



PDR 40-8698

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R. B. Sewell  
Manager of Operations

July 9, 1979



Mr. J. E. Rothfleisch  
Uranium Recovery Licensing Branch  
Division of Waste Management  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

RE: DOCKET 40-8698

Dear Mr. Rothfleisch:

My staff has reviewed the Safety Evaluation Report Source Material License Minerals Exploration Company Sweetwater Mill dated February 16, 1979 and our application for a Source Material License with supplemental information required by Regulatory Guide 3.5 dated May 5, 1978 and identified the more restrictive differences contained in the Safety Evaluation Report. The purpose of this letter is to describe those differences and indicate Plateau Resources Limited commitments in areas where more restrictive differences exist in the Safety Evaluation Report (SER).

SER Section 3.2

Section 3.2 of the Safety Evaluation Report limits the Sweetwater Mill to a yellowcake production rate which is 20% greater than the design throughput of the mill. This limitation is based on limiting the increase in the maximum organ dose to an individual at the site boundary to 20% increase in any one year over those presented in the FES. The limitation takes into account the expected recovery rate, the ore body grade and the design throughput.

In the case of Plateau, we believe the limitation should be structured based on the following factors. The design throughput of the operating facility is 750 tons per day averaged over 365 days per year. We believe that in the early years of operation, after initial operation is completed to eliminate "bugs", the plant availability on an annual basis may approach

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100% rather than the 95% assumed for the life of the facility. Further, the metallurgical test work for the process development was performed on a low-grade sample which resulted in a 90% uranium recovery. This conservative recovery value has been assumed throughout, even though we believe that the recovery will approach 95% for average ore grades of 0.10% and above. In addition, the ore bodies that Plateau is mining are pod-like. While the grade of the ore will average approximately 0.10% over project life, our present mining plan for the early year operation involves production from the higher grade pods which will result in a grade of approximately 0.12%.

Taking these variances into account, we suggest the annual limit for yellow-cake production be 660,000 pounds per year. This fluctuation will result in only small increases in the dose to an individual and these increases will be well within proposed EPA limits and less than 1% of the annual population dose commitment as presented in Table 4.6 of the Draft Environmental Statement.

Prior to additional comments, it should be noted that Plateau has instituted an organizational change. This change involves Mr. Jay Davis. He now reports directly to the Process Manager. His title is Environmental and Radiological Health Supervisor (see Attachment 1).

#### SER Section 4.5 Audits and Inspections

Plateau Resources Limited will perform monthly inspection of work and storage areas and practices with respect to Radiation Safety. In addition all monitoring and exposure data will be reviewed monthly to insure completeness, detection of abnormal conditions and adequacy of followup actions. Radiation exposures and radiation survey records will be reviewed annually for adherence to ALARA Philosophy.

A formal report will be prepared annually by Environmental and Radiological Health Supervisor and his staff and reviewed by the Process Manager. This report will address any upward trends, unusual discharges, problem areas, monitoring data, items of regulatory non-compliance and recommendations for necessary corrective actions. This report will also include an evaluation of the adequacy of the implementations of license conditions.

In addition Plateau Resources will commit to the following:

- (a) An annual audit by the corporate Program Control Department Staff including review of operating procedures, exposure records, monthly inspection reports, training programs, and safety meeting reports to determine the total Safety Program's effectiveness.
- (b) A Radiation Health Physics Specialist (an outside consultant) will inspect, review, and approve the project health physics safety programs and records and ALARA philosophy on at least an annual basis.

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(c) A daily documented visual surveillance of all mill areas by operating mill foreman for proper implementation of good radiation safety practices. A weekly documented inspection by an Environmental Assistant of all work and storage areas and a report to the Environmental and Radiological health supervisor on any items of non-compliance affecting Radiological Safety. Records of such inspection and any corrective actions will be retained for at least five years.

#### SER Section 4.6 ALARA Program

Plateau Resources will commit to keep Occupational Radiation Exposures as low as reasonably achievable. Any trends or deviations from ALARA will be addressed by the Environmental and Radiological Health Supervisor and to ensure that the ALARA philosophy is being pursued by Plateau Resources Limited, Program Control Department will conduct an audit on an annual basis. Items included in the audit are as follows:

1. Operating Procedures.
2. Exposure Records.
3. Inspection Reports.
4. Training Programs.
5. Safety Meeting Reports.

A formal report of an annual review of all audits and inspections shall be prepared by the Environmental and Radiological Health Supervisor. This report would also include his conclusions and recommendations and would be submitted to the Process Manager for review.

All other items in this section will be complied with, other than the Corporate Medical Staff which Plateau does not have at the present time nor is it planned in the future. Instead Plateau would engage an outside Radiation Health Physics Specialist as consultant on a part-time basis.

#### SER Section 5.0 Radiation Safety Controls and Monitoring

##### 5.1 Effluent Control Techniques

Emission control equipment to be used has been listed in Table 3.3-1 of the Environmental Report and is attached (Attachment 2).

The dust collecting, venting and fume control systems in the plant are designed to control emissions when the plant is operating at a designed rate of 790 tons per day.

The failure of all dust collectors, ventilators and scrubber fans will be indicated by an alarm system in the appropriate control rooms. Plateau would also comply with all other specific effluent control techniques

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as described in the Environmental Report and are similar to those described in the SER.

Plateau will also commit to the tailings impoundment monitoring and related weekly documented inspections.

#### 5.2 In-Plant External Radiation Monitoring Program

Plateau Resources will perform a survey of the restricted area quarterly to determine the levels of external radiation present at strategic locations. Twenty-five locations have been identified in Table 6.2-1 of the Environmental Report and the list is attached (Attachment 3).

Further, the instruments will be checked at each use against a source and they will be calibrated at six-month intervals.

#### 5.3 Personnel External Monitoring

All employees working in the product precipitation, drying and packaging areas will wear TLD's or film badges with a sensitivity range of 1-1000 millirem (m-rem). The dosimeters will be worn during working hours for a period of one month, then returned for measurement.

#### 5.4 Contamination Surveys

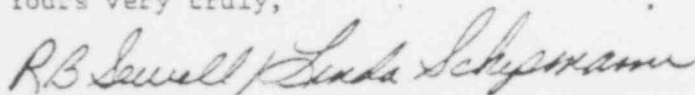
Plateau will commit to performing surface contamination surveys in the lunchroom, laboratory, control rooms and administrative office weekly.

#### 5.7 Bio-Assay Program

(a) Urine specimens shall be collected from all employees including maintenance employees working in the product precipitation, drying and packaging areas on a monthly basis. Also a baseline urine sample shall be obtained from any new worker who will be subjected to uranalysis prior to starting work.

(b) In vivo measurements shall be performed annually on all employees including maintenance employees working in the product precipitation, drying and packaging areas. Baseline in vivo measurements shall be performed on all new workers in the above areas.

Yours very truly,



R. B. Sewell  
Manager of Operations

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Attachment 1

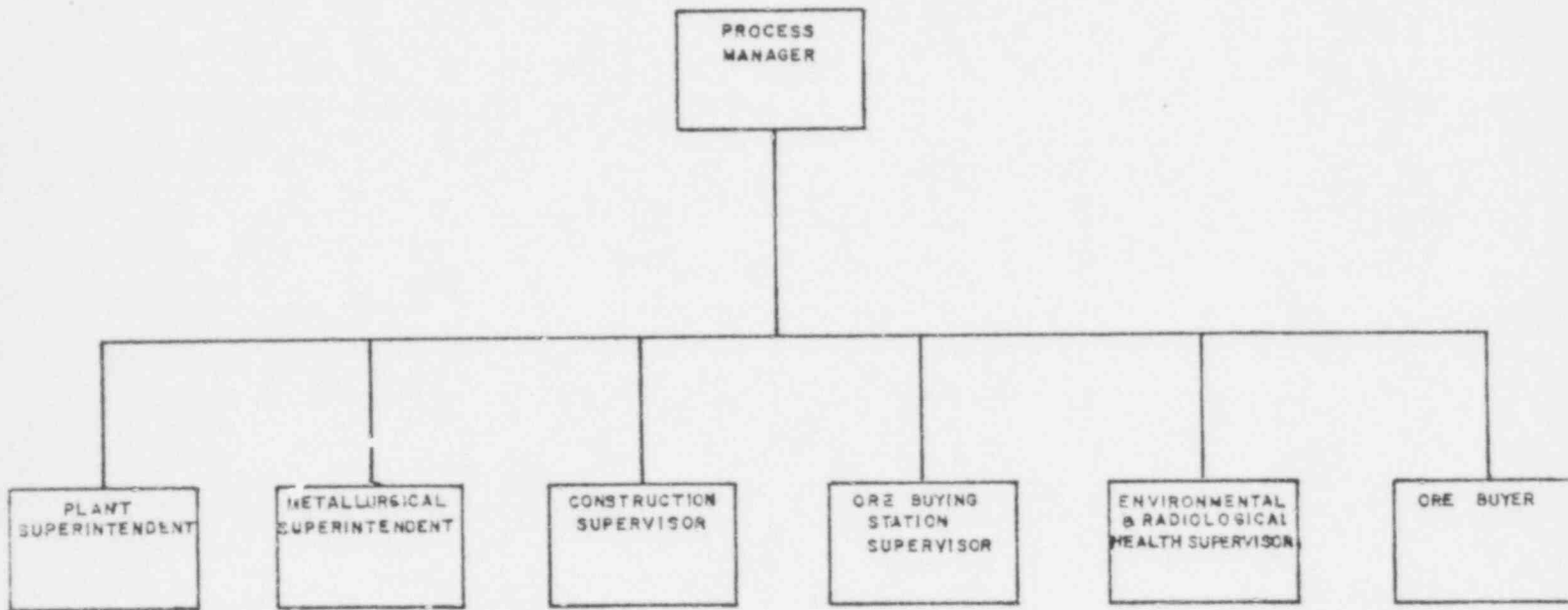


Table 3.3-1. PLANT STACK EMISSIONS

| Stack Location <sup>a</sup>           | Stack No. | Emission Control Equipment | Collection Efficiency (%)                     | Exit Flow Rate (cfm) | Exit Temperature (°F) | Exit Diameter (inches) | Release Height (feet) | Pollutant Concentrations and Emissions                                       |
|---------------------------------------|-----------|----------------------------|---|----------------------|-----------------------|------------------------|-----------------------|--|
| Primary Crusher                       | S-1       | wet dust collector         | 99.8  | 6,000                | ambient               | 18                     | 100                   | ore dust, 0.03-0.05 g/m <sup>3</sup>   |
| Secondary Crusher & Sampling          | S-2       | wet dust collector         | 99.8  | 13,000               | ambient               | 26                     | 80                    | ore dust, 0.03-0.05 g/m <sup>3</sup>   |
| Fine ore Bins & Feeders               | S-3       | wet dust collector         | 99.8  | 8,000                | ambient               | 20                     | 80                    | ore dust, 0.03-0.05 g/m <sup>3</sup>   |
| Rod Mill                              | S-4       | (none)                     | -   | 1,000                | 55-70                 | 12                     | 90                    | radon-222, 2.2 $\mu$ Ci/sec <sup>b</sup>                                     |
| Leach Tanks                           | S-5       | demister                   | 99.9+   | 5,000                | 60-70                 | 18                     | 90                    | undetectable amounts of sulfuric acid mist                                   |
| Yellowcake Precipitators & Thickeners | S-6       | wet dust collector         | 99.9+   | 1,000                | 60-100                | 12                     | 90                    | ammonia, 100 ppm   |
| Yellowcake Centrifuge & Calciner      | S-7       | wet dust collector         | 99.7(U <sub>3</sub> O <sub>8</sub> )<br>99.9+ | 3,000                | 150-200               | 18                     | 90                    | yellowcake (90% U <sub>3</sub> O <sub>8</sub> ), 0.016 lb/hr; ammonia, 5 ppm |
| Product Drumming                      | S-8       | bag filter                 | 99.7  | 1,000                | 60-100                | 12                     | 90                    | yellowcake (90% U <sub>3</sub> O <sub>8</sub> ), 0.021 lb/hr                 |
| Boiler                                | S-9       | (none)                     | -   | 5,000                | -                     | 18                     | 35                    | see Table 3.5-1  |
| Diesel Generator                      | S-10      | -                          | -   | -                    | -                     | 8                      | 35                    | see Table 3.5-2  |
| Laboratory Fume Hood Manifold         | S-11      | (none)                     | -   | 2,000                | 60                    | 12                     | 35                    | miscellaneous vapors   |

Source: Information supplied by Mountain States Engineers for Plateau Resources Limited, 1978.

<sup>a</sup>Shown on Figure 3.1-1.

<sup>b</sup>As a "worst case" condition the total radon-222 emissions from the plant, excluding tailings impoundment, are assumed to be emitted from the rod mill exhaust stack.

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Attachment 2

Table 6.2-1. EXTERNAL RADIATION MONITORING LOCATIONS

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Ore feed hopper  
Ore conveyor gallery  
Rod mill feed chute  
Rod mill discharge  
Leach tank vent  
Leach tank walls  
Thickener bridge(s)  
Washing and clarification control area  
Clarified pregnant solution storage tank  
Raffinate storage tank  
Precipitation tank walls  
Yellowcake thickener discharge pump  
Yellowcake thickener bridge  
Yellowcake thickener walls  
Yellowcake drum filter(s)  
Yellowcake drier  
Yellowcake drier exhaust scrubber  
Yellowcake roll crusher  
Entrance to drier room  
Yellowcake packaging and storage area  
Sand filters  
Charge room  
Laboratory (general area)  
Lunchroom  
Maintenance shops

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