PDR-Return 396-SS

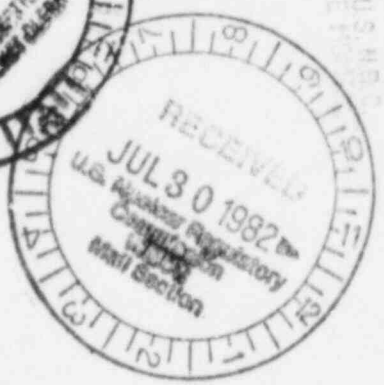
URANERZ U.S.A., INC.

040087830805

40-8783

800 Werner Court
Suite 140
CASPER, WYOMING 82601

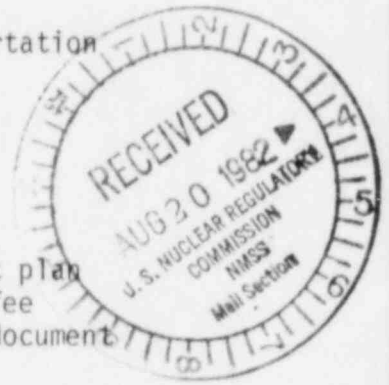
July 27, 1982



RECEIVED
'82 AUG 11 A10:24

Mr. John J. Linehan
Section Leader
Operating Facility Section I
Uranium Recovery Licensing Branch
Division of Waste Management
U.S. Nuclear Regulatory Commission
7915 Eastern Avenue, Mail Stop 461-SS
Silver Springs, MD 20910

Attention: Cyndy Bryck



Re: Facility and Transportation
Accident Plan
Docket No. 40-8783
License No. SUA-1401

Dear Mr. Linehan:

As per your request, please find Uranerz U.S.A., Inc.'s accident plan (Section 8.0), 10 copies each. Also enclosed is the amendment fee of $760.00. This plan is to be incorporated into the original document Section 8.0, page 118.

Should you or your staff have any questions, please contact me personally.

Sincerely,

URANERZ U.S.A., INC.

K. Gary Somerville
Environmental, Radiation
and Safety Officer

KGS:jm
Encl.

Applicant.....
Check No. 26272
Amount/Fee Category $760.00 A
Type of Fee Amend
Date Check Rec'd. 8/11/82
Received By Gary Somerville

OFFICIAL DOCKET COPY

20615
Amend

8.0 FACILITY AND TRANSPORTATION ACCIDENT PLAN

8.1 Organization

The corporate organization of Uranerz U.S.A., Inc. (UUS) related to the Ruth ISL pilot project is described in Section 5.1, page 87. Qualifications, responsibilities and authorization of the personnel supervising the work and radiation safety programs are outlined in Sections 5.1 through 5.3 and in Section 6.

8.2 Administrative Procedure

Safety and accident preventing procedures at the site, such as personnel training, mill emergency procedures, facility monitoring, personnel monitoring, environmental monitoring, etc. are detailed in Sections 6.1 through 6.3.

Written operating procedures and safety manuals for plant and lab will be maintained and kept at the plant site. An updated list of the nearest emergency facilities, such as physician, hospital, fire department, rescue squad, police, sheriff, with telephone numbers and names of persons to contact will be posted at several easily accessible locations at the plant site. Names of agencies, such as NRC and DEQ, with telephone numbers and names of persons, to be informed in case of accidents at the site, or during personnel or material transportation to and from the site will also be listed and posted at the plant site. A listing of names, addresses, and business and home telephone numbers of company officials to be informed in case of emergency or accidents will be maintained in the plant office. (See also Section 8.7, page 130.)

8.3 Possible Sources of Radioactive Material and of Radiation

Accidents involving radioactive materials can occur at the site of the operation and during transport to and from the site. The following sources of radioactive material have to be considered in the accident plan:

Radioactive Liquids

During operation, a waste stream of about 3% of the actual capacity of the plant will be generated. These liquid waste products from the process plant are expected to have a low level of radioactivity. They originate from filter backwash, elution, yellowcake washing, process bleeding, or pregnant solution from the wellfield. The anticipated flow rates and compositions of these liquid wastes are shown in Table 8, page 81. During restoration the majority of liquid waste will consist of the purification bleed stream.

Additional radioactive liquid wastes may derive from accidental leakages in the pipes or tanks in the process plant or in the wellfield. Those leakage liquids are expected to have a low radioactivity, but they may have U_3O_8 concentrations up to 20 grams per liter, in the high pregnant solution.

Radioactive Slurry

Spillages in the yellowcake precipitation and thickening areas are potential sources of contamination. The radioactive material to be expected in this area may be a mixture of yellowcake and slightly acid or alkaline water. Yellowcake

spillages can also occur during product transporation accidents.

Radioactive Dust

Radioactive dust is not expected within the process plant. The only possible source might be dried out remainders from wet yellowcake spillages.

Radioactive Gas

Rn^{222} (radon) gas and subsequently radon progeny may be released in significant quantities in the surge tanks, ion exchange columns, filter backwash tank, chemical make-up tanks, precipitation tank, and process pumps. As radon is physically dissolved in the pregnant solution, it will be released wherever the solution conditions for radon are changed, e.g. aeration, evacuation, open liquid surfaces, pressure drops, temperature changes, etc. The highest radon release is expected from the production surge tank and the ion exchange columns.

Ionizing Radiation

External beta and gamma-radiation is expected to be low. A slightly increased external radiation will occur only close to the storage tanks.

8.4 Technical Safety Providence

Radiation safety, radiation monitoring program, personnel safety training, special safety regulations are described in Section 6.0, page 93 and following.

Ventilation

The plant process area will be ventilated at a rate of four air volumes per hour. The air will enter the building through entries at the small walls and leave through fans in the ceiling, as shown on Figures 30 and 32. Restrooms, clean room, lunch room and lab will have individual ventilation through 100 - 400 CFM exhaust fans.

In addition to the general ventilation, all tanks will be vented by a separate independent ventilation duct system, as detailed on Figure 32. Air flow is maintained by a 600 CFM exhaust fan at the outlet to the downwind outside of the building.

Spillage and Leakage Prevention

Design engineering and construction supervision will make sure that all materials and equipment have the right material specifications and pressure ratings to ensure a safe operation of all surface facilities and of the wells. Pressure integrity tests will be done on all casings and pipings after installation to ensure tightness above operating pressure. To minimize adverse effects of spillages during operation, protective measures such as retention walls around the building foundation, sloped building floor with catchment sump, alarm devices in tanks and control valves, check valves, etc. will be built in. Pipe routing is designed as to by-pass all or only sections of the process installations in case of failures.

The location of possible leaks, additional prevention measures, and cleanup methods are described in more detail in the following Section 8.5.

Evaporation Pond Safety

The evaporation ponds will be lined with a Hypalon membrane, in prefabricated panels to minimize field seaming. A leak detection system will be installed under the liner consisting of three separate underdrain standpipe assemblies for each of the two ponds. Pond capacities are sufficient to transfer the waste solution from one pond to the other should a liner repair become necessary. Dike stability will be guaranteed by close supervision during construction as to compliance with the engineering specifications, accepted both by NRC and DEQ. Pond damages due to flooding or precipitation run-off are unlikely because of the topographic location of the pond and because of the construction of a surface runoff catchment ditch of sufficient capacity.

8.5 Possible Accidents and Their Mitigation

Operational accidents involving radioactive material can theoretically occur in four areas:

- in the plant area;
- in the wellfield area;
- in the pond area, and
- during transport of yellowcake.

Accidents in the Plant Area

The possibility of spillages of solutions or liquid chemicals will be minimized by level control and alarm devices in storage and surge tanks. If, despite these built-in precautions, solutions should be spilled, they will flow into the sump trench. The plant will have a concrete floor with an appropriate sealing to prevent seepage of solution in to the foundation and into the ground. The floor will be slightly sloped towards the sump so that the washwater and spillages will be collected in the sump by gravity. Large spills, e.g. due to a sudden tank rupture, will be contained within the process building by an elevated sill around the outside wall. In case of major spillage or breakage in the plant, the production stream from the wellfield will by-pass the process equipment and be circulated back to the wellfield.

Immediately after spillages, the concrete floor will be washed and the washwater collected in the sump. The efficiency of washing will be tested by hand held scintillometers, to ensure the contamination levels are consistent with the ambient background levels throughout the rest of the plant. Spills from low concentrated uranium solutions and slightly radioactive slurries will be collected in the sump and transferred to the evaporation ponds.

Leaks of higher concentrated uranium solutions, e.g. from the precipitation circuit, can be recirculated from the sump to the plant for processing.

Other accidents in the plant could be caused by spillage or release of process chemicals, either solid, liquid or gaseous. Solid chemicals will be delivered in sacks or drums, so that

spilled quantities are limited. Of the possible solid process chemicals, MgO, NaOH, NaCl, $(NH_4)_2CO_3$, Na_2CO_3, only the sodium hydroxide is a hazardous chemical. Special precautions and handling procedures will be developed and observed. All solid chemicals except MgO are soluble in water, making cleaning easy.

Liquid chemicals used in the process will be H_2SO_4, HCl and H_2O_2. All three are hazardous chemicals. They will be shipped, stored and handled in the original, factory filled drums or containers. Special safety procedures will be observed when handling those chemicals.

Industrial gases on the test site can be NH_3, CO_2, O_2 and propane. Release of CO_2 and O_2 from the pressurized tanks outside the building in case of overpressure will be through safety valves into the open air. Ammonia may be released from the decomposition and from the eluant make-up, but as the decomposition device is sealed under vacuum, the probability is low. In case of releases and hazardous concentrations of gases in the building, the personnel will be evacuated until the ventilation has restored the original air quality.

The yellowcake product will be packed in plastic lined steel drums with airtight lids. For packing, labeling, storing and shipping of the product the provisions of 10 CFR Part 71 will be observed. The same applies to radioactive solid or liquid wastes, either from the plant or from the solar evaporation ponds.

No solid, liquid or gaseous compounds of hazardous character other than those mentioned will be created by chemical process reactions in the plant.

Accidents Outside the Plant

Wellfield piping will be designed to hold a pressure of 680 psi, (34 k/cm^2), that is 2.4 times the maximum operating pressure of 200 psi (14 kp/cm^2). In case of pipe leakages, ruptures or breaks, the affected leach pattern will be shut down. Clean-up of those spillages may involve the excavation and the disposal of the contaminated soil at a NRC approved site.

A pipe rupture can easily be detected and located by the operator at the wellfield control panel, because each well is monitored separately.

Spills from broken injection lines are a minor environmental hazard because they only contain non-hazardous chemical in low concentrations. As all wells are piped separately to the control panel in the plant building, an injection line break will only effect one well, thus limiting the quantities spilled. Spills from recovery lines my contain uranium and some low radioactivity. All seven production wells are piped separately, same as the injection wells. The intake to the surge tank is at the tank top, so that no spill by backflow out of the recovery surge tank can occur.

Spillages from wellfield lines will be collected in an emergency pool at the lowest spot in the wellfield. The pool also serves as a sediment catchment facility, should contaminated soil be washed down. The collected spillages

will be transferred to the evaporation pond and any contaminated soil removed and properly disposed of.

Fires inside or outside the plant are possible, but not very likely, as there is a minimal amount of flammable material. Fire extinguishers will be set up and inspected regularly for proper function. Extinguisher types will be in accordance with appropriate regulations for chemical plants. For emergencies, a gasoline powered water pump and fire hoses will be stored at the test site. Water supply will be from an emergency water storage tank. A vegetation control strip will be set up around the wellfield and plant area to protect it from range fires as well as to contain grass fires lighted on the site.

Accidents in the Pond Area

Leakage of solutions from the ponds into subsoil and groundwater will be prevented by lining of the ponds. A leak detection system will be installed underneath the ponds. In order to have flexibility in the unlikely case of liner failures, the pond system will consist of two individual ponds, each with its individual leak detection system. The planned leak detection system consists of a system of horizontal detection pipes underneath the pond liner connected to monitor standpipes. The bottom drain pipes will be bedded in a trench and buried with a free drainage gravel sand. The pipes will be slotted PVC pipes. They will be extended to one side to the pond dike and connected to an inclined standpipe under the dike slope. The standpipe is for observation and in case of leakage for sampling. Each pond will have three drain pipes.

If a leak is confirmed, the damaged pond will be emptied immediately for repair by transferring the solution to the other pond.

The most adverse theoretical accidents related to the ponds are flash flooding and dike failures, but are highly unlikely, as described in Section 8.4.

Accidents During Product Shipment

Shipment of yellowcake will be carried out by an approved shipping contractor in compliance with appropriate local, state or federal regulations. Spillages of yellowcake caused by traffic accidents are normally prevented from drying out and being wind carried by spraying with an organic gelatinous solution, until final clean-up commences. Contaminated soils will be removed and disposed of at a NRC approved site.

8.6 Responsibilities

Uranerz is committed to initiate clean-up procedures immediately after accidents involving radioactive material produced, stored, shipped under the provisions of the Source Material License. Uranerz assumes full responsibility for the success of those clean-up procedures. That includes transportation accidents unless the receiving licensee accepts in writing prior to shipment to receive the material at the Ruth ISL facility.

Any radioactive material released either in liquid or solid form by an accident will be cleaned up in accordance with the criteria contained in "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use

or Termination of Licenses for Byproduct, Source or Special Nuclear Material" dated November 1976.

Uranerz is also committed to minimize the possibility of accidents by carefully designing, selecting, constructing, and construction supervising all facilities, material, or equipment. Preventive maintenance and routine checks for safe functioning during operation is also anticipated.

Generally, the duty and responsibility of each individual on the Uranerz staff is to take the appropriate actions to stop or minimize the impact of an accident occuring. More specifically, each operator has the responsibility to shut off the appropriate facility section in case of sudden pipe or tank ruptures, e.g. ruptures of surface piping in the wellfield will cause the wellfield operator in charge to stop injection and/or recovery of the affected wellfield area. After that step is taken, the operator informs the supervisor. After the impact of the accident has been evaluated, the highest ranking technical UUS employee on site decides whether additional areas are to be shut off and what immediate security and clean-up procedures are to be initiated. The highest ranking radiation safety technician on site has to be informed also; he decides whether to take additional steps within his/her area of responsibility to mitigate hazardous situations and to minimize accident impacts.

The highest ranking technical employee at the site can, depending on shift schedule, be the shift boss, the plant supervisor, or the plant superintendent. The highest ranking safety employee can be the radiation safety technician or his/her alternate. In case the Manager Operations or the Radiation Safety Officer are at the site, the accident and the already initiated action have to be reported to them directly.

Otherwise the highest ranking technical employee decides whether their immediate presence at the site is required and informs them by phone. All accidents causing partial or total shut down of operation, causing property damage, or personnel injuries are to be reported to the Manager Solution Mining. The Manager Operations and/or the Radiation Safety Officer decide whether immediate notification is necessary. In case of accidents during transportation the shipping contractor has to notify immediately the Manager Operations and the Radiation Safety Officer.

In case of major accidents, involving injuries of people, property loss or severe damage, major damage of properties other than UUS, or uncontrollable accidents and continuing hazardous situations, e.g. fire, and transport accidents, the General Manager UUS has to be informed. The Manager Solution Mining decides whether immediate notification is required. Corporate regulations require that any accident causing time loss or property damage are to be covered in a written accident report to be submitted to the General Manager's Office.

8.7 Emergency and Accident Contacts

A listing of persons, facilities, agencies to be contacted in emergency or accident situations as outlined in Section 8.2 will be compiled and will be available at the plant site prior to startup.

UUS employees having corporate responsibilities in case of accidents as detailed in Section 8.6 are listed below. The updated list will be maintained at all times in the plant office at the site.

0400878309 0S

Uranerz U.S.A., Inc.
445 Union Boulevard, Suite 230
Denver, CO 80228
(303) 985-1511

Dr. Bernhard Free
General Manager
6830 South Jasmine Court
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Uranerz U.S.A., Inc.
800 Werner Court, Suite 140
Casper, WY 82601
(307) 234-9169

Dr. Christof Schmidt
Manager Solution Mining
2908 Ridgecrest
Casper, WY 82604
(307) 265-8663

Uranerz U.S.A., Inc.
Ruth ISL Site
Highway 387, Mile Post 117
65 Mi. North of Casper, WY
(307) 234-2461
(307) 437-6745

Len F. Marrs
Manager Operations
208 North Sun
Casper, WY 82609
(307) 237-7087

K. Gary Somerville
Radiation Safety Officer
2232 Glendale Avenue
Casper, WY 82601
(307) 266-5023

Pei-Cheng Hsu
Plant Superintendent
4040 Placid Drive
Casper, WY 82604
(307) 265-9508

20615

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

PDR-Return Last. 1472, 396

FEE CLASSIFICATION MEMO

DOCKET NO.: 40-8783

TO: William O. Milier, Chief
License Fee Management Branch, ADM

FROM: J Linehan

SUBJECT: MATERIALS LICENSE AMENDMENT CLASSIFICATION

Applicant: Uranerz U.S.A., Inc.

License No.: SUA-1401 Fee Category: 2B

Application Dated: 7-27-82 Received: 7-30-82

Applicant's Classification: Minor S&E

The above application for amendment has been reviewed by NMSS in accordance with §170.31 of Part 170, and is classified as follows:

1. Safety and Environmental Amendments to Licenses in Fee Categories 1A through 1H, 2A, 2B, 2C, and 4A.
   - (a) Major safety and environmental ____
   - (b) Minor safety and environmental X
   - (c) Safety and environmental (Categories 1D through 1G only) ____
   - (d) Administrative ____
2. Justification for Reclassification: ____
3. The application was filed (a) ___ pursuant to written NRC request and the amendment is being issued for the convenience of the Commission, or (b) ___ other (state reason): ____

MAIL CONTROL #: 20615

CASEWORK #: 04008783080S

CHECK INCLUDED:

☐ No

☑ Yes

Amount: $760

Date of check: 7-20-82

on check: 26272

Signature: J Linehan

Uranium Recovery Licensing Branch
Division of Waste Management, NMSS

Date: 8/13/82