



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

May 5, 1999

Mr. Jon J. Indall, Esq.
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Santa Fe, NM 87504-0669

SUBJECT: TERMINATION OF MATERIALS LICENSE SUA-1480 FOR GRACE ENERGY
URANIUM EXTRACTION SITES IN NEW MEXICO

Dear Mr. Indall:

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of the Final Reclamation Report for the three Grace Energy sites in New Mexico, which was submitted by your letter dated March 8, 1999. The NRC staff evaluation of the Final Reclamation Plan is documented in the enclosed Technical Evaluation Report (TER). As stated in the TER, the staff has determined that reclamation of the sites was accomplished in accordance with the reclamation plan approved by Amendment Number 1 to Materials License SUA-1480, issued September 23, 1998.

As noted in NRC's letter transmitting the amendment, an Environmental Assessment of the reclamation of the three sites was performed by NRC staff, and it was determined that the reclamation activities would have no significant impact. A Finding of No Significant Impact and Opportunity for a Hearing on the license amendment was issued by *Federal Register Notice 49140-49142, Volume 63, No. 177, September 14, 1998*. Since reclamation was accomplished in accordance with the approved plan, no further environmental review of the action is required.

Based on the staff's evaluation of the Final Reclamation Plan, as documented in the enclosed TER, Materials License SUA-1480 is hereby terminated, and the three sites are released for unrestricted use. A Federal Register Notice of this action, which provides the opportunity for a hearing in accordance with Subpart L of Title 10, Code of Federal Regulations, Part 2, is being issued concurrently with this letter.

J. Indall

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If you have any questions concerning this letter or the enclosure, please contact Ken Hooks, the NRC Project Manager for the Grace Energy sites, at (301) 415-7777.

Sincerely,

A handwritten signature in cursive script that reads "N. King Stablein".

N. King Stablein, Acting Chief
Uranium Recovery and
Low-Level Waste Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 40-8912
License No. SUA-1480

Enclosure: As stated

cc: Gary Williams, ETEC, Morristown, TN
Katherine Yuhas, NMED, Santa Fe, NM
Russel Edge, DOE, Grand Junction, CO
Jennifer Fowler-Propst, F&WS, Albuquerque, NM

J. Indall

-2-

May 5, 1999

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Sincerely,

[Signed by]

N. King Stablein, Acting Chief
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TECHNICAL EVALUATION REPORT
OF THE RECLAMATION REPORT FOR
THE GRACE ENERGY SITES

DATE: April 16, 1999

DOCKET NO. 40-8912 LICENSE NO. SUA-1480

LICENSEE: Estate of Michael P. Grace

FACILITY: Three non-operating uranium extraction sites in New Mexico.

PROJECT MANAGER: Ken Hooks

TECHNICAL REVIEWERS: Ken Hooks and Elaine Brummett

BACKGROUND

The Estate of Michael P. Grace (Grace Estate or licensee), represented by Jon J. Indall, Esquire, of Comeau, Maldegen, Templeman & Indall, LLP (CMT&I), became responsible for the three non-operating uranium extraction sites in New Mexico, subsequent to the death of Michael P. Grace in April 1995. On July 3, 1998, the Grace Estate submitted a request for an amendment to Source Material License SUA-1480 to reclaim the three sites, including a Closure Plan prepared by ETEC, Inc., by letter to the U.S. Nuclear Regulatory Commission (NRC). The reclamation (closure) plan was subsequently amended by letters dated August 14, 1998, and August 20, 1998, concerning capping of existing wells and seeding remediated areas with native grasses. The plan was approved by the NRC on September 23, 1998, by Amendment No. 1 to Materials License SUA-1480.

The three sites were originally licensed by the State of New Mexico, as an Agreement State, and responsibility for licensing of the sites was transferred to NRC in 1986, when New Mexico terminated its Agreement State status. The current license was issued to Michael P. Grace by Order dated December 15, 1993. Uranium extraction operations at the sites appear to have ceased in about 1972. No evidence of site reclamation activities existed when the three sites were visited by staff of NRC's Region IV office and the New Mexico Environment Department (NMED) during March 1995.

The three sites are in remote, sparsely populated, semi-arid (annual precipitation about ten inches, elevations above 6300 feet), rural areas primarily used for cattle grazing. The predominant vegetation elements are grasses and shrubs. The sites were described in the July 1, 1996, Preliminary Site Assessments report by Rio Algom Environmental Services as:

Site #1 was an in-situ leach (ISL) operation and is located near the community of Church Rock, New Mexico. The site covers approximately 3 acres and contained two areas of elevated radiation with a total contaminated volume of approximately 6 cubic yards (cyds).

Enclosure

Site #2 was also an ISL operation and is located near the community of Bibo, New Mexico. The site area is 11 acres and radiation levels were essentially background, except for eight small spots that could represent 6 cyds of contaminated material.

Site #3 was a heap leach operation and is located near the community of Magdalena, New Mexico. The site consists of 160 acres, with fewer than 15 acres demonstrating visual disturbance. Three areas (ore pit, heap leach pad, and ore piles) were estimated to contain 800 cyds of contaminated material.

The sites also contain 29 wells, 17 of which the reclamation plan proposed to plug, cap, and abandon. The other wells were to be capped for future livestock watering. The licensee provided documentation from the New Mexico State Engineer Office (letter dated August 11, 1998) that capping specific wells would be acceptable. The proposed method of plugging and abandoning wells is in accordance with New Mexico procedures and was acceptable to NRC.

SUMMARY AND CONCLUSIONS

By letter dated January 20, 1999, the lawyer for the Estate of Michael P. Grace forwarded a draft Final Reclamation Report for the three Grace Energy sites for NRC staff comment. After discussion with NRC staff, the Final Reclamation Report and an addendum to the report were submitted March 8, 1999. Telephone discussions were held with ETEC, Inc. and its consultant on February 4, March 17, March 31, and April 15, 1999, to further clarify information in the report concerning radiological cleanup and surveys. The staff evaluated the information and determined that applicable radiological criteria and well closure criteria had been met and that the three sites could be released for unrestricted use.

TECHNICAL EVALUATION:

Site Cleanup Criteria

The applicable regulation for radium in soil cleanup is 10 CFR Part 40, Appendix A, Criterion 6(6). Guidance documents would apply if other soil radionuclides, surface activity on structures and equipment, or non-radioactive waste resulting from the licensed activities were found. Applicable criteria for decontamination of structures and equipment are referenced in License Condition 19. Requirements in 10 CFR 40.42(j) and (k) (relating to termination of licenses and decommissioning of buildings and outdoor areas) also apply. Decommissioning criteria in Part 20 Subpart E are not applicable to uranium recovery sites. The gamma scan and soil sampling procedures to be used to verify soil cleanup are stated in the Closure Plan and are required by License Condition 11. The closure plan indicates that initial reclamation is to be for areas defined by the Rio Algom assessment of July 1996, and no structures would remain on any of the sites.

Reclamation Report

The Final Reclamation Report documents the reclamation of the three sites and the final radiation survey data for each site. The report indicates that trash and debris were surveyed for release and then taken to a Class D landfill. Wells were abandoned or permitted according to New Mexico standards and 1298 cyds of contaminated soils and debris were disposed of at an NRC-licensed uranium tailings disposal cell. All reclamation activities were conducted under the supervision of a qualified Radiation Safety Officer (RSO).

Verification gamma surveys were conducted along 25-foot grids and a total of 12 soil samples were collected from the excavated areas. Three other samples were collected from non-remediated areas on Site #3 to demonstrate the wide range of background radium values. All samples were analyzed for Ra-226, Th-230, Pb-210, and U-nat. Two samples from the background area contained elevated Ra-226, and one of these exceeds the subsurface standard. However, the uranium is also elevated in that sample such that it indicates the material is ore and not byproduct material. The report indicates that the gamma survey and soil results were at or below background levels for Sites #1 and 2. Site #3 surveys were complicated by the "shine" from a natural ore deposit and other nearby areas of elevated background radiation. However, various evidence indicates that the radium criteria were met.

A quality control survey was performed by an independent consultant and the results were included as Attachment 3 to the report. This gamma survey was performed on a 15-foot grid system over and around the excavated areas. Sites #1 and 2 measured equal or less than 15 microR/hr (within the range of background). At Site #3, meter readings at the bottom of the excavation indicated that the 11e.(2) byproduct material had been removed. Readings in the upper excavation banks and surrounding the excavation were up to 35 microR/hr because of the adjacent high natural background. Telephone conversations with ETEC, Inc. and its consultants on February 4, March 17, March 31, and April 15, 1999, resolved questions concerning the work performed as described in the final reclamation report.

All excavated areas were backfilled (fill was gamma surveyed to confirm background levels of radiation), graded to original contour, and planted with grass seed.

Conclusions

All released material was scanned for alpha contamination, using criteria equivalent to that required in the license condition, and none of the material exceeded 20 percent of the release limit. Although the Closure Plan indicates that the gamma survey grid pattern will be approximately 10 x 10 feet, the consultant's gamma survey was at 15-foot intervals for all three sites. The staff considers that the 15-foot interval is adequate for the gamma survey. The Closure Plan also indicates that soil samples are to be taken at all remediated areas and five randomly selected areas. In addition, the Quality Assurance Program called for 15 soil samples from the three excavated areas of Site #3. The report contained data for only 6 excavation samples for Site #3. The addendum to the report indicates that the excavated areas on Site #3 were smaller than expected and that the samples collected were deemed representative for verification of cleanup. The staff considers that an adequate number of soil sample data were provided for these sites and that, in conjunction with the survey data, the results demonstrate compliance with the soil radium standards.

The reclamation of the 29 wells, as described in the Final Reclamation Report, is acceptable to NRC staff. Previous evaluations of the wells, as stated in the Environmental Assessment and Technical Evaluation Report included with Amendment No. 1, indicated no radiological contamination of the water due to uranium extraction activities. The permitting of various wells for stock watering was at the request of the current land users. The Final Reclamation Report states that 17 wells were plugged and abandoned in accordance with New Mexico regulations, 11 wells were permitted under two New Mexico stock well numbers at Site #2, and one well was permitted under a New Mexico stock well number at Site #3. The Final Reclamation Report

contains a copy of a February 8, 1999, letter from the State Engineer Office stating that reclamation of the 29 wells was completed in accordance with New Mexico State Engineer rules and regulations.

Recommendations

Considering the remote location of the sites, the size of the remediated areas, the high natural background on Site #3, and the likely future land use (cattle grazing), NRC staff determined that the Final Reclamation Report provides sufficient information to conclude that decontamination and remediation of the three sites has been adequately performed and documented. Therefore, the NRC license should be terminated and the sites released for unrestricted use.

REFERENCES:

1. Memorandum from P. Morgan, NMEID, to R. Young, NMEID. Subject: NMEID Requirements for Plugging Wells at Grace Sites. March 13, 1985.
2. Letter from R. Hall, NRC, to Grace Energy Company. Subject: Issue of Source Material License SUA-1480. Dated January 15, 1993.
3. Letter from J. Milhoan, NRC, to Michael P. Grace, Grace Energy Company. Subject: Order Modifying License for Michael P. Grace. Dated December 15, 1993.
4. Memorandum from L. Carson, NRC, to C. Cain, NRC. Subject: Grace Energy Sites Visit Report. Dated March 31, 1995.
5. Letter from John Indall, CMT&I, to L.J. Callan, NRC. Subject: Rio Algom Preliminary Site Assessments, Grace Energy Sites. Dated July 11, 1996.
6. Letter from J. Indall, CMT&I, to J. Holonich, NRC. Subject: Request for License Amendment to Reclaim Grace Sites. Dated July 3, 1998.
7. Letter from J. Indall, CMT&I, to J. Holonich, NRC. Subject: New Mexico State Engineer Approval of Reclamation of Existing Wells. Dated August 14, 1998.
8. Letter from J. Indall, CMT&I, to J. Holonich, NRC. Subject: Revegetation at Magdalena Site. Dated August 20, 1998.
9. Letter from J. Holonich, NRC, to J. Indall, CMT&I. Subject: Amendment to Materials License SUA-1480. Dated September 23, 1998.
10. Letter from J. Indall, CMT&I, to J. Holonich, NRC. Subject: Draft Final Reclamation Report. Dated January 20, 1999.
11. Letter from J. Indall, CMT&I, to K. Hooks, NRC. Subject: Final Reclamation Report for the Grace Energy Sites. Dated March 8, 1999.