

TECHNICAL PROGRESS REPORT
HEALY CLEAN COAL PROJECT

DOE COOPERATIVE AGREEMENT
DE-FC-22-91PC90544

QUARTERLY REPORT NO. 6
FOR THE PERIOD
APRIL - JUNE 1992

AUGUST 1992

ALASKA INDUSTRIAL DEVELOPMENT AND EXPORT AUTHORITY

Prepared by

STONE & WEBSTER ENGINEERING CORPORATION

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SECTION 1 - SUMMARY

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Engineering and design continued on the boiler, combustion, flue gas desulfurization (FGD), and turbine/generator systems. Balance of plant equipment procurement specifications continue to be prepared.

1992 construction activities commenced as the access road construction got under way. Temporary ash pond construction and drilling of the supply well will be completed during next quarter.

Project management activities including contracting, financing, and DOE reporting continued.

SECTION 2 - INTRODUCTION

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AIDEA's board of directors met during this reporting period.

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AIDEA began an investigation of the advantages and disadvantages of a separate or single facility permit for the HCCP. ADEC will be making a determination whether the HCCP should be considered as a separate facility from the existing Unit No. 1 unit, or whether the two units should be permitted as a single facility. The advantages/disadvantages of the separate/single facility permit issue were still under investigation at the end of the quarter. AIDEA will prepare a letter of recommendation in July 1992 to ADEC regarding the facility permit issue.

Ash Pond

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Follow-up contacts with agencies who are processing permit applications for the HCCP was continued. The Federal Aviation Administration (FAA) was contacted regarding the status of the determination of hazards to air navigation of the HCCP building and stack. FAA has issued the proposed project for public comment, and will make a determination whether the building and stack would present a hazard following the public comment period. The U.S. Army Corps of Engineers (Corps) and the Alaska Department of Natural Resources (ADNR) were also contacted to determine the status of Section 404 and water appropriation permit applications, respectively. Both the Corps and ADNR indicated that the permit applications were being actively processed.

Engineering

TRW Services:

Negotiations for the new Direct Coal Feed System (DCFS) were completed. The design, fabrication and installation of the Design Verification Test (DVT) DCFS hardware is proceeding.

The final DVT plan was completed and issued. The DVT precombustor hardware has been delivered to the Capistrano Test Site (CTS). The facility modification and buildup activities at the CTS cell 3 test facility are proceeding.

Cold flow testing on the coal feed system hardware configuration continued. The configured combustor has been installed. Characterization tests on the upstream splitters and cyclones designs are in process. The cyclones blowdown concept for transporting coal to the combustor were successfully demonstrated. The first draft of the combustor cold flow model report was completed and issued for review.

TRW and FWEC have worked together to simplify the combustor tube arrangement and to maximize the use of standard shop practices for the combustor fabrication in an effort to reduce costs.

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FWEC Services:

FWEC completed the pulverizer size reduction study and forced draft fan arrangement study. Review of the boiler design margins for determining the need of extra furnace height if actual furnace exit gas temperature is too high was completed. The results showed that the boiler does not need to be raised.

Flow model tests were completed with deflectors in the furnace hopper and various arrangements of NO_x ports.

Definitive boiler general arrangement drawings and preliminary mill bay layout drawings were submitted for review. Final heat and material balances were submitted based on TRW final critical furnace design information.

Overfire air and burner spacing requirements for low NO_x burner retrofit was completed. A budgetary estimate for low NO_x burner retrofit was completed.

Joy Services:

Joy awarded the ash conveying system and released the vendor to proceed with engineering. The agitators, atomizer motors, surge bin vent filter and recycle grit screen equipment have also been awarded.

Certified drawings for the loading diagrams, flow diagrams, SDA chamber, stair tower, baghouse and roof gas dispenser have been released. Preliminary logic diagrams, miscellaneous instrument drawings, bypass poppet valve details and tower mill drawings have been issued for review.

SCA Services:

SCA continued engineering efforts on the turbine, turbine auxiliary and piping, generator, embedded materials, electrical equipment and instrumentation.

Drawings were submitted for instrumentation and electrical equipment, and revised turbine loading documents including seismic loads.

SWEC Services:

SWEC continued preparation of preliminary P&ID's and system descriptions. Underground circulating water pipe drawings commenced. Piping drawings for the main steam, turbine area, boiler area and FGD areas continue to develop.

Concrete and steel drawings for the control building are essentially complete. Drawings for the turbine building, boiler and FGD areas continue to be prepared. Architectural drawings continue to be prepared.

The electrical station service study commenced and continues to be prepared. The main one-line diagram was completed and issued for participant review. Preliminary grounding grid layout commenced.

The Unit 1 bottom ash and coal handling studies were completed and engineering/design commenced in these areas. The temporary ash pond piping rework design was completed.

Bids were received for the Plant Control System (PCS) and evaluation commenced. AIDEA, GVEA, and SWEC toured existing facilities containing PCS's similar to the proposals received to aid in the evaluation.

The intake structure equipment letter of recommendation was issued to the participants for review.

The condenser and combustion air preheater procurement contracts were awarded and released for engineering.

Bids were received for the deaerator, feedwater heaters, turbine building bridge crane, lube oil conditioning equipment and induced draft fans. Evaluation of these proposals are continuing.

The circulating water, condensate and boiler feedwater pumps and oil/water separators equipment procurement contracts were issued for bids.

The bottom ash handling equipment, extraction non-return valves, fire pumps and air compressor specifications were issued for participant review.

SECTION 4 PLANS FOR NEXT QUARTER (JULY - SEPTEMBER 1992)

The following highlights activities planned for next quarter:

Environmental

- Continue required DOE reporting submittals.
- Continue administration of SWEC environmental subcontractors.
- Continue the Visibility Monitoring Program.
- Submit other HCCP permit applications as per attached schedule.
- Initiate work on the Environmental Monitoring Plan (EMP).
- Continue support and review of EIS documents.

TRW

- Issue the final Cold Flow Model Report
- Issue final P&ID's
- Issue final heat & material balance
- Continue cold flow testing on the coal feed system
- Continue design and buildup of the DVT and DCFS hardware

FWEC

- Finalize forced draft fan ductwork layout
- Continue furnace design
- Continue superheaters design
- Continue headers design
- Award coal feed system purchase order
- Continue major equipment procurement packages
- Issue updated definitive boiler general arrangements

Joy

- Execute contract change order no. 2

- Release certified electrical one-line drawings
- Release certified P&ID's
- Release certified general arrangements
- Issue equipment location drawings for review
- Issue instrument location drawings for review
- Issue motor location drawings for review

SCA

- Continue engineering efforts on the turbine, turbine auxiliary and piping, generator, embedded materials, electrical equipment and instrumentation

SWEC

- Issue electrical station service study
- Complete preliminary mechanical P&ID's and system descriptions
- Issue updated general arrangements
- Continue civil, architectural, concrete and steel drawings
- Award the following equipment procurement contracts:
Turbine building bridge crane, lube oil conditioning equipment, induced draft fans, feedwater heaters, deaerator, plant control system.
- Issue the following equipment specifications for bid:
Air compressors, fire pumps, bottom ash handling system, extraction non-return valves, coal handling and dust collection equipment, fly ash handling system, oil/water separators, power transformers, and construction camp.
- Issue the following equipment specifications for participant review:
Makeup demineralizer, chemical feed system, plant waste water treatment equipment, civil contract and structural contract.
- Continue participant reviews as required.

STONE & WEBSTER ENGINEERING CORPORATION

7677 EAST BERRY AVENUE
ENGLEWOOD, COLORADO 80111-2137



ADDRESS ALL CORRESPONDENCE TO P O BOX 5406, DENVER, COLORADO 80217-5406
W U TWX 910 935-0105 TELEPHONE 303 741-7700 FAX 303-741-7670
W U TELEX 45-4401 RCA TELEX 289251 303-741-7671

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WASHINGTON DC

Mr. Steven Heintz
Project Manager
United States Department of Energy
Pittsburgh Energy Technology Center
P.O. Box 10940
Pittsburgh, PA 15236-0940

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WP 3, File C4.5.4
Letter No. SD-169

FINAL TECHNICAL PROGRESS REPORT
APRIL 1992 THROUGH JUNE 1992
HEALY CLEAN COAL PROJECT
ALASKA INDUSTRIAL DEVELOPMENT AND EXPORT AUTHORITY

We are transmitting two (2) copies of the enclosed Final Technical Progress Report for efforts covering Phase I from April to June of 1992. This submittal is required under the terms of the Cooperative Agreement, Article XV, Reporting Requirements.

S. M. Rosendahl
Project Manager

Enclosure

SMR/MEP/LJC

cc: W. R. Mundorf, DOE	1/1	J. Olson, AIDEA	1/1
C. L. Miller, DOE	1/1	D. McCrohan, AIDEA	1/1
P. Gottlieb, DOE	1/1	S. Denton, UCM	1/1
Office of Technology Transfer	3/3		
S. N. Roger Rao, DOE	1/1		
L. M. Joseph, DOE	1/1		
F. Abegg, GVEA	1/1		

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FWEC

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- Continue headers design
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- Release certified general arrangements
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- Issue motor location drawings for review

SCA

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SWEC

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- Issue updated general arrangements
- Continue civil, architectural, concrete and steel drawings
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Turbine building bridge crane, lube oil conditioning equipment, induced draft fans, feedwater heaters, deaerator, plant control system.
- Issue the following equipment specifications for bid:

Air compressors, fire pumps, bottom ash handling system, extraction non-return valves, coal handling and dust collection equipment, fly ash handling system, oil/water separators, power transformers, and construction camp.
- Issue the following equipment specifications for participant review:

Makeup demineralizer, chemical feed system, plant waste water treatment equipment, civil contract and structural contract.
- Continue participant reviews as required.