "Reporting of Defects and Noncompliance."

10 CFR Part 40, "Domestic Licensing of Source Material."

10 CFR Part 50.59, "Changes, tests, and experiments."

10 CFR Part 61.82, "Commission Inspection of Land Disposal Facilities (Commercial Disposal Only)."

d. Guidance for Use of Inspection Procedures during the Pre-Operational Phase. The inspection procedures indicated in Table 1 for the construction/pre-operations phase are applicable to inspections conducted at uranium mills and 11e.(2) byproduct material disposal sites during construction/pre-operations. The inspection staff can determine the applicable elements of each procedure by reviewing the procedure, the facility license, and reports of previous inspections.

10.02 Part II - Inspection during the Operations Phase

a. Purpose. The purpose of this instruction is to provide guidance for planning and conducting inspections during the operations phase of the facility. Activities encompassed during the operations phase include receipt and handling of incoming 11e.(2) byproduct material, or the processing of ore and packaging of yellowcake; emplacement of the 11e.(2) byproduct material for disposal; radiation safety and environmental monitoring activities; and records management.

b. Implementation. This inspection program begins on issuance of the facility license, or a license amendment to allow a uranium mill on stand-by to restart, and continues until the facility ceases active receipt of materials and/or disposal of waste. Situations may arise in which inspection requirements specified for other phases may apply concurrently with those specified here for the operations phase. For example, certain requirements contained under Parts I and III may apply in the operations, or start-up of a facility.

The uranium mill or 11e.(2) byproduct material disposal site operations inspection program is defined by selection from among the list of procedures in Table 2. The areas covered

during an inspection need not be limited only to those elements discussed in the procedures, but may need to include examination of other activities not expressly delineated or covered in existing procedures. In such cases, the inspector must exercise good professional judgment in modifying the inspection and in identifying to the Headquarters the possible need for development of supplemental guidance. Conformance with the principles of ALARA should be a principal concern at all times.

For the normal inspection frequency, each procedure should be executed for each specific frequency. In practice, part or all of the procedure element may need to be examined during each inspection visit. Emphasis should be placed on physical examinations, observation of conduct of operations, independent measurements, and personnel interviews. Attention should be directed toward the availability of written procedures, the degree to which they are being followed, and the state of training of on-site personnel. Effort should be concentrated on areas of perceived concern (highest safety risk) and licensee activities conducted since the last inspection.

Review of records should otherwise involve only a sampling of those records important to safety of personnel and the general public. For example, if the organizational structure has not changed with respect to personnel and assigned functions and responsibilities, the inspector should not pursue the subject of organization in any detail, unless there is reason to believe that such is not the case. Discretion in such areas is left to the inspector's judgment.

c. Regulatory Considerations. The inspector should be familiar with current license requirements; previous inspection reports; applicable codes, standards and guides; and the following regulations:

10 CFR Part 19, "Notices, Instructions, and Reports to Workers: Inspection and Investigations."

10 CFR Part 20, "Standards for Protection against Radiation."

10 CFR Part 21, "Reporting of Defects and Noncompliance."

10 CFR Part 40, "Domestic Licensing of Source Material."

10 CFR Part 50.59, "Changes, tests, and experiments."

10 CFR Part 61.80, "Maintenance of Records, Reports, and Transfers."

10 CFR Part 61.82, "Commission Inspection of Land Disposal Facilities (Commercial Disposal Only)

d. Guidance for Use of Inspection Procedures During Operations. The inspection procedures indicated in Table 2 for the Operations Phase are applicable to inspections conducted at

uranium mills and 11e.(2) byproduct material disposal sites, including mills authorized for disposal of in-situ leach facility waste and other 11e.(2) byproduct material. The inspection staff can determine the applicable elements of each procedure by reviewing the procedure, the facility license, and reports of previous inspections. Inspectors should also refer to applicable portions of Regulatory Guides 4.14, 8.22, and 8.30, for details.

10.03 Part III - Inspection During the Reclamation/Closure Phase

a. Purpose. The purpose of this instruction is to provide guidance for planning and conducting inspections during the period of reclamation/closure of a uranium mill site or 11e.(2) byproduct material disposal site. In some cases, as specifically allowed or required by license condition, some closure activities may occur for some parts of a facility during the operations phase. The purpose of the inspection is to verify, by field observations and review of licensee records, that decontamination of soil, sediment, surface waters, and ground-water, as well as reclamation of the disposal cell, are being performed in accordance with NRC-approved plans.

b. Implementation. This program is initiated when the licensee begins implementation of any portion of the approved reclamation/decommissioning plan. The foundation for planning and scheduling inspections will thus be the licensee's progress in implementing the reclamation plan (construction schedule). The criteria for inspections will be license conditions and applicable regulations, some of which will directly address reclamation activities. In many cases, portions of the reclamation plan may be implemented for part of a site while active operations continue elsewhere on site. In these cases, the appropriate portions of this program should be implemented in conjunction with the operations inspection program. The reclamation plan itself, as amended during site operation and approved by NRC, should be reviewed by the regional office to determine if procedural or scheduling modifications are necessary to enable planning of an efficient inspection program. The inspection program continues in effect until the licensee has implemented all elements of the reclamation plan, the license is terminated, and the title to the land is transferred to the State or the U.S. Department of Energy for long-term surveillance and maintenance.

The 11e.(2) byproduct material disposal site, or uranium mill reclamation and decommissioning inspection program is also defined by selection from among the list of procedures in Table 2. The areas covered during an inspection need not be limited only to those elements discussed in the procedures, but may need to include examination of other activities not expressly delineated or covered in existing procedures. In such cases, the inspector must exercise good professional judgment in modifying the inspection and in identifying to

the Headquarters the possible need for development of supplemental guidance. Conformance with the principles of ALARA should be a principal concern at all times.

For inspections during site remediation/closure (includes licensee performing cleanup verification measurements), each procedure should be executed for each specific frequency. In practice, part or all of the procedure element may need to be examined during each inspection visit. Emphasis should be placed on physical examinations, observation of conduct of operations, limited independent measurements (e.g., split samples), and personnel interviews. Attention should be directed toward the availability of the licensee's written procedures, the degree to which they are being followed, and the state of training of on-site personnel. Effort should be concentrated on areas of perceived concern. Discretion in such areas is left to the inspector's judgment in consultation with Headquarters staff (project manager, technical reviewers).

A confirmatory survey may be performed as an audit of the licensee's final survey results to independently confirm that the report is accurate and representative of site conditions, but is only necessary if there is significant doubt regarding the licensee's final survey results. A confirmatory survey will be performed if any of the following applies to decommissioning of the site:

1. Repeated violations, with the inclusion of a "management paragraph;"

2. Issuance of an order;

3. Failure to take short-term corrective measures;

4. An event requiring a reactive inspection;

5. Limited financial and technical viability of the licensee; and

6. Significant problems identified with the reclamation plan or final survey data.

c. Regulatory Considerations. The inspector should be especially familiar with current license requirements; previous inspection reports; applicable codes, standards and guides; and the following regulations:

10 CFR Part 20, "Standards for Protection against Radiation."

10 CFR Part 40, "Domestic Licensing of Source Material."

10 CFR Part 61.82, "Commission Inspection of Land Disposal Facilities (Commercial Disposal Only)."

d. Guidance for Use of Inspection Procedures During Closure. The inspection procedures indicated in Table 2 are applicable

to inspections conducted at 11e.(2) byproduct material disposal sites, or uranium mills during closure. The most applicable procedure is under development and will be entitled, "Decommissioning Inspection Procedure for Uranium Mill Sites." The inspection staff can determine the applicable elements of each procedure by reviewing the procedure, the facility license, and the licensee's closure (reclamation) plan.

END

Attachments:

Table 1 Inspection Procedures Applicable to Pre-Operational Inspection of a Uranium Mill or 11e.(2) Byproduct Material Disposal Site

Table 2 Inspection Procedures Applicable to Inspection of a Uranium Mill or 11e.(2) Byproduct Material Disposal Site during Operations and Closure

TABLE 1

INSPECTION PROCEDURES APPLICABLE TO PRE-OPERATIONAL INSPECTION OF A URANIUM LL OR 11e.(2) BYPRODUCT MATERIAL DISPOSAL SITE

Procedure Number	Procedure Title	Inspection Frequency		Applicability of Procedure to the Inspection
		Minimum	Normal	
36100	10 CFR Part 21 Inspection at Nuclear Power Reactors	As Necessary	As Necessary	Inspectors should be sensitive to the underlying principle driving this procedure.
88001	On-site Construction	Annual	Key constr. milestones	Applicable to the inspection of engineering and construction.
88005	Management Organization and Controls	Annual	Annual	Generic Procedure applicable.
88045	Environmental Protection	Annual	Semiannual	License will specify offsite monitoring and sample locations, frequencies and applicable limits on levels and concentrations of radioactivity.
89001	In-situ Leach (ISL) facilities	Annual	Semiannual	Generic procedure applicable to uranium mills and in-situ leach facilities.
92701	Followup	As Necessary	As Necessary	Generic procedure applicable.
92703	Followup of Confirmatory Action Letters	As Necessary	As Necessary	Generic procedure applicable.

TABLE 2

INSPECTION PROCEDURES APPLICABLE TO INSPECTION OF A URANIUM MILL SITE OR 11e.(2) BYPRODUCT MATERIAL DISPOSAL SITE DURING OPERATIONS

Procedure Number	Procedure Title	Inspection Frequency		Applicability of the Procedure
		Minimum	Normal	
83822	Radiation Protection	Annual	Semiannual	This procedure is applicable in its entirety.
86740	Inspection of Transportation Activities	Annual	Semiannual	This procedure should be used to confirm compliance for yellowcake or 11e.(2) shipments.
88001	On-site Construction	Annual	Semiannual	This procedure is for the engineering and construction aspects of a disposal cell and implementation requires the assistance of Headquarters staff.
88005	Management Organization and Controls	Annual	Annual	This procedure is generally applicable.
88010	Operator Training/Retraining	Annual	Biennial	This procedure is applicable to mill and disposal sites.
88025	Maintenance and Surveillance Testing	Annual	Semiannual	Generally applicable.
88035	Radioactive Waste Management	Annual	Semiannual	Sections 02.01 - 02.06 are generally applicable.
88045	Environmental Protection	Annual	Semiannual	This procedure is applicable in its entirety.
88050	Emergency Preparedness	Biennial	Biennial	This procedure is generally applicable. Discretion is required regarding the degree to which all requirements are inspected against.
89001	In-situ Leach Facilities	Annual	Semiannual	Applicable to the operating aspects generic to uranium mills and ISL facilities.
92701	Followup	As Necessary	As Necessary	Generally Applicable.
90703	Followup of Confirmatory Action Letters	As Necessary	As Necessary	Generally Applicable.
93001	OSHA Interface Activities	As Necessary	As Necessary	Generally Applicable.

6

NRC Citation	NRC Regulatory Language	Discussion of Equivalent Utah Statutory Authority and/or Rules
		period [R317-6-6.15(E)]. **Rule Comparability:** minor differences exist in the State wording. However, the objectives of the Permit application needs and the CIR and CAP requirements for groundwater cleanup; plus the capability of the Executive Secretary to require the additional actions and data gathering all combine to provide an equivalent degree of protection of groundwater resources.
Criterion 5B(4)	*In making any determinations under paragraphs 5B(3) and 5B(6) of this criterion about the use of ground water in the area around the facility, the Commission will consider any identification of underground sources of drinking water and exempted aquifers made by the Environmental Protection Agency.*	A similar process of identifying groundwater suitable for human consumption, and therefore enhanced protection, is made by the Executive Secretary thru the State groundwater classification process. Under this process, groundwater is classified by its Total Dissolved Solids (TDS) content, among other parameters, as follows (see R317-6-3 and R317-6-4): Class IA = Pristine Groundwater, where TDS < 500 mg/l (GWPLs here are determined on a 10% basis of GWQS), Class 1B = Irreplaceable Groundwater for a public drinking water system (GWPLs here are also determined on 10% basis of the GWQS), Class 1C = Ecologically Important Groundwater, necessary for the existence of wildlife (GWPLs here are based on pre-requisite surface water quality standards needed to support the wildlife). Class II = Drinking Water quality groundwater where 500 mg/l < TDS < 3,000 mg/l, and no groundwater contaminant exceeds its GWQS (GWPLs here are determined on a 25% basis of the GWQS) Class III = Limited Use Groundwater, where 3,000 mg/l < TDS < 10,000 mg/l or one or more contaminants exceed their respective GWQS (GWPLs here are determined on a 50% basis of the GWQS.) . Class IV = Saline Groundwater, where TDS > 10,000 mg/l (GWPLs here are determined on a case-by-case basis by the Executive Secretary. In practice, the Executive Secretary has assigned GWPLs at facilities overlying Class IV groundwater in order to ensure that sufficient engineering controls are provided to adequately contain and sequester 11e.(2) waste contaminants). Under State rule, the Board may initiate the groundwater classification process during the Permit issuance process. Either a community or an individual person may petition the Board to classify nearby aquifers or parts of aquifers with the intent of protecting local groundwater quality (R317-6-5). **Rule Comparability:** the State rules provide steps to identify underground sources of drinking water thru the groundwater classification process. This process is a major underpinning to the State Permit issuance and groundwater corrective action programs. The State groundwater classification system provides protection for some limited groundwater resources that could be considered "exempted" from protection under EPA rules.
Criterion 5B(5)	*At the point of compliance, the concentration of a hazardous constituent must not exceed --*	The State process for determining compliance at the compliance monitoring point has several points in common. Compliance exists when groundwater quality meets one of the following Permit limits [R317-6-6.16(A) and (B)]:

7

AMENDMENT TO AGREEMENT
BETWEEN THE
UNITED STATES NUCLEAR REGULATORY COMMISSION
AND THE STATE OF UTAH
FOR
DISCONTINUANCE OF CERTAIN COMMISSION REGULATORY
AUTHORITY AND RESPONSIBILITY WITHIN THE STATE PURSUANT TO
SECTION 274 OF THE ATOMIC ENERGY ACT, AS AMENDED

WHEREAS, the United States Nuclear Regulatory Commission (hereinafter referred to as the Commission) entered into an Agreement on March 29, 1984 (hereinafter referred to the Agreement of March 29, 1984) with the State of Utah under Section 274 of the Atomic Energy Act of 1954, as amended (hereafter referred to the Act) which became effective on April 1, 1984, providing for discontinuance of the regulatory authority of the Commission within the State under Chapters 6, 7, and 8 and Section 161 of the Act with respect to byproduct materials as defined in Section 11e.(1) of the Act, source materials, and special nuclear materials in quantities not sufficient to form a critical mass; and

WHEREAS, the Commission entered into an amendment to the Agreement of March 29, 1984 (hereinafter referred to as the Agreement of March 29, 1984, as amended) pursuant to the Act providing for discontinuance of regulatory authority of the Commission with respect to the land disposal of source, byproduct, and special nuclear material received from other persons which became effective on May 9, 1990; and

WHEREAS, the Governor requested that and the Commission agreed to reassert Commission authority for the evaluation of radiation safety information on sealed sources or devices containing byproduct, source or special nuclear materials and the registration of the sealed sources or devices for distribution, as provided for in regulations or orders of the Commission.

WHEREAS, the Governor of the State of Utah is authorized under Utah Code Annotated 19-3-113 to enter into this amendment to the Agreement of March 29, 1984, as amended, between the Commission and the State of Utah; and

WHEREAS, the Governor of the State of Utah has requested this amendment in accordance with Section 274 of the Act by certifying on January 2, 2003 that the State of

Utah has a program for the control of radiological and non-radiological hazards adequate to protect the public health and safety and the environment with respect to byproduct material as defined in Section 11e.(2) of the Act and facilities that generate these materials and that the State desires to assume regulatory responsibility for such materials; and

WHEREAS, the Commission found on [insert date] that the program of the State for the regulation of materials covered by this amendment is in accordance with the requirements of the Act and in all other respects compatible with the Commission's program for the regulation of such materials and is adequate to protect public health and safety; and

WHEREAS, the State and the Commission recognize the desirability and importance of cooperation between the Commission and the State in the formulation of standards for protection against hazards of radiation and in assuring that the State and the Commission programs for protection against hazards of radiation will be coordinated and compatible; and

WHEREAS, this amendment to the Agreement of March 29, 1984, as amended, is entered into pursuant to the provisions of the Act.

NOW, THEREFORE, it is hereby agreed between the Commission and the Governor of the State, acting on behalf of the State, as follows:

Section 1. Article I of the Agreement of March 29, 1984, as amended, is amended by adding a new paragraph B. and renumber paragraphs B through D as C through E. Paragraph B will read as follows:

"B. Byproduct materials as defined in Section 11e.(2) of the Act;"

Section 2. Article II of the Agreement of March 29, 1984, as amended, is amended by deleting paragraph E and inserting a new paragraph E to implement the reassertion of Commission authority over sealed sources and devices to read:

"E. The evaluation of radiation safety information on sealed sources or devices containing byproduct, source, or special nuclear materials and the registration of the sealed sources or devices for distribution, as provided for in regulations or orders of the Commission."

Section 3. Article II of the Agreement of March 29, 1984, as amended, is amended by numbering the current Article as "A" by placing an "A." in front of the first paragraph and renumbering the subsequent paragraphs A through E as 1 through 5 and by adding the following new section after the current amended language to read:

"B. Notwithstanding this Agreement, the Commission retains the following authorities pertaining to byproduct material as defined in Section 11e.(2) of the Act:

1. Prior to the termination of a State license for such byproduct material, or for any activity that resulted in the production of such material, the Commission shall have made a determination that all applicable standards and requirements pertaining to such material have been met;

2. The Commission reserves the authority to establish minimum standards governing reclamation, long-term surveillance or maintenance, and ownership of such byproduct material and of land used as a disposal site for such material. Such reserved authority includes:

   a. The authority to establish terms and conditions as the Commission determines necessary to assure that, prior to termination of any license for such byproduct material, or for any activity that results in the production of such material, the licensee shall comply with decontamination, decommissioning, and reclamation standards prescribed by the Commission; and with ownership requirements for such materials and its disposal site;

   b. The authority to require that prior to termination of any license for such byproduct material or for any activity that results in the

production of such material, title to such byproduct material and its disposal site be transferred to the United States or the State of Utah at the option of the State (provided such option is exercised prior to termination of the license);

c. The authority to permit use of the surface or subsurface estates, or both, of the land transferred to the United States or the State pursuant to 2.b. in this section in a manner consistent with the provisions of the Uranium Mill Tailings Radiation Control Act of 1978, as amended, provided that the Commission determines that such use would not endanger public health, safety, welfare, or the environment.

d. The authority to require, in the case of a license for any activity that produces such byproduct material (which license was in effect on November 8, 1981), transfer of land and material pursuant to paragraph 2.b. in this section taking into consideration the status of such material and land and interests therein, and the ability of the licensee to transfer title and custody thereof to the United States or the State;

e. The authority to require the Secretary of the Department of Energy, other Federal agency, or State, whichever has custody of such byproduct material and its disposal site, to undertake such monitoring, maintenance, and emergency measures as are necessary to protect public health and safety, and other actions as the Commission deems necessary; and

f. The authority to enter into arrangements as may be appropriate to assure Federal long-term surveillance or maintenance of such byproduct material and its disposal site on land held in trust by the United States for any Indian Tribe or land owned by an Indian Tribe

and subject to a restriction against alienation imposed by the United States."

Section 4. Article IX of the 1984 Agreement, as amended, is renumbered as Article X and a new Article IX is inserted to read:

"ARTICLE IX

In the licensing and regulation of byproduct material as defined in Section 11e.(2) of the Act, or of any activity which result in the production of such byproduct material, the State shall comply with the provisions of Section 274o of the Act. If in such licensing and regulation, the State requires financial surety arrangements for reclamation and or long-term surveillance and maintenance of such byproduct material:

A. The total amount of funds the State collects for such purposes shall be transferred to the United States if custody of such byproduct material and its disposal site is transferred to the United States upon termination of the State license for such byproduct material or any activity that results in the production of such byproduct material. Such funds include, but are not limited to, sums collected for long-term surveillance or maintenance. Such funds do not, however, include monies held as surety where no default has occurred and the reclamation or other bonded activity has been performed; and

B. Such surety or other financial requirements must be sufficient to ensure compliance with those standards established by the Commission pertaining to bonds, sureties, and financial arrangements to ensure adequate reclamation and long-term management of such byproduct material and its disposal site."

This amendment shall become effective on [insert date] and shall remain in effect unless and until such time as it is terminated pursuant to Article VIII of the Agreement of March 29, 1984, as amended.

Done at Rockville, Maryland, in triplicate, this [day] day of [month, year]

FOR THE UNITED STATES
NUCLEAR REGULATORY COMMISSION

_____
[insert Chairman's name], Chairman

Done at Salt Lake City, Utah, in triplicate, this [day] day of [month, year]

FOR THE STATE OF UTAH

_____
Michael O. Leavitt, Governor

8

Recent Changes to Uranium Recovery Policy

November 30, 2000

- ADDRESSEES
- INTENT
- BACKGROUND
- PART 41 RULEMAKING (SECY-99-011)
- DISPOSAL OF NON-11e.(2) BYPRODUCT MATERIAL IN TAILINGS IMPOUNDMENTS (SECY-99-012)
- PROCESSING OF MATERIAL OTHER THAN NATURAL URANIUM ORES (SECY-99-012)
- CLASSIFICATION OF LIQUID WASTES AT ISL FACILITIES (SECY-99-013)
- GROUND-WATER ISSUES AT ISL FACILITIES (SECY-99-013)
- CONCURRENT JURISDICTION OF NON-RADIOLOGICAL HAZARDS OF URANIUM MILL TAILINGS (SECY-99-277)
- SUMMARY OF ISSUES

ADDRESSEES

All holders of materials licenses for uranium and thorium recovery facilities.

TOP

INTENT

The U.S. Nuclear Regulatory Commission (NRC) is issuing this regulatory issue summary (RIS) to inform materials licensees of the Commission's decisions on four Commission Papers prepared by the Uranium Recovery staff and the Office of the General Counsel (OGC). All the policy decisions will be codified in the 10 CFR Part 41 rulemaking that has been initiated. No specific action nor written response is required.

TOP

BACKGROUND

NRC staff prepared four Commission Papers in 1999 to address various uranium recovery issues. One Commission Paper (SECY-99-011, "Draft Rulemaking Plan; Domestic Licensing of Uranium and Thorium Recovery facilities - Proposed New 10 CFR Part 41") addressed the need to revise and update uranium recovery regulations, particularly with respect to in situ leach (ISL) facilities and recommended the initiation of rulemaking to create a new Part 41 specific to uranium recovery. The other three Commission Papers addressed issues raised by the National Mining Association EXIT (NMA) in its April 1998 paper, "Recommendations for a Coordinated Approach to Regulating the Uranium Recovery Industry." The first of those papers (SECY-99-012, "Use of Uranium Mill Tailings Impoundments for the Disposal of Other Than 11e(2) Byproduct Materials, and Reviews of Applications to Process Material Other Than Natural Ore") discussed the disposal of radioactive waste, other than byproduct material, defined in section 11e.(2) of the Atomic Energy Act (AEA) of 1954, as amended, in mill tailings impoundments, and the processing of material, other than natural ore, for source material at licensed uranium mills. The second of those papers (SECY-99-013, "Recommendations on ways to Improve the Efficiency of NRC Regulation of In Situ Leach Uranium Recovery Facilities") discussed the regulation of ground water at ISL sites and the issue of which waste streams at ISL facilities come under NRC regulatory jurisdiction as 11e.(2) byproduct material. The last paper (SECY-99-277, "Concurrent Jurisdiction of Non-Radiological Hazards of Uranium Mill Tailings") addressed the issue of

concurrent jurisdiction (with States that do not have Agreement State regulatory authority for 11e.(2) material under section 274 of the AEA) over the non-radiological hazards of uranium mill tailings.

On July 13, 2000, the Commission issued a Staff Requirements Memorandum (SRM) on SECY-99-011. On July 26, 20 the Commission issued SRMs on SECY-99-012 and SECY-99-013, and on August 11, 2000, the "SRM on SECY-99-277 was issued.

The decisions and directions in these SRMs and the staff actions in response are discussed in sections that follow.

TOP

PART 41 RULEMAKING (SECY-99-011)

SECY-99-011 approved the staff's recommendation to provide a draft Rulemaking Plan (RP) for comment to the Agreement States, with the preferred option being the creation of a new Part 41 dedicated to uranium recovery regulation. The Commission directed the staff to revise the draft RP to reflect the Commission's guidance in the other uranium recovery SRMs.

On September 11, 2000, the staff transmitted the draft RP to all States for comment. The staff sent the draft RP to all States rather than just Agreement States because the issue of concurrent jurisdiction regarding non-radiological hazards primarily affects non-Agreement States, and the staff wanted to give those States an opportunity to comment on the draft RP. Comments have been received from several States. In addition, the NMA and two licensees provided comments on the draft RP. The staff will consider all the comments received in preparing its final RP, which it expects to issue in early 2001.

TOP

DISPOSAL OF NON-11e.(2) BYPRODUCT MATERIAL IN TAILINGS IMPOUNDMENTS (SECY-99-012)

In 1995, the staff published guidance, in the *Federal Register* EXIT (60 FR 49296), for the disposal, in uranium mill tailings impoundments, of radioactive material that is not byproduct material, as defined in section 11e.(2) of the AEA. The guidance consisted of 10 criteria to determine whether to approve a proposed disposal of non-11e.(2) byproduct material in a uranium mill tailings impoundment. In its 1998 white paper, the NMA emphasized that the criteria were too restrictive, pointing out that no requests for such disposals have been made since the guidance was issued. The Commission, in the SRM for SECY-99-012, approved an option that would allow more flexibility in permitting non-11e.(2) material to be disposed of in tailings impoundments. The NRC intends to incorporate the criteria into the new Part 41. In the interim, the Commission directed the staff to implement the SRM.

To comply with the direction in the SRM, the staff is revising the 1995 guidance in the following manner:

- The staff will remove the prohibitions, found in items 2, 4, and 5, regarding non-AEA radioactive material and material subject to regulation under other legislative authorities, such as the Toxic Substance Control Act (TSCA) or the Resource Conservation and Recovery Act (RCRA).

- The staff will add a criterion regarding approval from the appropriate regulators of TSCA, RCRA, and non-AEA radioactive material for disposal of such material in the tailings impoundment.

- The staff will revise the criterion, in item 8, regarding approval by Low-Level Waste Compacts, to allow for the situation in which material proposed for disposal does not fall under the jurisdiction of Low-Level Waste Compacts (e.g., radioactive material not regulated under the AEA).

- The Commission directed the staff to pursue a generic exemption to NRC's disposal requirements for low-level radioactive waste in 10 CFR Part 61, rather than having to grant an exemption, under 10 CFR 61.6, as identified in item 10. A generic exemption to regulations must be issued through a rulemaking process. Therefore, the staff pursue incorporating the generic exemption in the new Part 41. In the interim, the requirement for a specific exemption will remain in the guidance, with addition of a caveat for material not regulated under Part 61.

The staff therefore is revising its 1995 guidance. The complete revised guidance, is in Attachment 1.

TOP

PROCESSING OF MATERIAL OTHER THAN NATURAL URANIUM ORES (SECY-99-012)

In 1995, the staff published its position and guidance, in the *Federal Register* EXIT (60 FR 49296), on the use of uranium feed material other than natural ores (alternate feed material), in uranium mills. The guidance identified three determinations that the staff had to make in order to approve an alternate feed request. The third determination -- whether the ore is being processed primarily for its source material content -- generated considerable controversy. This determination was required to address the concern that wastes that would otherwise have to be disposed of as radioactive or mixed waste would be proposed for processing at a uranium mill primarily to be able to dispose of them in the tailings pile as 11e.(2) byproduct material. This determination was essentially a determination of the motives of the mill operator in requesting approval of a specific stream of alternate feed material. In many cases it involved questioning the financial aspects of acquiring and processing the alternate feed material, and selling the resultant uranium product.

In its 1998 white paper, the NMA emphasized that NRC should not be looking to a licensee's motives in processing alternate feed material. After careful consideration of stakeholder comments and the staff's analysis, the Commission, in the SRM for SECY-99-012, directed the staff to allow processing of alternate feed material without inquiry into a licencee's economic motives, and referred to a Commission decision (CLI-00-01 51 NRC 9) on a specific instance of proposed processing of alternate feed, that was brought before the Atomic Safety Licensing Board and then appealed to the Commission. The Commission also addressed the second determination in the 1995 guidance (i.e., whether the feed material contains hazardous waste). It directed the staff to allow more flexibility with regard to this issue consistent with its direction to the staff on the disposal of non-11e.(2) byproduct material in tailings piles.

The Commission directed the staff to revise, issue, and implement final guidance on the processing of alternate feed as soon as possible and to codify the guidance in the new Part 41.

To comply with the SRM, the staff is revising the 1995 position and guidance in the following manner:

The staff will modify the prohibition in item 2 on feed material containing hazardous waste, to allow such feed material provided that the licensee obtains approval of the U.S. Environmental Protection Agency EXIT (EPA) or the State, and a commitment from the long-term custodian to accept the tailings after site closure.

The staff will revise the manner in which it determines whether the ore is being processed primarily for its source material content, to focus on the product of the processing, and eliminate any inquiry into the licensee's economic motives for the processing.

The staff therefore is revising its 1995 guidance. The complete revised guidance, is in Attachment 2.

TOP

CLASSIFICATION OF LIQUID WASTES AT ISL FACILITIES (SECY-99-013)

Before 1995, the staff practice for addressing the disposal of evaporation pond sludges at ISL facilities relied on a broad reading of the definition of 11e.(2) byproduct material. This broad reading only addressed discrete surface wastes capable of controlled disposal and did not distinguish between wastes generated at various phases of an ISL operation. All waste materials generated during ISL operations and ground-water restoration activities were designated 11e.(2) byproduct material and disposed of at licensed uranium mill tailings impoundments, in accordance with 10 CFR Part 40, Appendix A, Criterion 2.

The staff issued two guidance documents in 1995 to address issues raised by the industry in the uranium recovery program. The first, "Staff Technical Position on Effluent Disposal at Licensed Uranium Recovery Facilities" (hereinafter, the effluent guidance), was intended to ensure protection of the environment and public, while providing uranium recovery licensees with flexibility regarding the disposal of various types of liquid effluents generated during the operation of their facilities. In issuing this guidance, the staff took a more narrow view of the definition of 11e.(2) byproduct material. It

differentiated between the various waste waters generated during ISL operations on the basis of their origin and whether uranium was extracted for its source material content during that phase of the operation. Waste waters and the associated solids produced during the uranium extraction phase of site operations, called "production bleed," were classified as AEA Section 11e.(2) byproduct material and therefore subject to regulation by NRC. Conversely, waste waters and the resulting solids produced after uranium extraction (i.e., during ground-water restoration activities) were classified as "mine waste waters," and therefore were subject to regulation by individual States under their applicable mining programs. These wastes were considered naturally occurring radioactive material (NORM). However, because licensees often dispose of waste waters from uranium extraction and post-extraction activities in the same evaporation ponds, the resulting solids are a commingled waste consisting of 11e.(2) byproduct material and sludges derived from mine waste water.

In the second guidance document, "Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments" (hereinafter, the disposal guidance), the staff identified 10 criteria that licensees should meet before NRC could authorize the disposal of AEA material other than 11e.(2) byproduct material in tailings impoundments. One of these criteria prohibited the disposal of radioactive material not covered by the AEA, including NORM (see earlier discussion for policy revisions). This criterion was intended to avoid the possibility of dual regulation of the radioactive constituents in the impoundments, since individual States are responsible for radioactive materials not covered by the AEA.

The industry expressed concerns, in NMA's white paper, that, taken together, these two guidance documents leave no option for the disposal of radioactively contaminated sludges from ISL evaporation ponds. The reason for this concern is that the 11e.(2) byproduct material was commingled with a NORM waste, which the disposal guidance prohibits from disposal in a tailings impoundment. The industry emphasized that the staff's waste classification, based on the origin of the waste water (i.e., from the extraction or restoration phase) at an ISL facility, makes the disposal of such sludges in a mill tailings impoundment, as required under Criterion 2 of 10 CFR Part 40, Appendix A, impossible -- even though the sludges derived from waste waters produced throughout a facility's life cycle are physically, chemically, and radiologically identical.

The staff analyzed several options in SECY-99-013 for addressing the industry's concerns. In the SRM for SECY-99-013, the Commission determined that all liquid effluents at ISL uranium recovery facilities are 11e.(2) byproduct material. NRC takes the position that any waste water generated during or after the uranium extraction phase of site operations, and all evaporation pond sludges derived from such waste waters, are classified as 11e.(2) byproduct material. The staff will make no legal distinction among the waste waters produced at different stages in a facility's life cycle.

This revised policy is effective immediately. The staff intends to codify this policy in the new rulemaking for Part 41 and associated regulatory guidance.

TOP

GROUND-WATER ISSUES AT ISL FACILITIES (SECY-99-013)

Over the past several years, the industry has expressed concern that NRC's regulation of ground water at ISLs is duplicative of the ground-water protection programs required by the Safe Drinking Water Act (SDWA), as administered by EPA or EPA-authorized States. EPA and the States protect ground-water quality through the Underground Injection Control (UIC) program, under the SDWA. The States often require additional measures in the UIC program that are more stringent than the Federal program. As presented in NMA's white paper, the industry contended that NRC's review and licensing activities are a duplicative form of regulation covering the same issues. Additionally, NMA also expressed the view that NRC did not have authority to regulate ground water at ISLs.

Historically, NRC has imposed conditions on ISL operations to ensure that ground-water quality is maintained during licensed activities and that actions are taken to ensure the restoration of ground-water quality before the license is terminated. The specific conditions imposed in an ISL license have typically been the result of NRC's independent review, as documented in safety evaluation reports and appropriate environmental evaluations.

In addition to NRC's review, licensees must also obtain a UIC permit from EPA or the EPA-authorized State before uranium recovery operations can begin. EPA or the authorized State conducts many of the same types of reviews as NRC. This is evidenced by NRC incorporating ground-water protection limits from a State's permitting program into specific license requirements, after conducting its own review of the licensee's groundwater protection program, including the use of State-imposed standards -- and staff routinely accepting specific methodologies and guidance developed by EPA or States for ground-water monitoring programs and well construction.

In the SRM for SECY-99-013, the Commission approved the staff continuing discussions with EPA and appropriate States to determine the extent to which NRC can rely on the EPA UIC program for ground-water protection issues, thereby potentially minimizing duplicative review of ground-water protection at ISL facilities. Part of the discussions with EPA and appropriate States should include appropriate methods to implement any agreements, including Memoranda of Understanding (if necessary) and potential requirements that could be incorporated in the new Part 41. In the interim, it is recognized that some NRC/EPA dual regulation of the ground-water at ISL facilities will continue until such time that NRC can defer to EPA's UIC program.

NRC has initiated a new round of discussions with the EPA since the Commission decision in July 2000, and discussions with the appropriate States should begin in early to mid 2001.

In February 1998, staff documented its review process for ISLs, including a detailed evaluation of ground-water activities, in a draft Standard Review Plan (draft SRP) for ISL facility license applications (NUREG-1569), that was published for public comment. Following the comment period, staff held a public workshop on the SRP to discuss the issues raised. The staff intends to use the draft SRP in licensing reviews until the rulemaking for new Part 41 (SECY 99-011) has been completed and NUREG-1569 is finalized.

TOP

CONCURRENT JURISDICTION OF NON-RADIOLOGICAL HAZARDS OF URANIUM MILL TAILINGS (SECY-99-277)

In 1980, the staff considered the issue of whether the Uranium Mill Tailings Radiation Control Act (UMTRCA) preempts a non-Agreement State's authority to regulate the non-radiological hazards associated with 11e.(2) byproduct material and concluded that it did not. The NRC concluded that NRC and the State both exercised this authority. As a result, the staff has followed the practice of sharing jurisdiction of the non-radiological hazards with States. In its 1998 white paper, the NMA questioned the 1980 staff interpretation of UMTRCA. The Commission, in the SRM for SECY-99-0277 determined that NRC has exclusive jurisdiction over both the radiological and non-radiological hazards of 11e.(2) byproduct material.

As a result of this decision, the staff will implement its exclusive authority over the non-radiological hazards of 11e.(2) byproduct material and not recognize State authority in this area.

TOP

SUMMARY OF ISSUES

The Commission has evaluated a range of uranium recovery issues and the staff evaluation and has directed, through SRMs, the staff to take various actions that will ultimately be incorporated into the new Part 41 rulemaking and existing uranium recovery SRPs.

In the interim, this RIS informs the licensees of the Commission's decisions. These are: 1) to allow more flexibility in the disposal of non-11e.(2) material in tailings impoundments, subject to certain considerations; 2) to allow alternate feed material to be processed for uranium (or thorium) without any inquiry into a licensee's economic motives; 3) to classify all waste water and sludges generated during or after the uranium (or thorium) extraction phase of in situ leach operations as 11e.(2) byproduct material; 4) to continue discussions with EPA and appropriate States to determine the extent that NRC can rely on the EPA UIC program for ground-water protection at ISL facilities; and 5) to note that NRC has exclusive jurisdiction over both the radiological and non-radiological hazards of 11e.(2) byproduct material.

This regulatory issue summary requires no specific action nor written response. If you have any questions about this summary, please contact the technical contact listed below.

TOP

/RA/

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Attachments:
1. Interim Guidance Non-11e.(2)
2. Interim Position Alternate Feed
3. List of Recently Issued NRC Regulatory Issue Summaries

(ADAMS Accession Number ML003773008)

ATTACHMENT 1

Interim Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments

1. In reviewing licensee requests for the disposal of wastes that have radiological characteristics comparable to those of Atomic Energy Act of 1954, Section 11e.(2) byproduct material [hereafter designated as "11e.(2) byproduct material"] in tailings impoundments, the Nuclear Regulatory Commission staff will follow the guidance set forth below. Since mill tailings impoundments are already regulated under 10 CFR Part 40, licensing of the receipt and disposal of such material [hereafter designated as "non-11e.(2) byproduct material"] should also be done under 10 CFR Part 40.

2. Special nuclear material and Section 11e.(1) byproduct material waste should not be considered as candidates for disposal in a tailings impoundment, without compelling reasons to the contrary. If staff believes that such material should be disposed of in a tailings impoundment in a specific instance, a request for Commission approval should be prepared.

3. The 11e.(2) licensee must provide documentation showing necessary approvals of other affected regulators (e.g., the U.S. Environmental Protection Agency or State) for material containing listed hazardous wastes or any other material regulated by another Federal agency or State because of environmental or safety considerations.

4. The 11e.(2) licensee must demonstrate that there will be no significant environmental impact from disposing of this material.

5. The 11e.(2) licensee must demonstrate that the proposed disposal will not compromise the reclamation of the tailings impoundment by demonstrating compliance with the reclamation and closure criteria of Appendix A of 10 CFR Part 40.

6. The 11e.(2) licensee must provide documentation showing approval by the Regional Low-Level Waste Compact in whose jurisdiction the waste originates as well as approval by the Compact in whose jurisdiction the disposal site is located, for material which otherwise would fall under Compact jurisdiction.

7. The U.S. Department of Energy (DOE) and the State in which the tailings impoundment is located, should be informed of the U.S. Nuclear Regulatory Commission findings and proposed action, with a request to concur within 120 days. A concurrence and commitment from either DOE or the State to take title to the tailings impoundment after closure must be received before granting the license amendment to the 11e.(2) licensee.

8. The mechanism to authorize the disposal of non-11e.(2) byproduct material in a tailings impoundment is an

amendment to the mill license under 10 CFR Part 40, authorizing the receipt of the material and its disposal. Additionally, an exemption to the requirements of 10 CFR Part 61, under the authority of 10 CFR 61.6, must be granted, if the material would otherwise be regulated under Part 61. (If the tailings impoundment is located in an Agreement State with low-level waste licensing authority, the State must take appropriate action to exempt the non-11e.(2) byproduct material from regulation as low-level waste.) The license amendment and the 10 CFR 61.6 exemption should be supported with a staff analysis addressing the issues discussed in this guidance.

ATTACHMENT 2

Interim Position and Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores

In reviewing licensee requests to process alternate feed material (material other than natural ore) in uranium mills, the Nuclear Regulatory Commission staff will follow the guidance presented below. Besides reviewing to determine compliance with appropriate aspects of Appendix A of 10 CFR Part 40, the staff should also address the following issues:

1. Determination of whether the feed material is ore.

For the tailings and wastes from the proposed processing to qualify as 11e.(2) byproduct material, the feed material must qualify as "ore." In determining whether the feed material is ore, the following definition of ore will be used:

Ore is a natural or native matter that may be mined and treated for the extraction of any of its constituents or any other matter from which source material is extracted in a licensed uranium or thorium mill.

Determination of whether the feed material contains hazardous waste.

If the proposed feed material contains hazardous waste, listed under subpart D Sections 261.30-33 of 40 CFR (or comparable Resource Conservation and Recovery Act (RCRA) authorized State regulations), it would be subject to the U.S. Environmental Protection Agency (EPA) or State regulation under RCRA. If the licensee can show that the proposed feed material does not contain a listed hazardous waste, this issue is resolved.

Feed material exhibiting only a characteristic of hazardous waste (ignitable, corrosive, reactive, toxic) would not be regulated as hazardous waste and could therefore be approved for recycling and extraction of source material. However, this does not apply to residues from water treatment, so determination that such residues are not subject to regulation under RCRA will depend on their not containing any characteristic hazardous waste. Staff may consult with EPA (or the State) before making a determination of whether the feed material contains hazardous waste.

If the feed material contains hazardous waste, the licensee can process it only if it obtains EPA (or State) approval and provides the necessary documentation to that effect. Additionally, for feed material containing hazardous waste, the staff will review documentation from the licensee that provides a commitment from the U.S. Department of Energy or the State to take title to the tailings impoundment after closure.

3. Determination of whether the ore is being processed primarily for its source-material content.

For the tailings and waste from the proposed processing to qualify as 11e.(2) byproduct material, the ore must be processed primarily for its source-material content. If the only product produced in the processing of the alternate feed is uranium product, this determination is satisfied. If, in addition to uranium product, another material is also produced in the processing of the ore, the licensee must provide documentation showing that the uranium product is the primary product produced.

If it can be determined, using the aforementioned guidance, that the proposed feed material meets the definition of ore, that it will not introduce a hazardous waste not otherwise exempted, or if it has been approved by the EPA (or State) and the long-term custodian, and that the primary purpose of its processing is for its source-material content, the request can be approved.

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Last revised Monday, June 23, 2003