

DOE/EW/05066-
DISTRIBUTION CATEGORY

FUEL GAS DEMONSTRATION PLANT PROGRAM

SMALL-SCALE INDUSTRIAL PROJECT

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ERIE MINING COMPANY
PICKANDS MATHER & COMPANY, MANAGING AGENT
1100 SUPERIOR AVENUE
CLEVELAND, OHIO 44114

PREPARED FOR THE
U. S. DEPARTMENT OF ENERGY
ASSISTANT SECRETARY FOR ENERGY TECHNOLOGY
OFFICE OF FOSSIL FUELS

UNDER CONTRACT EW-78-C-02-5066
(FORMERLY CONTRACT ET-78-C-01-2578)

200-5066-T11

Pickands Mather & Co.

1100 Superior Avenue
Cleveland, Ohio 44114

April 17, 1979

NOTICE
PORTIONS OF THIS REPORT ARE UNCLASSIFIED. IT
HAS BEEN REVIEWED AND FOUND TO BE AVAILABLE
COPY TO THE BROADEST POSSIBLE AVAIL-
ABILITY.

Mr. R. W. Laza
Contracting Officer
U.S. Department of Energy
Chicago Operations Office
9800 South Cass Avenue
Argonne, Illinois 60439

NOTICE
PORTIONS OF THIS REPORT ARE UNCLASSIFIED. IT
HAS BEEN REVIEWED AND FOUND TO BE AVAILABLE
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ABILITY.

SUBJECT: Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066
McKee Contract 4814A
REF: ERDA-388

Dear Mr. Laza:

The scope of work for Phase I of our contract did not provide for a final report until 90 days after the completion of Phase III.

In accordance with the agreed upon reduced scope of activities, Erie has provided a final report of Phase I activities per DOE's request. The attached report was compiled to provide:

1. An overview, review and status of Phase I activities.
2. Erie's assessment of project viability.
3. A final update of capital and operating cost for both the Commercial and Demonstration Plant.
4. A final summary of Phase I costs and projected costs for Phase II and III.

*P.C.D.
Laza
5/16/79*

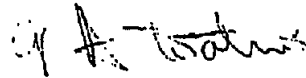
Mr. R. W. Laza
April 17, 1979
Page 2

Detail substantiating or clarifying analysis and summarizations have been referenced to Phase I deliverables where appropriate.

Twenty bound copies of this final report are provided for your perusal, record and distribution.

Very truly yours,

ERIE MINING COMPANY
PICKANDS MATHER & CO.,
MANAGING AGENT



J. H. Fatum
Project Director

JHF/mh



FINAL REPORT

COAL GASIFICATION PROJECT

DOE CONTRACT EW-78-C-02-5066

FORMERLY (ET-78-C-01-2578)

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ERIE MINING COMPANY

PICKANDS MATHER & CO., MANAGING AGENT

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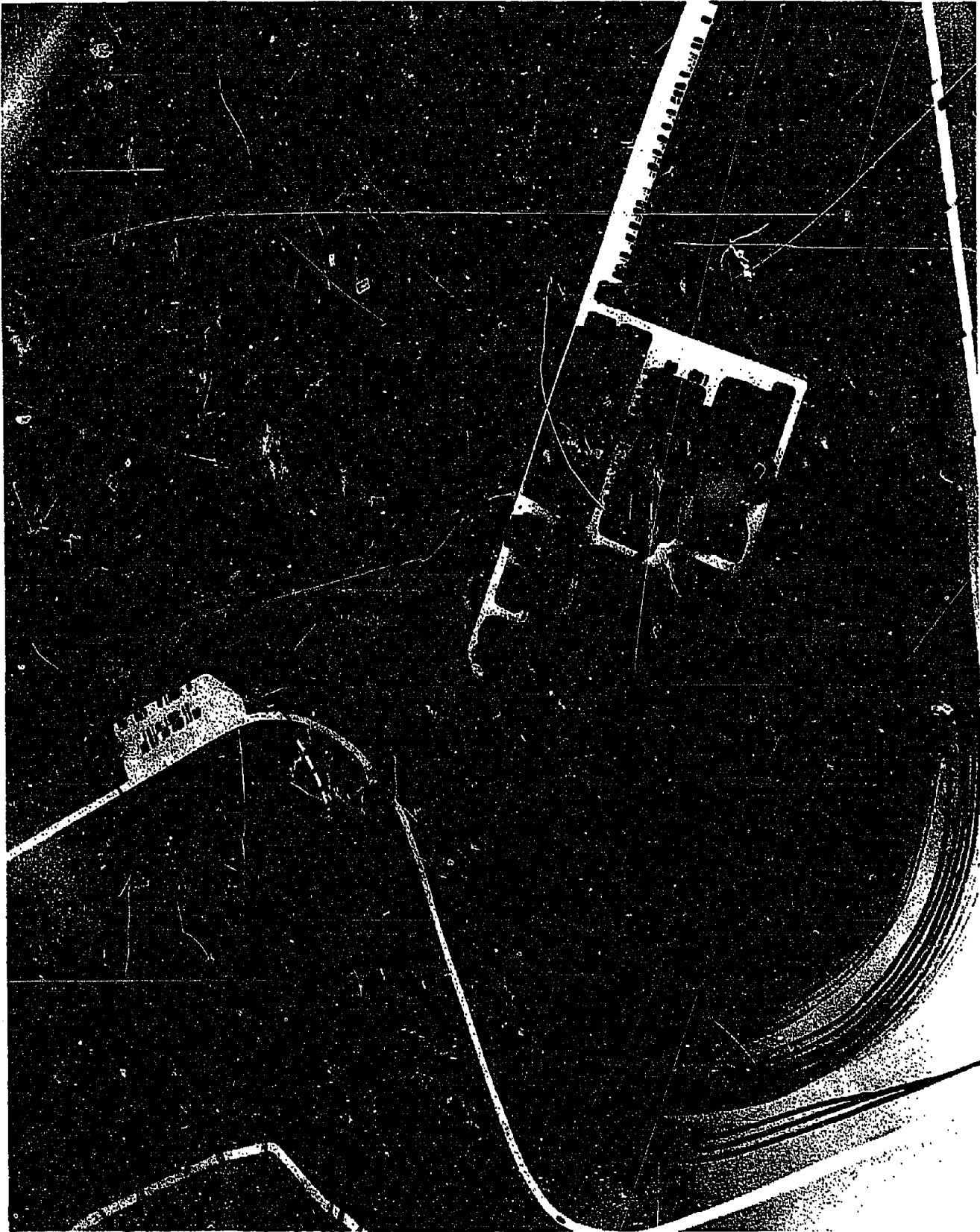
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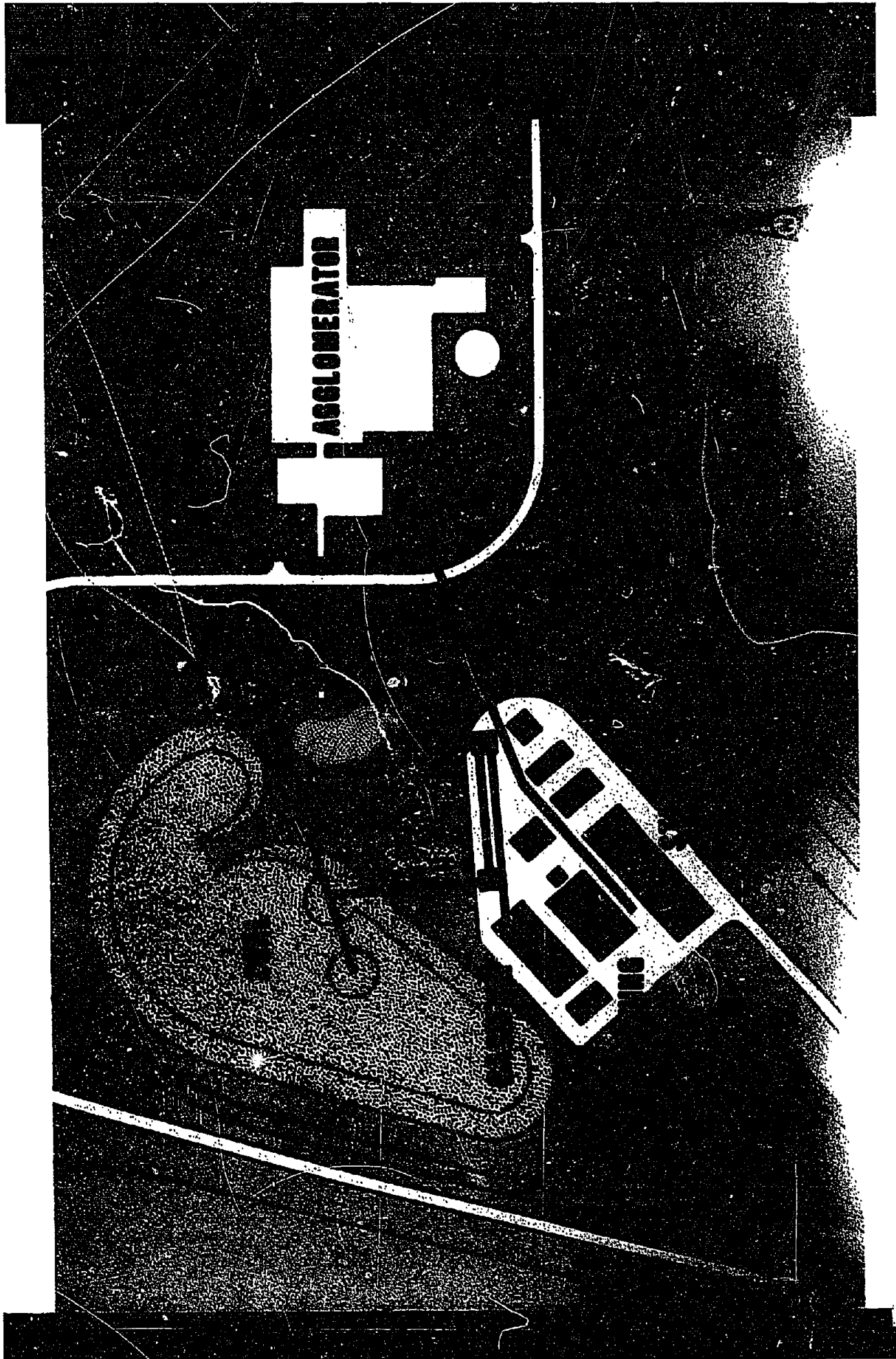
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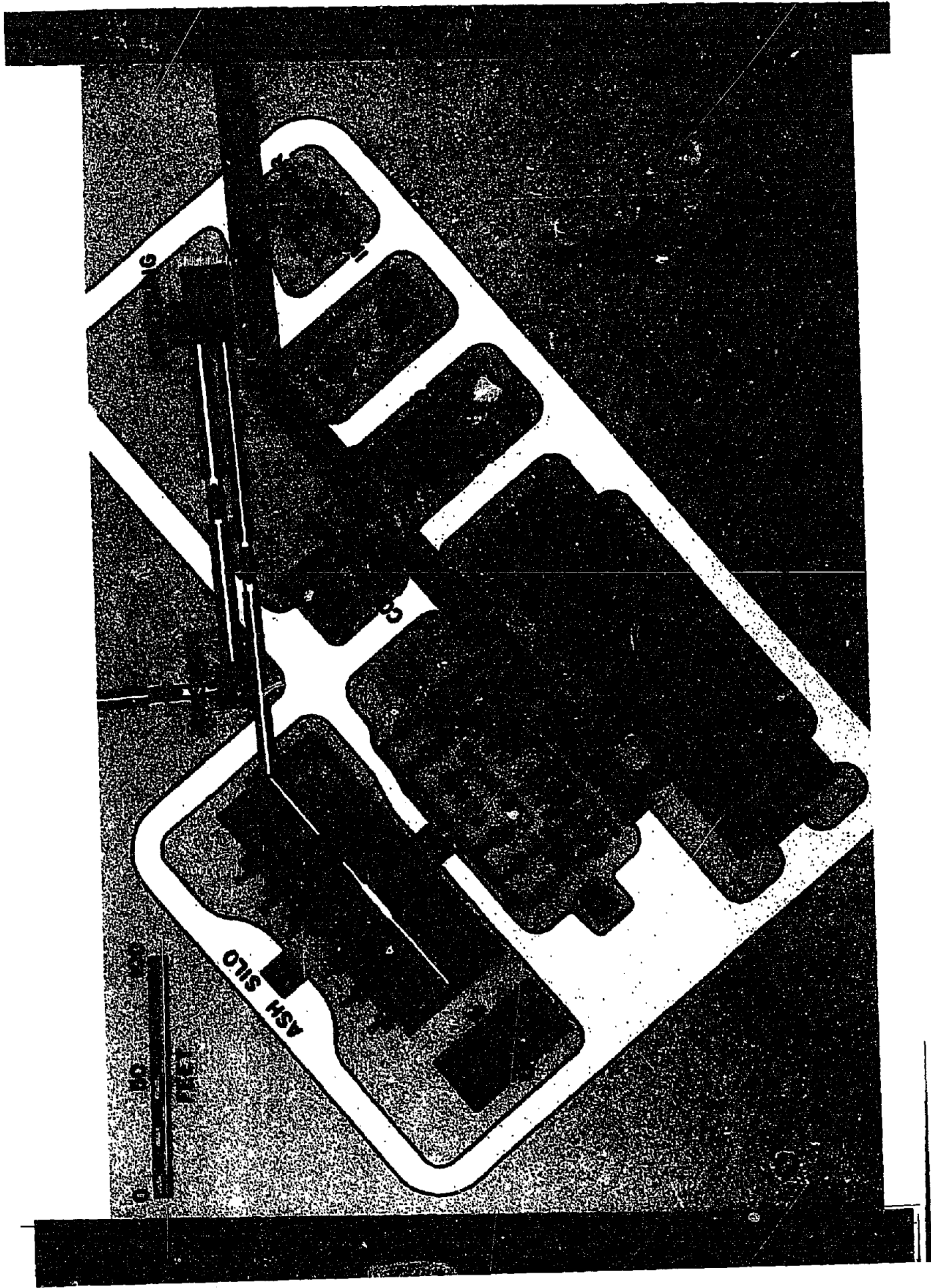
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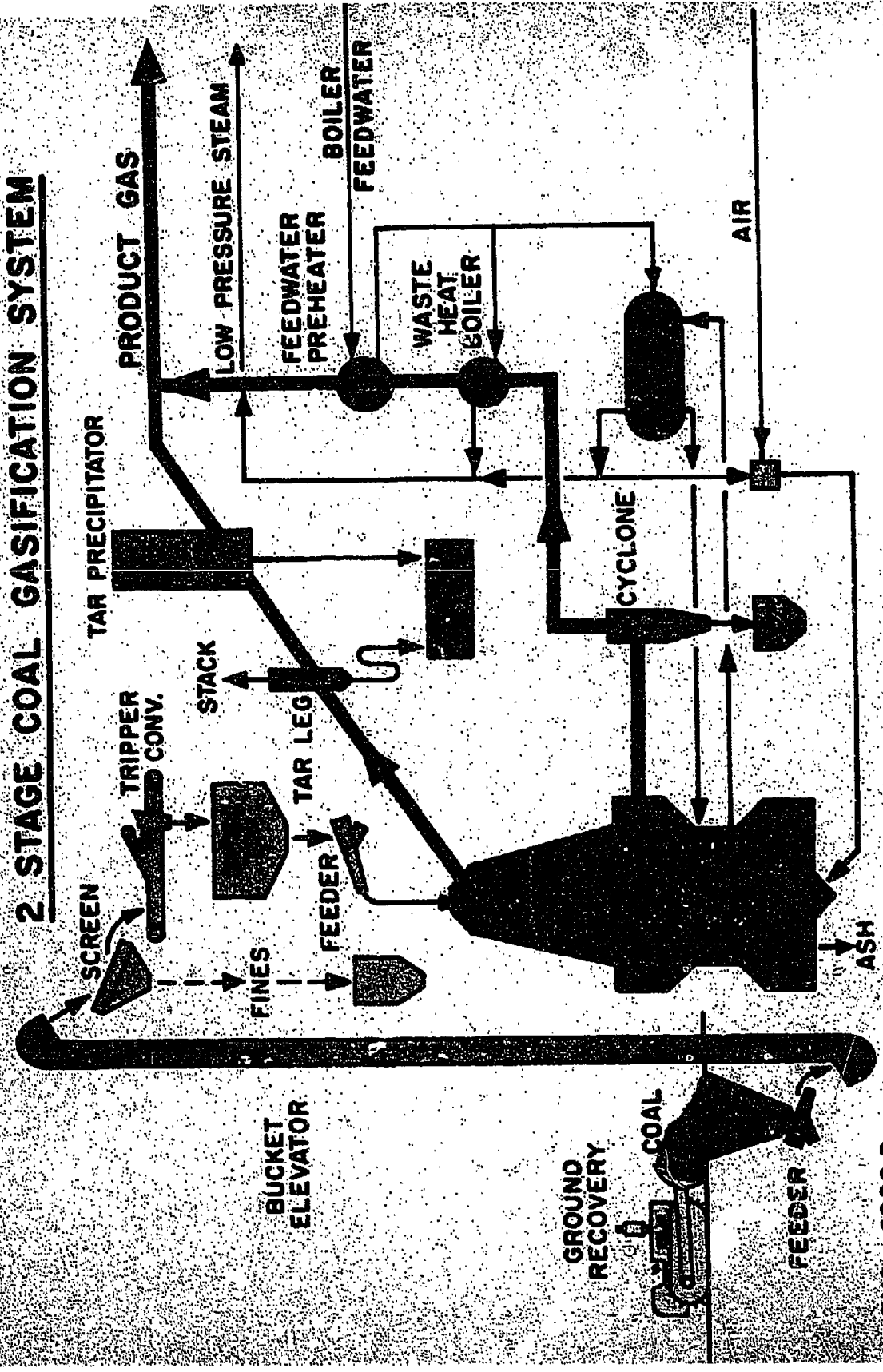


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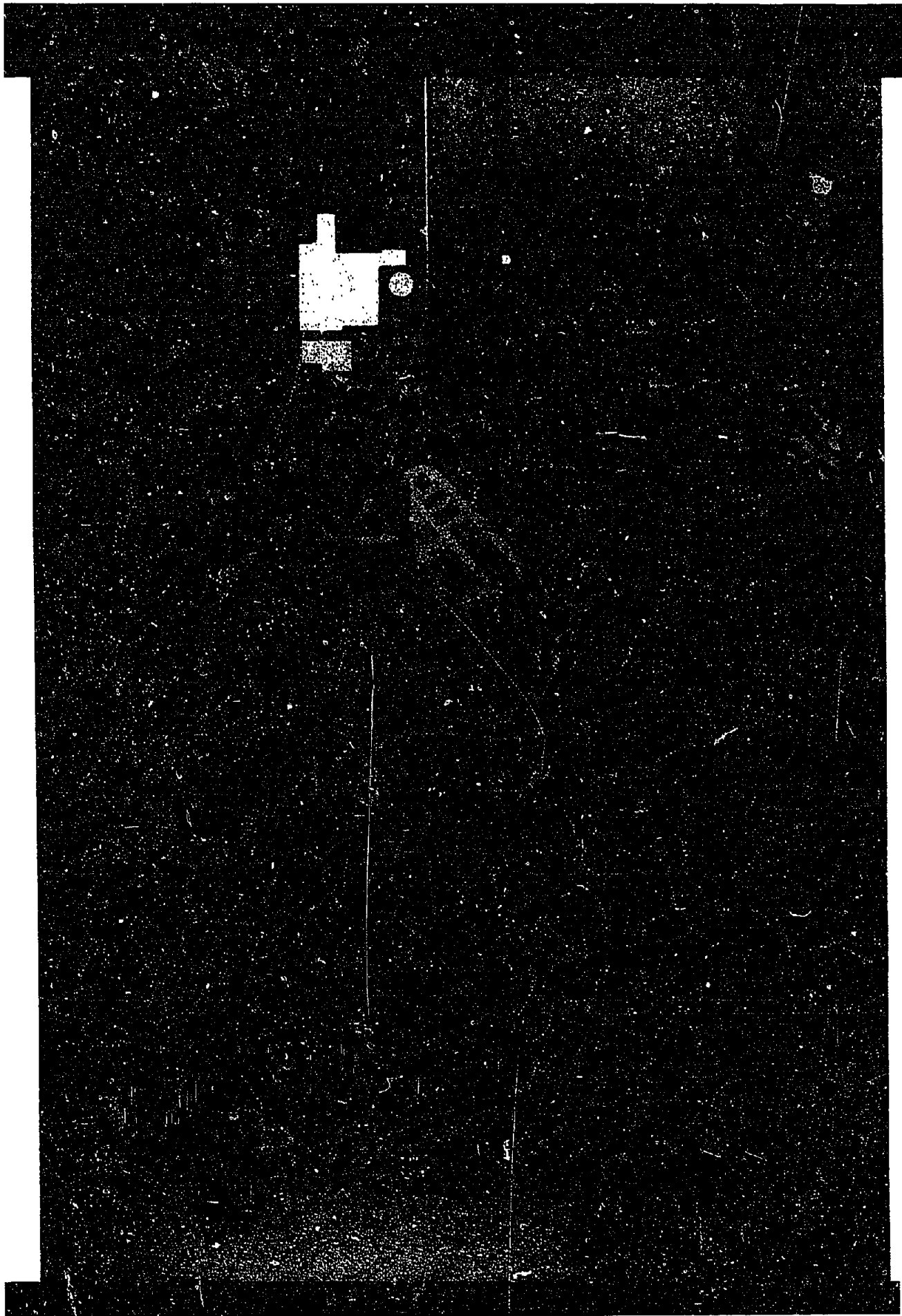
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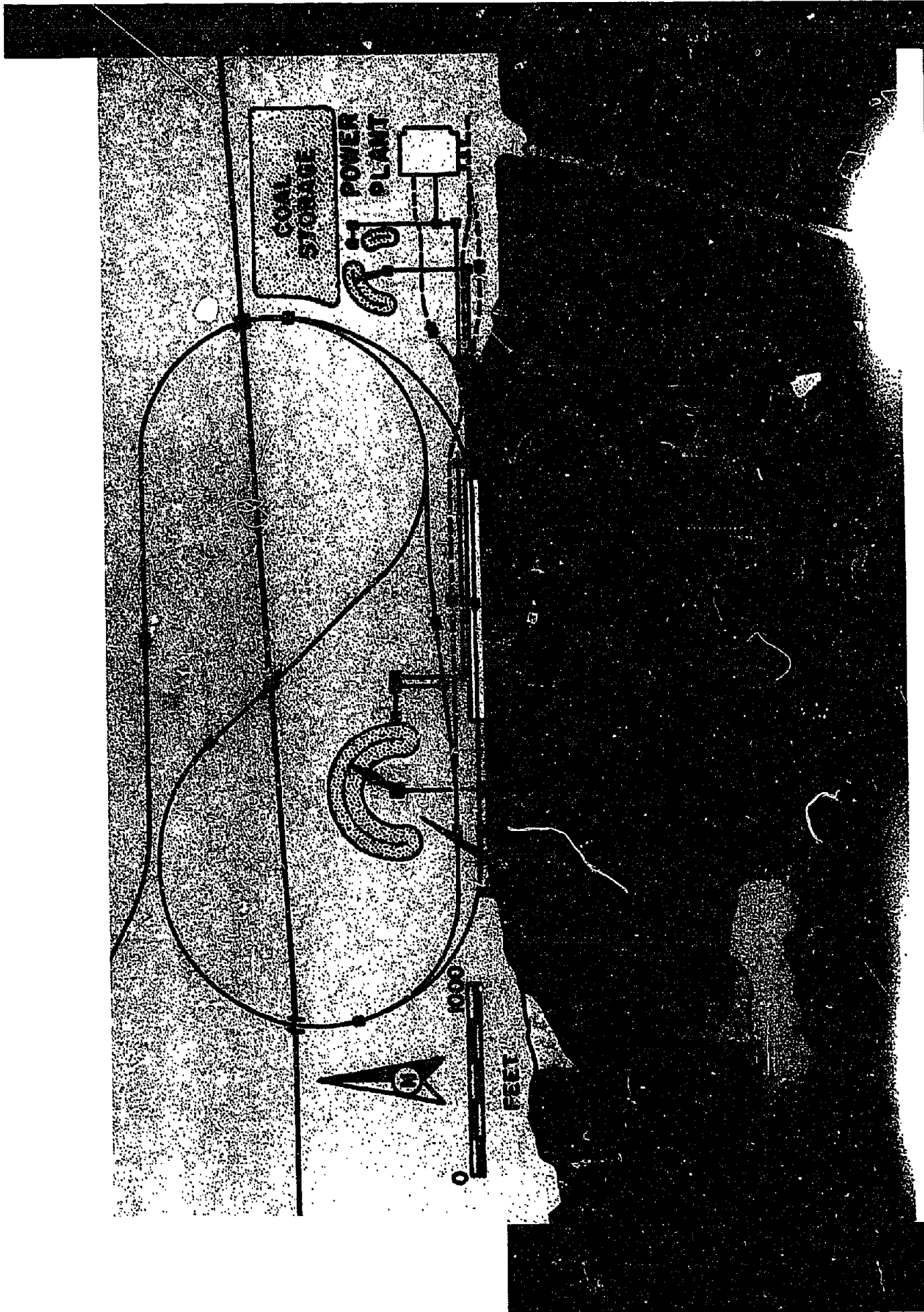
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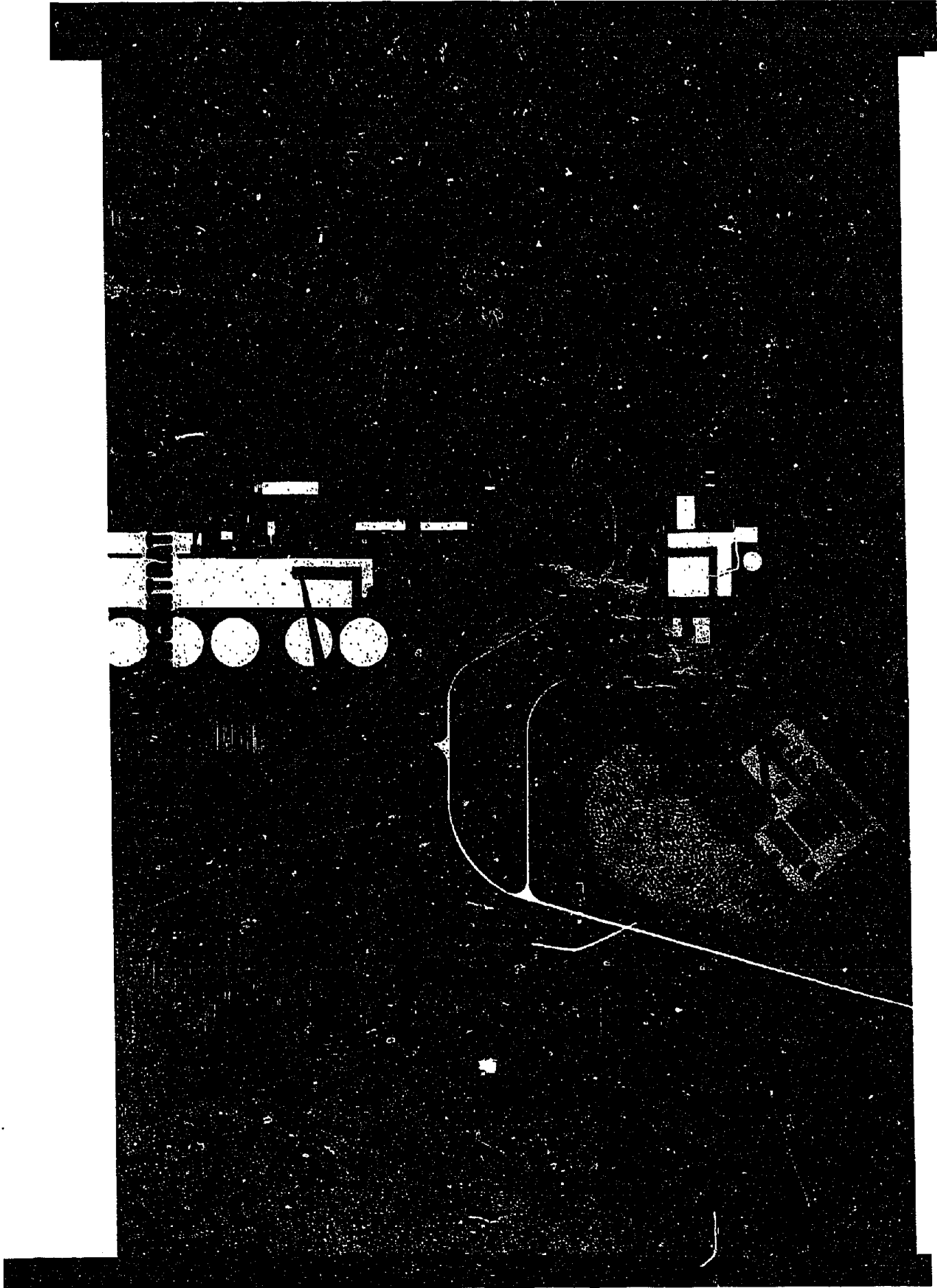
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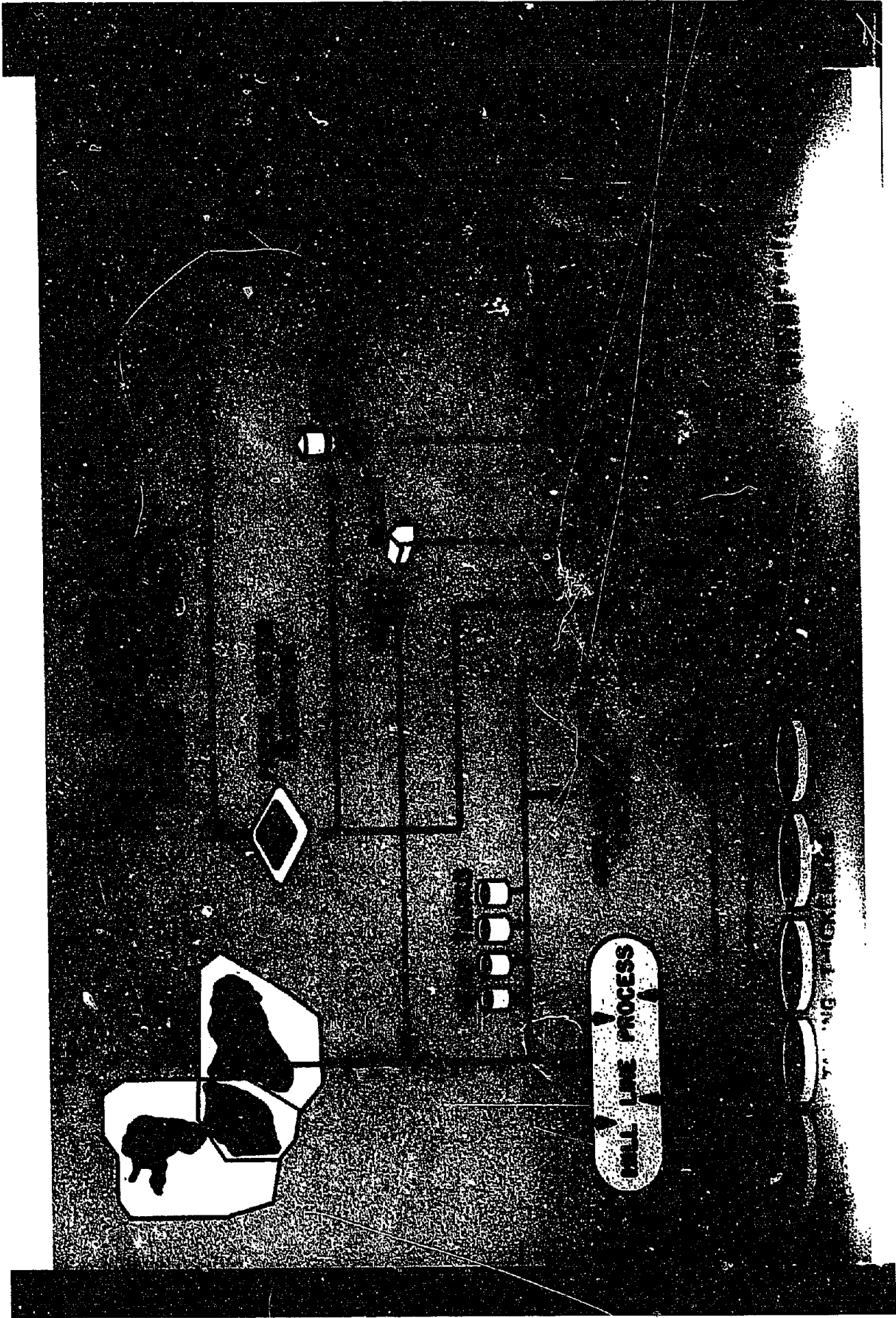


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Final Report
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066
(ET-78-C-01-2578)

I. INTRODUCTION

Shortly following the Arab oil embargo in 1973, Erie began an energy conservation program and initiated a preliminary review of alternate fuels.

In 1976, Erie began to experience serious curtailment of its primary pelletizing fuel - natural gas. Erie switched to No. 2 oil at that time. By January 1977, with full gas curtailment in all the taconite operations in Minnesota, the supplies of No. 2 oil fell to almost shortage levels and the Minnesota Energy Agency declared an "energy emergency." Erie, following a "crash" refurbishment program, converted to No. 6 oil. Essentially, curtailment has continued since that time on an intermittent basis.

In order to maintain maximum flexibility, Erie continued an alternate fuels program, which included coal gasification.

During the internal review in 1976, the ERDA RFP for small scale demonstration plants was released and Erie responded.

The basis of the contract proposal included design, construction and operation of a Demonstration Plant, which could be expanded to a full-sized industrial plant. The government specifically required the ability to handle Eastern - high-caking, high sulfur coal. Erie's proposal was to utilize as low-caking - low sulfur coals with the Eastern coals optional.



Final Report
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066
(ET-78-C-01-2578)

Following contract negotiations, it was mutually agreed that each type of coal, Eastern-Western, would be used for a one-year test period for a total of two years of Demonstration Plant operation. The Demonstration Plant was designed to handle both Eastern and Western coal.

McKee Engineers & Contractors was selected to act as Architect-Engineer and participated in preparing our proposal. On October 19, 1977, our contract was approved and McKee began design and procurement activity. Some precontract work was authorized by DOE prior to contract finalization in order to meet the project schedule which was based on an August 1977 finalization of the Erie/DOE Contract.

Phase I activity included selection of a gasifier and bids were solicited in October, 1977. Babcock Contractors, Inc. was selected in February 1978, based on price and technical evaluation of the gasifiers.

Similarly, bids were solicited for a system to remove sulfur from the gas and Ralph M. Parsons was selected to supply the Stretford Process in March 1978.

Some delay was experienced in selection activity due to late bids and clarification of bid proposals. Preliminary project design on these two major parts of the design began in April, 1978, while McKee continued on design of site and plant utilities.



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Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066
(ET-78-C-01-2578)

Prior to selection activities, Erie, McKee and DOE participated in a gasifier inspection trip, visiting 11 plants in South Africa, Italy and Czechoslovakia. The operations, maintenance and designs included by the solicited vendors were evaluated and compared with site observations.

To summarize the selection trip, the gasification plants viewed were producing "gas" economically in the 1.50 to 2.00/M BTU range. However, it was readily apparent that we would be unable to similarly produce such low cost fuels because they had several operating advantages: Minimal environmental cleanup, sized coal available, inexpensive labor, minimal governmental regulation and warm climate.

Knowledge gained from the trip was used to evaluate the gasifiers and initiated various trade-off studies to resolve questionable areas.

As design work progressed, delays were incurred with subcontractors due to late funding, delayed contractual approvals and disputes arising from DOE patent and proprietary data requirements.

As activities progressed, it became apparent that additional funding would be required to complete environmental work (as defined early in Phase I), perform some additional engineering and cover cost extensions due to delays in subcontract and funding approvals.



Final Report
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066
(ET-78-C-01-2578)

This final report is provided as a recapitulation and overall assessment of Phase I activities as performed in accordance with the Erie/DOE Contract and the agreed upon scope of work.

Preliminary review of cost data in October 1978 resulted in Erie recommending and DOE agreeing to a reduced scope of work as project costs were projected to be considerably above the economic goals of the project.

Phase I activities were reduced to a minimum and specifically limited to those essential in making a decision to proceed to Phase II.

Activities were again reviewed by Erie and DOE in a Cost Review Meeting January 19, 1979. A further reduction in activities was made at that time in anticipation of a mutual termination of the project due to economics.

Erie has completed and delivered to DOE the contract deliverables as per the reduced scope of work and recommends that Erie and DOE mutually terminate the project.



Final Report
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066
(ET-78-C-01-2578)

II. SCOPE OF WORK

The contract arrangement between the Department of Energy and Erie Mining Company provided mutually advantageous opportunity and means for:

- Employing coal gasification technology and equipment which is now commercially available for production, and use of low BTU gas in an industrial environment under actual operating conditions.
- Identifying, defining and resolving problems and operational unknowns that have heretofore retarded industrial use of synthetic gas.
- Establishing parameters for retrofitting existing industrial furnaces for use of low BTU gas.
- Determining and demonstrating the technical and economic feasibility of the proposed scheme.
- Assessing environmental requirements and costs for utilization of low BTU gas.

The Demonstration Plant was designed as the initial module of a Commercial Plant sized to supply the entire energy requirement of the Pellet Plant. Expansion of the Demonstration Plant to the ultimately desired capacity will require only the installation of additional processing units. Detail design of the full-scale Commercial Plant is not a part of the present contract.



Final Report
Erie Mining Company
Coal Gasification Project
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(ET-78-C-01-2578)

The Demonstration Plant Program was divided into three phases:

- Phase I - Program Development and Conceptual Design

This phase included selection of a gasifier process to be used, development of the conceptual design for both a Commercial scale plant and a Demonstration Plant.

The Demonstration Plant design was carried to the point of completion corresponding to the "front end design package" suitable for use in the detailed engineering of Phase II.

NOTE: Preliminary engineering and "in house McKee estimates" were used for the sulfur removal system, whereas a subcontract could not be finalized with the Stretford vendor.

Both plants were designed to operate with high-sulfur, high-caking coals as well as low-sulfur, low-caking coals.

- Phase II - Demonstration Plant Final Design, Procurement and Construction

This phase would include all the detailed engineering, procurement and construction of the Demonstration Plant.



Final Report
Erie Mining Company
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(ET-78-C-01-2578)

- Phase III - Demonstration Plant Operation

This phase covers the operating portion of the program and included training of personnel, shakedown testing with both low-sulfur, non-caking coal and high-sulfur, high-caking coal and testing of various practices and optimization schemes.

Phase I - Program Development and Conceptual Design

This phase was totally funded by the government and included the following tasks:

- Task I Conceptual design and evaluation of a commercial plant.
- Task II Demonstration Plant process and mechanical conceptual design.
- Task III Phases II and III current working estimate.
- Task IV Demonstration Plant site evaluation and selection.
- Task V Demonstration Plant environmental analysis.
- Task VI Materials agreements and licenses, plans for Demonstration Plant.
- Task VII Proposed methods and plans for Phase II and Phase III accomplishment.
- Task VIII Economic reassessment.
- Task IX Technical support.
- Task X Project Management.

It should be noted that no detail environmental work was included in Phase I activities. Therefore, no provisions were made for developing these details in the original contract cost estimates. As it became necessary to include certain phases of the environmental requirements in order to meet project schedules, additional work was necessary.



Final Report
Erie Mining Company
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(ET-78-C-01-2578)

Phase II - Final Design, Procurement and Construction

This phase was planned to be jointly funded by the contractor and the government. The contractor's share of costs is expected to be approximately fifty percent (50%). This phase would include the following tasks:

- Task I Site acquisition and finalization of agreements.
- Task II Demonstration Plant engineering and design.
- Task III Bid review, approval and award for subcontractor(s) and vendor(s).
- Task IV Demonstration Plant construction.
- Task V Check-out and acceptance by contractor.
- Task VI Plant operational training.
- Task VII Technical support.
- Task VIII Commercial Plant reassessment and design criteria.
- Task IX Project management.

Phase III - Demonstration Plant Operation

This phase was planned to be jointly funded by the contractor and the government with the contractor's share expected to be approximately fifty percent (50%). This phase would include the following tasks:

- Task I Training.
- Task II Shake down testing with coal.
- Task III Plant operation and evaluation.
- Task IV Technical support.
- Task V Commercial Plant reassessment and design criteria.
- Task VI Project management.



Final Report
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066
(ET-78-C-01-2578)

The proposed work schedule was:

Phase I 15 Months - commencing October, 1977

Phase II 24 Months

Phase III 27 Months

The scope of work for Phase I was reduced by mutual agreement during the Cost-Management Review Meeting held on October 26, 1978. During that meeting, preliminary plant costs and contract costs were reviewed. It was decided that, due to high projected costs, activities for Phase I would be reduced to a minimum. Activities were reduced to only those essential in making a decision to proceed with Phase II. Erie reviewed contract Phase I activities and responded with a letter to DOE. (See ERDA #302)

Activities were reviewed again during the Cost-Management Review Meeting held on January 19, 1979. This resulted in the final reduced scope of work, as outlined in ERDA Letter 351. In addition, contract modification A-006 was initiated. This modification extended the Phase I completion date of January 19, 1979 to April 19, 1979. The modification allowed sufficient time to complete activities under the reduced scope of work.

NOTE: Further minor deletions and some additional work was mutually agreed to by Erie and DOE during the extended period. (Ref. Sec. III, Status 2 APR 1978 - ERDA 386)

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Pickands Mather & Co.

1100 Superior Avenue

Cleveland, Ohio 44114

October 27, 1978

Mr. R. W. Laza
Contracting Officer
U. S. Department of Energy
9800 South Cass Avenue
Argonne, Illinois 60439

SUBJECT: Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066
McKee Contract 4814A
REF: ERDA-302

Dear Mr. Laza:

Attached please find our summary of the Phase I activities which are necessary for completion of a first case cost estimate and the capital and operating cost reduction assessment of the Commercial and Demonstration Gasification Plants.

These activities were jointly resolved by DOE, Erie and McKee as being essential to the cost estimate. All other non-essential activities would be held in order to minimize Phase I project costs.

We would anticipate giving McKee official notice (15 days per our contract) effective November 1 and direct them to reduce activities accordingly. Assuming receipt of your concurrence and re-direction today, we will proceed in the above manner to reduce the level of Phase I activities, within 15 days.

Your earliest response is requested.

Very truly yours,

ERIE MINING COMPANY
PICKANDS MATHER & CO.,
MANAGING AGENT



J. H. Fatum
Project Director

JHF:na
Attachment

cc: P. L. Rader E. L. Wilkins
I. H. Hess G. A. Peterson
C. A. Stiles

U-43A

INTER-OFFICE COMMUNICATION

Date October 27, 1978

To

From

J. H. Fatum

G. A. Peterson

Subject:

PHASE I ACTIVITY ASSESSMENT MEETING October 25, 1978

A meeting was held in the Erie Mining Company Office - Cleveland between Erie and the DOE Project Management Personnel for the purpose of discussing minimal activities necessary for completion of a 1st case cost estimate to be delivered by December 15, 1978 and also for the purpose of minimizing Phase I project costs. Mutual consent was given to perform the following activities:

Task 1

1. Process Engineering Design - Commercial Plant
2. Project Engineering Design - Commercial Plant
3. Cost Estimate - Commercial Plant
4. Demonstration Plant recommendations

Task 2

1. Process Engineering Design - Demonstration Plant
2. Preliminary Engineering and Layouts

Task 3

1. Detailed current working estimate Phase II
2. Detailed current working estimate Phase III.

Task 5

1. Project Description for Environmental Analysis
2. Demo Plant Environment Report
3. Report of Significance of Project Operation with respect to the Environment
4. Mitigation Measures Report
5. Report of adverse environmental effects which cannot be avoided
6. Report of relationship between local short-term uses of the environment and long-term productivity.
7. Report of irreversible and irretrievable commitments of resources
8. Report of alternatives to proposed action
9. Environment Impact Assessment Report
10. Environmental Data

NOTE: Items 1 - 10 to be completed in draft form only as included in draft Environmental Assessment Statement.

Task 6

1. Plan for obtaining coal
2. Report of Proprietary Process Licenses
3. Plans for acquiring permits and licenses
4. Certificate of Need - draft only

INTER-OFFICE COMMUNICATION

- 2 -

Date October 26, 1978

To

From

J. H. Fatum

G. A. Peterson

Subject: PHASE I ACTIVITY ASSESSMENT MEETING October 25, 1978

Task 7

1. Construction Plan - Demonstration Plant
2. Operation Plan - Demonstration Plant

Task 8

1. Economic re-assessment of Commercial Plant
2. Economic re-assessment of Demonstration Plant

Task 9


1. Technical support plan

Task 10

1. Monthly Report
2. Oral Monthly Report
3. Other activities only as approved

Attendees:

C. Stiles
F. Settimi
E. Wilkins
J. Fatum
E. Trescott
P. Rader
G. Peterson



GAP:na

January 25, 1979

Mr. R. W. Laza
Contracting Officer
U.S. Department of Energy
Chicago Operations Office
9800 South Cass Avenue
Argonne, Illinois 60439

SUBJECT: Erie Mining Company
Coal Gasification Project
DOE Contract EN-78-C-02-5066
McKee Contract 4314A
REF: LRDA-351
List of Phase I activities
to be completed. (Ref. Meeting
Minutes, LRDA-349)

Dear Mr. Laza:

The attached list of activities will be finalized in accordance with the agreed upon reduced scope of activities.

Contract deliverables and related activities are anticipated to be completed on the dates indicated. This estimate assumes completion of subcontractor activities as follows:

1. BCI complete by February 16, 1979.
2. McKee issuance of Volumes 1 and 2 of the Design Manuals for the Demonstration and Commercial Plants as scheduled February 16, 1979.
3. Resolution of Parsons activity and issue of the Parsons data (as received) by McKee before March 2, 1979.
4. McKee activity finalized by March 16 and further activity held (no cost--all personnel released).
5. Reduced scope of activities be removed from "suspension" status and the Erie/DOE contract be suitably "amended".
6. ERT contract extension (10-1500) and rework of the Environmental Draft will be completed by February 16, 1979.

Mr. R. W. Laza
January 25, 1979
Page 2

The completion dates and cost estimates indicated are our best "estimate" at this time. Delay in subcontractor activities will result in additional costs and schedule slippage. (Resolution of the Parsons issue by February 15 is probably unreasonably optimistic.)

If you have any comments on the attached schedule (additions, or deletions), please so indicate with your concurrence of the activities scheduled as outlined.

Very truly yours,

ERIE MINING COMPANY
PICKANDS MATHER & CO.,
MANAGING AGENT

G. A. Peterson
Project Manager

GAP/zh
Attachment

cc: J. H. Fatum
C. A. Stiles
E. L. Wilkins
P. L. Rader
F. L. Hartman

	<u>ACTIVITY</u>	<u>MANHOURS</u>	<u>COST</u>	<u>DATE OF COMPLETION</u>
1.	Design Manual - Commercial			
	Volume 1 Conceptual Design	150	\$ 6,000.00	2-16-79
	Volume 2 Conceptual Design	included above		
	Volume 3 Gasifier Details	25	1,000.00	2-15-79
	Volume 4 Stretford Details	40	1,500.00	3- 2-79
2.	Design Manual - Demonstration			
	Volume 1 Conceptual Design	150	6,000.00	2-16-79
	Volume 2 Conceptual Design	included above		
	Volume 3 Gasifier Details	25	1,000.00	2-15-79
	Volume 4 Stretford Details	40	1,500.00	3- 2-79
3.	Environmental Assessment	225	15,000.00	2-16-79
4.	Parson's Negotiations	125	150,000.00	2-15-79
5.	Parson's Cost Estimate	200	8,000.00	3-15-79
6.	Technical Report No. 7 - Stirrer Design Material		1,000.00	1-29-79
7.	Technical Report No. 8 - Preliminary Briquetting Review		1,000.00	1-29-79
8.	Contract Deliverable Report	150	6,000.00	2-23-79
9.	Monthly Reports, Dec.-Apr.	200	8,000.00	4-19-79
10.	Quarterly Report, 4th quarter, 1978	40	1,500.00	2- 1-79
11.	Annual Report, 1978	40	1,500.00	2- 1-79
12.	Final Report	950	38,000.00	4-19-79
	Erie Economic Evaluation			
	Technical Summary			
	Economic Summary			
	Environmental Summary			
13.	Contract Administration	600	24,000.00	4-19-79
14.	Contract Close-Out	1,500	60,000.00	4-19-79
15.	Design Review Meeting	140	5,600.00	Tentative
16.	Stirrer Review Meeting	56	3,000.00	2- 1-79
17.	Parson's Review Meeting	96	5,000.00	Tentative
18.	Erie-DOE Cost Review Meeting	40	2,000.00	Tentative
19.	Miscellaneous		32,000.00	



Final Report
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066
(ET-78-C-01-2578)

III. PROJECT REVIEW

Executive summaries from monthly, quarterly and annual reports have been included in this report for review.

If more detail is required for a specific event, than reference should be made to the complete report for that reporting period.

Pickands Mather & Co.
1100 Superior Avenue
Cleveland, Ohio 44114

April 2, 1979

Mr. R. W. Laza
Contracting Officer
U.S. Department of Energy
Chicago Operations Office
9800 South Cass Avenue
Argonne, Illinois 60439

SUBJECT: Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066
McKee Contract 4814A
REF: ERDA-386
Deliverable Status

Dear Mr. Laza:

Attached is a status report for the project for April 2, 1979.

All major deliverables have been completed and distribution is in progress. All tasks except Task 10, Project Management, have been closed out by Erie anticipating no further activities will be required. Allowances have been made to re-open activities should DOE so require.

Final acceptance of deliverables by DOE is required by April 4 to allow close out of subcontracts by April 19, 1979.

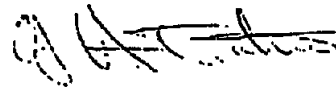
We would appreciate at least ten days notice of your requirements for the final Design Meeting, to allow Erie adequate time for preparation of a suitable presentation. Please specify time, date, location and extent of review required.

Mr. R. W. Laza
April 2, 1979
Page 2

Your earliest response would be appreciated.

Very truly yours,

ERIE MINING COMPANY
PICKANDS MATHER & CO.,
MANAGING AGENT



J. H. Fatum
Project Director

JHF/mh
Attachment

cc: H. P. Whaley
C. A. Stiles
G. A. Peterson
E. L. Wilkins

STATUS April 2, 1979

<u>Deliverables Due DOE</u>	<u>Estimated Cost</u>	<u>January 19 Scheduled Date</u>	<u>Current Status</u>	<u>Comment</u>
9.b. Monthly Report - March		4-19-79	4-19-79	
12. Final Report (from Phase III)	38,000.00	4-19-79	4-19-79	Proceeding as scheduled **(Item 8 included)
13. Contract Administration	24,000.00	4-19-79	4-19-79	Subcontract audits completed
14. Contract Close-Out (subcontractors)	60,000.00	4-19-79	4-19-79	Proceeding as scheduled
15. Design Review Meeting	5,600.00		To be Scheduled	Waiting DOE schedule
19. Miscellaneous	32,000.00		As Incurred	Reviewing potential patent areas
20. Low sulfur - low caking coal estimate of capital and operating cost. Request for costs to perform	21,600.00	New	?	Cost estimate and schedule submitted to DOE
21. Technical Report #9 - Coal Procurement Papers	2,000.00	New	4-19-79	Requested following files review by DOE

Items Completed:

February 14 - 28

Technical Report #7
 Technical Report #8
 December Monthly Report
 Quarterly Report, 1978
 Annual Report, 1978
 Stirrer Review Meeting

February 28 - March 21

1. Volumes 1, 2 Design Manual - Commercial
 2. Volumes 1, 2 Design Manual - Demonstration
 3. Environmental Assessment
 9. January Monthly Report

March 21 - April 1

1. Design Manuals, Volume 3
 2. Design Manuals, Volume 3
 9. Monthly Report, February
 22. Contract Files

Items Removed from Schedule*

1. Volume 4
2. Volume 4
4. Parsons Negotiations
5. Parsons Estimate
17. Parsons Review Meeting
18. Erie/DOE Cost Review Meeting

*Per DOE instructions March 7, 1979, March 26, 1979

NOTE: Close out of Parsons activities may require negotiations with Parsons and review of Parsons deliverables.

Item 8

**Matrix now will be included in Final Report. Erie will complete work started by Mound.



Monthly Report
January 1979
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066

Monthly Report No. 15
Period: January 1, 1979 -
January 31, 1979

EXECUTIVE SUMMARY

A. Project Schedule

Activities were concentrated on reviewing the plant design and economic evaluation and completing deliverables as outlined in the reduced scope of work.

An Erie-DOE Management Review Meeting was held on January 19, 1979. During that meeting, a contract amendment for extending the contract three months was delivered to Erie for execution. The contract amendment will allow completion of Phase I activities per the reduced scope of work as mutually agreed upon at the November and December Cost Review Meetings. This extended the original Phase I completion date of January 19, 1979 to a new completion date of April 19, 1979.

The environmental draft was reviewed and commented on by DOE. ERT will rework the document and issue it on February 16, 1979.

BCI continued work for the completion of the Phase I front-end engineering package. Completion is expected by February 16, 1979. A Design Review Meeting was scheduled for February 1, 1979, to discuss the stirrer design.

The Stretford subcontract status remained unchanged in the month of January. The project schedule will proceed without the inclusion of Parson's data for sulfur removal.

The McKee activities as outlined in the reduced scope of work are scheduled for completion on March 16, 1979.

B. Cost Comments

Project costs have not changed from those estimated in contract cost Amendment A-005.



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January 1979
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066

C. Major Activities

1. An Erie-DOE Project Management Review Meeting was held on January 19, 1979. Erie stated that the plant based on current contractual conditions results in the project being uneconomical and that it would be in the best interest of the Government and Erie to mutually terminate the contract unless the Government wished to propose conditions which would make the plant practicable to Erie owners. Environmental and technical risk areas need to be resolved to Erie's and DOE's satisfaction.

After a somewhat lengthy discussion it was agreed that

- a. Phase I activities (as reduced) would be completed without any additional requirements by Erie or DOE.
 - b. DOE and Erie would review final documents and jointly explore the conditions under which either party would proceed. A meeting to discuss alternatives would be scheduled shortly following the finalization of Phase I deliverables.
 - c. Phase I activities would be limited to those provisions of the contract concerning "final inspections" and "wrap-up activities." In the event Erie and the Government cannot establish a mutually agreeable basis to proceed the Erie/DOE contract would be terminated in accordance with contractual provisions.
 - d. It was mutually agreed that under the present design criteria called for in our contract proceeding with Phase II is not practicable.
2. BCI continues work on the preliminary engineering for the gasifier front-end engineering package. Due to a change in material philosophy, the stirrer design has not been completed. A stirrer Design Review Meeting has been scheduled for February 1, 1979, to discuss this change in design. The new completion date for the front-end engineering package is February 16, 1979.
 3. McKee issuance of Volumes I and II of the Design Manuals for the demonstration and commercial plants was scheduled for completion by February 16, 1979.



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4. ERT will rework the environmental draft. They will include comments as received from DOE. This activity is scheduled for completion by February 16, 1979.
5. Certificate of Need was issued on January 17, 1979.
6. Engineering Design Specifications Manual was issued on January 17, 1979.
7. Technical Report No. 7, Stirrer Material Study was issued on January 18, 1979. This was research work performed by BCI in selecting the materials of construction for the gasifier stirrer.
8. Technical Report No. 8, Briquetting Studies, was issued on January 19, 1979. This report included preliminary research information that had been gathered throughout the project regarding briquetting. It should serve as useful information in developing a briquetting study.

J. H. Fatum

PROGRAM DIRECTOR FOR
ERIE MINING COMPANY



Monthly Report No. 14
Period: December 1, 1978 -
December 31, 1978

Monthly Report
December, 1978
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066

EXECUTIVE SUMMARY

A. Project Schedule

All major activity concentrated on the effort to establish the cost estimate and economic evaluations for the Demonstration and Commercial Gasification Plants. Essential activities, as defined in the reduced scope of work, were maximized in order to realize the contract completion date of January 19, 1979 and avoid further contractual delays and unnecessary Phase I costs. The gasifier front end engineering contractor continues to complete and periodically submit sections of the preliminary front end engineering package for the gasifier and auxiliary equipment. Scheduled completion date is January 19, 1979. This material will be submitted to the DOE for review.

Erie will include BCI design material in the Design Manuals to be issued in January with the stipulation that a detailed review will be necessary before Phase II Engineering proceeds.

The Stratford subcontract negotiation status remained unchanged in the month of December. The economic evaluations for the Demonstration and Commercial Plants included only the data received from Parsons in the original bid proposal response.

The scheduled contract deliverables will not include any proprietary information. The project schedule will proceed without the inclusion of Parsons data for sulfur removal.

The Demonstration and Commercial Economic Evaluations were issued by McKee on December 8, 1978.

Erie's review of the economic evaluations was initiated and the presentation of plant costs to the DOE are scheduled for January 19, 1979.

Phase I completion of the Erie/DOE contract is tentatively projected for January 31, 1979 with completion of all contract deliverables by Erie and the subsequent acceptance by the DOE.



Monthly Report
December, 1978
Erie Mining Company
Coal Gasification Project
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B. Cost Comments

1. Notice was received by Erie from McKee that allocated dollars in the amount of \$2,704,096 were committed for expenditures by McKee in December, and in order to continue on the project schedule per the revised scope of work, additional funds were required.

An Erie/McKee contract modification in the amount of \$96,844 was effected December 7, 1978 (PM-283) allocating total funds to McKee in the amount of \$2,800,940.

C. Major Activities

1. Gasifier Front End Engineering

BCI has completed preliminary engineering designs on the gasifier retort and stirrer arrangements including auxiliary equipment with subsequent issue to McKee/Erie expected to be during the week of January 14, 1979.

2. An Erie-DOE Contract Cost Review meeting was held December 12, 1978 to review Phase I costs.
3. An Erie-DOE Project Management Review meeting was held December 13, 1978 to review project status.
4. The Environmental Assessment Statement draft was issued by Erie for a concurrent Erie/DOE review. A final document will be issued by Erie for the purpose of inclusion into public record of the gasification project. A tentative distribution date is January 31, 1979. The document will not include data considered as proprietary.
5. Activity was initiated on final design manuals incorporating all preliminary engineering data on the Demonstration and Commercial Plant designs. These documents are to be issued during January for inclusion into the public record of the gasification project. No data considered proprietary will be included in these manuals.
6. Completion of the Engineering Design Specification Manuals is scheduled for the week of January 7, 1979. These manuals are scheduled for DOE inclusion into the project records. These manuals will not include any data considered as proprietary.



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D. Materials, Licenses and Agreements

1. Stretford engineering contract negotiations with Ralph M. Parsons concerning the McKee subcontract and the Parsons-Erie sublicense agreement were not finalized. Further negotiations have been cancelled pending agreement to proceed to Phase II of the Erie/DOE contract.
2. The Minnesota Certificate of Need is being prepared for inclusion into the public record of the gasification project and will be issued for review the week of January 14, 1979.

J. H. Paton

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PROGRAM DIRECTOR FOR
ERIE MINING COMPANY



Monthly Report
November 1978
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066

Monthly Report No. 13
Period: November 1, 1978
through November 30, 1978

EXECUTIVE SUMMARY

A. Project Schedule

During the month of November, it was jointly agreed by DOE and Erie Project Management that Phase I activities would be limited to the essential activities required to re-define Phase I deliverables and establish schedule and cost estimates to provide the necessary data for Erie's economic assessment of project goals. The activities as re-defined would include the determination and evaluation of potential capital and operating cost reductions, and efforts maximizing the activities necessary to complete essential deliverables in order to minimize further contractual delays and unnecessary Phase I costs.

Subsequent to the completion of the McKee/BCI contract negotiations, activities have been intensified with the BCI front end engineering design in order to effect completion of the gasifier engineering package. Projected delivery of all BCI subcontract deliverables is scheduled for the week of January 29, 1979.

McKee issued a schedule for the cost estimates and economic data, which were originally scheduled for October 1, 1978, reflecting delivery on December 1, 1978. The cost estimate and economic data delivered at that time will not include a definitive estimate from Parsons but will include McKee's "best estimate" of Stretford capital and operating costs for sulfur removal.

The McKee/Parsons subcontract negotiations have not been completed resulting in the continuance of the Parsons stop work order. The project activities have been continued with the realization Parsons deliverables will not be included until contract negotiations are finalized.

B. Major Activities

1. Gasifier Front End Engineering. BCI forwarded partial deliverables to McKee for the front end engineering of the gasifier. A process, P & ID and layout review was held at BCI on November 21-22, 1978. A stirrer design presentation was given to Erie-McKee on November 28, 1978. Erie review of the gasifier design data to be included in the cost estimate and submitted for preliminary design approval is being evaluated.



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November 1978
Erie Mining Company
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DOE Contract EW-78-C-02-5066

2. Stretford Front End Engineering. The Stretford subcontract remains under the stop work status due to subcontract negotiation difficulties. No deliverables have been received during the month of November.

3. The scale plant model was completed in November.

4. The site model was completed in November.

5. The following reports were issued in November:

October Monthly
Third Quarter
Fiscal Year 1978 Reports

6. The Environmental Assessment report was distributed for review on November 28, 1978.

C. Materials, Licenses and Agreements

1. Stretford Engineering Contract with Ralph M. Parsons and the Parsons-Erie Sublicense Agreements are proceeding very slowly. Parsons issued a stop work notice on August 16, 1978. Patent, proprietary data and the sublicense are the areas of major disagreement. Engineering deliverables have not been released since the stop work notification. Schedule delays have resulted from Subcontract negotiation and approval delays.

2. The Minnesota Certificate of Need is in final review. Completion of the draft is expected the week of December 11, 1978. The presentation of a final certificate to the Minnesota Energy Agency is contingent upon the decision by Erie and the DOE to proceed to Phase II of the project.

J. H. Fatum

PROGRAM DIRECTOR FOR
ERIE MINING COMPANY

JHF:na



Monthly Report
October, 1978
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066

Monthly Report No. 12
Period: October 1, 1978
through October 31, 1978

EXECUTIVE SUMMARY

A. Project Schedule

The project schedule experienced major delays in contract deliverables in the month of August due to Subcontract negotiation difficulties. Stop work notices from the Gasifier and Stretford Front End Engineering subcontractors continue to result in schedule delays for October. The extent of schedule delay will depend on the length of delays incurred because of the contractual problems and approval delays of major subcontractors.

The Gasifier front end engineering subcontract with BCI was finalized on October 27, 1978. August deliverables should be obtained the week of November 6 for McKee, Erie assessment.

B. Cost Comments

An Erie/DOE Cost Review was held at Erie Cleveland on October 25, 1978 for the purpose of assessing the economic goals of the Coal Gasification Project. Erie submitted communication ERDA-288, dated October 6, 1978, reflecting Erie's concern with increasing project costs due to engineering and cost estimating delays. Project viability was questioned based on current cost trending reports and projected project delays.

Based on ERDA-288 and discussions at the Cost Review Meeting, Erie recommended that Phase I activities be limited to completing front end engineering subcontracts and finalizing a preliminary cost estimate for the week of December 11, 1978.

A work suspension notice will notify McKee of the Erie/DOE intention of maximizing effort toward the cost estimate and minimizing Phase I expenses to the Government.

The Stretford cost amendment in the amount of \$139,400 and the miscellaneous cost amendment in the amount of \$545,148, including the Schedule Extension (\$315,813), Overhead and Fringe (\$114,764) and the Coal Fines Handling (\$114,571), were submitted for DOE approval.



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Erie/McKee subcontract amendment numbers 500-M-02, 03, 04 allocating funds to McKee for the total amount of \$2,704,096 were completed. Amendment number 500-M-02 for the amount of \$526,248 and amendment number 500-M-03 for \$99,961, including the General Environmental (\$84,961), Clean Air Act (\$12,500) and the Certificate of Need (\$2,500) were issued. Amendment number 500-M-04 included the schedule extension to October 31, 1978 costs (\$186,390) and the coal fines handling study costs (\$65,470).

C. Major Activities

1) Front End Engineering

Erie continues to review and comment on engineering materials released by McKee but major activities have been slowed down due to the work stoppages of the Gasifier and Stretford sub-contractors. Project deliverables have not been received and as a result, engineering designs have been delayed which will result in cost estimating delays and ultimately project schedule delays.

- 2) Modeling activity on the plant design model approached completion during the month of October.
- 3) Site model update activity was initiated to convert the inset to the expected commercial plant design.
- 4) Foster Wheeler performed the gasifier testing of Rosebud coal. A coal and bottom pan ash sample were sent to the Southwest Research for analysis. The gasifier testing of 15 tons of coal did not produce enough tar and oil for sample analysis.
- 5) The United States Environmental Protection Agency changed the non-attainment status of Erie Mining Company to attainment with notice in the Federal Register Volume 43 Number 194 on Thursday, October 5, 1978, pages 45997, 45998.
- 6) Technical Report #6, Pot Grate - Low BTU Gas Firing Tests, was issued confirming the combustion of low BTU gas would have minimal metallurgical effects on pellet induration.



Monthly Report
October, 1978
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066

D. Materials, Licenses and Agreements

1) Stretford Engineering Contract with Ralph M. Parsons and the Parsons-Erie Sublicense Agreements are proceeding very slowly. Parsons issued a stop work notice on August 16, 1978. Patent, proprietary data and the sublicense are the areas of major disagreement. Engineering deliverables have not been released since the stop work notification. Schedule delays have resulted from Subcontract negotiation and approval delays.

2) Gasifier Engineering Contract

The BCI-McKee Subcontract continued to be delayed throughout the month of October until negotiations were completed and the contract was finalized on October 27, 1978. With the signing of the contract, it is expected that contract deliverables will be released for review immediately.

3) The Minnesota Certificate of Need is in final review. Notice has been received from the State of Minnesota that a delay is imminent because of delays expected from the Hearing Office. Presentation of the CON is now expected to be in November, 1978.

4) The release of the Environmental Assessment Report is not expected until December, 1978. Draft sections will be released for internal review the week of November 13, 1978.

J. H. Fatum

PROGRAM DIRECTOR FOR
ERIE MINING COMPANY

JHF:na



Monthly Report - September, 1978
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066

Monthly Report No. 11
Period: September 1, 1978
through September 30, 1978

EXECUTIVE SUMMARY

A. Project Schedule

The project schedule experienced major delays in contract deliverables in the preceding month of August due to Subcontract negotiation difficulties. Stop work notices from the Casifier and Stretford Front End Engineering subcontractors continue to result in schedule delays for September. The extent of schedule delay will depend on the length of delays incurred because of the contractual problems and approval delays of major subcontracts. The schedule delays will be assessed when subcontract negotiations are finalized.

B. Cost Comments

Approval of funds allotted in Phase I were received September 1, 1978 from DOE in the amount of \$681,600 increasing the total Erie/DOE contract commitment to \$3,136,800. The \$681,600 were received as uncommitted funds to be allocated for the project. Further approvals on September 28 1978 of funds in the amount of \$518,858 and \$344,323 increase the total contract commitment to \$3,999,981. To be included in the \$518,85 is the approval of the General Environmental - Product and By-Product Cost Pricing Amendment (\$247,858) and an uncommitted amount of \$271,000. Approval of the Clean Air Act and Certificate of Need Cost Pricing Amendments for the additional \$344,323 is funding for final environmental approvals which is fully reimburseable to the contractor by the DOE.

C. Major Activities

1) Front End Engineering

Erie continues to review and comment on engineering materials released by McKee but major activities have been slowed down due to the work stoppages of the gasifier and Stretford subcontractors. Project deliverables have not been received and as a result engineering designs have been delayed which will result in cost estimating delays and ultimately project schedule delays.

- 2) The Coal Handling Trade Off Study was issued September 20, 1978. The results, conclusions and recommendations pertaining to coal and coal fines handling are presented to the DOE for review and comment.



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Erie Mining Company
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- 3) An environmental progress meeting was held with DOE, McKee, Southwest Research Institute, Ecology Consultants Inc. (ERT) and Erie at the DOE facility - Chicago on September 12, 1978 for the purpose of assessing environmental progress and finalizing the schedule of environmental activities.
- 4) Modeling activity on the plant design model was initiated in September.
- 5) Cost estimating activity on the data to be presented McKee for Erie Mining Company's participation in Phases II and III was prepared for review.
- 6) Preliminary activities were initiated for Work Breakdown Structure - Phases II and III and Reporting Procedures - Phases II and III. Major activity on these items is expected in October, November 1978.
- 7) Engineering and Socio-economic related information was gathered for the Environmental Assessment Report. Activity is expected to continue throughout October. A preliminary draft is expected to be released December 1978 for concurrent reviews.
- 8) Foster Wheeler continues a delay in coal-oil-tar-ash sampling. Foster Wheeler notified Erie Mining Company that the condition of the Rosebud coal to be used for gasifier startup and testing had deteriorated appreciably. Erie agreed to arrange for a new supply of sized Rosebud coal to be delivered to Foster Wheeler (at Foster Wheeler's expense) for startup. Coal delivery is expected the week of October 2, 1978.
- 9) Formal approval of the change from non-attainment to attainment status has not been received from the Federal EPA. Verbal approval has been received, publication in the Federal Register is expected in October.
- 10) A Coal Gasification Progress Meeting was held in the Chicago facilities of the DOE on September 13, 1978. Participants included DOE personnel - Chicago and Washington Operations Offices and Erie Mining Company.
- 11) Briquetting Study Work Definition was prepared for DOE review to assess the scope of work necessary to validate a Coal Fines Agglomeration Study. The outline was presented to DOE at the September Monthly Oral, September 26, 1978.



Monthly Report - September, 1978
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066

D. Materials, Licenses and Agreements

- 1) Stretford Engineering Contract with Ralph M. Parsons and the Parsons-Erie Sublicense Agreements are proceeding very slowly. Parsons issued a stop work notice on August 16, 1978. Patent, proprietary data and the sublicense are the areas of major disagreement. Engineering deliverables have not been released since the stop work notification. Schedule delays have resulted from Subcontract negotiation and approval delays.
- 2) Gasifier Engineering Contract. The BCI-McKee Subcontract continues to be delayed due to new proprietary data requirements by DOE. The July 14 stop work notice continues to be in effect and August deliverables have not been received. Schedule delays have resulted from Subcontract negotiation and approval delays.
- 3) The Minnesota Certificate of Need is in final review. Notice has been received from the State of Minnesota that a delay is imminent because of delays expected from the Hearing Office. Presentation of the CON is now expected to be in November, 1978.
- 4) The release of the Environmental Assessment Report is not expected until December, 1978. Report sections will be released for internal review as completed.
- 5) The Stretford and Miscellaneous Cost Amendments are being prepared and are expected to be sent to the DOE for approval and review during October, 1978.
- 6) DOE approval of the Clean Air Act, MEA Amendment - Certificate of Need and the General Environmental - Product and By-Product Amendment was received by Erie in September. DOE approval has been requested of other outstanding items and is expected in October.

E. Coal Procurement and Handling

- 1) Work is proceeding on establishing suppliers of sized coal for both Eastern and Western coal.
- 2) Erie presented a proposal to replace "Western" low sulfur non-caking coal with an "Eastern" low sulfur, low caking coal for operational purposes in coal gasification in September. DOE approval is requested.



Monthly Report - September, 1978
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066

F. New Requirements

- 1) The 10 Code of Federal Regulations, Section 711, which concerns the release of proprietary data to the public continues to be reviewed and evaluated. Erie's recommendation will be available when the Government has completed and submitted its review for comment. The current new contractual language being developed for the Parsons and BCI subcontracts will require close coordination with these new requirements.

J. H. Fatum

PROGRAM DIRECTOR FOR
ERIE MINING COMPANY

JHF:na



Monthly Report, August 1978
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066

Monthly Report No. 10
Period: August 1 through
August 31, 1978

EXECUTIVE SUMMARY

A. Project Schedule

The project schedule experienced major delays in contract deliverables in August due to the July 14 stop work notice received from BCI and an August 16 stop work notice received from Parsons. It is not known what affect these delays will have on the entire project schedule. The extent of the schedule delay will depend on the length of the delays incurred because of the contractual problems and approval delays of major subcontracts. The assessment of schedule delays will continue until the major subcontracts are finalized.

B. COST COMMENTS

Approval was received in August for an additional \$255,200. The approval of these funds increases the total contract commitment to \$2,455,200.

The Gasifier, Clean Air Act, Certificate of Need, and the General Environmental amendments are still awaiting DOE approval. Approval of these amendments is necessary for the project to continue to meet the environmental requirements of the gasification project and to continue to meet the overall project schedule.

C. Major Activities

1) Erie continues to review and comment on engineering materials released by McKee but major activities have been slowed down due to the work stoppages of the gasifier and Stretford subcontractors. Project deliverables have not been received and as a result engineering designs have been delayed which will result in cost estimating delays and ultimately project schedule delays.

2) Coal Handling Study Preliminary Report was issued for internal review. Formal issue is expected the week of September 11, 1978.

3) An Environmental Review Meeting was held August 18, 1978, in Fort Collins, Colorado, at the facilities of Ecology Consultants Inc. for the purpose of discussing all outstanding environmental matters. The environmental schedule was set with data and reporting responsibilities outlined. A progress meeting is scheduled for September 12 in the DOE Chicago Operations Office.



Monthly Report, August 1978
Erie Mining Company
Coal Gasification Project
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- 4) The Waste Water Treatment Report was issued in August comparing the capital and operating costs of a biological treatment system with an oxidative incineration treatment system.
- 5) Justification work continues on the miscellaneous cost amendments. Approval is necessary for work to continue and contractual requirements to be completed.
- 6) Delays were experienced in the Foster Wheeler coal-oil-tar-ash sampling project. Foster Wheeler has set a testing period to begin the week of September 25, 1978. Delays were due to equipment complications, vacation delays and personnel changes. Foster Wheeler remains reluctant to test the high swelling coal.
- 7) The second Design Review Meeting was held August 29-30 at the offices of the DOE Cleveland. The purpose of the meeting was for project technical review. Comments were solicited from participants on the technical presentation handout.
- 8) Formal approval of the change from non-attainment to attainment status has not been received from the Federal EPA.

D. Materials, Licenses and Agreements

- 1) Stretford Engineering Contract with Ralph M. Parsons and the Parsons-Erie Sublicense Agreements are proceeding very slowly. Parsons issued a stop work notice on August 16, 1978. Patent, proprietary data and the sublicense are the areas of major disagreement. Engineering deliverables have not been released since the stop work notification.
- 2) Gasifier Engineering Contract. The BCI-McKee subcontract continues to be delayed due to new proprietary data requirements by DOE. The July 14 stop work notice continues to be in effect and August deliverables have not been received.
- 3) The Minnesota Certificate of Need is in final review. Notice has been received from the State of Minnesota that a delay is imminent because of delays expected from the Hearing Office. Presentation of the CON is now expected to be in October, 1978.
- 4) The release of the Environmental Assessment Report is not expected until December, 1978. Report sections will be released for internal review as completed.
- 5) The Stretford and Miscellaneous Cost Amendments are being prepared and are expected to be sent to the DOE for approval and review during September, 1978.



Monthly Report, August 1978
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066

E. Coal Procurement and Handling

1) Work is proceeding on establishing suppliers of sized coal for both Eastern and Western coal. The Coal Handling Study was reviewed at the Design Review Meeting in August.

F. New Requirements

1) The 10 Code of Federal Regulations, Section 711, which concerns the release of proprietary data to the public continues to be reviewed and evaluated. Erie's recommendation will be available when the Government has completed and submitted its review for comment. The current new contractual language being developed for the Parsons and RCI subcontracts will require close coordination with these new requirements.

A handwritten signature in dark ink, appearing to read 'J. H. Fatum'.

J. H. Fatum
Program Director for
Erie Mining Company



Monthly Report, July 1978
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066

Monthly Report No. 9
Period July 1 through
July 31, 1978

A. Project Schedule

The project continued on the revised schedule for the month of July. A change-over from the DOE-Washington, D.C., office to the Chicago Operations Office-DOE of contracting and funding functions may cause delays in project schedule. Erie placed a two week "hold" on subcontracts Air Dispersion II, Soil Boring II, Noise Survey, Coal Tar, Oil and Ash Testing and MEA Printing due to the lack of funds in allocated monies. On July 14 McKee was notified of a work stoppage by BCI which stated BCI was no longer willing to work "at risk." BCI deliverables due on July 31 have been given to McKee, however, no retraction of the work stoppage has occurred. It is predicted if the work stoppage continues a two week to one month delay in the project schedule could occur. Documents provided to McKee were very preliminary.

B. Cost Comments

Following a review meeting with DOE-Cleveland and DOE-Chicago procurement personnel and in accordance with requests from the Chicago Operations Office, revised cost pricing proposal amendments of the Clean Air Act, Certificate of Need and the General Environmental were issued on July 20. The Gasifier Cost Pricing Proposal Amendment was submitted to the DOE on July 25. Until these cost amendments are approved and the cost plan revised, the monthly comparison reports will show considerable variations from the original budget.

The amount of funds committed to the project totaled the allocated project funds of \$2.2 million the week of July 24, 1978. Unless additional funding is approved in July, a work suspension order to Erie subcontractors would be issued July 28, 1978.

C. Major Activities

1) Gasifier front end engineering proceeded at the contractors risk until July 14, when a work stoppage was issued by BCI to McKee. BCI did present July deliverables to McKee but stated that no other deliverables would be issued until suitable financial arrangements could be made. DOE approval of the BCI subcontract and outstanding contract amendments are necessary for the payment of BCI invoices. A BCI Preliminary Design Review Meeting was held on July 12-13, 1978 in Pittsburgh. However, documents were not released for detailed review until July 31.



Monthly Report, July 1978
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066

- 2) A BCI Onsite Familiarization Trip was held at Erie Mining Company on July 10.
- 3) The Stratford front end engineering proceeded on schedule in July with a final Design Review Meeting held on July 6 in Pasadena, California. All drawings were reviewed for cost estimating purposes.
- 4) Foster Wheeler has indicated a delay due to equipment commissioning and vacation in the test for procuring coal, tar, oil and ash samples. This delay could cause a delay in the environmental schedule. Foster Wheeler is reluctant to test the high swelling coal. Firm dates have not been resolved at this time.
- 5) Written approval was received on the ERT contract from the DOE. Environmental work has proceeded on that basis. A final Environmental Review Meeting is scheduled for August 18, 1978, in Fort Collins, Colorado.
- 6) The formal approval of the change in status from Non-attainment to Attainment has not been received from the Federal EPA.
- 7) Clean Air Act. Erie will require a combustion gas analysis to present to the DOE-EPA for discussion of the BACT-NSPS requirement pertaining to the effects of the coal gasification plant on the existing plant emissions.
- 8) Environmental Cost Amendments. Revised cost amendments have been submitted for DOE approval. It is expected that if approval is not given before the week of August 21, 1978, work suspension notices must be issued to Erie subcontractors.
- 9) The Site Boring Report was issued in July. McKee is basing cost estimates on report results. The Soil Boring II contract will be issued in August for the additional work required in the ash-sulfur disposal area.
- 10) The Coal Handling Study was completed with the preliminary report to be issued the week of August 14, 1978. The study set the design basis for western coal at 1400 TN/DY with the assumption that all western coals will be briquetted and the design basis for eastern coal will be sized coal received at the plant-site allowing 1187 TN/DY + 12% for fines generation.

D. Materials, Licenses and Agreements

- 1) Minnesota Certificate of Need. The preliminary draft was received by Erie Mining Company in July. Comments are being incorporated and the final draft is expected to be finished in August.
- 2) Stratford Engineering Contract. Contract finalization is proceeding very slowly. The letter of authorization for time extension was approved to August 10, 1978. Difficulties in agreeing on patent and proprietary information are the major items of negotiation. Patent search and verification activity was initiated.
- 3) Gasifier Engineering Contract. The BCI-McKee subcontract was submitted to the DOE in July in conjunction with the Gasifier Cost Price Proposal Amendment. DOE approval is expected the week of August 12, 1978.



Monthly Report, July 1978
Erie Mining Company
Coal Gasification Project
DOE Contract EW-78-C-02-5066

4) Erie-DOE Procurement Procedure. Chicago operations office-DOE requested copies of the Erie-DOE Procurement Procedure previously submitted to Washington. Copies were re-submitted and DOE-Chicago approval was requested.


E. Coal Procurement and Handling

Work is proceeding on establishing a supplier of sized coal with both Eastern and Western coal suppliers. Formal presentation of the coal handling study is expected at the next Design Review Meeting scheduled for August 29-30, 1978.

F. New Requirements

We were verbally notified that DOE has under consideration amendments to 10 Code of Federal Regulations, Section 711. A very preliminary review indicates that there may be a significant impact on the content and structure of project deliverables with regard to the possibility of proprietary information being made public in contradiction to our contract provisions. Our recommendation will be available in August following receipt and evaluation of the proposed requirements.

J. H. Fatum


PROGRAM DIRECTOR FOR
ERIE MINING COMPANY

JHF:ljb



Monthly Report June 1978
Erie Mining Company
Coal Gasification Project
DOE Contract ET-78-C-01-2578

Monthly Report No. 8
Period June 1 through
June 30, 1978

A. Project Schedule

During June, the project was essentially on the revised schedule. Sub-contract approvals continued to be delayed in June; however, minimal work slippage was incurred in the project schedule as major sub-contractors reluctantly agreed to proceed on the pre-contract arrangements.

DOE approval of the environmental contract late in June allowed the environmental work to proceed. (ERT had in writing indicated that they would "stop work" and would not extend the "at risk" pre-contract expense agreement.)

B. Cost Comments

Requests for cost amendments have been or are in the process of being submitted for DOE approval. Work continues on the gasifier front end engineering costs and the gasifier and Stratford cost amendments. Erie and McKee project coordinators updated and revised the cost and manpower estimates and a Contract Pricing Review meeting was held in Washington, D.C. on June 29, 1978 presenting the updated cost and manpower requirements including all cost amendment status. Cost reductions, deferred expense and Phase I - Phase II overlaps were items of discussion. Until these cost amendments are approved and the cost plan revised, the monthly cost comparison reports will show considerable variations from the original budget. We are currently utilizing previously allocated funds but expect that unless additional funding is approved, a delay in the project schedule and a reduction of activity will occur until amendments are approved.

C. Major Activities

- 1) Gasifier engineering has proceeded at the contractors risk. Contract negotiations continue with the final contract expected to be presented the week of July 17, 1978. A DCI Design Review meeting was held in the DCI office to review preliminary gasifier design. The final Design Review meeting was scheduled for July 12-13, 1978.



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- 2) Stretford engineering proceeded on schedule under a letter contract agreement. A final Design Review meeting is scheduled July 6, 1978.
- 3) Foster Wheeler Energy Corporation submitted a Scope of Gasification Tests and Table of Inspection concerning the coal test - coal tar, ash samples. Work is expected to start in August which is past the starting date originally presented and may delay the environmental schedule. Foster Wheeler is reluctant to process the high swelling design basis coal.
- 4) Environmental Contract. Verbal approval was received on the ERT contract with a commitment that written approval will be received the week of July 3, 1978. The contractor agreed to proceed on the environmental services on that basis.
- 5) Attainment status has been granted by the Minnesota Pollution Control Board. A formal request from the State of Minnesota to the EPA has been submitted and approval is awaited.
- 6) Clean Air Act Amendments. Erie is reviewing the DOE interpretation of the NSPS requirement affecting the present operating regulations as pertaining to the construction of the coal gasification plant. Erie will request further interpretation of this standard from DOE.
- 7) Environmental Cost Amendments. Contract cost amendments have been submitted to the DOE for approval. It is anticipated that approval can be received before the end of July. Allocated money will have been spent and a possible delay in the project schedule could occur.
- 8) Site Boring Contract. Soil Testing Services of Minnesota, Inc. completed the soil boring work underlined in the contract. Additional work is needed in the ash-sulfur disposal area. These new requirements are being defined.

D. Materials, Licenses and Agreements

- 1) Minnesota Certificate of Need. Work was completed on the drafting of the document and the review of the application is proceeding. Final printing and submission to the Minnesota Energy Agency is tentatively scheduled for August 24.
- 2) Stretford Engineering Contract. Negotiations are proceeding slowly, the letter contract extension to July 31, 1978 for \$145,000 was



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approved by the DOE. An additional time extension to the letter contract to August 31, 1978 is awaiting DOE approval. McKee is estimating that the Stretford contract will not be approved and signed before August 31, 1978.

- 3) Gasifier Engineering Contract. Contract negotiations are proceeding slowly with the contractor very reluctantly agreeing to work "at risk" until June 30, 1978. It is expected a contract will be submitted for approval the week of July 17, 1978.

D. Coal Procurement

Initial procurement requisitions were prepared and quotations requested for coal prices for the various coals required by the project. Work on establishing a supplier of sized coal is proceeding with both Eastern and Western coal suppliers. Formal presentation of the coal study is expected at the next Design Review Meeting tentatively scheduled for August 4, 1978.

J. H. Fatumo

PROGRAM DIRECTOR FOR
ERIE MINING COMPANY

JHF:na



Monthly Report, May 1978
Erie Mining Company
Coal Gasification Project
DOE Contract ET-78-C-01-2578

MONTHLY REPORT NO. 7
PERIOD: MAY 1 THROUGH
MAY 31, 1978

A. Project Schedule

During May the project was essentially on the revised schedule. Approvals for sub-contracts, although delayed, did not affect schedule performance in May as pre-contract arrangements with major sub-contractors allowed project work to proceed.

We anticipate that unless the outstanding environmental contract is approved by DOE during the first week of June, some slippage of environmental work will be incurred as the vendor has not been willing to extend the "at risk" pre-contract award agreement past that time.

B. Cost Comments

A request for cost amendment for general environmental product and by-product analysis was submitted for DOE approval.

Work continues on definition of the gasifier and Stretford front end engineering and miscellaneous cost amendments.

Erie has requested that McKee and Erie project coordinators review and update cost and manpower estimates for DOE review in June. Design decisions and all project requirements are being reviewed for cost reductions and deferred expense.

We are continuing to utilize previously allocated funds until contract amendments can be processed by DOE, however, we estimate that additional funding will be required in early July to allow project commitments to be met and ensure that project schedule can be maintained.

C. Major Activities

1. Front End Engineering

Parsons and BCI are proceeding satisfactorily with design and engineering activities.

General plant layout, process flowsheets and process parameters are being developed according to schedule.

2. Environmental Contract

Re-negotiation of fee delayed execution of the contract for environmental services. DOE consent has been verbally received and the contractor has agreed to proceed until the formal consent is received from DOE during the first week of June.



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3. Re-designation of "Non-attainment" Status

On May 31 the Minnesota Pollution Control Board unanimously voted in favor of Erie's request for re-designation of the Erie plant site area.

Minnesota's formal request to the EPA is expected to be prepared early in June for submittal to the Governor of Minnesota for his signature and forwarding to the EPA.

4. Clean Air Act Amendments

The question remaining to be resolved is whether construction of the coal gasification plant will cause EPA or the State to apply a different set of regulations to the existing facilities at Erie, other than those which presently apply.

We are currently assessing the effluents anticipated for review by DOE to determine whether we will exceed the 100 ton per year limitations.

5. Environmental Cost Amendments

Request for contract amendments were finalized for environmental and product, by-product analysis. Submission of a request for contract amendment was made.

As the environmental uncertainties are resolved, it is appropriate that the cost amendments for environmental activities be processed and the contract amended.

A special cost meeting has been scheduled for June 15 to discuss updating the cost and manpower plans to reflect current conditions.

D. Materials, Licenses and Agreements

1. Minnesota Certificate of Need (CON)

Work continued on definition and drafting of the application for CON. A status and progress update report was submitted for DOE review and comment.

Concurrent review of the preliminary draft application is scheduled for June 30, 1978. Final printing and submission to the Minnesota Energy Agency is tentatively scheduled for August 24 (no change at this time).

2. Stratford Engineering Contract

Negotiations are proceeding slowly and extension of the letter contract with Parsons was requested by McKee and submitted to DOE for approval. The existing letter contract expired on May 19, 1978, however, Parsons has continued work on the project pending DOE approval.

3. Gasifier Engineering

Contract negotiations are proceeding slowly, however, work continued under the "at risk" pre-contract expense agreement with BCI. McKee requested and was granted approval to extend the "at risk" agreement until June 30, 1978.



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Erie Mining Company
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E. Coal Procurement

Initial procurement requisitions were prepared and quotations requested for coal prices for the various coals required by the project.

Work on establishing a supplier of sized coal is proceeding with both Eastern and Western coal suppliers.

Design comparisons for sized and unsized coal are proceeding and a preliminary report on the scope of studies was provided at the scheduled Design Review Meeting. Finalization of this study is tentatively scheduled for the end of June. Formal presentation of the coal study will be made at the July Design Review Meeting.

F. Plan for Obtaining Materials, Licenses and Agreements

Deliverable Items I-F-1 to 5 were submitted for DOE review May 31, 1978, as provided for in the contract schedule. Plan for obtaining coal, water, power, chemicals and plans for use and disposition of products scheduled for July 31, 1978, were submitted early. Erie considers these deliverables complete as submitted.

Although deliverables have been completed, monies for coal procurement and development of the Certificate of Need application will continue to be incurred as planned in requested cost amendments (which are being added to the cost and manpower plan).

J. H. Fatum

PROGRAM DIRECTOR FOR
ERIE MINING COMPANY

JHF:ljb



Monthly Report - April, 1978
Erie Mining Company
Coal Gasification Project
DOE Contract ET-78-C-01-2578

Monthly Report No. 6
Period April 1 through
April 30, 1978

EXECUTIVE SUMMARY

A. PROJECT SCHEDULE

Rescheduling of activities in March and finalized in April resulted in extension of parts of most tasks, as shown in the attached schedule.

During April the project was essentially on the revised schedule. Approvals for front-end engineering and other contracts continued to affect schedule performance, but delays were minimized by the pre-contract arrangements made with the major sub-contractors work on the gasifier. Stretford and environmental sub-contracts proceeded.

B. COST COMMENTS

We continue to be concerned that significant costs are being incurred based on escalation of engineering cost, new requirements being imposed by State and Federal agencies, new environmental requirements and design and coal procurement activity related to coal fines handling and disposal.

Requests for cost amendments have been submitted or are in the process of being submitted for DOE approval.

Until these cost amendments are approved and the cost plan revised, the monthly cost comparison reports will show considerable variance from original budget. We are currently utilizing funds previously allocated and proceeding with the necessary project work until our contract can be amended as instructed.

We estimate that seventy five percent of allocated funds will be expended during June with the finalization of the Stretford and Gasifier contracts.

C. MAJOR ACTIVITIES

1. Gasifier Engineering has proceeded at the contractors risk. Contract negotiations continued. We anticipate that final drafts of the McKee/BCI contract will be available for review early in May.

2. Stretford Engineering. Parsons agreed to entering into a limited pre-contract expense arrangement to cover the first two weeks of engineering until a letter contract could be initiated. A letter contract was submitted to DOE for approval April 20, 1978. DOE approval is expected in early May. The letter contract covers activity from April 12, 1978, to May 19, 1978, (maximum \$80,000) at which time a "definitized" contract is expected to be completed.



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3. Environmental Contract. A contract with "environmental research" was prepared and submitted to DOE for approval and consent.

The vendor continued to provide limited services at their own risk during April, but has indicated that they will be unable to proceed much farther unless a contract can be approved.

4. Re-designation of "Non-attainment Area" and Environmental Uncertainties. Erie's contractor completed the Air Dispersion Study I, and Erie submitted an application to the PCA for re-designation of the Erie site. Hearing of our request originally scheduled for April 26 has been delayed by the PCA until May 30, 1978. We continue to feel confident that the results of our study and the data produced will provide the PCA with grounds to request the EPA to re-designate the Erie site to an "attainment area."

DOE was requested to provide clarification of the uncertainties raised by the Clean Air Act Amendments. The question remaining to be resolved is whether construction of the coal gasification plant will cause EPA or the State to apply a different set of regulations to the existing facilities at Erie other than those which presently apply.

5. Environmental Cost Amendments. Request for contract amendment of \$170,000 to comply with Clean Air Act Amendments was submitted mid-month for DOE final approval.

General environmental and by-product analysis amendments are being finalized and are expected to be submitted for DOE approval in May.

D. MATERIALS, LICENSES AND AGREEMENTS

1. Minnesota Certificate of Need (CON). Work continued on definition and drafting of the application for CON. Erie participated in hearings in St. Paul, Minnesota, and offered testimony relative to several suggestions/questions which were raised during our review of the certificate detail.

Completion of a draft document for review is scheduled for June 30, 1978, with final printing and submission to the Minnesota Energy Agency tentatively set for August 24 (when the rules become effective).

2. Air Dispersion Study I. This contract was initiated, work completed and report issued during the period.



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Erie Mining Company
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E. COAL PROCUREMENT

Preliminary plans for acquiring coal and sampling requirements were issued as Technical Report #4 on April 28, 1978.

We are continuing to evaluate the various coals referenced in this report for market availability and cost comparisons.

Gasifier and coal handling design work has been significantly increased by the lack of available sized coal at commercially attractive prices.

Design comparisons are proceeding for sized and unsized coal. We expect a preliminary report of our studies at the scheduled Design Review Meeting in mid-May.

J. H. Fatum

A handwritten signature in dark ink, appearing to read "J. H. Fatum", is written over the typed name.

Program Director for
Erie Mining Company

JHF:na



Monthly Report - March, 1978
Erie Mining Company
Coal Gasification Project
DOE Contract ET-78-C-01-2578

Monthly Report No. 5
Period: March 1 through
March 31, 1978

EXECUTIVE SUMMARY

A. PROJECT SCHEDULE

Considerable effort was expended reviewing and rescheduling activities which have been delayed due to our inability to proceed with subcontracts for Front End Engineering. Re-scheduling of some parts of Tasks I, II, III, and V is required. Time seeking approvals, additional environmental review and subcontractor reluctance to proceed at their own risk until a contract has been definitized were the principle reasons why these activities were delayed.

B. COST COMMENTS

We are concerned that significant cost increases in Phase I will be incurred due to escalation of engineering costs and new requirements being imposed by both Federal and State agencies. Continual changing and addition of new environmental requirements have contributed to possible delays in project schedule and necessitated considerable design changes. Review of new requirements has been a continual task, since the commencement of Phase I, and was never anticipated prior and during our contract negotiations.

As a result, we are currently projecting that Phase I expenses could be increased from \$2.2 million to \$3.8 million, an increase of approximately \$1.6 million unless measures can be taken to halt changes and firm up the environmental guidelines and other regulations.

During January, February and March of this year, as the project progressed, DOE was notified of projected cost increases in the following areas:

Gasifier Front End Engineering (ERDA-65)	\$ 446,912
Stretford Front End Engineering (ERDA-82)	25,000
MEA Certificate of Need (ERDA-83)	175,000

These estimates have been further updated since that time and are currently estimated at \$855,000. Reductions in work definition have already been made to maintain the current costs estimated.

Review of new environmental requirements and regulatory agency actions which were promulgated since contract inception were also reviewed during this period.

Definitive estimates, however, were not, and are not at this date finalized. We have not been able, with certainty, to establish the environmental steps the project must take.



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As we currently understand the requirements, we expect that an additional \$401,000 will be required to complete the Federal Environmental Assessment, and the Minnesota Environmental Worksheet.

C. MAJOR ACTIVITIES

1. Gasifier Selection: Woodall-Duckham/BCI agreed to proceed with the Front End Engineering at their own risk until a contract could be finalized. Several weeks were required to negotiate the precontract letter.
2. Stretford selection was finalized and approvals received from DOE. Negotiations with Parsons were initiated. Parsons at month-end was hesitant to enter into a precontract arrangement at their own expense.
3. New environmental requirements continued to be outlined, and integrated into the design basis.

Although we have reviewed these new regulatory requirements which were promulgated since contract inception, we have not been able to provide a definitive estimate. Review of new requirements has been a continual task since the commencement of Phase 1 and was never anticipated to be so extensive. We have not been able, with certainty, to establish the environmental route the project must take.

As we currently understand The Clean Air Act, we expect an additional \$170,000 will be required to produce the Federal and State Environmental Worksheets and Assessments called for in our contract. The above estimate assumes that we will be successful in getting EPA to revise its designation of the area as a "non-attainment area" for total suspended particulates. We have requested the MPCA to recommend to EPA redesignation of the area to attainment status and are proceeding with the necessary applications and hearings. If we are unsuccessful in this regard, we may be faced with serious economic problems.

At the present time, Erie is in compliance with all environmental emission regulations. We have always intended that the design of the coal gasification plant would be such that the Erie plant would be able to meet existing environmental emission standards. The Clean Air Act Amendments of 1977 creates uncertainty with respect to DOE requirements of our contract and EPA policies.

The amendments have created uncertainties which have not been resolved by EPA and we find it impossible to define with any degree of certainty what the applicable regulations might be.



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Erie Mining Company
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The question to be resolved is whether the construction of the coal gasification plant will cause EPA or the State to apply a different set of regulations to the existing facilities at Erie other than those which presently apply. Economics would indicate that if this were to occur, and such an interpretation were to be upheld, proceeding with this project, or any other retrofit project, would not be justified at this time. Before Erie can safely proceed with Phase II and meet its contractual agreements, DOE should obtain a ruling from EPA resolving this question.

We are planning to request that our contract be amended to include the costs estimated and that DOE resolve the uncertainty with respect to DOE requirements and EPA policies.

Erie in the interim will continue implementing the new requirements as previously instructed to minimize any impacts on project schedule. We are currently utilizing funds previously allocated and proceeding with necessary project work until our contract can be amended.

D. MATERIALS, LICENSES, AND AGREEMENTS

1. Minnesota Certificate of Need

Submission of Form 60's for contract amendment of \$170,000 were submitted for DOE approval and action. In order to minimize the impact of these MEA requirements on project schedule, we are utilizing funds presently allocated and proceeding with definition and necessary project work until our contract can be amended. Erie anticipates that the draft document will be completed during June 1978 for review.

2. Erie/McKee Contract

DOE approval of the McKee contract was obtained.

3. Financial Agreements

Payments were made successfully during March for expenses from August, 1977 to February, 1978.

J. H. Fatum

A handwritten signature in black ink, appearing to read 'J. H. Fatum', is written over the typed name.

Program Director for
Erie Mining Company

JHF:na



Monthly Report - February, 1978
Erie Mining Company
Coal Gasification Project
DOE Contract ET-78-C-01-2578

Monthly Report No. 4
Period: January 30 through
February 28, 1978

EXECUTIVE SUMMARY

A. Contract Deliverables

DOE was notified February 13 of Erie's selection of gasifier vendor. The selection report was issued the following week. Woodall-Duckham was notified February 24th (immediately following DOE approval) that they were selected. Selection was scheduled for February 3.

The preliminary draft of Environmental Deliverables, E1, E2, E3 were submitted February 28, as scheduled. Several sections were incomplete as data could not be obtained from the gasifier vendor until the selection of a vendor was officially announced.

B. Project Schedule

The project continued during the period to be essentially on schedule except for those tasks related to the selection activity. Some delay and re-scheduling of some parts of Task I (commercial plant design), Task II (demonstration plant design) and Task V-Environmental is required; however, the project completion date of December 31, 1978 is not anticipated to be delayed.

A. G. McKee has been asked to re-schedule the above activities. A revised schedule is to be prepared for review early in March.

C. Cost Comments

The project continues to be operating under the level budgeted in the cost plan.

The principle reasons for under expenditure are related to the selection activity being delayed and the time required to obtain approvals for the Erie/McKee contract.

McKee has not been able to proceed with letting sub-contracts until the Erie/McKee contract is released by DOE and Erie. The existing schedule did not anticipate accurately the time required to allow both Erie and DOE evaluations and approvals. Both Erie and DOE evaluated and approved the gasifier selection on an accelerated basis, well under the maximum times allowed by the contract.

As a result of the aforementioned problems, monies for several sub-contracts were not expended as originally planned.



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Erie Mining Company
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D. Major Activities

1. Gasifier Selection:

Following gasifier selection, McKee held an initial planning meeting with Woodall-Duckham to discuss commencing work on the project under a pre-contract expense arrangement similar to the arrangement Erie entered into with DOE during negotiation of the Erie/DOE contract.

2. Stratford Selection:

The bid conditioning meetings deemed necessary in February were held and evaluations were continued. On February 13, McKee notified Erie of its recommended selection. Back-up data was submitted to Erie as it became available during the following ten days. During the review of McKee's selection, the Erie Engineering group requested that vendor plant site visits be organized to resolve several questions concerning environmental, process and contractual matters. In addition, the evaluation committee requested that McKee provide responses to, (or request the bidders to provide), a list of questions pertaining to McKee's recommendation.

Although several weeks will be required to complete Erie's evaluation, the Erie Management Committee determined that adequate evaluation is required prior to Erie's selection or approval of McKee's recommendation.

We anticipate that Erie will be able to make its selection by March 24, 1978.

3. Demonstration Plant Design:

Process studies continued on coal handling, waste heat recovery, site location, water treatment, and retrofit activities were outlined.

4. New Environmental Requirements:

Definition of new environmental requirements continued. Impacts on the Front Engineering Package and other design work were determined and integrated into the design basis.

Sampling and monitoring requirements for both State and Federal assessments were distributed for DOE review. Qualitative data requirements were defined for feedstock, plant products and solid/liquid effluents.



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Solid waste disposal plans were outlined and engineering commenced on evaluating various alternatives.

A review meeting is scheduled in early March in Washington to review current progress and data requirements.

E. Materials, Licenses and Agreements

1. Minnesota Certificate of Need

Definition of State requirements continued. Manpower and Cost Estimates were prepared. We expect completion of Form 60's and support data will be submitted early in March.

2. Erie/McKee Contract

Following resolution of patent and cost/price proposals, McKee signature was obtained in early February. DOE approval is pending.

3. Financial Agreement

"Draw Down" documents were received in the last week of February due to delays in the mail (possibly due to weather disruption of mail services). McKee has not been paid due to this delay. It is expected that Erie will be able to pay its contractors in early March.

F. Project Management

1. Communication and Approvals

It appears that some tasks as scheduled do not allow for adequate time for review and approvals. Both the ERIE/DOE and Erie/McKee contracts allow review periods which are not reflected in the project task scheduling. Although we do not foresee delays in approvals extending the project completion date of December 31, 1978 at this time, we have extended several activities. We expect the extent of re-scheduling required will not be completely known until late March when the gasifier and Stratford Front End Engineering timetable will be known.

J. R. Fatum

PROGRAM DIRECTOR FOR
ERIE MINING COMPANY



Monthly Report - January, 1978
Erie Mining Company
Coal Gasification Project
DOE Contract ET-78-C-01-2578

Monthly Report No. 3
Period: January 1 through
January 29, 1978

EXECUTIVE SUMMARY

A. Contract Deliverables

Quarterly and Annual reports for 1977 were delivered and the project manual was issued to all project personnel.

B. Project Schedule

The project continued during the period to be essentially on schedule. Milestone #4, Site Data Collection and Evaluation was completed as scheduled. Major blizzards and emergency conditions resulted in disruptions of communications and caused delay in preparation of monthly, annual and quarterly reports. Selection activities were similarly affected.

In order to minimize slippage in the tasks related to the selection of the gasifier, Erie reviewed and evaluated the vendor proposals on an accelerated basis.

Selection Timetable

<u>Activity</u>	<u>Schedule Data</u>	
	<u>Original</u>	<u>Actual*</u>
1. Selection Package Preparation	Sep. 5 - 30	Oct. 3 - 28
2. Inspection Trip	Sep. 26 - Oct. 21	Oct. 27 - Nov. 19
3. Inquiries sent to vendors	Sep. 26	Nov. 4
4. Vendor inquiry meetings	Early Nov.	Early Dec.
5. Responses from vendors	Dec. 6	Jan. 6, 1978
6. Vendor response meetings	Early Dec.	Jan. 23, 24, 25
7. Gasifier selection	Feb. 3	Feb. 13

Selection was made February 13, considerably ahead of our previously estimated selection date of February 28 (January Oral Meeting).



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Erie Mining Company
Coal Gasification Project
DOE Contract ET-78-C-01-2578

C. Cost Comments

The project continues to be operating under the level budgeted in the Cost Plan.

As in December, storms, blizzards and emergency conditions resulted in disruptions to planned activities. Over four full working days were lost during the period.

The resulting delays in communications, etc. retarded Accounting and prevented work from being completed at the levels budgeted.

During February, we expect to "catch up" these activities and costs.

Due to problems in "Billing" and ticketing from the gasifier selection trip in November, all charges have not been submitted. We expect to have these travel charges booked in February.

D. Major Activities

Work continued on the major tasks scheduled for the period including:

Task I. Conceptual Design

a. Gasifier Selection.

Inquiry responses were received, from the gasifier suppliers January 6th; however, were not completely submitted until January 20. Meetings were held with each vendor following review of their proposals to clarify or request information which was incomplete. Responses were received up to the end of the month. In order to minimize possible delays, Erie, McKee and DOE reviews were simultaneous.

b. Stretford Selection.

Selection of the Sulfur Removal System continued and quotations were received and bid analysis started. As with the gasifier proposals, "Bid conditioning" meetings were deemed necessary and scheduled for early February.



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Erie Mining Company
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Task II. Demonstration Plant Design

Process studies continued on coal handling, waste heat recovery, compressor sizing and site location. Some initial work on waste water treatment was started. The use of the existing Erie burner was evaluated and a preliminary draft of the burner test program issued for comment.

Task IV. Site Evaluation

The plant site - subsurface exploration bid tabulation and procurement package was submitted to DOE for approval.

Task V. Environmental Analysis

During January, preliminary drafts for environmental assessment work for Section 3 (Existing Environmental Setting) were distributed for review and comment.

Data collection continued during the report period and preliminary drafts of the process and related sections were further refined. The Ambient Noise Survey was finalized and bids sent out for quotation.

New Environmental Requirements

The timing and costs which might be incurred with some of the impacts of the new Federal and related State requirements were reviewed and defined.

There are several issues which could affect the project but have not been defined or quantified, particularly whether Erie is not in a "non-attainment area" and the detail level of data required to indicate that the gasification plant will comply with the prevention of significant deterioration rules. Definition of these areas continues.

Gasifier Front End Package Specifications were modified to include our current understanding of the potential impacts of these new requirements. Items such as a "dispersion modelling study", coal, and plant product analysis requirements have been evaluated and defined.

We expect our preliminary review and recommendations to DOE will be available by late February.



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Erie Mining Company
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Task VI. Materials Licenses and Agreements

a. Minnesota Certificate of Need.

The new requirements were evaluated and submitted to DOE with our recommendations. DOE approval was received, and we are proceeding with preparations for the Certificate of Need and contract modifications.

- b. The Erie/McKee contract was delayed due to interpretation of patent provisions. The contract was not signed as anticipated. Erie has given an extension of funds on the current letter agreement to cover McKee's activities until the end of February, anticipating contract approval at that time. We expect the contract to be signed in mid-February.

c. Financial Agreements

The banking agreement was finalized by all parties; however, the documents to allow use of the special account have not been received. No "Draw Down" has yet been effected.

Task X. Project Management

a. Early Report Dates

A review meeting was held in Washington to discuss DOE requirements. Erie requested clarification of DOE requirements at that time.

b. Procurement Procedures

A procurement package containing our interpretation of contract requirements was submitted by DOE for review. Approval requirements were discussed at a meeting held in Washington, and preparation of a draft approval cycle for all contracts was outlined. We expect to formalize this procedure next month.

J. H. Fatum

PROGRAM DIRECTOR FOR
ERIE MINING COMPANY



Monthly Report
Erie Mining Company
Coal Gasification Project
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Monthly Report No. 2
Period November 21 through
December 31, 1977

EXECUTIVE SUMMARY

A. Contract Deliverables

The Consolidated Management Plan, Employee Health and Safety Plan, and associated correspondence were prepared for delivery January 4, 1978 per the deliverable schedule.

B. Project Schedule

The project continued, during the reporting period, to be essentially on schedule. Costs were slightly lower than anticipated due to the Holiday period and vacations. Snow storms, preventing travel and resulting in some staff absences further affected costs. These problems did not affect our ability to prepare the required deliverables and work continued on the major tasks scheduled for the period including:

- Task 1. Conceptual Design
- Task 2. Demonstration Plant Design
- Task 4. Site evaluation
- Task 5. Environment Analysis
- Task 6. Materials Licenses and Agreements
- Task 10. Project Management

C. Major Activities

1. Task 1. - Conceptual Design

a. Selection activities

Following issuance of inquiries to the gasifier and Stretford vendors, basic process definition continued. Anticipating questions from the vendors on the inquiries, meetings were scheduled with each vendor to discuss and define subjects which could require further elaboration. Meetings were held and responses to all vendor questions were formally returned to all competitors.

2. Task 2 - Demonstration Plant Design

Process trade-off studies continued on coal handling, heat recuperation, compressor sizing, site location. Preliminary drafts of the studies will be available for review early next month.



Monthly Report
Erie Mining Company
Coal Gasification Project
DOE Contract ET-72-C-01-2578

Definition of coal requirements and preparation of the detailed design basis for the plant commenced.

The "Site Model" was completed except for the "legends" and gasification section insert. The model will be used in its current form, for environmental presentations and public hearings for obtaining a Minnesota Certificate of Need.

3. Task 4 - Site Evaluation

The preliminary plant site - subsurface exploration bids were received late in the month, and evaluation is expected to be completed early in January. It is likely that this will be the first sub-contract which will require DOE approval.

4. Task 5 - Environmental Analysis

a. Environmental data collection continued during the report period and preparation of rough draft copies of the existing environmental setting commenced. Evaluation and scheduling of the process related information was completed anticipating submissions by the gasifier and Stretford suppliers early in January. Initial reports received on indigenous flora and fauna (endangered species) indicate that there are no unusual environmental problems in the site area.

b. New Environmental Requirements

As requested by DOE last month, we have commenced analysis of the impact of new federal requirements.

- Hazardous waste
- Clean air act amendment

In addition, the Minnesota Pollution Control Agency has indicated verbally their intent to require more detailed evaluations in the following areas:

1. Ash disposal (leaching, etc.)
2. Sulfur disposal
3. Coal transport - within state boundaries
4. Coal selection - impact on air quality
5. Fines - impacts on shipment
6. Coal storage runoff



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7. Heavy metals distribution

It is our understanding that these requirements are possibly more stringent than Federal requirements and will increase the scope and cost of this task significantly.

The MPCA has on December 28 also declared the Iron Range a non-attainment area. The construction of the Gasification Plant could require the total Erie operation to comply as a "new source emission."

If the MPCA persists, we expect considerable additional costs for compliance studies to meet the new set of ground rules.

We will, in January, complete review and evaluation of these new requirements as they become known; however, it is apparent that additional costs could exceed \$500,000 should we be required to comply with all the new requirements.

5. Task 6 - Materials Licenses and Agreements

a. Minnesota Certificate of Need: New Requirements

Preliminary discussions were held with agency personnel concerning the proposed Certificate of Need. We are primarily concerned with the impact on the project schedule should the proceeding run its maximum time limits. Permits for construction could be delayed until June 1979 effectively delaying Phase II by six months.

We are and will, in January, pursue early filing and/or faster processing of Certificate of Need with the Minnesota Energy Agency.

b. The McKee/ Erie contract has been agreed to "in principle" and final revisions submitted to DOE for approval.

Erie has given an extension of funds, on the current letter agreement to cover activities until the end of January, 1978, anticipating contract approval and execution prior to that time.

c. Financial Arrangements

The Banking Agreement was finalized and distributed to the Bank for execution. We will be submitting executed (Erie/Bank) copies to DOE for final processing early in January.



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First payments under the contract and reimbursement to Erie will follow shortly.

6. Task 10 - Project Management

a. Early Report Dates

Initial comments from McKee and Erie site locations were prepared. Initial evaluations indicate that deterioration of cost control would result and significant change of both Erie and McKee procedures is required. Due to the possible complex interactions with cost control and audit procedures, we have been unable to complete our evaluation in December. Definitive costs will be provided in January.

J. H. Patum

A handwritten signature in dark ink, appearing to read 'J. H. Patum', is written over the typed name.

Program Director for
Erie Mining Company

JHF:ljb



Monthly Report
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Monthly Report No.1
Part A. Period August 17, 1977 through
October 19, 1977.
Part B. Period October 20, 1977 through
November 20, 1977.

EXECUTIVE SUMMARY

A. Contract Initialization

The contract between Erie Mining Company and the Department of Energy was finalized October 19, 1977. As we have operated under a letter agreement with DOE since August 17, 1977, while awaiting contract finalization, we have prepared this first report to cover the period between August 17 and October 19 (Part A) and the period October 20 to November 20 (Part B) as separate sections.

At the conclusion of the December monthly cut-off date, we shall be returning to the normal accounting system schedules as were proposed and reflected in our contract.

B. Project Schedule

In general, the project is on schedule within cost estimates, and we feel proceeding in an acceptable manner. Despite some delay in contract signing, preventing enquiries to gasifier supplies being issued, we hope to remain within the projected schedule, provided vendor response to our inquiries will provide the necessary data for environmental studies.

Current major activities during the period included:

1. Gasifier Selection
2. Selection Inspection Trip
3. Various Process and Trade-Off Studies
4. Environmental Assessment
5. Project Organization

Despite the fact that Erie has been on strike since August 1 we were able to attain union consent to allow site visits and preliminary site evaluation studies are either completed or well underway. Initial meetings have been held with both State and local agencies and reactions appear very positive. Our ability to begin environmental work in August under letter approval from DOE, has avoided considerable delay in data gathering which would have otherwise been delayed until mid 1978 due to weather conditions.

C. Major Activities

1. Gasifier Selection

Preliminary gasifier definition and selection activities centered on issuance of inquiries to the various gasifier and Stretford suppliers. This activity was planned to be completed prior to the gasifica-



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Monthly Report No. 1

Part A. Period August 17, 1977 through
October 19, 1977.

Part B. Period October 20, 1977 through
November 20, 1977.

tion trip to allow vendor response preparation while the process team were involved in the Gasifier Selection Trip.

Inquiries were issued the first week of November.

Utilizing the information McKee and PM had previously developed, the vendor inquiry responses, and the detailed information gathered on the inspection trip in South Africa, we should be able to make our selection of gasifier system in late February or early March as planned.

2. Selection Inspection Trip

Starring in South Africa, 9 gas plants and various test and research facilities were visited. The reception was excellent and the various industrial hosts were exceptionally cooperative in providing operating data, technical problem information which included samples of various products and effluents, and waste, for our perusal. The information we gathered has already helped us to improve our basic design concept and will provide invaluable assistance in evaluating the responses from our vendor inquiries, and avoiding potential environmental problems.

3. Process Trade-Off Studies

While the process inspection team was overseas, process trade-off studies continued according to plan. Progress on coal handling gas clean-up, site location, and various materials handling studies were made.

4. Environmental Assessment

Data collection, and environmental reviews are well underway. The project team has established the guidelines and standards that are to be used for Phase I activities, reflecting State, local and Federal requirements as well as ensuring that the standards of the Erie multiple use environmental systems are not upset.

5. Project Organization

Overall project management structure was finalized and project staffing is being undertaken as the preliminary cost and manpower management plans indicate.



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Estimated Costs:

Fee to State: maximum \$50,000

Cost to Prepare: \$50-150,000*

* "Ball park estimate - subject to changes or revisions of rules by MEA prior to issue."

F. Deliverables

The attached reports constitute the deliverables for the period ending November 20, 1977 as itemized in the contract schedule.

A handwritten signature in black ink, appearing to read 'J. H. Fatum'.

J. H. Fatum
Program Director for
Erie Mining Company
Pickands Mather and Co.,
Managing Agent



Quarterly Report
Erie Mining Company
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Fourth Quarter
Period: October 1, 1978 -
December 31, 1978

EXECUTIVE SUMMARY

A. Contract Deliverables

The following contract deliverables were completed during the fourth quarter, 1978:

1. Plant Scale Model
2. Plant Site Model
3. Environmental Assessment Statement - Draft
4. McKee/BCI Subcontract
5. Technical Report #6, Pot Grate - Low BTU Gas Firing Tests
6. Monthly Oral - September and October
7. Monthly Reports - September, October, November
8. Quarterly Report - Third Quarter
9. Fiscal Year 1978 Report
10. Erie/DOE Contract Cost Review Meeting - December 12, 1978
11. Erie/DOE Project Management Meeting - December 13, 1978
12. Gasifier Front End Engineering Preliminary Design per revised contract schedules
13. Initial Risk Analysis Evaluation
14. First Issue - Engineering Flow Diagrams
15. Second Issue - Engineering Flow Diagrams
16. Demonstration Plant Design and Economic Evaluation - Phase I
17. Commercial Plant Design and Economic Evaluation - Phase I



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3. Project Schedule

The project schedule experienced major delays in contract deliverables in the month of August due to Subcontract negotiation difficulties. Stop work notices from the Gasifier and Stretford Front End Engineering subcontractors continued to result in schedule delays for October.

The Gasifier front end engineering subcontract with BCI was finalized on October 27, 1978. August deliverables were obtained the week of November 6 for McKee, Erie assessment.

During the month of November, it was jointly agreed by DOE and Erie Project Management that Phase I activities would be limited to the essential activities required to re-define Phase I deliverables and establish schedule and cost estimates to provide the necessary data for Erie's economic assessment of project goals. The activities as re-defined would include the determination and evaluation of potential capital and operating cost reductions, and efforts maximizing the activities necessary to complete essential deliverables in order to minimize further contractual delays and unnecessary Phase I costs.

Subsequent to the completion of the McKee/BCI contract negotiations, activities have been intensified with the BCI front end engineering design in order to effect completion of the gasifier engineering package. Projected delivery of all BCI subcontract deliverables is scheduled for the week of January 19, 1979.

McKee issued a schedule for the cost estimates and economic data, which were originally scheduled for October 1, 1978, reflecting delivery on December 1, 1978. The cost estimate and economic data which delivered at that time, will not include a definitive estimate from Parsons but will include McKee's "best estimate" of Stretford capital and operating costs for sulfur removal.

The McKee/Parsons subcontract negotiations have not been completed resulting in the continuance of the Parsons stop work order. The project activities have been continued with the realization that Parsons deliverables will not be included until contract negotiations are finalized.

McKee issued a schedule for completion of the Design Manuals on January 29, 1979. The gasification front end engineering, as included in the design manuals will be reviewed in detail before Phase II engineering proceeds. The design manuals will not include any Stretford materials precluding arrival at an acceptable subcontract with Parsons.



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Erie review of the Demonstration and Commercial Plant Economic Evaluations was initiated after McKee distributed the documents on December 8, 1978. An economic presentation of the plant design to the DOE is scheduled for January 19, 1979.

C. Cost Comments

An Erie/DOE Review was held at Erie-Cleveland on October 25, 1978 for the purpose of assessing the economic goals of the Coal Gasification Project. Erie submitted communication ERDA-288, dated October 6, 1978, reflecting Erie's concern with increasing project costs due to engineering and cost estimating delays. Project viability was questioned based on current cost trending reports and projected project delays.

Based on ERDA-288 and discussion at the Cost Review Meeting, Erie recommended that Phase I activities be limited to completing front end engineering subcontracts and finalizing a preliminary cost estimate for the week of December 11, 1978.

A work suspension notice will notify McKee of the Erie/DOE intention of maximizing effort toward the cost estimate and minimizing Phase I expenses to the Government.

The Stretford cost amendment in the amount of \$139,400 and the Miscellaneous cost amendment in the amount of \$545,148, including the Schedule Extension (\$315,813), Overhead and Fringe (\$114,764) and the Coal Fines Handling (\$114,571), were submitted for DOE approval.

Approval was received by Erie Mining Company for allocated funds in the amount of \$3,999,981 for expenditures as requested in the Erie/DOE contract cost amendments and as authorized by the DOE. Subsequent Erie/McKee contract modifications were issued allocating a total of \$2,800,940 for projected McKee expenditures and costs for Phase I.

The Erie/McKee contract modifications include the following:

1. 500-ME-01 \$60,000 withdrawal to Erie for subcontract revisions.
2. 500-ME-02 \$526,248 Gasifier Front End Engineering.
3. 500-ME-03 \$99,961 General Environmental; Certificate of Need, Clean Air Act.
4. 500-ME-04 \$251,860 Schedule Extension to October 31, 1978 and Coal Fines Handling.
5. 500-ME-05 \$96,844 Salary rate revision and overhead rate revision.



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Subsequent to the approval and notification of the revised scope of activities, developed on October 25, 1978 by Erie and DOE for Phase I, an Erie/DOE Cost Review meeting was held at Erie-Cleveland on December 12, 1978 for the purpose of reassessing project economic goals and related activities.

Under the terms of the present contract as revised, project funding is adequate and is projected to be within budget.

D. Major Activities

1. Gasifier Front End Engineering.

In October Erie continued to review and comment on engineering materials released by McKee but major activities were slowed down due to the work stoppages of the Gasifier and Strctford subcontractors. Project deliverables were not received and as a result, engineering designs have been delayed which will result in cost estimating delays and ultimately project schedule delays.

In November BCI forwarded partial deliverables to McKee for the front end engineering of the gasifier. A process, P & ID and layout review was held at BCI on November 21-22, 1978. A stirrer design presentation was given to Erie-McKee on November 28, 1978. Erie review of the gasifier design data to be included in the cost estimate and submitted for preliminary design approval is being evaluated.

The gasifier front end engineering preliminary design package is projected for completion January 19, 1979.

2. Foster Wheeler performed the gasifier testing of Rosebud coal. A coal and bottom pan ash sample were sent to the Southwest Research for analysis. The gasifier testing of 15 tons of coal did not produce enough tar and oil for sample analysis.
3. The United States Environmental Protection Agency changed the non-attainment status of Erie Mining Company to attainment with notice in the Federal Register Volume 43 Number 194 on Thursday, October 5, 1978, pages 45997, 45998.
4. Technical Report #6, Pot Grate - Low BTU Gas Firing Tests, was issued confirming the combustion of low BTU gas would have minimal metallurgical effects on pellet induration.



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5. Project goals relative to management, technical and economic activities were discussed at an Erie/DOE Project Management meeting December 13, 1978. Activities are scheduled to maximize efforts to utilize the engineering, technical and economic information necessary to assemble and complete a design package for evaluation.
6. Environmental activities have concentrated on the Environmental Assessment Statement Draft which was issued for DOE review November 28, 1978.
7. Activities continued on the Design Manuals for the Demonstration and Commercial Plants as well as the Engineering Specification book. These documents are scheduled for completion and distribution on January 19, 1979.
8. The McKee Economic Evaluations for the Demonstration and Commercial Plants were distributed and reviewed in December. Formal presentation is scheduled on January 19, 1979.

E. Materials, Licenses and Agreements

1. McKee/BCI Subcontract - Gasifier Front End Engineering
Negotiations were completed in October and the contract was approved by the DOE and Erie.
2. McKee/Parsons Subcontract - Stretford Front End Engineering
Negotiations with Ralph M. Parsons concerning the McKee subcontract and the Erie/Parsons sublicense agreement were not finalized. Further negotiations have been cancelled pending agreement to proceed to Phase II of the Erie/DOE Contract.
3. The Minnesota Certificate of Need is scheduled for distribution the week of January 14, 1979 for DOE review. The presentation of a final Certificate to the Minnesota Energy Agency is contingent upon the decision by Erie and the DOE to proceed to Phase II of the contract.



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4. Status of Phase I Subcontracts

<u>Contract Number</u>	<u>Item</u>	<u>Status</u>
004	Site Exploration I	Complete
008	Noise Survey	Complete
001	Fauna Survey	Complete
002	Flora Survey	Complete
003	Air Dispersion I	Complete
007	Air Dispersion II	Cancelled
010	Printing Services	In Progress
001.2	Front End Engineering/ McKee	In Progress
005	Environmental Research	In Progress
006	Coal Oils-FWEC	Complete
011	Site Exploration II	Cancelled

F. Project Management

1. Procurement Procedures. The McKee Proposed Procurement Procedures were issued in June for Erie DOE approval. The document is currently under review and approval is requested. Erie Procurement Procedures were submitted to DOE early in the second quarter and have not been approved. Erie cannot finalize its approval of the McKee procedures until such approval is received. Project, Subcontract, Equipment and Materials Procurement Procedures will be included in the Project Manual approved.

G. New Requirements

1. The 10 Code of Federal Regulations, Section 711, which concerns the release of proprietary data to the public continues to be reviewed and evaluated. Erie's recommendation will be available when the Government has completed and submitted its review for comment. The current new contractual language being developed for the Parsons and BCI subcontracts will require close coordination with these new requirements.
2. The Best Available Control Technology - New Source Pollution Standard decision on the regulations applicable to the existing plantsite will require a combustion gas stack analysis from the current operation to present to the DOE-EPA for discussion of the effects of the coal gasification plant on the existing plant emissions.

J. H. Fatum


PROGRAM DIRECTOR FOR
ERIE MINING COMPANY



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Quarterly Report
Period: July 1 - September 30, 1978

EXECUTIVE SUMMARY

A. Contract Deliverables

The following were completed during the third quarter, July 1 - September 30, 1978:

- 1) Gasifier - Preliminary Front End Engineering Design, July 31, 1978.
- 2) Stretford - Preliminary Front End Engineering Design, July 6, 1978.
- 3) Site Boring Report I, July 1978.
- 4) Waste Water Treatment Report, August 1978.
- 5) Design Review Meeting - Third Quarter, August 1978
- 6) Coal Handling Trade Off Study, September 1978.
- 7) Monthly Oral Meetings, July, August, September.
- 8) Monthly Report, July, August, September.
- 9) Quarterly Report - Second Quarter, July.

B. Project Schedule

The project continued on the revised schedule in the month of July. A changeover in contract and funding responsibilities from the Washington, D.C. Operations Office to the Chicago Operations Office resulted in a two week hold on Air Dispersion II, Soil Boring II, Coal oil-tar-ash sampling, and NEA printing until responsibilities were defined and assigned by the DOE. McKee was notified on July 14, 1978 by BCI of a work stoppage which stated BCI was no longer willing to work "at risk". Gasifier Front End Engineering preliminary design was issued to McKee July 31, 1978 but no retraction of the work stoppage has occurred.

Parsons notified McKee on August 16, 1978 of a work stoppage resulting from approval delays of the Parsons/McKee Subcontract by Eric/DOE. The project schedule experienced major delays in contract deliverables due to the BCI, Parsons stop work notices.



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Subcontract negotiations and approvals are not finalized as of this writing. The extent of the schedule delay will depend on the length of the engineering delays incurred. The assessment of schedule delays will continue until the major subcontracts are finalized.

Listed below are major deliverables not complete as of scheduled date September 29, 1978:

- 1) Cost Estimate
- 2) Demonstration Plant Recommendations
- 3) Demonstration Plant Process Description and Rationale
- 4) Phases II and III Current Working Estimates
- 5) Demonstration Plant Environmental Analysis
- 6) Economic Re-assessment of Demonstration Plant
- 7) Economic Re-assessment of Commercial Plant
- 8) Procurement Schedule of Long Lead Items.

G. Cost Comments

Following a review meeting with DOE-Cleveland and DOE-Chicago Procurement personnel and in accordance with requests from the Chicago Operations Office, revised cost pricing proposal amendments of the Clean Air Act, Certificate of Need and the General Environmental were issued on July 20. The Gasifier Cost Pricing Proposal Amendment was submitted to the DOE on July 25.

The amount of funds committed to the project totaled the allocated project funds of \$2.2 million the week of July 24, 1978.

Approval was received in August for an additional \$255,200. The approval of these funds increased the total contract commitment to \$2,455,200.

Approval of funds allotted in Phase I were received September 1, 1978 from DOE in the amount of \$681,600 increasing the total Erie/DOE contract commitment to \$3,136,800. The \$681,600 were received as uncommitted funds to be allocated for the project. Further approvals on September 28, 1978 of funds in the amount of \$518,858 and \$344,323



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increase the total contract commitment to \$3,991,981. To be included in the \$518,858 is the approval of the General Environmental - Product and By-Product Cost Pricing Amendment (\$247,858) and an uncommitted amount of \$271,000. Approval of the Clean Air Act and Certificate of Need Cost Pricing Amendments for the additional \$344,323 is funding for final environmental approvals which is fully reimbursable to the contractor by the DOE.

Erie Mining Company continues to be concerned that significant cost increases are being incurred due to escalation of engineering costs, new requirements being imposed by Federal and State regulatory agencies, new environmental requirements, design, coal procurement activity related to coal fines handling and disposal, and schedule extension resulting from subcontract procurement and funding delays.

D. Major Activities

- 1) Gasifier front end engineering proceeded at the contractors risk until July 14, when a work stoppage was issued by BCI to McKee. BCI did present July deliverables to McKee but stated that no other deliverables would be issued until suitable financial arrangements could be made. DOE approval of the BCI subcontract and outstanding contract amendments are necessary for the payment of BCI invoices. A BCI Preliminary Design Review Meeting was held on July 12-13, 1978 in Pittsburgh. However, documents were not released for detailed review until July 31.
- 2) Stretford front end engineering proceeded on schedule until the August 16 work stoppage notice. The Parsons subcontract letter agreement was extended to August 10, 1978 by DOE approval. A Parsons Design Review Meeting was held July 6 in the Pasadena office for review of the Stretford design for cost estimating purposes.
- 3) DOE approval of the Environmental Research Technology contract was received in July.
- 4) An Environmental Review Meeting was held August 18, 1978, in Fort Collins, Colorado, at the facilities of Ecology Consultants, Inc. for the purpose of discussing all outstanding environmental matters. The environmental schedule was set with data and reporting responsibilities outlined.
- 5) An Environmental Progress Meeting was held with DOE, McKee, Southwest Research Institute, Ecology Consultants Inc. (ERT)



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and Erie at the DOE facility - Chicago on September 12, 1978 for the purpose of assessing environmental progress and finalizing the schedule of environmental activities.

- 6) Engineering and Socio-economic related information was gathered for the Environmental Assessment Report. Activity is expected to continue throughout October. A preliminary draft is expected to be released December 1978 for concurrent reviews.
- 7) Delays were experienced in the Foster Wheeler coal-oil-tar-ash sampling program scheduled for third quarter completion. Delays were attributed to equipment commissioning problems, vacation schedules and personnel changes in August. In September, Foster Wheeler notified Erie Mining Company that the condition of the Rosebud coal to be used for gasifier startup and testing had deteriorated appreciably. Erie agreed to arrange for a new supply of sized Rosebud coal to be delivered to Foster Wheeler (at Foster Wheeler's expense) for startup. Coal delivery is expected the week of October 2, 1978.
- 8) The Soil Boring Report I was issued in July. McKee is basing cost estimates on report results. The Soil Boring II Contract for additional site work at the sulfur and ash waste disposal area is expected to be released in October.
- 9) The Waste Water Treatment Report was issued in August comparing the capital and operating costs of a biological treatment system with an oxidative incineration treatment system.
- 10) The second Design Review Meeting was held August 29-30 at the offices of the DOE Cleveland. The purpose of the meeting was for project technical review. Comments were solicited from participants on the technical presentation handout.
- 11) The Coal Handling Trade Off Study was issued September 20, 1978. The results, conclusions and recommendations pertaining to coal and coal fines handling are presented to the DOE for review and comment.

The study set the design basis for western coal at 1400 TN/DY with the assumption that all western coals will be briquetted and the design basis for eastern coal will be sized coal received at the plantsite allowing 1187 TN/DY + 12% for fines generation.



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- 12) A BCI Onsite Familiarization Tour was conducted at Erie Mining Company July 10.
- 13) A DOE Onsite Familiarization Tour was conducted at Erie Mining Company August 15, 1978.
- 14) Formal approval of the change from non-attainment to attainment status has not been received from the Federal EPA. Verbal approval has been received, publication in the Federal Register is expected in October.
- 15) A Coal Gasification Progress Meeting was held in the Chicago facilities of the DOE on September 13, 1978. Participants included DOE personnel - Chicago and Washington Operations offices and Erie Mining Company.
- 16) Briquetting Study Work Definition was prepared for DOE review to assess the scope of work necessary to validate a Coal Fines Agglomeration Study. The outline was presented to DOE at the September Monthly Oral, September 26, 1978.
- 17) Modeling activity on the plant design model was initiated in September.
- 18) Cost estimating activity on the data to be presented McKee for Erie Mining Company's participation in Phases II and III was prepared for review.
- 19) Preliminary activities were initiated for Work Breakdown Structure - Phases II and III and Reporting Procedures - Phases II and III. Major activity on these items is expected in October, November 1978.
- 20) The Stretford and Miscellaneous Cost Amendments were prepared for issue to DOE in October for review and approval.
- 21) Air Dispersion II contract arrangements have been finalized with the contract to be released in October.

E. Materials, Licenses and Agreements

- 1) Stretford Engineering Contract with Ralph M. Parsons and the Parsons-Erie Sublicense Agreements are proceeding very slowly. Parsons issued a stop work notice on August 16, 1978. Patent, proprietary data and the sublicense are the areas of major disagreement. Engineering deliverables have not been released



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since the stop work notification. Schedule delays have resulted from Subcontract negotiation and approval delays. Patent search and verification activities were initiated.

- 2) Gasifier Engineering Contract. The BCI-McKee Subcontract continues to be delayed due to new proprietary data requirements by DOE. The July 14 stop work notice continues to be in effect and August deliverables have not been received. Schedule delays have resulted from Subcontract negotiation and approval delays.
- 3) The Minnesota Certificate of Need is in final review. Notice has been received from the State of Minnesota that a delay is imminent because of delays expected from the Hearing Office. Presentation of the CON is now expected to be in November, 1978.
- 4) DOE approval of the Clean Air Act, MEA Amendment - Certificate of Need and the General Environmental - Product and By-Product Amendment was received by Erie in September. DOE approval has been requested of other outstanding items and is expected in October.

F. Coal Procurement and Handling

- 1) Work is proceeding on establishing suppliers of sized coal for both Eastern and Western coal.
- 2) Erie presented a proposal to replace a "Western" low sulfur non-caking coal with an "Eastern" low sulfur, low caking coal for operational purposes in coal gasification in September. DOE approval is requested.

G. Project Management

- 1) Procurement Procedures. The McKee Proposed Procurement Procedures were issued in June for Erie-DOE approval. The document is currently under review and approval is requested. Erie Procurement Procedures were submitted to DOE early in the second quarter and have not been approved. Erie cannot finalize its approval of the McKee procedures until such approval is received. Project, Subcontract, Equipment and Materials Procurement Procedures will be included in the Project Manual when approved.



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H. New Requirements

- 1) The 10 Code of Federal Regulations, Section 711, which concerns the release of proprietary data to the public continues to be reviewed and evaluated. Erie's recommendation will be available when the Government has completed and submitted its review for comment. The current new contractual language being developed for the Parsons and BCI subcontracts will require close coordination with these new requirements.
- 2) The Best Available Control Technology - New Source Pollution Standard decision on the regulations applicable to the existing plantsite will require a combustion gas stack analysis from the current operation to present to the DOE-EPA for discussion of the effects of the coal gasification plant on the existing plant emissions. Data gathering for submittal is expected for completion in the fourth quarter.

J. H. Fatum

A handwritten signature in black ink, appearing to read 'J. H. Fatum'.

PROGRAM DIRECTOR FOR
ERIE MINING COMPANY

JHF:na



Quarterly Report
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Coal Gasification Project
DOE Contract ET-78-C-01-2578

Quarterly Report
Period Ending June 30, 1978

EXECUTIVE SUMMARY

A. Contract Deliverables

The following were completed during the second quarter:

- 1) The Plan for Obtaining Coal, Water, Power and Chemicals.
- 2) The Plan for Use and Disposition of Products.
- 3) The Report of Proprietary Process Licenses.
- 4) The Report of Applicable Construction Codes and Ordinances.
- 5) The Plans for Acquiring Permits and Licenses.

The Monthly Oral and the Monthly Reports were issued as scheduled. The first Design Review meeting was held on May 18, 1978. The second Design Review meeting is scheduled for the third quarter.

B. Project Schedule

During March and April, a re-scheduling of activities resulted in an extension of most tasks. The project remained essentially on the revised schedule throughout the months of April, May and June. Sub-contract approvals were delayed but work continued as major subcontractors agreed to proceed on the basis of precontract arrangements. The June approval of the environmental contract allowed the environmental work to proceed without schedule delays. (ERT had previously given written notice that they would not proceed further "at risk").

C. Cost Comments

We continue to be concerned that significant costs are being incurred based on escalation of engineering cost; new requirements being imposed by State and Federal agencies, new environmental requirements and design and coal procurement activity related to coal fines handling and disposal.

Requests for cost amendments have been submitted or are in the process of being submitted for DOE approval.

Until these cost amendments are approved and the cost plan revised, the cost comparison reports will show considerable variance from original budget. We are currently utilizing funds previously allocated and proceeding with the necessary project work until our contract can be amended as instructed.



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Erie and McKee project coordinators updated and revised the cost and manpower estimates and a Contract Pricing Review meeting was held in Washington, D.C. on June 29, 1978 presenting the updated cost and manpower requirements including the status of all cost amendments.

During the first quarter of 1978 as work progressed, DOE was notified of projected cost increases. These cost increases have been updated and currently are:

Gasifier Front End Engineering	\$526,248
Stretford Front End Engineering	\$139,000
MEA Certificate of Need	\$175,000
General Environmental	\$247,000
Other Environmental	\$306,000
Clean Air Act	\$170,000

As a result we are currently projecting that Phase I expenses could be increased from \$2.2 million to \$3.8 million, an increase of \$1.6 million.

D. Major Activities

- 1) Gasifier engineering has proceeded at the contractors risk. Contract negotiations continue with the final contract expected to be presented the week of July 17, 1978. A BCI design review meeting was held in the BCI office to review preliminary gasifier design. The final design review meeting was scheduled for July 12-13, 1978.
- 2) Stretford Engineering. Parsons agreed to entering into a limited pre-contract expense arrangement to cover the first two weeks of engineering until a letter contract could be initiated. A letter contract was submitted to DOE for approval April 20, 1978. Design and engineering activities proceeded on schedule for the quarter with general plant layout, process flowsheets and process parameters being developed. A final design review meeting is scheduled for July 6, 1978. The Parsons subcontract letter was extended May 19. Further extension is expected in July.
- 3) Environmental Contract. A contract with Environmental Research & Technology Inc. was prepared and submitted for DOE approval. DOE approval was delayed, however. Verbal approval was received on the ERT contract with a commitment that written approval will be received the week of July 3, 1978. The contractor agreed to proceed on the environmental services on that basis and withdrew his stop-work notice.



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- 4) Coal Tar and Ash Samples. Foster Wheeler Energy Corporation submitted Scope of Gasification Tests and Table of Inspection concerning the coal test - coal tar and ash samples. Work is expected to start in August which is past the starting date originally presented and may delay the environmental schedule. FWEC has not agreed to testing the high caking coal.
- 5) Re-designation of "Non-Attainment Status". Attainment status was granted by the Minnesota Pollution Control Board. A formal request from the State of Minnesota to the EPA has been submitted and approval is expected during July.
- 6) Environmental Cost Amendments. Contract cost amendments have been submitted for DOE approval as outlined in Section C. A special cost meeting was held on June 15, 1978 to update and review these costs. A Contract Pricing Review meeting was held with DOE on June 29 in Washington, D.C. to review the results of the June 15 meeting. Second Quarter work has proceeded with the presently allocated funds. However, it is expected that if additional funding has not been approved by the end of July, a possible delay in the project schedule may occur.
- 7) Clean Air Act Amendment. The question remaining to be resolved is whether construction of the coal gasification plant will cause EPA or the State to apply a different set of regulations to the existing facilities at Erie, other than those which presently apply. Erie is reviewing the DOE interpretation of the NSPS requirement affecting the present operating regulations as pertaining to the construction of the coal gasification plant.
- 8) Site Boring Contract. Soil Testing Services of Minnesota, Inc. completed the soil boring work underlined in the contract. Additional work is needed in the ash-sulfur disposal area due to ground conditions. Definition of the new requirements is expected to be complete in July.

E. Materials, Licenses and Agreements

- 1) Minnesota Certificate of Need. Work was completed on the rough drafting of the document and the review of the application is proceeding. Final printing and submission to the Minnesota Energy Agency is tentatively scheduled for August 24.