Decommissioning Plan
for the
Collins Draw In Situ Uranium Mining
Research and Development Project
Source Materials License No. SUA-1352
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On June 29, 1979, Source Material License No. SUA-1352 was issued to The Cleveland-Cliffs Iron Company to operate the Collins Draw In Situ Research and Development Uranium Mine and Pilot Plant. Construction of the 1/4 acre A-1 Well Field and pilot plant was completed during the fall of 1979. Preconditioning start-up of the A-1 Well Field with purified water injection started in A-1 on April 2, 1980. In situ (solution) mining of uranium with an ammonium carbonate lixiviant was conducted until November 4, 1980, at which time groundwater restoration was initiated. Initial groundwater restoration in the A-1 Well Field was completed on September 1, 1981.

Injection of lixiviant into the B Well Field began on November 4, 1980, with the transfer of mine chemicals from the A-1 Well Field. Mining was conducted in the B Well Field until July 23, 1981, at which time the B Well Field was also placed in the restoration mode. The B Well Field was restored by the same technologies that were effective in restoring the A-1 Well Field. Restoration of both well fields will be completed in 1982 and restoration approval by the regulatory agencies is expected in early 1983. Plant decommissioning and surface reclamation will proceed as soon as groundwater restoration and decommissioning plan approval is received.

The licensed project area is shown on the attached Figure MP-1, the Surface Site Plan.

Decommissioning of Process Building and Equipment

Annex C, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," will be used as the guide for decommissioning. The dimensions of the process building used during the project are 60 feet by 100 feet. All process equipment (except two rubber storage bladders) used during the duration of the project was housed inside of the process building. After emptying the process building of decontaminated equipment, machinery, etc., it will be decontaminated and then measured for radiation. When decommissioning of the site has been completed and approved by the regulatory agencies, the process building will be left intact and then be turned over to the lessor of the land, provided that the building meets the conditions for release for unrestricted use. A comprehensive radiation survey report will be sent to the Nuclear Regulatory Commission at least 30 days before release of premises for unrestricted use.

The exteriors and interiors of the process equipment including all tanks, pipes and columns will be flushed thoroughly to eliminate any residual contamination. After this procedure has been completed, all equipment will be measured for radioactivity. All equipment released for unrestricted use will meet the conditions of Annex C. Radiation levels will be compared to the acceptable surface contamination levels listed in Table 1 of the above guide. The radioactivity on the interior surfaces of pipes and drain lines will be determined

at appropriate access points. All equipment is of a size so that all surfaces are accessible for radiation measurements. If conditions for unrestricted use have been met, the used piping and hoses will be buried in the licensed solid waste site, or released for unrestricted use. Used piping which fails the criteria for unrestricted use will be placed in a licensed tailings impoundment. No used piping will be put to another use without meeting or exceeding the criteria for unrestricted use given in Appendix C.

Two rubber storage bladders, each with a capacity of 20,000 gallons, were taken out of service. The bladders were thoroughly flushed and checked internally and externally for radiation. All results were well below acceptable criteria in Table 1 of Appendix C. We propose that both bladders be shipped to, and disposed of, in a licensed uranium mill tailings basin or transferred to a facility with a current source material license. The bladder storage area will be reclaimed pending approval from Federal and State agencies. The spill containment area for the bladders has been monitored and there has been no increase in gamma radiation readings. The monitoring data will be included in the comprehensive radiation survey report.

Removal of Contaminated Resins and Equipment

All contaminated resins and equipment will be shipped to and disposed of in Getty's Petrotomics uranium mill tailings basin. An amendment was issued by the N.R.C. to Petrotomics on January 29, 1981, which authorized the receipt for disposal in their tailings impoundment of wastes resulting from solution extraction processes. Used ion exchange resins have been checked and all have radiation levels less than 2,000 pCi/gm. These resin wastes will not have to be transported as LSA radioactive material since they are below the 2,000 pCi/gm limit set by the DOT. If any wastes exceed the 2,000 pCi/gm limit they will be handled and transported as LSA material. Liquid wastes will be drummed and handled as LSA material. In transporting the LSA material, an exclusive use vehicle will be used, radiation measurements will be taken and all routine safety precautions will be employed. The containers will be numbered and labeled "Radioactive LSA Waste Material." The Transport Index for each container will be shown on the shipping papers. The shipping papers will have driver instructions, radiation survey data and will show that the material is being transferred to a licensed facility. Radioactive placards will be deployed on the sides of the exclusive use vehicle.

Radiation Testing Procedures

All equipment before being allowed to leave the site will be swipe tested, tested with a Beta-Gamma meter and tested with a micro Rem gamma meter. All results will be recorded and available to the Nuclear Regulatory Commission. All records of this testing will be kept on file for three years. The equipment used for this testing is listed below.

For Alpha Swipe Testing

Ludlam Scaler Model 2000	Serial No. 10078
Ludlam Alpha Counter Model 43-9	Serial No. P1521

Beta-Gamma Meter

Geiger Counter Model E-530 Serial No. 807
Hand Probe Model HP-270

Micro Rem Gamma Meter

Ludlam Model 12S Micro R Meter Serial No. 15488

Surface Gamma Survey

A surface gamma survey of the entire permit area will be conducted when weather permits in late Spring or early Summer in 1983. A survey of the entire permit area will be conducted. Readings will be taken on a 200-foot grid spacing. Approximately 95 readings will be taken using the 200-foot spacial arrangement. The Micro R Meter will be used for this survey. The premining baseline survey was recorded on a 200-foot grid. Results from this post mining gamma survey will be sent to the Nuclear Regulatory Commission.

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