KWB

August 21, 1992

R. L. Bruce, BR 3D-C

KINGSTON FOSSIL PLANT - BACKUP SEWAGE PUMP STATION

Attached is Fossil Engineering's manhour estimate, schedule and scope of work for phases II and III of the subject project. Ken Burnett has contacted you to discuss our schedule and manhour estimate. Please coordinate with plant personnel and let us know whether or not to proceed with design.

Ralph G. Johnson/er

Ralph G. Johnson
Manager, Fossil Engineering
BR 2B-C

KWB:ER
Attachments

8339J

PROJECT DEVELOPMENT ESTIMATE

FOSSIL ENGINEERING SERVICES

Plant: KINGSTON FOSSIL PLANT

Project: BACKUP SEWAGE PUMP STATION

Lead Engineer: KENNETH BURNETT

	Discipline	Man Hours	Duration
Phase I (10%):	Mechanical		weeks
	Electrical		weeks
	Civil		weeks
	Total		weeks
Phase II (20%):	Mechanical	190	8 weeks
	Electrical	250	4 weeks
	Civil	80	2 weeks
	Total	520	12 weeks
Phase III (50%):	Mechanical	32	weeks
	Electrical	24	weeks
	Civil	20	weeks
	Total	76	weeks

Schedule:	Start	Complete
Phase 1	Phase 1 Approval	Weeks
Phase 2		
Phase 3		

Prepared MELISSA A. HEDGECOTH Approved _____ Date _____

8-13-92

PROJECT: BACKUP SEWAGE PUMP STATION

MECHANICAL-AUXILIARY SYSTEMS

SCOPE FOR PHASE I & II

The existing sewage sump in the Chlorinator building overflows at various times. A backup sump is to be installed that will eliminate this overflow. The mechanical scope for this project is as follows:

- Perform a site inspection to collect all available data and verify the current installation.
- Verify capacities of inflow into the sump and sump pump discharge.
- Prepare calculations to verify the required pump head.
- Size the new sump.
- Design the system. Retrieve ,revise, and issue all affected drawings.
- Complete and issue Bill of Material.
- Prepare the requisition for the pump.
- Contract Administration for the pump contract.
- Determine the requirements and source for the permits.

This project can be started in FY 93 (Oct 5 with a duration of 8 weeks).

SUPERVISOR ESTIMATE SUMMARY

Plant: Kingston Fossil Plant_____ CER No.: _____N/A_____

Project: Backup Sewage Pump Station____ Date: _Aug 14, 1992

Section Supervisor: R. A. Babb Discipline: Mechanical

Prepared by: __D. E. BOHL_____

Activity description and estimated manhours/$

	FY _92__	FY _93__	FY _94__
Project development	_____ MH	_____ MH	_____ MH
Phase 1 - Study:			
Study and Preliminary Estimate	_____ MH	_____ MH	_____ MH
Contract Engineering: _____ MH'S @ $ ____ /MH	$ _____	$ _____	$ _____
Site Trips: _____ Trips @ $ _____/Trip	$ _____	$ _____	$ _____
Phase 2 - Engineering Design and Long Lead Procurement:			
Inspections and Design of Non-phased projects	_____ MH	_____ MH	_____ MH
Engineering, Drawings, Bill of Materials, Coordination and Site Visits During Design	_150_ MH	_____ MH	_____ MH
Requisition, Award, Vendor Drawing Review, Source Insp., and Contract Administration	__40_ MH	_____ MH	_____ MH
Contract Engineering: _____ MH'S @ $ ____ /MH	$ _____	$ _____	$ _____
Construction/Contractor Site Trips: __1__ Trips @ $ __0__/Trip	$ __0__	$ _____	$ _____
Phase 3 - Implementation:			
Engineering for Implementation	__32_ MH	_____ MH	_____ MH
Contract Engineering: _____ MH'S @ $ ____ /MH	$ _____	$ _____	$ _____
Site Trips: __2__ Trips @ $ __0__/Trip	$ __0__	$ _____	$ _____

KIF - BACKUP SEWAGE PUMP STATION

SITE ENGINEERING MANHOUR REQUIREMENT FOR A PHASE II & III:

TOTAL MANHOURS - 80

DURATION FROM DATE OF AUTHORIZATION - 2 WEEKS

POSSIBLE START DATE - OCTOBER 5, 1992 (FY93)

STUDY AND ESTIMATE TASKS:

1. SECURE THE APPLICABLE PLANT DRAWINGS FOR THE AFFECTED FACILITIES AND YARD FEATURES.
2. CORRESPOND WITH PLANT PERSONNEL.
3. DESIGN A CAST IN PLACE CONCRETE LIFT STATION.
4. PROVIDE A DETAILED WORKSCOPE.
5. PROVIDE COST ESTIMATE INPUTS.
6. PROVIDE A PROJECT SCHEDULE.
7. PROVIDE A BILL OF MATERIALS.
8. COORDINATE WITH THE ELECTRICALS & MECHANICALS.

SUPERVISOR ESTIMATE SUMMARY SHEET

PROJECT: KINGSTON FOSSIL PLANT CER NO. N/A

FEATURE/PHASE: BACKUP SEWAGE PUMP STATION DATE: AUGUST 17, 1992

SECTION SUPERVISOR: K.W. BURNETT DISCIPLINE: CIVIL

PREPARED BY: M.A. HEDGECOTH FILE: _____

ACTIVITY DESCRIPTION AND ESTIMATED MANHOURS/$ (by milestone & fiscal year): FY 92 FY 93 FY 94

PROJECT DEVELOPMENT: ____ MH+ ____ MH+____ MH

PHASE I - STUDY:

ST01 Study and Preliminary Estimate ____ MH+ ____ MH+____ MH

contract Engineering _____ MHs @ $ _____/MH=$_____ +$_____ +$_____
Constr/Contract. Site Visitation (ST01)
_____ trips @ $_____ per trip = $_____ +$_____ +$_____

PHASE II - ENGINEERING DESIGN & LONG LEAD PROCUREMENT:

EN01-07 Inspections & Design of Non-phased projects ____ MH+ ____ MH+____ MH

EN10,20, 40 & 60 Engineering, Drawings, Bills of Materials, Squadcheck Review & Coord, & Construction Site Visitation during design ____ MH+ 80 MH+____ MH

EN30, 50 & 70 Requsition (RQ), Award (AW), Vendor Drawing Review, Product Source Inspection, & Contract Administration ____ MH+ ____ MH+____ MH

Contract Engineering _____ MHs @ $_____/MH= $_____+$ _____+$_____

Constr/Contract. Site Visitation (EN01-07, 20, 40 & 60) _____ trips @ $_____per trip = $_____+$ _____+$_____

Product Source Inspection (EN30, 50 & 70)
____ trips @ $____ per trip = $_____+$ _____+$_____

PHASE III - IMPLEMENTATION:

IM00 Engineering for Implementation ____ MH+ 20 MH+____ MH

Contract Engineering _____ MHs @ $_____/MH = $_____+$_____+$_____
Constr/Contract. Site Visitation (IM00)
___ trips @ $____ per trip = $_____+$_____+$_____

KINGSTON FOSSIL PLANT
INSTALL BACKUP SEWAGE PUMPS
SCOPE

DURATION

The design duration will be one month from October 5th.

ASSUMPTIONS

For the purpose of this estimate it is assumed that two 20HP, 480V, submersible pumps will be installed in a new concrete lift station that will be located 10 feet south of existing chlorination building.

Complete mechanical/civil/structural information will be available before electrical start. If this is not so, schedule and manpower will be adversely impacted.

DETAILS

Power for the two pumps will be from the 480V Feeder Board "B" located on elevation 765.0 of the Coal Crusher Building. A new 100 amp circuit breaker, MCC bucket with stabs, and hinged door with operator handle will be purchased and installed in compartment 4C of 480V Feeder Board "B". Three 1C #2 AWG cables shall be run from panel 4C to existing Coal Handling Sump Pump via conduit 2I-PLC2220. A NEMA 3 or 3R weather tight junction box shall be purchased and installed at the Coal Handling Sump Pump between conduit 2I-PLC2220 form the Crusher Building and the Coal Handling Sump Pump Controls. A new 2I conduit will be installed in the junction box and run underground approximately 20 feet to the new Backup Sewage Pumps lift station controls. A ground wire will be extended from the Coal Handling Sump Pumps and run underground along side the new conduit to the Backup Sewage Pumps. The new conduit and ground wire shall be embedded in concrete. The 3-1C #2 AWG power cables from the Crusher Building will extend from the junction box through the new 2I conduit to the Backup Sewage Pumps.

Fusible disconnects shall be provided for each pump. The pumps shall have automatic on and off controls. Levels shall be set for duty pump on, standby on, high level alarm and low level off. Local annunciation (orange light for pump on and red light for high level alarm) shall be provided.

KINGSTON FOSSIL PLANT
INSTALL BACKUP SEWAGE PUMPS
DRAWING LIST

DRAWING	TITLE	WORK DESCRIPTION
15W840-1	C&G&L NLDF EQPT	RENAME CONDUIT IN KEY PLAN
15W840-2	C&G&L NLDF EQPT	REVISE PLAN & ELEV FOR COAL HANDLING SUMP
NEW DWG	C&G MISC DETAILS	SEWAGE PUMP PLAN & DETAILS AND BM
NEW DWG	CONN & SCHEM DIAG	NEW BACKUP SEWAGE PUMPS
25N704	480V FDR BD A&B	REVISE FDR BD "B" COMPT 4C AND BM
25N717	480V FDR BD "B" CD	ADD PMP TO PNL 4 & REF TO CONN DRAWING
25N718	480V FDR BD "B" CD	RENAME CONDUIT FOR COAL SUMP PUMP
25N724	480V SINGLE LINE	ADD BACKUP SEWAGE SUMP PUMPS AND CONTROLS - REDRAW
25N740	480V AUX PWR CD	RENAME CONDUIT FOR COAL SUMP PUMP
25W800	C&G DUCT LINES & CONV	RENAME CONDUIT & ADD BKUP PMPS
25W818	C&G CRUSHER BLDG	RENAME CONDUIT FOR COAL SUMP PUMP
25W825	C&G CRUSHER BLDG DET	ADD SEWAGE AND COAL PUMP CABLES
45C800	C&CA SCH SHEET PLC-112	REVISE PLC 2220
45C800	C&CA SCH SHEET (NEW)	ADD NEW CA & CONDUITS FOR SEWAGE BACKUP SUMP PUMPS

SUPERVISOR ESTIMATE SUMMARY SHEET

[redacted]ECT: Kingston Fossil Plant CER NO. Verbal Request

FEATURE/PHASE: Backup Sewage Pumps DATE: 14Aug92

SECTION SUPERVISOR: L. E. Durham DISCIPLINE: Electrical

PREPARED BY: ERF/JWB FILE: SEW_PUMP.KIF

ACTIVITY DESCRIPTION AND ESTIMATED MANHOURS/$ (by milestone & fiscal year):	FY 92	FY 93	FY 94
PROJECT DEVELOPMENT:	_____MH+	_____MH+	_____MH
PHASE I - STUDY:			
ST01 Study and Preliminary Estimate	24 MH+	_____MH+	_____MH
Contract Engineering ___ MHs @ $ ____ /MH=$	_____ +$	_____ +$	_____
Constr/Contract. Site Visitation (ST01) ____ trips @ $_____ per trip = $	_____ +$	_____ +$	_____
PHASE II - ENGINEERING DESIGN & LONG LEAD PROCUREMENT:			
[redacted]1-07 Inspections & Design of Non-phased projects	_____MH+	_____MH+	_____MH
EN10,20, 40 & 60 Engineering, Drawings, Bills of Materials, Squadcheck Review & Coord, & Construction Site Visitation during design	_____MH+	250 MH+	_____MH
EN30, 50 & 70 Requsition (RQ), Award (AW), Vendor Drawing Review, Product Source Inspection, & Contract Administration	_____MH+	_____MH+	_____MH
Contract Engineering _____MHs @ $_____/MH= $	_____+$	_____+$	_____
Constr/Contract. Site Visitation (EN01-07, 20, 40 & 60) ___1___trips @ $ 100 per trip= $	_____+$	100 +$	_____
Product Source Inspection (EN30, 50 & 70) _____trips @ $_____ per trip= $	_____+$	_____+$	_____
PHASE III - IMPLEMENTATION:			
IM00 Engineering for Implementation	_____MH+	24 MH+	_____MH
Contract Engineering _____ MHs @ $_____/MH = $	_____+$	_____+$	_____
Constr/Contract. Site Visitation (IM00) _____trips @ $_____ per trip = $	_____+$	_____+$	_____