

INTERIM REPORT

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Management

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OAK RIDGE NATIONAL LABORATORY  
Oak Ridge, Tennessee 37830  
operated by  
UNION CARBIDE CORPORATION  
for the  
U. S. DEPARTMENT OF ENERGY

INTERIM REPORT

NRC Research and Technical  
Assistance Report

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OAK RIDGE NATIONAL LABORATORY MONTHLY REPORT TO  
THE FUEL PROCESSING AND FABRICATION BRANCH  
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY

July 1979

A. Environmental Assessment Activities

Hanksville Ore Buying Station  
Plateau Resource Ore Buying Station

Final mats and copies of the Hanksville Ore Buying Station and spare copies of Plateau Resource Ore Buying Station were shipped by air to the EPM on 7/27/79. These projects are complete.

B. In Situ Mining

Nine Mile Lake

Two staff members attended the scoping meeting for the Nine Mile Lake project. No major new issues were discovered. Some sections of the PDES were completed, specifically:

- Section 2.1 Alternative of no licensing action
- 2.2 Alternative Energy sources
- 3.1 Demography and socioeconomic profile
- 3.- Surface water
- 4.4.1 Socioeconomic effects
- Description of the ore body
- 2.7 Geology, Mineral resources, and seismicity
- 2.12 Groundwater

Restoration, Reclamation, and decommissioning, (Partial) Engineering sections were completed to a status where new information from the applicant is necessary. Environmental science's sections are also in preparation. If the applicant produces needed information by mid-August this project is close to schedule.

C. Mines and Mills

Kerr-McGee

The updated socioeconomic sections were received from Georgia Tech. The updated version of the remainder of the PDES became available from Word Processing.

At NRC direction work on this project is discontinued until further notice. Copies of recently completed material is being sent to the EPM.

925 086

NRC Research and Technical  
Assistance Report

Shootering Canyon

The FES was issued. Costs are late word-processing charges and minor close out costs.

Gulf Minerals

Review of the ER continued. The staff has not received material from the applicant requested by the EPM.

Edgemont

Environmental Sciences review of the Edgemont proposal was completed and copies sent to the EPM. EIS staff inputs pertaining to geohydrological problems were also supplied the EPM.

Below Grade Burial-Morton Ranch

This account is being closed per NRC instructions. See cost sheet Note 4.

D. Budget

Project costs are reported on the attached table.

E. Overdue Action of FCMS Regarding Laboratory Requests

None

F. Remarks

As per NRC request the time and cost records format has been changed to show cumulative time and costs for each project since FY79 began. Except for 3 projects initiated this Fiscal year this accumulation is a matter of historical record only (ie: the projects are completed); Therefore, it seemed counterproductive to expend the time required to detail prior years. If required, we can develop this information and submit it later.

No surprises were found in the FY79 records and none would be expected in prior years.

Document preparation, travel, and consultant costs have been corrected to include ORNL overhead costs. There is no method to account for document preparation costs as accrued since weekly cost charges are not current (ie: the last partial week of the month is not billed until the following month and if we subcontract Figures and Tables over a 30 day discrepancy can occur). Minor changes in travel costs may also occur for up to 60 days after a trip, consultant charges do not appear until the bill is paid.

925 087

Only word processing charges are a significant factor in total costs per project besides travel and manpower and total over 18% of total project cost for the FY to date. The man-hours utilized in word processing are not reported in technical hours reported.

On a temporary basis this cost can seriously distort apparent MY-costs for a project.

Consultant costs on tasks assigned by NRC and paid by ORNL will be reported as separate line items in subsequent monthly reports.

Unit labor costs and other unit costs are so volatile that monthly variations sometimes result in absurd answers. ORNL reports on a monthly cost-center basis. Present annual cost-center averages are:

|                                |          |
|--------------------------------|----------|
| Environmental Impacts Section  | \$77,857 |
| Socioeconomics Group           | 48,871   |
| Radiation Analysis             | ~49,000  |
| Environmental Sciences Section | 45,451   |

Over the 6-month period Feb-July, 1979 EIS costs have varied between 84 and 133% and ESS costs have varied between 97 and 125% of their respective averages. These swings are the result of cost-center overhead changes caused by sickness, vacations, new personnel and awaiting assignment and old personnel awaiting reassignment as well as supervisory and clerical costs. In short, even if two projects received exactly the same number and type of man-hours, each project's costs would vary significantly.

The laboratory support charges add from 31 to 33% to the above unit costs.

Our new contract with Science Applications, Inc. represents average costs of about \$81,000 per MY for the skills they provide. This represents total cost including support and travel.

Presently we have on loan from the NURE program at K-25 a geologist at an equivalent cost-center charge of \$60,000 which dilutes our apparent EIS cost to some extent.

We agree that NRC costs to individual projects review must be properly assigned. For project work assigned to ORNL every effort is made to distribute costs properly. Since unit labor costs and other unit costs are not fixed under our cost-center accounting system, we suggest your Environmental Project Managers use the following table as a guide to determine expected major project cost and manpower requirements.

| Expected Major Project             | Manpower<br>Hours | 1.75 man-years<br>Dollars |
|------------------------------------|-------------------|---------------------------|
| Environmental Impacts Section      | 900               | 44,000                    |
| Environmental Sciences Section     | 1300              | 37,000                    |
| Socioeconomics Group               | 450               | 14,000                    |
| Radiation Analysis (if required)   | 300               | 9,000                     |
| Science Applications, Inc.         | 700               | 27,000                    |
| Document Preparation (75% for DES) |                   | 23,000                    |
| Travel (Estimate by site)          |                   | (2,500 av)                |

925 088

In addition, under the new reporting system, general charges of 3,000 - 5,000 \$/month can be expected.

Assuming 6 projects/yr, no radiation analysis, general charges of 3,000 \$/mo. and \$2,500 travel per project, total cost per year = \$921,000.

Please contact H. E. Zittel, 624-5757, if you require further information or clarification.

*H. E. Zittel*

H. E. Zittel  
Project Manager

925 087

|                              | Prior Years       |         | Total Project |                     | Original Estimate |
|------------------------------|-------------------|---------|---------------|---------------------|-------------------|
|                              | MM                | Cost    | MY            | Cost                |                   |
| Shooting Canyon Mill         | 5.88              | 33,328  | 1.67          | 130,016             | 125,000           |
| White Mesa Mill              | 13.20             | 70,323  | 1.74          | 145,301             | 125,000           |
| Homestake Pitch Project      | 20.52             | 191,571 | 2.35          | 253,247             | None              |
| Kerr-McGee Powder River      | 20.04             | 154,180 | 1.74          | 164,877             | None              |
| Plateau Resources OBS        | 3.48              | 18,630  | 0.36          | 25,337              | 25,000            |
| Energy Fuels OBS, Hanksville | 1.56              | 8,472   | 0.22          | 23,399              | 25,000            |
| Energy Fuels OBS, Blanding   | 1.56              | 8,742   | 0.18          | 14,528              | 25,000            |
| Nine Mile Lake               | --                | --      | 0.64          | 44,177              | 150,000           |
| Edgemont Decommission        | --                | --      | 0.14          | 10,078              | 150,000           |
| Gulf Minerals                | --                | --      | 0.15          | 10,452              | 150,000           |
| Morton Ranch                 | 0.63              | 42,639  | 0.09          | 34,384 <sup>2</sup> | NA                |
| General                      | 0.24              | 14,688  | 0.59          | 45,929 <sup>2</sup> | NA                |
| Monthly Total                | 5.76 <sup>1</sup> | 435,695 | 10.04         |                     |                   |

1. Includes 0.17 MY and \$11,619 on WMC, Exxon and B&W (closed accounts).

2. Current year cost.

NA Notes: (a) General charges cover items in support of branch which are short term and not specific to single projects. Examples: mining conference attendance, and general involvement in the environmental areas of uranium fuel cycle related activities as well as supervisory duties not specific to particular projects.

925 090

PROJECT COST AND MANPOWER BREAKDOWN FOR JULY 1979

|  | MM Cost |         | Environ. Impact Section Hours | Environ. Sciences Division Hours | Science Applications Inc. Hours | Radiation Analysis Hours | Socio-economic Hours | Technical Support Services Hours | Includes Overhead          |                    |              |
|--|---------|---------|-------------------------------|----------------------------------|---------------------------------|--------------------------|----------------------|----------------------------------|----------------------------|--------------------|--------------|
|  | MM      | Cost    |                               |                                  |                                 |                          |                      |                                  | Document Preparation Costs | Consult. Costs     | Travel Costs |
| Shooting Canyon Mill Cumulative (from Oct. 1978) | 0.06    | 1,246   |                               |                                  |                                 |                          |                      | 11                               | 895                        |                    |              |
|  | 14.21   | 104,688 | 868                           | 531                              | 466                             | 288                      | 188                  | 122                              | 22,236                     |                    | 282          |
| White Mesa Mill Cumulative                       | 7.70    | 74,978  | 400                           | 312                              | 414                             | 0                        | 16                   | 133                              | 22,233                     |                    |              |
| Homestake Pitch Project Cumulative               | 7.66    | 61,676  | 516                           | 755                              |                                 |                          |                      | 57                               | 18,704                     |                    | 986          |
| Kerr-McGee Powder River Cumulative               | 0.55    | 1,692   |                               |                                  |                                 |                          | 8                    |                                  | 1,495                      |                    |              |
|  | 0.87    | 10,697  | 36                            | 8                                | 64                              |                          | 26                   | 16                               | 1,561                      | 5,760 <sup>2</sup> |              |
| Plateau Resources OBS Cumulative                 | 0.88    | 1,410   |                               | 27                               |                                 | 84                       |                      | 41                               | 1,410                      |                    |              |
|  |         | 6,707   |                               |                                  |                                 |                          |                      |                                  | 2,247                      |                    |              |
| Energy Fuels OBS, Hanksville Cumulative          | 1.02    | 2,908   | 58                            | 75                               |                                 | 44                       |                      |                                  | 2,908                      |                    |              |
|  |         | 14,927  |                               |                                  |                                 |                          |                      |                                  | 7,632                      |                    |              |
| Energy Fuels OBS, Blanding Cumulative            | 0.61    | 5,786   | 16                            | 29                               |                                 | 44                       |                      | 16                               | 2,400                      |                    |              |
| Nine Mile Lake <sup>3</sup> Cumulative           | 4.13    | 14,384  | 236                           | 111                              | 357 <sup>1</sup>                |                          |                      | 11                               |                            |                    | 1,651        |
|  | 7.71    | 44,177  | 384                           | 423                              | 519 <sup>1</sup>                |                          |                      | 10                               |                            |                    | 4,046        |
| Edgemont Decommission <sup>3</sup> Cumulative    | 1.17    | 6,871   | 76                            | 110                              |                                 |                          |                      | 16                               |                            |                    |              |
|  | 1.65    | 10,078  | 160                           | 110                              |                                 |                          |                      | 16                               |                            |                    |              |
| Gulf Minerals <sup>3</sup> Cumulative            | 0.48    | 3,578   | 48                            | 24                               |                                 |                          |                      | 11                               |                            |                    |              |
|  | 1.85    | 10,452  | 164                           | 142                              |                                 |                          |                      | 15                               |                            |                    |              |

6

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POOR

Project Cost and Manpower Breakdown for July 1979 (con't.)

|               |      |        |     |     |     |   |    |       |       |
|---------------|------|--------|-----|-----|-----|---|----|-------|-------|
| Monthly Total | 7.90 | 46,573 | 432 | 510 | 357 | 8 | 60 | 7,064 | 3,524 |
|---------------|------|--------|-----|-----|-----|---|----|-------|-------|

1. Approximate SAI costs incurred but not yet paid:
  - Nine Mile Lake - 519.9 hrs - \$17,282
  - Kerr-McGee - 64 hrs - \$1,832
  - Nine Mile Lake site visit costs - \$1,325
2. 320 hours of socioeconomic consultant time updating PDES - sections will be sent to EPM
3. Some hours and charges to be redistributed later
4. EIS time is primarily coordination of Burns, and Roe Dewatered tailings report, contract initiation and coordination with Nelson and Shepherd (Colorado State), trip and consulting on Cotter Corp. preparation of and paper delivery at CSU symposium on Uranium tailings Management Nov. 20-21, 1978.  
 Consultant costs are charges by Nelson and Shepherd (including overhead) on tasks assigned by NRC paid by ORNL. If required these costs can be estimated by project.

7

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925 092



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925 093