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Power Systems Development Facility

**Quarterly Report
January - March 1995**

May 1995

Work Performed Under Contract No.: DE-FC21-90MC25140

For
U.S. Department of Energy
Office of Fossil Energy
Morgantown Energy Technology Center
Morgantown, West Virginia

By
Southern Company Services, Inc.
Birmingham, Alabama

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May 1995

POWER SYSTEMS DEVELOPMENT FACILITY
QUARTERLY TECHNICAL PROGRESS REPORT
JANUARY 1 - MARCH 31, 1995

TABLE OF CONTENTS

1.0 INTRODUCTION AND SUMMARY.....	1-1
2.0 REVIEW OF TECHNICAL PROGRESS.....	2-1
2.1 Project Management.....	2-1
2.2 Phase 1 - Conceptual Design Activities.....	2-1
2.2.1 Task 1.4 Transport Reactor Development Unit.....	2-1
2.3 Phase 2 - Detailed Design Activities.....	2-1
2.3.1 Task 2.1 Detailed Design	2-1
2.3.1.1 MWK: PSDF Transport Train	2-1
2.3.1.2 FW Team Activities	2-2
2.3.1.3 Balance-of-Plant Activities.....	2-4
2.3.1.4 Process Hazard Review.....	2-8
2.3.2 Task 2.2 Facility Design Document	2-8
2.3.3 Task 2.3 Environmental Permitting and Compliance	2-8
2.3.4 Task 2.4 Particle Characterization and Collection	2-9
2.3.5 Task 2.5 Particle Control Technologies.....	2-11
2.3.6 Task 2.8 Experimental Test Plan	2-14
2.4 Phase 3 - Construction, Procurement and Installation	2-15
2.4.1 Task 3.1 Procurement	2-15
2.4.2 Task 3.3 Construction and Installation	2-17
2.4.3 Task 3.6 Preparations for Operations	2-19
3.0 PLANS FOR FUTURE WORK.....	3-1

APPENDIX A:	Balance-of-Plant Engineering and Construction Schedule.....	A-1
APPENDIX B:	Operations - Shakedown Schedule.....	B-1

1.0 INTRODUCTION AND SUMMARY

This quarterly technical progress report summarizes the work completed during the first quarter, January 1 through March 31, 1995, under the Department of Energy (DOE) Cooperative Agreement No. DE-FC21-90MC25140 entitled "Hot Gas Cleanup Test Facility for Gasification and Pressurized Combustion." The objective of this project is to evaluate hot gas particle control technologies using coal-derived gas streams. This will entail the design, construction, installation, and use of a flexible test facility which can operate under realistic gasification and combustion conditions. The major particulate control device issues to be addressed include the integration of the particulate control devices into coal utilization systems, on-line cleaning techniques, chemical and thermal degradation of components, fatigue or structural failures, blinding, collection efficiency as a function of particle size, and scale-up of particulate control systems to commercial size.

The conceptual design of the facility was extended to include a within scope, phased expansion of the existing Hot Gas Cleanup Test Facility Cooperative Agreement to also address systems integration issues of hot particulate removal in advanced coal-based power generation systems. This expansion included the consideration of the following modules at the test facility in addition to the original Transport Reactor gas source and Hot Gas Cleanup Units:

1. Carbonizer/Pressurized Circulating Fluidized Bed Gas Source.
2. Hot Gas Cleanup Units to mate to all gas streams.
3. Combustion Gas Turbine.
4. Fuel Cell and associated gas treatment.

This expansion to the Hot Gas Cleanup Test Facility is herein referred to as the Power Systems Development Facility (PSDF).

The major emphasis during this reporting period was continuing the detailed design of the facility and integrating the particulate control devices (PCDs) into structural and process designs. Substantial progress in construction activities was achieved during the quarter. Delivery and construction of the process structural steel continued at a good pace during the quarter. MWK and FW equipment are being set in the structure.

The detailed design of the PSDF continued with refinements to P&IDs, preparation of specification bid packages and a move towards freezing the balance-of-plant design. The

integration of PCDs and the sampling system in the MWK and FW portions of the process structure continued and detailed civil, electrical, instrumentation and controls, and mechanical design information were exchanged between the design teams. SRI continued with simplifying the design and casting of the particulate sampling system cyclone manifold for the PSDF, working with the engineering design teams to resolve interferences and preparing to issue drawings for construction. The skid mounts for the insertion sampling probes are being fabricated and other parts are being procured for assembly and functional testing.

Construction is progressing well at the site. Most of the construction activities at the beginning of the quarter concentrated on process structural steel erection. The MWK and FW motor control center (MCC) buildings have been erected. Final bolt-up on the completed portion of the coal handling structural steel was achieved. The process structure elevator is being installed incrementally as the structural steel is being erected.. The construction of the control/administrative building is being completed. Voice and data communications are being installed for a projected project management, operations and maintenance staff move to the site in April. The existing firewater storage tank was moved and the suction line from the tank to the diesel pumps was installed.

Procurement of all equipment in the FW train is progressing well. The fluid bed heat exchanger was delivered to the site and is being refractory lined. The alkali getters will be delivered early next quarter for refractory lining at the site. The action items from the Design and Operability Hazard Review (DHR) of the APFBC System have been reviewed and resolved. Detailed engineering design of the APFBC system is nearing completion.

The PCD equipment designs are complete. Purchase orders for equipment fabrication and procurement have been issued. MWK has completed their design and engineering and issued all drawings, databases and other material for construction. The operating instruction manual is scheduled for completion in the next quarter. Many of the 39 MWK train major components were delivered to the site, and procurement activity of the few remaining items is progressing.

It should be noted that this report includes accounts of progress made by Foster Wheeler (FW), M. W. Kellogg (MWK), Combustion Power Company (CPC), Industrial Filter & Pump (IF&P), Westinghouse, Southern Research Institute (SRI), Nolan MultiMedia, and Southern Company Services (SCS).

2.0 REVIEW OF TECHNICAL PROGRESS

2.1 PROJECT MANAGEMENT

The Continuation Application (CA) for Budget Period 4 was submitted to DOE in February. The budget was based on an updated schedule of achieving mechanical completion of the MWK train by October 1995. This will be followed by cold and hot shakedown activities and a coal test fire in mid-December. Much of the FW train should be complete mechanically by early 1996. The CA includes risk quantification estimates based on the process development allowance method, but these costs are not included in the budget request. The CA also includes projections for Budget Periods 5-7.

DOE visited the PSDF site to assess the construction progress. Following the visit, the PSDF test objectives, scheduling of tests and other issues were discussed. SCS met with FW to discuss increases in weights of some vessels and refractory-lined pipes and its effect on structural steel as the steel drawings are being issued for fabrication. Detailed design completion and equipment delivery schedules were also discussed at the meeting.

2.2 PHASE 1 - CONCEPTUAL DESIGN ACTIVITIES

2.2.1 Task 1.4 Transport Reactor Development Unit

The final report describing all the TRDU test runs, including the results of data analysis is being prepared by EERC. A draft copy of the report was reviewed and comments were provided to EERC.

2.3 PHASE 2 - DETAILED DESIGN ACTIVITIES

2.3.1 Task 2.1 Detailed Design

2.3.1.1 MWK: PSDF Transport Train

The detailed design is essentially complete. MWK was consulted about allowable water pressure in the cooling water jackets. All of the equipment on cooling water can be used at 100 psig except the water jacket on the sulfator air compressor which has a maximum design pressure of 75 psig. Three refractory spool pieces were modified so as to resolve interference between CPC granular bed filter and MWK refractory piping. Work continued on the operating and instruction manual. The draft report is expected to be completed by the end of March and will be internally reviewed before requesting

comments from SCS. A meeting with SCS was held to review electrical and instruments drawings; both electrical and instrument work flows were presented and specifics of various drawings were discussed. Work on the PCD heatup task is near completion and a package of all affected drawings will be issued during the next quarter. The draft report of the maintenance and inspection manual is being completed for internal review.

2.3.1.2 FW Team Activities

The Phase II detailed engineering and Phase III procurement activities continued. The following activities occurred during the first quarter of 1995.

The refractory-lined pipe connecting the carbonizer cyclone to the IF&P filter vessel was heavier than the initial design. This was because the refractory vendor was unable to install the double lining originally specified and had to resort to a single lining that was around 10 percent heavier. The thermal conductivity of the single layer was also higher so the shell temperature was slightly higher resulting in increased thermal expansion. Design checks were carried out on the structural steel and on the vessel connection stubs. All the resulting stress was taken up by reinforcement, and some redesign, of the steel work. The screw cooler below the IF&P filter was calculated to thermally expand more than originally expected and would have placed additional stress on the vessel and its supports. SCS accommodated this by installing bearings between the cooler and the slide plate.

Although there was considerable uncertainty in the calculations, structural analysis indicated that the process flows in the combustor could induce excessive vibration in the steelwork. If such vibration did exist it could be accommodated by installing spring dampeners between the vessels and the structural supports. Two options were identified. The first was to retrofit them when the extent of the vibration is known and the dampeners can be accurately designed. This approach was likely to take three months, given time required for structural analysis, dampener specification, purchase, and installation. This period could be extended if the dampeners were not immediately available. During this time plant operations would be restricted to those conditions at which vibration was not a problem. Actual installation could take two to three weeks. The second option was to install dampeners, of a conservatively high design, during construction to avoid operational downtime. This option was considered to be the least-cost option overall and dampeners have been ordered. Their installation may introduce a number of interferences with pipework and structural steel but these are expected to be readily accommodated.

Because of the large number of structural changes being requested, at the beginning of February SCS put a hold on ordering and detailing the steelwork until such time that the design work was completed. Drawings were eventually released for detailing in mid-March and the steel will be delivered to site towards the end of June, approximately 6 weeks later than expected at the beginning of the year.

Design review meetings were held in Wilsonville and Birmingham on February 13 and 14, respectively, to discuss various construction and design issues. Representatives from DOE-METC, FWEC, FWUSA, and SCS were in attendance. Discussions in Wilsonville focused on issues related to the refractory lining of the FBHE and alkali getter vessels. It was agreed to be less costly and speedier to have them lined and cured on site. Various civil engineering issues, mainly associated with steel work, were discussed. Mechanical engineering issues included the status of piping isometric drawings and the suitability of these drawings for use by fabricators. Electrical/instrumentation issues centered mainly on finalization of material requisitions. To ensure their completion, the Action Items from the minutes of the meeting were incorporated into the weekly Needs List meeting.

The FBHE was delivered to site at the end of February and stood vertically in readiness for refractory installation. J.T. Thorpe commenced the installation early in March and was almost finished by the end of the month. SCS and FW are to meet in April to determine how best to cure the refractory: on the ground; in the structure using a contractor; or in the structure using the startup burners. The latter option represents cost savings of approximately \$65,000 but its practicality remains to be assessed. The alkali getters are expected to be delivered to site early in April and refractory lined during May.

Foster Wheeler provided process startup and operational information to Westinghouse in support of the MASB. The orientation of the vitiated-air pipework entering the topping combustor was altered from inclined to perpendicular to better accommodate mechanical stresses. A design meeting was held on March 13 and 14 at METC, with DOE, SCS and Westinghouse attending, to discuss the design of the MASB. Concern had been expressed that although the rest of the advanced PFBC train may be available in March, 1996, the MASB was not expected to be delivered until the following July. One suggestion was to use the burner used for testing at UTSI as it had the same thermal capacity as the one to be designed for use at the PSDF. Westinghouse explained that as the UTSI burner required a number of design changes it was unlikely to be available any earlier than a new burner. Westinghouse said that they may be able to deliver earlier than July but they will only know this once vendor quotes are available in, or around, September, 1995. The prospect of obtaining a backup propane burner is to be

investigated to allow for an earlier startup and to cater for a premature failure of the MASB. During the meeting a design modification to the pressure shell was proposed to better facilitate maintenance of the burner.

2.3.1.3 Balance-of-Plant Activities

Significant progress on several on the balance-of-plant systems was made during the last quarter. A summary of the balance of plant design, engineering and construction support activities arranged by engineering disciplines follows, and a detailed schedule of design and construction activities is given in Appendix A.

BOP Engineering - Mechanical

Nitrogen System: The technical evaluation of the bids received was completed in January with a recommendation. The nitrogen system commercial evaluation continued as clarifications to the bids and options which required technical review were addressed and resolved. The contract was signed on April 4, 1995. The high pressure compressor, storage tubes, and accumulator tank were sized and the P&ID's are being developed. Bids were received for the high pressure storage tubes.

Ash Handling Systems/Dense Phase Conveying Systems: Engineering completed its preliminary design and released the inquiry package on February 6, 1995. The detail design of the ash handling system, along with the other pneumatic conveying systems (ground coal and limestone, coke, LASH and other feed materials) will be performed by a vendor based on specifications developed by SCS. The bids were received on February 24, 1995 and Clyde Pneumatic Conveying was selected on March 21, 1995 to provide the ash handling and dense phase conveying systems.

Fire Protection: All design activities for the fire protection system are complete with the exception of the riser systems within the process structure. The designs are scheduled to be performed during April, 1995.

Miscellaneous Utilities: Design of the potable water system is complete. The potable water booster pump system was released for bids during late February. The potable water booster pump is on order.

Final Gas Cleanup: The bids for the stacks were evaluated and a recommendation given during January. The fabrication and erection of the stacks were awarded during early February. The first issue of the stack drawings were received in April and reviewed. The baghouse bids were received during mid February. The baghouse purchase

recommendation has been made and an award will be made when final commercial issues are settled. Bids for the dilution air fan were evaluated and a purchase recommendation was sent to purchasing. A P&ID for the final gas cleanup has been completed and reviewed.

Coal and Limestone Systems: The bids for the mill systems were reviewed during January. Performance tests were conducted in early February. The results were forwarded to both MWK and FW for their approvals. The evaluation and recommendation were developed and completed in late February with a project award during March.

Tanks, Hoppers and Silos: The design of the miscellaneous tanks, silos and hoppers continues. The dimensional designs of the crushed coal and limestone silos and the pulverized coal and limestone silos are complete.

Steam and Condensate Systems: The P&ID's for the SCS portion of the cooling water and the steam/condensate systems were completed during February. The heat exchanger bids, which were received in late January, were evaluated during February. The shell and tube heat exchangers were purchased and drawings have been reviewed and approved. The pump inquiry package was nearing completion during February for an early April release to bid.

Cooling Water and Service Water Systems: Detail design of the cooling water system continued. The bid package for the cooling towers was released at the end of March, 1995. The design of the raw water system was completed during February. The design of the 400,000 gallon service water tank was completed and issued for bids. The tank bids were received on February 28 and was awarded in early March. An application for permit for the raw water crossing beneath the railroad was submitted to the railroad during early February for approval, but is still pending for a permit to bore under the railway.

Auxiliary Fuel: The propane system bid package was completed in January. The projected release to bid is mid-April, 1995. A decision was made during late February to relocate the existing 7,000 gallon diesel storage tank to the utility island. At this location it will serve as the primary fuel storage for the auxiliary generator as well as the rolling stock for the coal and limestone storage area.

Wastewater: The site wastewater study was reviewed during February. Discussions were held and a preliminary design of the implementation was begun. Completion of the preliminary design is expected in April.

Service Air/Instrument Air: Inquiry for the compressors, tanks, dryers and aftercoolers were issued February 23. Bids were evaluated and an award is expected in early April.

BOP Engineering - Civil

SCS completed the review of Sequence 6 (MWK and common bay to roof) structural steel shop drawings. The contract drawings for Sequences 5 and 7 were revised in January. The review of the Sequence 6 grating drawings continues, and will be completed in March. The Process Structure steel contract drawings were revised and issued in February. The temporary access system to the overhead crane was completed in March. The revised drawings will be issued in April. The temporary access was necessary because the original access platform to the crane was located on the FW side of the building. SCS continues to make steel modifications to eliminate equipment and piping interferences and changes. Also continuing to review and revise the shop drawings for the steel grating in the process structure. SCS is changing the Process Building structural steel to accommodate the addition of the dampening system for the FW combustor system. The proposed configuration of the spring system is being revised in detail to resolve potential construction/installation problems.

Preliminary drawings for the coal storage concrete were sent to construction during January. This was to allow the site to begin preparing the area prior to receipt of the final drawings. The coal and limestone storage silos inquiry package was issued to bidders in the pre-bid meeting. The package contained only basic information on the physical dimensions of the silos. The detailed design drawings will be issued in April to the successful bidder.

SCS continued the bid evaluation for the overhead crane. Due to the evaluation of the exceptions, the contract was not awarded in February as anticipated. This contract was awarded in March. The pre-award meeting for the Process Structure elevator was held in January. Additional information obtained from these bidders required additional evaluation by SCS. The Process Structure elevator contract was awarded to EMSCOR, and the erection of the elevator is in progress.

Work continued on the Ash Handling Building structural steel computer model. The detailed steel drawings were started, and are approximately 90% complete. Review of the model is in the final stage. The design activities will be completed in April.

The concrete drawings for the coal storage area were released for construction with a "hold" on the piers for the building columns. These portions of the design were

completed and released in March. Other design work included the reinforced concrete drawing for the Control/Administration building equipment room, the detailed foundation drawing for the 40 foot diameter Service Water tank, and the detailed drawings for the Thermal Oxidizer foundations. The sulfator start-up burner design was put on hold to work on higher priority design packages. The design should resume in March.

The preliminary design of the stack foundations continued in February. Final loads and drawings were received from the vendor in March. The design of the reinforced concrete foundations is in progress. SCS will issue a construction package that contains drilled piers for both the FW and MWK stacks, the column foundation for the nitrogen plant and the Ash building column foundations. This will reduce the mobilization costs for the drilling crew.

BOP Engineering - Electrical & Controls

Assembly of the DCS configuration and graphics design lab for the PSDF project continued with the addition of the second configuration work station. Configuration continued and graphics development was initiated on the second station. SCS completed the DCS factory acceptance test.

The specification for instrument transmitters and for the essential engine generator was completed and issued to procurement for inquiry. The engine generator procurement has been awarded. Prospective gas analysis vendors were queried with regard to the SCS scope addition. Design was completed on the fiber optic network for the DCS field bus communication as well as the voice and data communications infrastructure. The materials were also specified for this area. Preparation of DCS wiring diagrams continued.

Two-hundred-fifty eight new raceways were designed and added to the cable routing database. Fifty-eight new circuits were added and 43 were routed. Updated motor and load lists resulting from design evolution were obtained again. Elementary diagrams were prepared for several medium voltage starters.

The data and phone network at the Control/Administration building, in preparation for PSDF staff move to Wilsonville on April 21, has been designed and the field work is being tracked. Design of the Control/Administration building Electrical Equipment room was completed. The cable tray design drawings have been completed for the room. MWK's cable tray drawings were reviewed and a cable tray material take off was performed. Together with completion of the Electrical Equipment room, material

take off was performed and a major bill of material cable tray order was transmitted. Six drawings have been completed for the Electrical Equipment room. The drawings cover the building's electrical embed requirements, 4 KV switchgear foundation, cable tray plan and sections, lightning protection, lighting plan and power cable routing drawings. Most of the material take off was performed on the electrical design of the coal/limestone material handling area drawings. FW database files have been received and design checking and preparation for field release of the information is in progress.

2.3.1.4 Process Hazard Review

FW has reviewed the suggestions made by the DHR and some alternative suggestions made. These were discussed with SCS and a final set of recommended design changes were agreed upon. These changes are being incorporated into the final version of the P&IDs, expected to be issued early next quarter.

2.3.2 Task 2.2 Facility Design Document

Updates of the PSDF design documents for the BOP will be issued next quarter. Modified information from FW and MWK are also expected.

2.3.3 Task 2.3 Environmental Permitting and Compliance

Regular site visits were made to the PSDF construction site for environmental inspection purposes. Stormwater runoff samples for compliance purposes were collected on March 5 and submitted to the Alabama Power Environmental Test Laboratory for analysis. After the results are obtained, a Discharge Monitoring Report will be submitted to the Alabama Department of Environmental Management (ADEM). The National Pollutant Discharge Elimination System (NPDES) Permit Application was submitted to ADEM on March 7 for review. The review process takes from three to six months.

Federal Aviation Agency (FAA) Forms 7460-1 "Notice of Proposed Construction or Alteration" were submitted to the FAA on February 6 for review. These forms notify the FAA of the construction of the PSDF emission stacks and allows the FAA to make a determination regarding stack markings and lighting. A reply was received from the FAA on February 28 and the information regarding lighting was give to SCS Engineering to incorporate into the design specifications of the stacks.

During this quarter internal meetings were held to discuss the final design of the PSDF wastewater treatment unit. Several modification to an existing concrete yard drainage basin were recommended in order for this basin to serve the anticipated needs of the

PSDF wastewater discharges. An extra wall will be added to facilitate solids settling and a new flowmeter will be installed for flow monitoring compliance. An oil and water separator will be installed adjacent to the basin to receive potentially oil contaminated streams from the PSDF process area. The water discharge from the separator will flow to the basin for additional treatment. A utility shed will be constructed next to the basin to store water treatment chemicals.

2.3.4 Task 2.4 Particle Characterization and Collection

SRI's work this quarter focused on

- Coordination with SiCAM and with Howmet on the casting of the cyclone manifold
- Coordination with Santek Engineering on fabrication and assembly of sampling system components
- Coordination with SCS on the layout of platforms for SRI's particulate sampling systems and the testing of particulate samplers in the SRI combustor
- Coordination with Nolan Multimedia on training videos
- Wiring and assembly of control cabinets
- Preparation of the construction issue of P&IDs
- Revision of electrical wiring diagrams
- Procurement of impactor shells, electric heaters, pressure switches and gauges, control valves, heat transfer coils, and filters for instrument protection

In January, SiCAM produced the first wax pattern of the cyclone manifold. The first pattern was made with plastic rods inserted in the interconnecting tubes to assist Howmet in the production of alumina cores. In February, Howmet received the first wax pattern and made the alumina cores for use in the subsequent patterns. The alumina cores were shipped to SiCAM, and in March, SiCAM produced three wax patterns with the cores inserted at the proper locations. The three finished patterns were shipped to Howmet in late March. Ceramic casting molds are now being made, and the casting will take place in April. Delivery of the prototype manifold is currently scheduled for April 21.

Santek Engineering continued to work on the fabrication and assembly of the sampling system components. Layout drawings of the local control panels and electrical wiring diagrams were delivered to Santek in January. The fabrication work was essentially complete in February. A review of the assembly work was held at Santek on March 20, with participants from SCS, SRI, and Santek. The review revealed several minor problems with the assembly, which are now being addressed. It now appears that the

assembly work will be delayed by the late shipments of two critical items: the Thomson linear actuators (now scheduled to ship on April 13) and the Marpac high-temperature ball valves (now scheduled to ship on April 19). Because of these delays, the assembly will not be completed until the end of May, and the testing will not be finished until the end of June.

On February 9, SRI representatives met with SCS engineers to review the layout of platforms for SRI's sampling systems located in the FW process structure. As a result of the review, two of the platforms were enlarged to provide space for the sampling system control panels and to increase the working area around the insertion mechanisms. The revised layout drawings were reviewed at a follow-up meeting on March 9, in which SRI and SCS also reviewed the layout of platforms in the MWK process structure. No changes were recommended in the MWK platforms, but space restrictions made it necessary for SRI to redesign one of the local control panels for the sampling systems. The electrical enclosure containing the push-button controls was removed from the control panel and relocated so that the panel would fit within the available space.

Plans for testing the five-stage cyclone assembly and bauxite cartridge in SRI's combustion facility were submitted to SCS in February. The original plan was based on operating the combustor at a reduced load to provide the required gas velocity of 20 ft/sec. Subsequent discussions at SRI revealed that the reduced gas velocity could be obtained by doing the tests in a slipstream, eliminating the need for special combustor operating conditions. The test plan was modified accordingly. The testing will be done after the cyclone manifold is received, and the cyclone manifold receptacles are machined to match the cyclones. The machining should be finished by late May, making it possible to do the combustor tests in June.

On February 21, SRI met with Nolan Multimedia and SCS to discuss the training video for SRI's sampling systems. As suggested in the meeting, SRI prepared written procedures for bolting the sampler onto the sampling probe, for bolting the packing gland flange onto the outer casing flange, and for unbolting the packing gland flange and retrieving the sampler. These procedures were submitted to Nolan on March 13, and Nolan submitted a draft script for the training video on March 24. SRI is now reviewing the draft script and will submit comments to Nolan in April.

In January, SRI initiated discussions with several system integrators concerning the assembly and wiring of the control cabinets for SRI's sampling and monitoring systems. Three system integrators expressed interest in the assembly and wiring as well as the programming of the insertion mechanism controllers. Preliminary cost estimates

suggested that the system integrators could do this work more cost effectively than it could be done internally at SRI. Therefore, a request for bids on this work was issued in February, and the three bidders were invited to SRI to review the operation of the probe motion controllers. The bids were received in February, and, in March, SRI awarded the system integration and programming work to In-Control, Inc. of Pelham, Alabama.

In March, SRI finished the final round of revisions on the P&IDs. The construction issue of the P&IDs was released on March 31, 1995. SRI will also submit the AutoCAD files containing the P&IDs, so that SCS can incorporate any changes made after the installation of SRI's systems. The construction issue of the electrical wiring diagrams will be released in April.

2.3.5 Task 2.5 Particle Control Technologies

The following presents a summary of progress made in the last quarter in the design, engineering and procurement of the Particulate Control Devices (PCDs) for the PSDF.

Combustion Power Company PCD for the MWK Transport Gasifier

Programmable Logic Controller (PLC) components were received in December, 1994. Some components were assembled for check out and two quotes from panel vendors were received and CPC is waiting for one more quote. Two panels are needed: one for field mounting the components that collect information from local transmitters and thermocouples, and the other for housing the computer control components in the motor control center. Work on routing of interconnecting piping for filter components has been delayed pending receipt of vendor drawings. Drawings received from MWK have defined the locations for interfaces for utilities.

A factory acceptance test by SCS is planned for the control system at the Foxboro Company in Massachusetts. Arrangements are being made to include check-out of a replica of the CPC control system. The communications module for CPC's computer control system has been sent to Foxboro for programming and check-out in conjunction with GE-FANUC personnel. This communication module will be sent back to CPC for installation in CPC's control rack to assure compatibility with the Foxboro DCS.

The new schedule with updates shows the most recent estimates on equipment deliveries. Equipment will arrive in Wilsonville in March, 1995 through June, 1995. Filter material is scheduled to arrive June, 1995.

Pressure vessels and refractory lined pipe have been shipped from Memphis to Houston for installation of refractory. Refractory installation started in February, 1995. Some refractory lined pressure vessels will arrive on site in Wilsonville in mid-April, 1995.

Design revisions were requested by CPC on the baghouse and recuperative heat exchanger and the air-cooled heat exchanger. This has affected delivery. Vendor engineering on the boost blower is ongoing. An inspection trip is scheduled that includes refractory inspection, recuperative heat exchanger inspection and review of the boost blower vendor status.

Industrial Filter & Pump PCD for the FW Carbonizer

IF&P has been working with Oak Ridge National Laboratory (ORNL) to determine the physical and mechanical properties of IF&P's ceramic tubesheet material. IF&P received test data from ORNL on the physical properties of the Fibroplate II ceramic tubesheet material envisioned for use in the IF&P PCD. ORNL provided precise specific heat, thermal conductivity, diffusivity, and thermal expansion data which will allow for the calculation of heat transfer and other properties within the tubesheet area of the PCD.

IF&P met with Mallett Technology to refine the design of internal components. Both met with ORNL to optimize the internal material selection through the evaluation of additional candidates.

Nozzle stress values for the IF&P PCD changed slightly as a result of a refractory material change in the FW piping connection to the PCD. IF&P's outside consultant reviewed the revised nozzle load data supplied by FW and determined that no changes in PCD metal thickness will be required. Resultant changes in the foundation loadings were sent by IF&P to SCS and FW.

Westinghouse PCDs for the MWK Transport Gasifier and FW CPFBC

Westinghouse is under contract to SCS to design and supply two particulate control devices (PCDs). One PCD (FL0301) is to be located in the MWK transport reactor train and was delivered on March 23, 1995. The second PCD (FL0352) is to filter gases from the combustor of the FW APFBC process. The delivery schedule has been adjusted by SCS to provide delivery of FL0352 by July 30, 1995. Other elements of the Westinghouse project include qualification testing of alternate filter media, for future insertion into the PCD being designed to operate with the MWK transport reactor

(FL0301), and some companion programs which serve to augment the technology base for Westinghouse design and engineering.

The detail designs for the two PCDs is complete. Design of heat tracing for the accumulator tanks has been completed. Each accumulator tank should be maintained at 165°F to ensure that the pulse gas temperature does not fall below 0°F. To accomplish this, each tank should be provided with a uniform heat input of 1.2 kW with a 3 inch fiberglass wool ($K \sim 0.022$ Btu/hr-ft-°F) insulation around it. This kind of heat input can be provided by 120 ft of Chromalox SRM-10 (10 w/ft) heating cable or equivalent, controlled by a Chromalox type RTBC-EP controller (for Div 2 hazardous areas) or equivalent.

Control system database layout was completed and sent to SCS for both PCD301 and PCD352. Westinghouse is currently working on the pulse control logic specifications.

Representatives from Westinghouse visited the PSDF construction site to discuss storage and installation of equipment. Westinghouse studied the issue of providing a nuclear ash level detector for FL0352 and FL0301. Based on the experience at AEP-Tidd, a density gauge for FL0352 was recommended to be procured by SCS. The issue of providing a level detector for FL0301 is open because it would have to have a much larger source (due to high density insulation on the inside wall of FL0301) and would cost much more. Specifications and quotes for both, with recommendations, have been forwarded to SCS.

Westinghouse also evaluated the availability of used candles for PCD 301 and perhaps also for PCD 352 for use during shakedown for the MWK Transport Reactor and FW APFBC, respectively. If a sufficient inventory of used candles is available they will be used for shakedown. Cleanup and inspection costs will be a small fraction of new candle costs.

2.3.6 Task 2.8 Experimental Test Plan

MWK train test plan: Further iterations of the test plan were prepared in response to suggestions from the sponsors. The issues, mainly concerning test sequencing and duration, were resolved satisfactorily and to the benefit of the test plan. There will now be six test campaign through to the end of 1997, three each in combustion and gasification modes. Further, the course of hot commissioning was revised to allow for an earlier start to gasification operation. Some detailed issues remain to be discussed after which the final draft will be prepared.

FW train sampling requirements: An effort was undertaken to define the gas and solid sampling requirements for the FW train. Foster Wheeler's proposed sampling list was matched against the requirements for plant operation and process investigation. Samples were identified on the basis of their contribution to the overall operation of the train, their contribution to test plan objectives, and the physical difficulty and safety of obtaining a given sample. The number of gas sample locations was reduced from the twelve proposed by FW to three. These will be used to sample from the fuel gas and vitiated air streams entering the topping combustor and from the flue gas stream leaving the gas turbine. There was a sample location between the gas turbine and the MASB that used a rake to sample across the cross section. If this failed mechanically and passed through the gas turbine it would cause considerable damage and so it was eliminated. Any additional gas-phase reactions occurring will influence the emissions so sampling after the turbine is probably more representative from a complete system standpoint. All three locations will have a sample conditioning train to remove any residual dust, and to condense out water and ammonia compounds prior to analysis. Continuous gas analyzers will be used for CO, CO₂, O₂, NO_x, and SO₂, with batch samples being taken for hydrocarbon concentration determination by chromatography. The batch samples will be taken three or four times per day. Specialized analysis will be required to determine the ammonia content of the fuel gas and to complete a nitrogen balance across the MASB. Specialized analysis may also be required if H₂S, COS, and chlorine content are required.

The number of solid sample locations was reduced from the thirteen proposed by FW to five. Solid samples will be taken from the inlet coal and sorbent feed streams, the PCD ash stream, the PFBC ash stream, and the oversized char stream. These are adequate to support plant operation and test program objectives. In selecting these locations consideration was given to the physical difficulty, safety, and cost of the sample. This resulted in all samples being removed from low pressure, low temperature locations. Although accepted as being beneficial to process understanding, samples were not taken from high temperature, high pressure locations such as the char transfer line and the combustor recycle line. Several sampling devices were studied, but none was considered acceptable. A maximum of 400 to 500 samples per week will be sent to the laboratory for analysis from the FW train.

MWK train sampling requirements: An evaluation of alternative methods for collecting solid samples from the MWK train was initiated. The solid samples identified are feed coal, sorbent feed, PCD spent solids, and reactor spent solids. Sulfator ash will also be sampled when operating in gasification mode. The alternatives will be evaluated on the basis of their ability to minimize the hazards to which a person collecting the sample would be exposed, and to provide representative measures of the flowing solids without

disrupting the flow. Their cost in terms of equipment, system modifications required to accommodate the method, and technician and maintenance requirements are also taken into account in evaluation. Automatic and manual means of sampling are being considered.

2.4 PHASE 3 - CONSTRUCTION, PROCUREMENT AND INSTALLATION

2.4.1 Task 3.1 Procurement

MWK Advanced Gasifier train

Several pieces of equipment from MWK arrived at the site in February. All of the coal/limestone/ash transport devices (FD0210, FD0220, FD0510, FD0520, FD0530 and FD0610) arrived. The last two heat exchangers (HX0402 and HX0601) were delivered to the site. Five of the refractory lined pipe spools were received. Only a few items remain to be shipped. These are the analyzer shelter and analyzers, the shutdown relay system, the refractory lined slide valve and the cyclones (primary cyclone and disengager).

Combustion Power Company

Pressure vessels, internals, and refractory lined pipe were ordered in September, 1994 from Plant Maintenance Service Corporation (PMSC) in Memphis, TN. There was considerable activity in January, 1995 as the pressure vessels and refractory lined piping were completed and pre-assembled for a dimensional check. Inspection by CPC and SCS was completed during the dimensional check. Anchors for refractory were installed in mid-January, and hydrotest was completed in late January, 1995.

Items to be refractory lined arrived in late January, 1995 at J.T. Thorpe Company in Houston for refractory installation, thermal drying (to 700 - 750°F), and painting. CPC inspected the refractory lining of the vessels at J.T. Thorpe on February 15, 1995. Critical points on the installation were discussed and errors noted for correction with another inspection completed in early March, 1995. CPC completed refractory pour, partial cure, and painting of three major vessels (the granular bed filter, the de-entrainment vessel, and the media makeup hopper). The filter vessel was shipped to the site the last week of March 1995, with other equipment scheduled to arrive through May 15, 1995.

The recuperative and gas/air heat exchanger were ordered as a unit in September, 1994 from Phoenix Metallurgical in Houston. Preliminary drawings were received in mid-

November, 1994. Design details dealing with expansion joints, support, and guides were discussed in January, 1995. Revised drawings were received by CPC in early February, 1995 and reviewed.

The boost blower was ordered in December, 1994 from Susquehanna Valley Systems, Inc. (SVS) in Berwick, PA. Submittal drawings were received in February, 1995 from the new owners of SVS, Hy-Bon Engineering Company of Midland, TX. The new owners have experience in designing and manufacturing oil refinery equipment. SVS engineers are still involved. This alliance increases the engineering and manufacturing expertise available to produce a suitable piece of equipment. Submittal drawings received in mid-February, 1995 included only a general arrangement which was satisfactory.

The water-cooled heat exchanger, FL0302-HX03, was placed on order in January, 1995. Vendor drawings have been received and approved. Shipment is expected in late April, 1995. The cooling air fan, FL0302-FN01, was placed on order in January, 1995. Vendor drawings have been received and approved. Shipment is expected in early May, 1995.

Industrial Filter and Pump

IF&P's PCD material procurement and fabrication is well under way. A refractory lining contractor has been selected and is scheduled to pour the Resco lining shortly after completion of the pressure vessel fabrication.

Westinghouse Filters

FL0301: The filter vessel for the MWK train, FL0301, was delivered to the PSDF site on March 23. The remaining items such as erection hardware, instrumented flange cover assemblies and gasket sets. These have been procured and are being held at Westinghouse STC till the PSDF construction crew is ready to erect the vessel (FL0301).

FL0301-ME01 and ME02: The back pulse skids have been assembled. They will be plumbed, wired and tested by May 1. They will be ready for shipment to the PSDF site by May 7, but can be held back at vendor's site if that is convenient for the construction crew.

FL0301 Internal Metal Structures: The tubesheet and cluster assembly are nearing completion of fabrication. They will be insulated and be ready for shipment to the

PSDF site by May 7. We have asked the vendor to package these for outdoor storage and therefore they will be shipped when completed.

FL0352: Final vessel drawings of the PCD vessel in the FW train, FL0352, have been sent to SCS and FW. Fabrication is proceeding with a schedule for completion by 7/30.

FL0352-ME01, ME02 and ME03: The back pulse and instrument skids are in the final stages of assembly. They will be plumbed, wired and be ready for testing by May 7. They will be ready for shipment to the PSDF by May 15, but can be held back at the vendor's site if necessary.

SRI Particulate Sampling

During the past quarter, SRI completed the procurement of all components needed for the initial assembly of the sampling systems. The items that were ordered during the past quarter included: impactor shells, electric heaters, pressure switches and gauges, control valves, orifice plates, heat transfer coils for the sampling system condensers, and filters for instrument protection. A purchase order was issued to In-Control for the assembly and wiring of the control cabinets, and a change order was issued to Santek to incorporate various changes in mechanical details. All remaining components of the sampling systems will be ordered in the next quarter. The remaining components include the impactor stages and substrates, the ceramic liners for the bauxite cartridges, and the additional cyclone manifolds.

2.4.2 Task 3.3 Construction and Installation

Construction - Civil

The construction civil work at the site continued with support activities associated with Mechanical and Electrical installations. Roof and HVAC installations for the FW and MWK MCC buildings were completed.

The final bolt-up on the completed portion of the coal structure was performed (structure cannot be completed until silos are installed). The coal storage structural materials were received and unloaded. The concrete work on the coal storage foundation was continued. The pipe trench access platform and roadway crossings were completed. The MWK and FW equipment that were received were unloaded and prepared for short-term storage. All grade level MWK equipment within the process structure was set. The MWK Sulfator was set in the structure on 2/03/95. Steel City completed setting of the structural steel in Sequence 2 (MWK first tier), Sequence 3

(FW to 152 ft) except for leave-out steel, and Sequence 8 (stairway) to the 152 ft level. Sequence 4 (MWK and common bay to 218 ft) steel erection was started and have continued setting grating in Sequence 2.

Existing fire protection tank was relocated to the PSDF site on 2/03/95. Process structure elevator was installed to the 152 ft elevation. Process structure equipment will continue to be set in conjunction with structural steel sequence. The FBHE from FW was delivered 2/25/95 and is being refractory lined at the site by J.T. Thorpe.

Construction - Electrical

The temporary power board for the process structure was energized and motor space heaters for the installed equipment was re-energized on temporary power. The work on yard lighting, embedded conduits, light pole foundations and grounding grid is being continued. The duct run into the Control/Administration building is complete and temporary power installed and energized.

The equipment pads in MWK and FW MCC buildings was poured in order to receive the Foxboro DCS cabinets. The installation of cable tray in MWK MCC building continued during the quarter and work on cable tray in FW MCC building begun. The work to install duct runs to E.C. Gaston Steam Plant was started and continued for controls on raw water, demineralized water pumps and ground wires to tie the PSDF ground grid to the E.C. Gaston ground grid. The work on duct run to electrical building resumed. Sewage lift stations and potable water booster pumps were energized and tested. The fiber optic cable between existing and new Control/Administration and Maintenance/Warehouse/Lab buildings was pulled for telephone and computers. The work in the new Control/Administration building on telephone and cubicle power requirements is being started.

Construction - Mechanical

The suction line from storage tank to diesel pumps at the fire protection pump house was installed. The process water and demineralized water line installation from E.C. Gaston plant has been on hold, and will start again pending approval to bore under the railway tracks. The installation of wash-down water system was completed. The drain line from the building sump to the yard sump was installed. The base slab drainage for the coal and limestone storage was also installed. The permanent potable water tie to the Wilsonville main line is complete. The potable water booster pump is on order. The sewage system is 100% complete mechanically. Equipment storage and maintenance program for MWK and FW equipment is on-going. The main air

compressor, the heat transfer fluid equipment, the recycle gas booster compressor and the sulfator air compressor (all MWK equipment) were set in their final positions.

Control/Administration Building: Sunbelt Builders continued work on the building. The work is concentrated on interior with walls, floors, ceiling, and electrical work in progress. The completion of contract work is projected for mid-April.

2.4.3 Task 3.6 Preparations for Operations

Wilsonville Interactive Learning System (WILS)

WILS will contain a series of Technology Resource Modules to provide highly usable, visually-based information on each technology at the Wilsonville facility. WILS will also contain a series of Interactive Video Training (IVT) modules on a variety of tasks. The Tech Transfer and Training modules are being developed concurrently with construction of the facility using 2D and 3D graphics and animation. Training modules will be completed prior to commissioning of each train to allow time for operator training; they will be revised and augmented with video following the shakedown period. WILS is being developed for delivery via a series of Windows-based interactive CD ROMs.

Significant progress on the WILS project was made this quarter in a number of key areas. Nolan's February trip to SCS helped to accelerate progress.

- Graphics production on the Advanced Gasifier/MWK Transport Reactor (K-train) Technology Resource module, which had been started at the end of last quarter, continued. Paper prints (greyscale) of graphic screens for the Feed Prep, Flare and Sulfator systems proved very useful for a review during Nolan's visit to SCS. Later, Nolan incorporated SCS's comments on the graphics for these 3 systems, and they are now ready to go on to the next step -- image processing in preparation for integration (programming). Concurrent with these graphics, some 38 K-train tables and formulas (for chemical reactions) were also produced, reviewed by SCS on paper, and revised.
- Development of the HGCU modules also made good progress this quarter. Storyboards for the two PCDs in the K-train, i.e. Westinghouse and CPC PCDs, were prepared first and graphics production got started. Script revisions from SCS on the HGCU A-train modules, i.e. Westinghouse and IF&P PCDs, were received and incorporated into the database. Storyboards for these two PCD modules were then prepared. Graphic screens for the HGCU Overview and CPC

PCD module were the first to be produced. These screens were sent to SCS for review.

- As graphics development occurred and new information from SCS was received, some script changes became inevitable. New narration for a number of scenes in the K-train module will be re-recorded next month, along with narration for the HGCU Overview and CPC PCD modules. Audio was digitized for most of K-train narration.
- The CD version of the Realtime Monitors and Sampling module revealed navigational and performance issues in the authoring code. The CD performance is being optimized and the program navigational issues are being resolved.
- A CD ROM installer for the PC has been developed. The installer copies the WILS "projector" onto the users' hard drive. It provides necessary messages for a successful installation. The installer also creates a program folder for grouping all WILS files together.
- During a meeting with SCS and SRI, probe insertion and retraction procedures were discussed in detail to kick-off development of a training module. SRI later submitted detailed procedures for the following operator training tasks: bolting the sampler and the packing gland and retrieving the sampler.
- Images from still photographs of the equipment on the ground at Wilsonville and the process structure are being used in the Technology Resource module for the K-train; they can be augmented with additional still photos later.
- A visit to ModelVision in Madison, Alabama, yielded the first in the series of images derived from the 3D Intergraph model. These images will be used for the "You Are Here" feature within the Technology Resource modules, which allows the user to see where particular pieces of equipment are located within each train. Additional images, such as plan and cross-sectional views and other internal views will be created for inclusion in the K-train training module.
- Development of the APFBC or A-train, was also started this month. A rough draft script was prepared from an outline that was submitted to SCS. This new script contains a level of detail similar to the K-train. Progress was halted, however, pending final receipt of all design and drawing information from FW and SCS.

Operation and Maintenance

Work began on specifying the operations and maintenance labor brokers. A bid was prepared for the Instrumentation Technicians of two levels of expertise: the first is the typical Technician class who calibrates transmitters, loops, and control processors; and the second is knowledgeable in gas analysis equipment repair, calibration and troubleshooting. Specific job descriptions, duties, and the number of various operator and mechanic positions are being written, and evaluated.

Most of the Operations supervisory staff have joined the project, and the Coordinator's have begun developing the background understanding of the project, its two process trains, and the specific equipment involved in order to develop the detailed operating procedures manual for use when the journeyman operators arrive later this year.

Work has begun in identifying and refurbishing the essential Machine Shop and Maintenance Tools that are available from other SCS/DOE projects for use by the PSDF maintenance staff. The Maintenance Coordinator was selected and has joined the project. Both the Maintenance Supervisor and Coordinator will be assisting the project Construction force, until equipment commissioning begins.

Commissioning Related Activities

Work continued in detailing the start-up activity plan for scheduling purposes. This entails identifying specific activities required to assure proper equipment operation, and to integrate equipment into operating subsystems capable of maintaining control of the system's parameters (flow, temp, pressure, ratio). The tested sub-systems will be combined resulting in process operation and control. This activity is an input useful in defining the project critical paths and priorities. This work is continuing with updates due to system/ equipment design changes. A cold/hot shakedown schedule is attached in Appendix B.

3.0 PLANS FOR FUTURE WORK

1. Complete work on the TRDU final report and orderly closure of the contract with UND/EERC.
2. Work on the MWK operating instruction manual and maintenance and inspection manual will continue and draft copies will be issued early in the next quarter for review and comments. The final report on the MWK train design hazard review will also be issued.
3. For the next reporting period, FW will continue to close the detail design of the process with finalization of the P&IDs and logic diagrams/descriptions, and drafting of plant & piping layouts. A design hazard review of the topping combustor and the gas turbine sections of the process will be conducted in the next quarter.
4. SCS will continue with construction activities at the site. Steel City (steel erectors) will continue on the MWK and common bay steel and set equipment. The process structure elevator erection is in progress. Continuing electrical work will involve work on the yard lighting, duct runs, grounding cable tray in MWK and FW MCC buildings. Mechanical will lay the process water and de-mineralized water lines from Plant E.C. Gaston. The Foxboro DCS system will be energized and further configuration activities will continue with the DCS system.
5. SCS engineering will continue to work on the balance-of-plant design and specifications. The wastewater design will be completed in April. DCS configuration will continue for the MWK portion. SCS will continue to make steel modifications to eliminate equipment and piping interferences and changes. Design of raceways and cable routing continues. P&IDs for all balance-of-plant areas will be updated and issued in the next quarter.
6. CPC will continue to fabricate and ship major equipment in its system. CPC plans for the next quarter include installation of internals in the filter vessel, begin manufacture of panels with instrumentation and update schedule. The installation manual will be revised to include more vendor information. As part of the installation manual, the drawings for the top assembly will be issued. The recuperative heat exchanger will be delivered in early May, followed by the baghouse and boost blower in June. Other auxiliary equipment delivery is on schedule. IF&P plans for the next quarter include completion of shakedown

sequence and discussions with SCS on the need for a PLC. Westinghouse plans for the next quarter include construction support during installation of the filter vessel in the MWK train and delivery of internals and the backpulse skid.

7. In the coming quarter, Howmet will deliver the prototype cyclone manifold, and SRI will machine the manifold's receptacles to match the cyclones. The cyclones will then be match lapped to the receptacles. The complete assembly should be ready for testing in the combustion facility in June. Assembly and testing of the insertion mechanism will be done in June because of delays in receiving the linear actuators and the high-temperature ball valves. Major deliverables including the P&IDs, electrical wiring diagrams, DCS loop descriptions and drawings of particulate sampling systems will be completed in the next quarter, and with that the design phase of the project will be complete.
8. SCS will continue preparation of an integrated test plan for the Advanced Gasifier train components and system for shakedown, characterization and normal operations. The development of operation procedures for the MWK train will start upon completion of operation and maintenance instructions manual that is being written by MWK. The number of samples and required analysis as well as the frequency of sampling and analysis will be defined in order to estimate the needs for the laboratory at the site.

APPENDIX A

BALANCE-OF-PLANT ENGINEERING AND CONSTRUCTION SCHEDULE

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996											
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
GS016	11	11	01MAY95	15MAY95	-27	GAM																								
GS018	119	119	01MAY95	17OCT95	-26	GAM																								
CGS019	13	13	18OCT95	08NOV95	-21	NFK																								
COAL RAMP DESIGN																														
SE080103	10	10	07APR95	20APR95	4	DLE																								
CE080303	28	28	08MAY95	26JUN95	3	NFK																								
I&C COAL/LIMESTONE																														
SG090010	61	61	28MAR95A	03JUL95	-16	JLH																								
SG090020	45	45	01MAY95	03JUL95	-16	JLH																								
SG09030	20	20	02MAY95	30MAY95	58	JLH																								
SG09030A	24	24	31MAY95	12JUL95	46	JLH																								
200-400 PROCESS STRUCTURE																														
STRUCTURAL STEEL DESIGN																														
SD013C	37	16	26DEC94A	28APR95	410	DLE																								
SD0012B	76	76	07APR95	25JUL95	47	DLE																								
SD0012A	19	19	01MAY95	25MAY95	410	DLE																								
STRUCTURAL STEEL MATERIAL																														
SD01930	215	125	29SEP94A	03OCT95	-2	NFK																								
ERECTION SEQUENCE																														
DCD0210	41*	29*	20MAR95A	30MAY95	-2	NFK																								
DCD0235	68*	60*	27MAR95A	25JUL95	3	NFK																								
CD01930F	4	4	01MAY95*	04MAY95	14	NFK																								
DCD0250	0	0		11MAY95	81	NFK																								
DCD0265	12	12	31MAY95	20JUN95	-2	NFK																								
CD01930E	4	4	01JUN95*	06JUN95	86	NFK																								
DCD0230	0	0		08JUN95	66	NFK																								
DCD0240	0	0		08JUN95	66	NFK																								
DCD019BC	0	0		15JUN95	316	NFK																								
CD01930G	3	3	22JUN95*	26JUN95	132	NFK																								
DCD019AB	0	0		27JUL95	19	NFK																								
DCD0225	20	20	31JUL95	31AUG95	19	NFK																								
DCD0260	0	0		27JUL95	39	NFK																								
DCD0255	48	48	05SEP95	28NOV95	19	NFK																								
DCD0220	0	0		20SEP95	72	NFK																								
DCD0270	16	16	29NOV95	28DEC95	19	NFK																								
REFRACTORY PIPING																														
DCD019ADA	64	64	27MAR95A	11OCT95	-23	NFK																								
DCD019AD	40	40	10APR95*	19JUN95	-23	NFK																								
DCD019ADM	40	40	31MAY95	09AUG95	13	NFK																								
PIPEWAY PIPING																														
CD019CC	60	46	26DEC94A	12JUN95	-8	NFK																								
REMAINING PIPING																														
CD019CEM	143*	70*	26DEC94A	03APR95A		NFK																								

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996											
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
SF04591	328	67	03OCT94A	12JUL95	-8	WKK	FINALIZE DESIGN OF RACEWAY DWG																							
CF04590A	98	98	15OCT95A	06NOV95	-22	NFK	PULL CABLES IN PROCESS STRUCTURE (MWK)																							
CF04590B	59	59	01NOV95A	20NOV95	-11	NFK	TERMINATE CABLES IN THE PROCESS STRUCTURE (MWK)																							
SF0459J	20	20	13JUL95	09AUG95	-8	WKK	REVIEW RACEWAY DWG & BM																							
CF04590	44	44	31JUL95*	16OCT95	-13	NFK	INSTALL RACEWAYS IN THE PROCESS STRUCTURE (MWK)																							
SF04590	0	0	31JUL95*		0	WKK	DELIVER RACEWAY DWG/BM TO SITE																							
HEAT TRACE - FREEZE PROTECTION																														
SF04595	40	40	10MAR95A	02JUN95	46	WKK	PREP BOP FREEZE PROTECTION DWG/BM																							
SF04597	0	0	05JUN95		46	WKK	DELIVER BOP FREEZE PROTECTION DWG/BM TO SITE																							
CF04597	48	48	12SEP95	05DEC95	-2	NFK	INSTALL FREEZE PROTECTION (BOP & P.S.) (MWK)																							
HEAT TRACE - P.S. TEMP MAINT.																														
SF04595D	173	89	22NOV94A	11AUG95	-10	WKK	PREP P.S. FREEZE PROTECTION DWG/BM																							
CF04597D	0	0		11AUG95	-3	WKK	DELIVER P.S. FREEZE PROTECTION DWG/BM TO SITE																							
OPS - KELLOGG TRANSPORT REACTOR to PCD's																														
RDYFIREK	0	0	07APR95		627	C_P	KELLOGG REACTOR READY FOR COAL																							
MATERIAL																														
FAH0252	0	0	07APR95*		182	NFK	AH0252 CARBONIZER AIR PREHEATER DELIVERY																							
FAH0253	0	0	07APR95*		144	NFK	AH0253 COMBUSTOR AIR PREHEATER DELIVERY																							
FAH0254	0	0	07APR95*		182	NFK	AH0254 COMBUSTOR ABOVE GRID AIR PREHEATER																							
FAH0255	0	0	07APR95*		144	NFK	AH0255 'HX0253's' AIR PREHEATER																							
FCO0252P	1	1	07APR95	07APR95	290	NFK	PULL CABLE TO CO0252 TRANSPORT AIR COMPRESSOR																							
FCY0251	0	0	07APR95*		268	NFK	CY0251 CARBONIZER CYCLONE DELIVERY																							
FCY0252	0	0	07APR95*		268	NFK	CY0252 COMBUSTOR CYCLONE DELIVERY																							
FFD0251P	1	1	07APR95	07APR95	290	NFK	PULL CABLE TO FD0251 SORBENT FEEDER																							
FFD0252P	1	1	07APR95	07APR95	290	NFK	PULL CABLE TO FD0252 CARBONIZER COAL FEEDER																							
FFD0253P	1	1	07APR95	07APR95	290	NFK	PULL CABLE TO FD0253 COMBUSTOR COAL FEEDER																							
FFD0256P	1	1	07APR95	07APR95	290	NFK	PULL CABLE TO FD0256 FINES COOLING SCREW FEEDER																							
FFL0254	0	0	07APR95*		268	NFK	FL0254 COAL SURGE HOPPER FILTER DELIVERY																							
FFL0255	0	0	07APR95*		182	NFK	FL0255 SORBENT SURGE HOPPER FILTER DELIVERY																							
FFN0251P	1	1	07APR95	07APR95	625	NFK	PULL CABLE TO FN0251 CHAR COOLER FAN																							
FHX0253	0	0	07APR95*		292	NFK	HX0253 FLUIDIZED BOTTOM ASH COOLER DELIVERY																							
FLP0601	0	0	07APR95*		268	NFK	LP0601 CARBONIZER OVERHEAD LINED PIPE																							
FLP0613-1	0	0	07APR95*		182	NFK	LP0613-1 CARBONIZER CHAR LINED PIPE																							
FLP0613-2	0	0	07APR95*		182	NFK	LP0613-2 CARBONIZER CHAR LINED PIPE																							
FLP0613-3	0	0	07APR95*		627	NFK	LP0613-3 CARBONIZER CHAR LINED PIPE																							
FLP0803-1	0	0	07APR95*		268	NFK	LP0803-1 CARBONIZER CYCLONE/BOTTOMS LINED PIPE																							
FLP0803-2	0	0	07APR95*		182	NFK	LP0803-2 CARBONIZER CYCLONE/BOTTOMS LINED PIPE																							
FLP0803-3	0	0	07APR95*		292	NFK	LP0803-3 CARBONIZER CYCLONE/BOTTOMS LINED PIPE																							
FLP0910	0	0	07APR95*		144	NFK	LP0910 COMBUSTOR PRI HOT START-UP AIR LINED PIPE																							
FLP0913	0	0	07APR95*		182	NFK	LP0913 COMBUSTOR ABOVE GRID START-UP AIR L PIPE																							
FLP1334	0	0	07APR95*		144	NFK	LP1334 HX0253 HOT AIR LINED PIPE																							
FPG0252	1	1	07APR95	07APR95	143	NFK	RECEIVE PG0252 FUEL GAS AIR BYPASS QUENCH PKG																							
KBL0401P	1	1	07APR95	07APR95	197	NFK	PULL CABLE TO BL0401 THERMAL OXIDIZER BLOWER																							

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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FFD0252	1	1	28APR95	28APR95	122	NFK																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

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<div>◆ E11002 COMBUSTOR PCD OVERHEAD EXPANSION JOINT</div> <div>◆ LP1004 COMBUSTOR PCD BOTTOMS LINED PIPE</div> <div>1 SET CO0252 TRANSPORT AIR COMPRESSOR</div> <div>■ HX0204 TRANSPORT AIR COOLER Install</div> <div>◆ V10451 VITIATED AIR VALVE</div> <div>◆ V10452 FUEL GAS VALVE</div> <div>◆ F10302 (COMBUSTION POWER) PCD DELIVERY</div> <div>◆ F10351 CARBONIZER (IFP) PCD DELIVERY</div> <div>◆ LP1401-1 CARBONIZER ALKALI GETTER OUTLET L PIPE</div> <div>◆ LP1401-2 CARBONIZER ALKALI GETTER OUTLET L PIPE</div> <div>◆ LP1401-3 CARBONIZER ALKALI GETTER OUTLET L PIPE</div> <div>◆ LP1402-1 COMBUSTOR ALKALI GETTER OUTLET L PIPE</div> <div>◆ LP1402-2 COMBUSTOR ALKALI GETTER OUTLET L PIPE</div> <div>◆ LP2532 FLUE GAS BYPASS LINED PIPE</div> <div>◆ LP2533 VITIATED AIR BYPASS LINED PIPE</div> <div>◆ F10352 COMBUSTOR (W) PCD DELIVERY</div> <div>1 SET HX0402 SECONDARY GAS COOLER</div> <div>1 TERM CO0252 TRANSPORT AIR COMPRESSOR</div> <div>1 TERM F00251 SORBENT FEEDER</div> <div>1 TERM F00252 CARBONIZER COAL FEEDER</div> <div>1 TERM F00253 COMBUSTOR COAL FEEDER</div> <div>1 TERM F00256 FINES COOLING SCREW FEEDER</div> <div>1 F00251 CHAR COOLER FAN</div> <div>1 TERMINATE PG0252 FUEL GAS AIR BYPASS QUENCH PKG</div> <div>1 TERM BL0401 THERMAL OXIDIZER BLOWER</div> <div>1 TERM CO0401 RECYCLE GAS BOOSTER COMPRESSOR</div> <div>1 TERM CO0601 SULFATOR AIR COMPRESSOR</div> <div>1 TERM F00210 COAL FEEDER SYSTEM</div> <div>1 TERM F00220 LIMESTONE FEEDER SYSTEM</div> <div>1 TERM F00402 FINES SCREW COOLER</div> <div>1 TERM F00610 SULFATOR LIMESTONE FEEDER SYSTEM</div> <div>1 TERM ME0540 HEAT TRANSFER FLUID (HFT) SYSTEM</div> <div>1 SET F00251 CHAR COOLER FAN</div> <div>1 TERM F00251 CHAR COOLER FAN</div> <div>1 GN0451 ALLISON GAS TURBINE GEN SET DELIVERY</div> <div>◆ BR0451 WESTINGHOUSE TO</div>																											
<div>1 SET CO0251 BOOSTER AIR COMPRESSOR</div> <div>1 SET GN0451 ALLISON GAS TURBINE</div>																											
<div>500 ASH SYSTEMS</div> <div>ASH HANDLING SYSTEM</div> <div>35268 35 35 16MAY95 05JUL95 -27 GAM</div> <div>352628B 20 20 06JUL95 02AUG95 41 GAM</div> <div>Receive/Review Ash Handling System Vendor Dwg's</div> <div>Prepare Ash Handling System Final Drawing</div>																											

Sheet 6 of 30

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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GS259	2	2	18JUL95	19JUL95	-16	GAM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996											
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
SD02110	60	24	01FEB95A	10MAY95	43	DLE																								
SD02110D	0	0		10MAY95	43	DLE																								
CD02110	8	8	12JUN95	22JUN95	34	NFK																								
STACK DESIGN																														
GS086	30	6	29MAR95A	14APR95	56	GAM																								
GS087	130	130	07APR95	10OCT95	-17	GAM																								
SEEMBED5	10	10	07APR95	20APR95	67	WKK																								
STACK ERECTION																														
CD02230	16	16	11OCT95	07NOV95	-14	NFK																								
ELECTRICAL FOR BAGHOUSE																														
SE30014	20	20	19MAY95	16JUN95	13	WKK																								
SE3001B4A	20	20	19JUN95	17JUL95	13	WKK																								
SE3001A4	20	20	18JUL95	14AUG95	13	WKK																								
SE3001B4	20	20	01AUG95	28AUG95	13	WKK																								
SE3001D4	8	8	06SEP95	19SEP95	10	NFK																								
SE3001E4	8	8	13SEP95	26SEP95	10	NFK																								
SE3001F4	4	4	15NOV95	21NOV95	-18	NFK																								
ELECTRICAL FOR DILUTION AIR FAN																														
SE30015	20	20	26MAY95	23JUN95	16	WKK																								
SE3001B5A	20	20	26JUN95	24JUL95	16	WKK																								
SE3001A5	20	20	25JUL95	21AUG95	16	WKK																								
SE3001B5	20	20	08AUG95	05SEP95	16	WKK																								
SE3001D5	8	8	13SEP95	26SEP95	13	NFK																								
SE3001E5	8	8	20SEP95	03OCT95	13	NFK																								
SE3001F5	1	1	04OCT95	04OCT95	13	NFK																								
BAGHOUSE & DUCTWORK																														
GS268B	30	30	07APR95	18MAY95	-22	GAM																								
GS270B	20	20	19MAY95	16JUN95	68	GAM																								
GS271B	110	110	19MAY95	24OCT95	-22	GAM																								
GS271BC	25	25	19MAY95	23JUN95	17	DLE																								
GS270D	0	0		16JUN95	68	GAM																								
CS271D	0	0		23JUN95	17	DLE																								
CGS273BC	8	8	25JUL95	07AUG95	14	NFK																								
CGS273B	12	12	25OCT95	14NOV95	-18	NFK																								
DILUTION AIR FAN																														
GS 721	15	10	24MAR95A	20APR95	16	GAM																								
GS 724	25	25	21APR95	25MAY95	16	GAM																								
SMCC4	10	10	21APR95	04MAY95	17	GAM																								
GS 723	60	60	26MAY95	21AUG95	44	GAM																								
CGS273BA	2	2	22AUG95	23AUG95	35	NFK																								
OPS - SYSTEM COMPLETE																														
FIN700	0	0		01DEC95	-32	NFK																								
1000 I&C																														

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996											
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
PLANT CONTROLS (DCS)																														
SG06035	241	7	02JUN94A	17APR95	19	JLH																								
SG06030A	179	5	03JUN94A	13APR95	440	JLH																								
SG06031	0	0	07APR95		154	JLH																								
SG06031A	10	10	07APR95	20APR95	154	JLH																								
CG06030	35	35	02OCT95	30NOV95	34	NFK																								
CG06030A	33	33	02OCT95	31OCT95A	34	NFK																								
DATABASE DEVELOPMENT & CONFIGURATION																														
SG06110A	273	128	26AUG94A	06OCT95	-10	JLH																								
SG01020	152	53	01NOV94A	21JUN95	-10	JLH																								
SG06F	100	89	03FEB95A	11AUG95	-10	JLH																								
SG01029	6	6	07APR95	14APR95	10	JLH																								
SG01020A	15	15	22JUN95	13JUL95	-9	JLH																								
I&C BULK MATERIAL																														
SG06310	215	105	17OCT94A	05SEP95	-10	JLH																								
SG06330	117	117	19APR95	03OCT95	69	JLH																								
CG06330	86	86	29JUN95*	30NOV95	34	NFK																								
VENDOR DRAWING REVIEW																														
SG1040BB	154	48	21OCT94A	14JUN95	-10	JLH																								
SG01040B	212	149	26DEC94A	06NOV95	-4	JLH																								
VENDOR COORDINATION																														
SG01050E	103	60	03OCT94A	30JUN95	-44	JLH																								
PCD LOOP DRAWINGS																														
SG01061	176	113	26DEC94A	15SEP95	10	JLH																								
AUTO GAS DETECTION ACT																														
SG01060	113	113	07APR95	15SEP95	10	JLH																								
BOP - WATER ANAL. SPEC																														
SG01100	27	27	16MAY95	22JUN95	0	JLH																								
SG01100A	0	0		29JUN95	0	JLH																								
I&C DATA SYSTEMS																														
SG090X	168	105	26DEC94A	05SEP95	-1	JLH																								
SG090Y	109	109	01MAY95	03OCT95	107	JLH																								
Uncategorized																														
CG06330A	84	84	23MAY95	19OCT95	55	NFK																								
2000 BOILER/STEAM/CONDENSATE																														
CONDENSATE PUMPS																														
GS299	20	20	07APR95	04MAY95	44	GAM																								
SMCC5	10	10	07APR95	20APR95	27	GAM																								
GS301	51*	51*	05MAY95	18JUL95	44	GAM																								
CK13830	2	2	19JUL95	20JUL95	39	NFK																								
CK13830F	2	2	19JUL95	20JUL95	35	NFK																								
CONDENSATE PIPING																														
SK13932	20	20	21APR95	18MAY95	72	GAM																								

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996												
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	J	F	M	A	M	J	J	A	S	O	N
SK13932F	20	20	21APR95	18MAY95	78	GAM																									
CONDENSATE STORAGE TANK																															
SK14030A	30	30	07APR95	18MAY95	237	NFK																									
CR17730A	12	12	10APR95	27APR95	67	NFK																									
SK14030	2	2	20JUN95	21JUN95	49	NFK																									
SK14030F	2	2	22JUN95	23JUN95	67	NFK																									
CONDENSATE PUMP/TANK FOUNDATION																															
CK14030	28	28	10APR95	25MAY95	39	NFK																									
AUX BOILER																															
GS503	27	27	07APR95	15MAY95	-27	GAM																									
GS506	20	20	16MAY95	13JUN95	-27	GAM																									
GS509	30	30	14JUN95	26JUL95	-27	GAM																									
GS511D	0	0		26JUL95	53	GAM																									
SEEMBED6	10	10	27JUL95	09AUG95	3	WKK																									
SK14745	22	22	27JUL95	25AUG95	31	GAM																									
SK14750	10	10	27JUL95	09AUG95	-7	DLE																									
SK14750D	0	0		09AUG95	-7	DLE																									
CK14760	12	12	11SEP95	28SEP95	-6	NFK																									
CK14755	8	8	23OCT95	02NOV95	-6	NFK																									
HEAT EXCHANGER																															
SL15130	59	59	07APR95	29JUN95	-5	GAM																									
CL15130	1	1	03JUL95	03JUL95	33	NFK																									
CL15130F	1	1	03JUL95	03JUL95	37	NFK																									
I&C WIRING FOR FEEDWATER/CONDENSATE																															
SE34012	10	10	18JUL95	31JUL95	-12	WKK																									
SE3401B2A	10	10	01AUG95	14AUG95	-12	WKK																									
SE3401A2	10	10	15AUG95	28AUG95	-12	WKK																									
SE3401B2	10	10	29AUG95	12SEP95	-12	WKK																									
SE3401C2	10	10	29AUG95	12SEP95	-12	WKK																									
SE3401D2	8	8	19SEP95	02OCT95	-9	NFK																									
SE3401E2	8	8	26SEP95	09OCT95	-9	NFK																									
SE3401F2	4	4	10OCT95	16OCT95	-9	NFK																									
ELECTRICAL FOR AUX BOILER																															
SE30016	20	20	27JUL95	23AUG95	-27	WKK																									
SE3001B6A	20	20	24AUG95	21SEP95	-27	WKK																									
SE3001A6	20	20	22SEP95	19OCT95	-27	WKK																									
SE3001B6	20	20	06OCT95	02NOV95	-27	WKK																									
SE3001D6	8	8	13NOV95	27NOV95	-22	NFK																									
SE3001E6	8	8	20NOV95	04DEC95	-22	NFK																									
SE3001F6	4	4	05DEC95	11DEC95	-22	NFK																									
ELECTRICAL FOR FEEDWATER/CONDENSATE PUMPS																															
SE30017	10	10	05MAY95	18MAY95	66	WKK																									
SE3001B7A	5	5	19MAY95	25MAY95	66	WKK																									

										1996													
										1995													
										D	J	J	F	M	A	M	J	J	A	S	O	N	D
										O N D J F M A M J J A S O N D													
Activity	ID	Qty	Dur	Unit	Start	Finish	Float	Unit	EAU														
										RACEWAY DESIGN FOR FEED/COND PUMPS													
SE3001A7		10	10	26MAY95	09JUN95		66	WKK		CABLE ROUTING DESIGN FOR FEED/COND PUMPS													
SE3001B7		10	10	05JUN95	16JUN95		66	WKK		INSTALL RACEWAYS FOR FEED/COND PUMPS													
SE3001D7		4	4	26JUN95	29JUN95		52	NFK		PULL CABLES FOR FEED/COND PUMPS													
SE3001E7		4	4	03JUL95	10JUL95		52	NFK		TERMINATE CONNECTIONS-PU2000A&B CONDENSATE PUMPS													
SE3001F7		2	2	20SEP95	21SEP95		12	NFK		TERMINATE CONNECTIONS-PU2001A&B CONDENSATE PUMPS													
SE3001F7F		4	4	20SEP95	26SEP95		2	NFK															
										BOILER/STEAM/CONDENSATE													
GS095D		10	10	10/07APR95	20APR95		72	GAM		REVIEW/DEL Feedwater/Condensate DWGS/BM TO SITE													
CGS130A		16	16	05JUL95	01AUG95		33	NFK		INSTALL CONDENSATE WATER PIPING SYSTEM (MWK)													
CGS130AF		12	12	05JUL95	25JUL95		37	NFK		INSTALL CONDENSATE WATER PIPING SYSTEM (FW)													
										I&C STEAM/CONDENSATE													
SG09180		5	5	10/07APR95	13APR95		-12	JCH		REVIEW & CRITIQUE THE STEAM/COND P&ID'S													
SG09060		31	31	14APR95	26MAY95		-12	JCH		DEV STM/COND INSTR INSTALLATION DETAILS (S-2000)													
SG09190		23	23	14APR95	16MAY95		90	JCH		CREATE AN I&C BM FOR SYSTEM 2000 STEAM/COND													
SG09070		34	34	30MAY95	17JUL95		-12	JCH		DEV INST LOOP DRAWINGS (S-2000) STEAM/COND													
										OPS - SYSTEM COMPLETE													
FIN2000		1	1	16DEC95	16DEC95		3/8	NFK		COMPLETE SYSTEM 2000 (MWK SIDE)													
										2100 COOLING CIRC SERVICE WATER													
										COOLING TOWER													
GS111		1	1	11/2APR95*	12APR95		-2	GAM		I Receive/Evaluate Cooling Tower Bldgs													
SMCC8		10	10	13APR95	26APR95		-2	GAM		GIVE COOLING TOWER MCC LOAD INFO TO ELECTRICAL													
GS114		30	30	28APR95	09JUN95		-40	GAM		Review Cooling Tower Vendor Dwg's													
GS115		90	90	12JUN95	17OCT95		-40	GAM		Fabricate/Deliver Cooling Tower													
CL13530		16	16	18OCT95	14NOV95		-32	NFK		ERECT COOLING TOWER													
										COOLING TOWER FOUNDATIONS													
SL13530		20	20	13APR95	10MAY95		11	DLE		PREP COOLING TOWER CONCRETE FOUNDATIONS													
SL13530D		0	0		10MAY95		11	DLE		DEL COOLING TOWER CONCRETE FOUNDATION DWGS													
CL13530		20	20	12JUN95	17JUL95		8	NFK		POUR COOLING TOWER CONCRETE FOUNDATIONS													
										INTAKE STRUCTURE MODS													
SL007		15	15	10/07APR95	27APR95		85	DLE		DESIGN INTAKE STRUCTURE MODS													
CL007		20	20	28APR95	25MAY95		85	DLE		ERECT INTAKE STRUCTURE MODS													
SL006		0	0		27APR95		67	DLE		DEL THE INTAKE STRUCTURE MODS DWGS TO SITE													
										PRIMARY COOLING WATER PUMPS													
CL14430		16	16	12JUL95	08AUG95		23	NFK		INSTALL CIRC WATER PUMPS PU2103A,B,C,D													
SMCC9		10	10	26JUL95	08AUG95		-61	GAM		GIVE CIRC WATER PUMP MCC LOAD TO ELECTRICAL													
										COOLING WATER PIPING													
GS104		24	7	10/FEB95A	17APR95		27	GAM		Prepare Circ/Cooling Water Piping Design													
GS102		5	5	11APR95	17APR95		27	GAM		Prepare Circ/Cooling Water Piping P&ID's (4 DWG)													
GS2109		20	20	17APR95*	12MAY95		89	GAM		PREPARE CIRC WATER SYSTEM DWGS													
SL14532		20	20	18APR95	15MAY95		398	GAM		PROCURE & DELIVER COOLING WATER PIPING													
GS128		10	10	15MAY95*	26MAY95		79	GAM		Prepare Circ/Cooling Water Detail Design Dwgs													
										COOLING WATER PUMP FOUNDATIONS													
SEEMBED8		10	10	10/07APR95	20APR95		50	WKK		ELEC EMBED DESIGN CIRC WATER PUMP FND													

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996											
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
SL14630	18	18	07APR95	02MAY95	32	DLE																								
SL14630D	0	0		02MAY95	32	DLE																								
CL14630	8	8	01JUN95	14JUN95	25	NFK																								
SERVICE WATER PUMPS																														
CL14936	12	12	25JUL95	14AUG95	36	NFK																								
SMCC10	10	10	26JUL95	08AUG95	-50	GAM																								
COOLING TOWER MAKE-UP WATER PUMPS																														
CGS139B	8	8	12JUL95	25JUL95	39	NFK																								
HEAT EXCHANGER																														
SL15130A	60	60	07APR95	30JUN95	375	GAM																								
CL15130A	8	8	03JUL95	17JUL95	300	NFK																								
STORAGE TANKS																														
GS124A	26	26	21APR95	26MAY95	14	GAM																								
SL15230A	50	50	21APR95	30JUN95	-10	GAM																								
SL15230	32	32	03JUL95	28AUG95	-8	GAM																								
I&C WIRING FOR CIRC WATER SYSTEM																														
SE34013	20	20	07APR95	04MAY95	-5	WKK																								
SE3401B3A	20	20	05MAY95	02JUN95	-5	WKK																								
SE3401A3	20	20	05JUN95	30JUN95	-5	WKK																								
SE3401B3	20	20	19JUN95	17JUL95	-5	WKK																								
SE3401C3	10	10	11JUL95	24JUL95	-5	WKK																								
SE3401D3	8	8	25JUL95	07AUG95	-4	NFK																								
SE3401E3	8	8	01AUG95	14AUG95	-4	NFK																								
SE3401F3	4	4	15AUG95	21AUG95	-4	NFK																								
ELECTRICAL FOR COOLING TOWER																														
SE30018	20	20	13APR95	10MAY95	44	WKK																								
SE3001B8A	20	20	11MAY95	08JUN95	44	WKK																								
SE3001A8	20	20	09JUN95	07JUL95	44	WKK																								
SE3001B8	20	20	23JUN95	21JUL95	44	WKK																								
SE3001D8	8	8	31JUL95	10AUG95	35	NFK																								
SE3001E8	8	8	20SEP95	03OCT95	10	NFK																								
SE3001F8	4	4	15NOV95	21NOV95	-14	NFK																								
ELECTRICAL FOR COOLING/SERVICE WATER PUMPS																														
SE30019	10	10	07APR95	20APR95	83	WKK																								
SE3001B9A	5	5	21APR95	27APR95	83	WKK																								
SE3001A9	10	10	28APR95	11MAY95	83	WKK																								
SE3001B9	10	10	12MAY95	25MAY95	83	WKK																								
SE3001D9	4	4	05JUN95	08JUN95	66	NFK																								
SE3001E9	4	4	12JUN95	15JUN95	66	NFK																								
SE3001F9	2	2	20SEP95	21SEP95	14	NFK																								
ELECTRICAL FOR SERVICE WATER PUMPS																														
SE30019U	10	10	07APR95	20APR95	85	WKK																								
SE3001B9AU	5	5	21APR95	27APR95	85	WKK																								

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996												
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
SE3001A9U	10	10	28APR95	11MAY95	85	WKK																									
SE3001B9U	10	10	12MAY95	25MAY95	85	WKK																									
SE3001D9U	4	4	05JUN95	08JUN95	68	NFK																									
SE3001E9U	4	4	12JUN95	15JUN95	68	NFK																									
SE3001F9U	2	2	20SEP95	21SEP95	16	NFK																									
ELECTRICAL FOR COOLING WATER PUMPS																															
SE30019V	10	10	07APR95	20APR95	90	WKK																									
SE3001B9AV	5	5	21APR95	27APR95	90	WKK																									
SE3001A9V	10	10	28APR95	11MAY95	90	WKK																									
SE3001B9V	10	10	12MAY95	25MAY95	90	WKK																									
SE3001D9V	4	4	05JUN95	08JUN95	72	NFK																									
SE3001E9V	4	4	12JUN95	15JUN95	72	NFK																									
SE3001F9V	2	2	20SEP95	21SEP95	20	NFK																									
ELECTRICAL FOR CT MAKE-UP WATER PUMPS																															
SE30019W	10	10	07APR95	20APR95	75	WKK																									
SE3001B9AW	5	5	21APR95	27APR95	75	WKK																									
SE3001A9W	10	10	28APR95	11MAY95	75	WKK																									
SE3001B9W	10	10	12MAY95	25MAY95	75	WKK																									
SE3001D9W	4	4	05JUN95	08JUN95	60	NFK																									
SE3001E9W	4	4	12JUN95	15JUN95	60	NFK																									
SE3001F9W	2	2	20SEP95	21SEP95	8	NFK																									
ELECTRICAL FOR RAW WATER PUMPS																															
SE30019X	10	10	07APR95	20APR95	37	WKK																									
SE3001B9AX	5	5	21APR95	27APR95	37	WKK																									
SE3001A9X	10	10	28APR95	11MAY95	37	WKK																									
SE3001B9X	10	10	12MAY95	25MAY95	37	WKK																									
SE3001D9X	4	4	05JUN95	08JUN95	30	NFK																									
SE3001E9X	4	4	12JUN95	15JUN95	30	NFK																									
SE3001F9X	2	2	09AUG95	10AUG95	1	NFK																									
COOLING/CIRC WATER																															
CGS130	16	16	19JUN95	17JUL95	300	NFK																									
CGS130CW	16	16	15NOV95	13DEC95	-32	NFK																									
SERVICE WATER SYSTEM																															
GS135	67	7	13JAN95A	17APR95	45	GAM																									
GS134	5	5	07APR95	13APR95	47	GAM																									
GS137	20	20	18APR95	15MAY95	45	GAM																									
SEEMBED9	10	10	16MAY95	30MAY95	55	WKK																									
SLT4931	10	10	16MAY95	30MAY95	45	DLE																									
SLT4931D	0	0		30MAY95	45	DLE																									
CGS139	2	2	26JUN95	27JUN95	22	NFK																									
CLT4931	2	2	28JUN95	29JUN95	36	NFK																									
RAW WATER																															
CI09130A	60	12	16JAN95A	27APR95	343	NFK																									

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996													
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	
GS2998A	20	20	07APR95	04MAY95	47	GAM																										
CI09130M	0	0		06APR95	-19	NFK																										
GS2998B	20	20	12JUL95	08AUG95	1	GAM																										
I&C COOLING/CIRC WATER																																
SG09200	10	10	13APR95	26APR95	27	JLH																										
SG09210	21	21	27APR95	25MAY95	27	JLH																										
OPS - COOLING WATER																																
TUSYS2102	1	1	19AUG95	19AUG95	61	C_P																										
RDY2102	0	0		19AUG95	61	C_P																										
SUCL2100	1	1	20AUG95	20AUG95	61	C_P																										
RDY2100	0	0		28SEP95	30	C_P																										
SOPU212A	1	1	07OCT95	07OCT95	0	C_P																										
SUFN2101	1	1	13NOV95	13NOV95	0	C_P																										
SUFN2103	1	1	13NOV95	13NOV95	0	C_P																										
SUFN2104	1	1	13NOV95	13NOV95	0	C_P																										
SUFN2105	1	1	13NOV95	13NOV95	0	C_P																										
SUFN2106	1	1	13NOV95	13NOV95	0	C_P																										
SUFN2108	1	1	13NOV95	13NOV95	0	C_P																										
SUFN2109	1	1	13NOV95	13NOV95	0	C_P																										
SUFN2110	1	1	13NOV95	13NOV95	0	C_P																										
SUFN2111	1	1	13NOV95	13NOV95	0	C_P																										
SUFN2112	1	1	13NOV95	13NOV95	0	C_P																										
FLSYS2102	5	5	15NOV95	19NOV95	-13	C_P																										
SUFN2102	1	1	28NOV95	28NOV95	-26	C_P																										
SUFN2107	1	1	28NOV95	28NOV95	-26	C_P																										
RDY2103	0	0		28NOV95	-26	C_P																										
2200 SERVICE AIR																																
SERVICE/INSTRUMENT AIR SYSTEM																																
SEEMB10	10	10	10MAR95A	20APR95	28	WKK																										
GS142	5	5	07APR95	13APR95	23	GAM																										
GS152	10	10	07APR95	20APR95	9	GAM																										
SMCC11	10	10	07APR95	20APR95	27	GAM																										
SGS154	10	10	14APR95	27APR95	23	DLE																										
GS154	20	20	21APR95	18MAY95	49	GAM																										
SM15430	60	60	21APR95	17JUL95	9	GAM																										
SGS155	0	0	28APR95		23	DLE																										
SGS156	10	10	28APR95	11MAY95	23	DLE																										
CSGS154	12	12	15MAY95	05JUN95	18	NFK																										
CM15430	8	8	18JUL95	31JUL95	7	NFK																										
CM15510	16	16	18JUL95	14AUG95	7	NFK																										
HIGH PRESSURE INSTRUMENT AIR																																
GS149P	20	10	24MAR95A	20APR95	5	GAM																										
SM15430P	50	50	21APR95	30JUN95	54	GAM																										

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996											
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
SMCC11P	10	10	21APR95	04MAY95	425	GAM																								
CM15430P	8	8	03JUL95	17JUL95	43	NFK																								
ELECTRICAL FOR SERVICE AIR SYSTEM																														
SE300191	20	20	21APR95	18MAY95	40	WKK																								
SE3001B91A	20	20	19MAY95	16JUN95	40	WKK																								
SE3001A91	20	20	19JUN95	17JUL95	40	WKK																								
SE3001B91	20	20	03JUL95	31JUL95	40	WKK																								
SE3001D91	8	8	08AUG95	21AUG95	32	NFK																								
SE3001E91	8	8	15AUG95	28AUG95	32	NFK																								
SE3001F91	4	4	20SEP95	26SEP95	20	NFK																								
2300 AUX FUELS																														
CONCRETE FOUNDATIONS																														
SN15830	20	20	14JUN95	12JUL95	-7	DLE																								
SN15820	0	0	13JUL95		-7	DLE																								
CN15830	20	20	27JUL95	30AUG95	-6	NFK																								
FENCING																														
DCU20008A	8	8	04DEC95	14DEC95	-18	NFK																								
ELECTRICAL FOR AUX FUEL SYSTEM																														
SE300192	20	20	13JUL95	09AUG95	-24	WKK																								
SE3001B92A	20	20	10AUG95	07SEP95	-24	WKK																								
SE3001A92	20	20	08SEP95	05OCT95	-24	WKK																								
SE3001B92	20	20	22SEP95	19OCT95	-24	WKK																								
SE3001D92	8	8	30OCT95	09NOV95	-20	NFK																								
SE3001E92	8	8	06NOV95	16NOV95	-20	NFK																								
SE3001F92	4	4	20NOV95	27NOV95	-20	NFK																								
PROPANE SYSTEM																														
GS161	59	17	01NOV94A	01MAY95	-54	GAM																								
GS142B	5	5	07APR95	13APR95	98	GAM																								
GS167	30	30	02MAY95	13JUN95	-54	GAM																								
GS170	20	20	14JUN95	12JUL95	-24	GAM																								
SMCC12	10	10	14JUN95	27JUN95	-54	GAM																								
SN15730	80	80	14JUN95	05OCT95	-17	GAM																								
GS171	15	15	13JUL95	02AUG95	36	GAM																								
CN15730	8	8	09OCT95	19OCT95	-14	NFK																								
CN15930	12	12	18OCT95	07NOV95	-14	NFK																								
DIESEL SYSTEM																														
GS174	4	4	10APR95	13APR95	16	GAM																								
CGS174	8	8	17APR95	27APR95	16	NFK																								
HEAT TRACE - PROPANE HEATER																														
SF0459-1	10	10	28APR95	11MAY95	-59	WKK																								
SF0459-1A	10	10	12MAY95	25MAY95	-59	WKK																								
SF0459-2	10	10	26MAY95	09JUN95	-59	WKK																								
SF0459-3	10	10	12JUN95	23JUN95	-59	WKK																								

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996											
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
CF04597C	16	16	26JUN95	24JUL95	-47	NFK																								
SF04597C	0	0	26JUN95		-59	WKK																								
2400 FIRE PROTECTION																														
FIRE PROT GEN ARRANGEMENT																														
DC0162COA	33	33	10APR95	06JUN95	-6	NFK																								
DC0162055	2	2	10APR95	11APR95	24	NFK																								
DC0162015	2	2	30MAY95	31MAY95	-2	NFK																								
DC0162000	1	1	01JUN95	01JUN95	-2	NFK																								
DC0162010	5	5	07JUN95*	11JUN95	-12	NFK																								
ELECTRICAL FOR FIRE PUMP HOUSE																														
SE3001D93	8	8	10APR95	20APR95	46	NFK																								
SE3001E93	8	8	17APR95	27APR95	46	NFK																								
SE3001F93	4	4	20SEP95	26SEP95	-33	NFK																								
FIRE PROTECTION WATER SYSTEM																														
GS193	5	5	07APR95	13APR95	139	GAM																								
FIRE PROTECTION PROCESS STRUCTURE																														
GS200	22	22	01MAY95*	31MAY95	86	GAM																								
GS199	0	0		31MAY95	86	GAM																								
GS201	20	20	01JUN95	28JUN95	86	GAM																								
GS201A	16	16	29JUN95	27JUL95	68	NFK																								
GS201AA	16	16	31JUL95	24AUG95	68	NFK																								
FIRE PROT PUMP CONTROL																														
SGF305	10	10	07APR95	20APR95	-2	NFK																								
SGF0306B	10	10	24APR95	09MAY95	-2	NFK																								
SGF0306C	10	10	10MAY95	25MAY95	-2	NFK																								
2500 WASTE WATER TREATMENT																														
WASTE WATER GENERAL ARANGMENT																														
GS205A	10	6	24MAR95A	14APR95	31	GAM																								
GS209	40	20	07APR95	04MAY95	-73	GAM																								
GS205	5	5	10APR95	14APR95	31	GAM																								
GS210	1	1	05MAY95	05MAY95	-73	GAM																								
GS212	1	1	08MAY95	08MAY95	68	NFK																								
OIL SEPARATOR																														
CP16930	12	12	14AUG95	31AUG95	-11	NFK																								
CHEMICAL INJECTION PUMP																														
SS17930	65	65	08MAY95	08AUG95	-73	GAM																								
CS17930	2	2	09AUG95	10AUG95	-58	NFK																								
ELECTRICAL FOR WASTE WATER PUMPS																														
SE30019XA	10	10	07APR95	20APR95	70	WKK																								
SE30019XB	5	5	21APR95	27APR95	70	WKK																								
SE30019XC	10	10	28APR95	11MAY95	70	WKK																								
SE30019XD	10	10	12MAY95	25MAY95	70	WKK																								
SE30019XF	4	4	05JUN95	08JUN95	56	NFK																								

Activity ID		Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD
<div> <div> <div>1995</div> <div>1996</div> </div> <div> <div>D</div> <div>J</div> <div>F</div> <div>M</div> <div>A</div> <div>M</div> <div>J</div> <div>J</div> <div>A</div> <div>S</div> <div>O</div> <div>N</div> <div>D</div> <div>J</div> <div>F</div> <div>M</div> <div>A</div> <div>M</div> <div>J</div> <div>J</div> <div>A</div> <div>S</div> <div>O</div> <div>N</div> <div>D</div> </div> </div>							
SE30019XG	4	4	12JUN95	15JUN95	56	NFK	
SE30019XI	2	2	20SEP95	21SEP95	4	NFK	
WASTE WATER PUMPS							
CP16530	4	4	07AUG95	10AUG95	-11	NFK	
I&C WASTE WATER TREATMENT							
SG099R	10	10	17APR95	28APR95	31	JLH	
SG099S	25	25	01MAY95	05JUN95	61	JLH	
SG099T	57	57	01MAY95	20JUL95	31	JLH	
SG099U	33	33	05JUN95	20JUL95	64	JLH	
OPS - SYSTEM COMPLETE							
FIN2500	0	0	15AUG95*		0	C_P	
RDY2500	1	1	29SEP95*	29SEP95	0	C_P	
2500 NITROGEN SYSTEM							
NITROGEN SYSTEM FOUNDATION							
SEEMB212	10	10	18APR95	01MAY95	26	WKK	
SQ17030	34	34	18APR95	05JUN95	-8	DLE	
CQ17030	16	16	05JUL95	01AUG95	-6	NFK	
I&C WIRING FOR NITROGEN SYSTEM							
SE340131	20	20	27JUL95	23AUG95	-43	WKK	
SE3401B31A	20	20	24AUG95	21SEP95	-43	WKK	
SE3401A31	20	20	22SEP95	19OCT95	-43	WKK	
SE3401B31	20	20	22SEP95	19OCT95	-43	WKK	
SE3401C31	10	10	13OCT95	26OCT95	-43	WKK	
SE3401D31	8	8	30OCT95	09NOV95	-35	NFK	
SE3401E31	8	8	06NOV95	16NOV95	-35	NFK	
SE3401F31	4	4	20NOV95	27NOV95	-35	NFK	
ELECTRICAL FOR NITROGEN SYSTEM							
SE300194	20	20	20APR95	17MAY95	15	WKK	
SE3001B94A	20	20	18MAY95	15JUN95	15	WKK	
SE3001A94	20	20	16JUN95	14JUL95	15	WKK	
SE3001B94	20	20	30JUN95	28JUL95	15	WKK	
SE3001D94	8	8	07AUG95	17AUG95	12	NFK	
SE3001E94	8	8	14AUG95	24AUG95	12	NFK	
SE3001F94	4	4	28SEP95	04OCT95	-6	NFK	
NITROGEN GENERATION SYSTEM							
GS224	14	7	24MAR95A	17APR95	-80	GAM	
S4KV	10	10	07APR95	20APR95	435	GAM	
SMCC13	10	10	07APR95	20APR95	6	GAM	
GS226	2	2	18APR95	19APR95	-80	GAM	
GS227	252	252	20APR95	17APR95	-80	GAM	
CGS229	20	20	18APR95	22MAY95	-64	NFK	
NITROGEN HP							
GS227A	80	80	08MAY95	29AUG95	-9	GAM	

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAL	1995												1996											
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
CGS227A	43	43	30AUG95	14NOV95	-7	NFK																								
NITROGEN TANKS & VAPORIZER																														
GS227B	90*	80*	24MAR95A	31JUL95	9	GAM																								
CGS229B	20	20	23AUG95	27SEP95	-6	NFK																								
I&C NITROGEN																														
SG09220	10	10	13APR95	26APR95	-43	JCH																								
SG09100	50	50	27APR95	07JUL95	-35	JCH																								
SG09230	33	33	11MAY95	27JUN95	-43	JCH																								
SG09110	20	20	28JUN95	26JUL95	-43	JCH																								
CG09110	35	35	10JUL95	07SEP95	5	NFK																								
2700 WATER TREATMENT (DEMIN)																														
CHEMICAL FEED DESIGN																														
GS232	106*	17*	01DEC94A	01MAY95	99	GAM																								
GS234	15	15	07APR95	27APR95	11	GAM																								
GS244C	10	10	28APR95	11MAY95	71	DLE																								
GS245	10	10	28APR95	11MAY95	91	GAM																								
SEEMBED13	10	10	28APR95	11MAY95	71	WKK																								
SMCC14	10	10	28APR95	11MAY95	11	GAM																								
CGS246C	8	8	30MAY95	12JUN95	56	NFK																								
DEMIN STORAGE TANK FND																														
CR17730	8	8	10APR95	20APR95	72	NFK																								
CR17730T	1	1	15MAY95	15MAY95	72	NFK																								
WATER TREATMENT PIPING																														
CR17830	100	30	31JAN95A	16AUG95	19	NFK																								
DEMIN WATER PUMPS PU 2700 & 2701																														
SR17828	20	20	12JUL95	08AUG95	27	NFK																								
I&C WIRING FOR DEMIN																														
SE340132	10	10	11MAY95	24MAY95	53	WKK																								
SE3401B32A	5	5	25MAY95	01JUN95	53	WKK																								
SE3401A32	10	10	02JUN95	15JUN95	53	WKK																								
SE3401B32	10	10	09JUN95	22JUN95	53	WKK																								
SE3401C32	5	5	16JUN95	22JUN95	53	WKK																								
SE3401D32	2	2	27JUN95	28JUN95	42	NFK																								
SE3401E32	2	2	28JUN95	29JUN95	42	NFK																								
SE3401F32	2	2	14AUG95	15AUG95	19	NFK																								
ELECTRICAL FOR DEMIN																														
SE300195	10	10	28APR95	11MAY95	47	WKK																								
SE3001B95A	5	5	12MAY95	18MAY95	47	WKK																								
SE3001A95	10	10	19MAY95	02JUN95	47	WKK																								
SE3001B95	10	10	05JUN95	16JUN95	47	WKK																								
SE3001D95	8	8	26JUN95	10JUL95	37	NFK																								
SE3001E95	8	8	03JUL95	17JUL95	37	NFK																								
SE3001F95	1	1	17AUG95	17AUG95	19	NFK																								

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996											
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
I&C DEMIN																														
SG09240	5	5	14APR95	20APR95	24	JLH																								
SG09120	20	20	21APR95	18MAY95	53	JLH																								
SG09130	10	10	27APR95	10MAY95	53	JLH																								
SG09250	33	33	04MAY95	20JUN95	24	JLH																								
CG09139	25	25	28JUN95	10AUG95	19	JLH																								
2800 SAFETY/SECURITY																														
PROCESS & AREA LIGHTING																														
CF04530B	71	16	03JAN95A	04MAY95	81	NFK																								
SF04510CA	37	37	07APR95	30MAY95	-10	WKK																								
SF04511	50	50	07APR95	16JUN95	-3	WKK																								
SF04510C	5	5	31MAY95	06JUN95	-1	WKK																								
SF04526C	1	1	07JUN95	07JUN95	-1	WKK																								
SF04530C	30	30	08JUN95	20JUL95	-1	WKK																								
CF04530	60	60	19JUN95	03OCT95	-2	NFK																								
CF04532	40	40	24JUL95	02OCT95	-1	NFK																								
FENCING																														
CA02A045A	21	21	03JUN95	08JUL95	12	NFK																								
OPS - SYSTEM COMPLETE																														
FIN2800	0	0		03OCT95	-5	NFK																								
2800 MISC UTILITIES																														
PIPE TRENCH																														
CE400	24	24	08MAY95	19JUN95	315	NFK																								
SPEC FOR MISC PUMP'S																														
GS295D	20	20	07APR95	04MAY95	-61	GAM																								
GS297C	21	21	12MAY95	12JUN95	-61	GAM																								
GS299C	30	30	13JUN95	25JUL95	-61	GAM																								
GS299D	20	20	13JUN95	11JUL95	-38	GAM																								
POTABLE WATER SYSTEM																														
SS18430	20	20	07APR95	04MAY95	-4	GAM																								
CS18430	16	16	08MAY95	05JUN95	-4	NFK																								
CE400A	8	8	12JUL95	25JUL95	-30	NFK																								
SANITARY WATER SYSTEM																														
SS18630	82	10	28NOV94A	20APR95	435	GAM																								
I&C WIRING FOR MISC UTILITIES																														
SE340133	10	10	26JUN95	10JUL95	25	WKK																								
SE3401B33A	5	5	11JUL95	17JUL95	25	WKK																								
SE3401A33	10	10	18JUL95	31JUL95	25	WKK																								
SE3401B33	10	10	01AUG95	14AUG95	25	WKK																								
SE3401C33	10	10	01AUG95	14AUG95	25	WKK																								
SE3401D33	4	4	21AUG95	24AUG95	20	NFK																								
SE3401E33	4	4	28AUG95	31AUG95	20	NFK																								
SE3401F33	2	2	05SEP95	06SEP95	20	NFK																								

Activity ID	Orig Dur	Revised Dur	Early Start	Early Finish	Total Float	LAD	1995												1996												
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
ELECTRICAL FOR MISC UTILITIES																															
SE300195	20	20	07APR95	04MAY95	44	WKK																									
SE3001B95A	20	20	05MAY95	02JUN95	44	WKK																									
SE3001A95	10	10	05JUN95	16JUN95	44	WKK																									
SE3001B95	10	10	19JUN95	30JUN95	44	WKK																									
SE3001D95	8	8	10JUL95	20JUL95	35	NFK																									
SE3001E95	8	8	17JUL95	27JUL95	35	NFK																									
SE3001F95	4	4	20SEP95	26SEP95	6	NFK																									
THERMAL INSULATION DESIGN																															
GS256A	23	23	01JUN95	03JUL95	17	GAM																									
GS256C	39	39	16AUG95	10OCT95	17	GAM																									
I&C MISC UTILITIES																															
SG09260	61	15	20FEB95A	27APR95	25	JLH																									
SG09140	20	20	28APR95	25MAY95	25	JLH																									
SG09270	22	22	28APR95	30MAY95	69	JLH																									
SG09150	20	20	26MAY95	23JUN95	25	JLH																									
CG09150	12	12	26JUN95	17JUL95	47	NFK																									
OPS - SYSTEM COMPLETE																															
FIN2900	0	0		19JUN95	554	NFK																									
3000 ELECTRICAL NON-SYSTEM																															
ELECTRICAL ERECTION																															
SF02726	0	0		06APR95	41	WKK																									
PSDF's SUBSTATION																															
CFSUBSTA	45	45	14MAR95A	27JUN95	-18	NFK																									
ENTRANCE CABLE BUS																															
SF04610	15	7	31JAN95A	17APR95	-34	WKK																									
SF04620	10	10	18APR95	01MAY95	-34	WKK																									
SF04624	1	1	18APR95	18APR95	-25	WKK																									
SF04622	5	5	02MAY95	08MAY95	-34	WKK																									
SF04628	1	1	09MAY95	09MAY95	-34	WKK																									
SF04626A	15	15	10MAY95	31MAY95	-34	WKK																									
SF04626B	5	5	01JUN95	07JUN95	-34	WKK																									
SF04630	15	15	08JUN95	28JUN95	-34	NFK																									
CF04630	12	12	29JUN95	20JUL95	-27	NFK																									
4160 SWITCHGEAR																															
SF03026C	5	5	10MAR95A	13APR95	440	WKK																									
CF-MACP-P	4	4	10APR95	13APR95	100	NFK																									
CF03030	8	8	22JUN95	06JUL95	-23	NFK																									
CF4KV-BAC	4	4	10JUL95	13JUL95	108	NFK																									
CF4KV-DG	4	4	10JUL95	13JUL95	299	NFK																									
CF4KV-MAC	4	4	10JUL95	13JUL95	51	NFK																									
CF4KV-N2	4	4	10JUL95	13JUL95	38	NFK																									
CF4KV-XF1	4	4	10JUL95	13JUL95	299	NFK																									

1995							1996													
D	J	J	A	M	A	M	J	J	A	S	O	N	D	J	J	A	S	O	N	D
<div>Activity ID</div> <div>Orig Dur</div> <div>Item Dur</div> <div>Early Start</div> <div>Early Finish</div> <div>Total Float</div> <div>EAU</div>																				
CF4KV-XF2 4 4 10JUL95 13JUL95 299 NFK																				
CF4KV-XF3 4 4 10JUL95 13JUL95 299 NFK																				
CF4KV-XF4 4 4 10JUL95 13JUL95 299 NFK																				
CF4KV-XF5 4 4 10JUL95 13JUL95 299 NFK																				
CF4KV-BACT 2 2 17JUL95 18JUL95 108 NFK																				
CF4KV-DGT 2 2 17JUL95 18JUL95 299 NFK																				
CF4KV-MAC 2 2 17JUL95 18JUL95 51 NFK																				
CF4KV-N2T 2 2 17JUL95 18JUL95 38 NFK																				
CF4KV-XF1T 2 2 17JUL95 18JUL95 299 NFK																				
CF4KV-XF2T 2 2 17JUL95 18JUL95 299 NFK																				
CF4KV-XF3T 2 2 17JUL95 18JUL95 299 NFK																				
CF4KV-XF4T 2 2 17JUL95 18JUL95 299 NFK																				
CF-MAC-T 4 4 20SEP95 26SEP95 13 NFK																				
CF4KV-GT 4 4 27DEC95 03JAN96 14 NFK																				
CF-UST-GT1 2 2 04JAN96 08JAN96 14 NFK																				
CF4KV-GT1 2 2 04JAN96 08JAN96 14 NFK																				
480 SWITCHGEAR																				
SFA3022 49' 21' 28FEB95A 05MAY95 31 WKK																				
#1 480V SWITCHGEAR																				
CFA3024 4 4 22JUN95 28JUN95 -1 NFK																				
CFXF1-FW2 4 4 07SEP95 13SEP95 -39 NFK																				
CFXF1-U12 4 4 07SEP95 13SEP95 20 NFK																				
CFXF1-FW2T 2 2 14SEP95 18SEP95 -39 NFK																				
CFXF1-U12T 2 2 14SEP95 18SEP95 20 NFK																				
#2 480V SWITCHGEAR																				
CFA3024A 4 4 22JUN95 28JUN95 4 NFK																				
CFXF2-MWK 4 4 07SEP95 13SEP95 13 NFK																				
CFXF2-MWK 4 4 07SEP95 13SEP95 4 NFK																				
CFXF2-U11 4 4 07SEP95 13SEP95 5 NFK																				
CFXF2-MW2 2 2 14SEP95 18SEP95 4 NFK																				
CFXF2-MWK 2 2 14SEP95 18SEP95 13 NFK																				
CFXF2-U11T 2 2 14SEP95 18SEP95 5 NFK																				
#3 480V SWITCHGEAR																				
CFA3024B 4 4 08MAY95 11MAY95 30 NFK																				
CFXF3-CT 4 4 07SEP95 13SEP95 10 NFK																				
CFXF3-CT2 4 4 07SEP95 13SEP95 5 NFK																				
CFXF3-FW1 4 4 07SEP95 13SEP95 2 NFK																				
CFXF3-UST 4 4 07SEP95 13SEP95 71 NFK																				
CFXF3-CT2T 2 2 14SEP95 18SEP95 5 NFK																				
CFXF3-CT1 2 2 14SEP95 18SEP95 10 NFK																				
CFXF3-FW1T 2 2 14SEP95 18SEP95 2 NFK																				
CFXF3-USTT 2 2 14SEP95 18SEP95 71 NFK																				

1995																					1996											
D J J A M J J																																

Activity ID	Ong Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996											
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
#4 480V SWITCHGEAR																														
CFA3024C	4	4	22JUN95	28JUN95	4	NFK																								
CFXF4-ASH	4	4	07SEP95	13SEP95	26	NFK																								
CFXF4-CH	4	4	07SEP95	13SEP95	-15	NFK																								
CFXF4-ESS4	4	4	07SEP95	13SEP95	-1	NFK																								
CFXF4-ASHT	2	2	14SEP95	18SEP95	26	NFK																								
CFXF4-CHT	2	2	14SEP95	18SEP95	-15	NFK																								
CFXF4-ES4T	2	2	14SEP95	18SEP95	-1	NFK																								
#5 480V SWITCHGEAR																														
CFA3024D	4	4	08MAY95	11MAY95	30	NFK																								
CFXF5-ESS1	4	4	07SEP95	13SEP95	10	NFK																								
CFXF5-ESS2	4	4	07SEP95	13SEP95	-33	NFK																								
CFXF5-ESS3	4	4	07SEP95	13SEP95	26	NFK																								
CFXF5-ES1T	2	2	14SEP95	18SEP95	10	NFK																								
CFXF5-ES2T	2	2	14SEP95	18SEP95	-33	NFK																								
CFXF5-ES3T	2	2	14SEP95	18SEP95	26	NFK																								
SWITCHGEAR BUILDING																														
SF04601	10	16	02MAR95A	28APR95	429	DLE																								
SF04601L	5	5	07APR95	13APR95	34	DLE																								
SF04601LA	19	19	14APR95	10MAY95	34	DLE																								
CF04601	12	12	10MAY95	31MAY95	-23	NFK																								
CF04601L	8	8	11MAY95	24MAY95	27	DLE																								
CF04601R	12	12	01JUN95	21JUN95	-23	NFK																								
SWITCHGEAR BUILDING FOUNDATION																														
CF046001	8	8	12APR95	25APR95	-23	NFK																								
CABLE TRAYS																														
CF03230	56"	48"	27MAR95A	29SEP95A		NFK																								
INSTRUMENT CABLE																														
SF03430	58	58	11APR95	30JUN95	31	WKK																								
CF03430A	78	78	03JUL95	16NOV95	25	NFK																								
POWER CABLE																														
SF03530	58	58	11APR95	30JUN95	-3	WKK																								
CABLE ROUTING																														
SF037A	232	155	05DEC94A	14NOV95	-10	WKK																								
SF03610	185	163	01FEB95A	28NOV95	177	WKK																								
SF037B	19	19	29NOV95	27DEC95	177	WKK																								
SF037C	19	19	29NOV95	27DEC95	177	WKK																								
ELECTRICAL BULKS																														
SF03726	119	100	27FEB95A	28AUG95	-10	WKK																								
SF03730	114"	104"	24MAR95A	01SEP95	85	NFK																								

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996												
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
SF038E	63	63	04MAY95	02AUG95	-43	WKK																									
SF038F	32	32	03AUG95	18SEP95	-43	WKK																									
SF038G	10	10	19SEP95	02OCT95	-43	WKK																									
ELEMENTARY DRAWINGS																															
SF02620	41	16	17FEB95A	28APR95	-10	WKK																									
SF039B	105	105	07APR95	05SEP95	340	WKK																									
SF039BA	20	20	07APR95	04MAY95	-1	WKK																									
SF039BB	20	20	01JUN95*	28JUN95	-19	WKK																									
GROUNDING																															
SF04110Z	65	20	24OCT94A	04MAY95	-18	WKK																									
SF04110A	65	65	05MAY95	07AUG95	-18	WKK																									
LIGHTNING PROTECTION																															
SF04210A	20	20	07APR95	04MAY95	-18	WKK																									
CF04210	62	62	08AUG95	27NOV95	-14	NFK																									
MCC BUILDINGS & FOUNDATIONS																															
CF43B01	20	8	19DEC94A	20APR95	1	NFK																									
CF43B01HV	7	7	07APR95*	13APR95	14	NFK																									
SF04340	0	0	20JUN95		-29	WKK																									
SF04345	20	20	19JUL95	15AUG95	-49	WKK																									
SFFLOAD	0	0		08AUG95	-49	WKK																									
SF04330	10	10	16AUG95	29AUG95	-49	WKK																									
ASH HANDLING MCC																															
CF-ASH	4	4	30AUG95	06SEP95	26	NFK																									
CF-ASH-S01	1	1	19SEP95	19SEP95	26	NFK																									
CF-ASH-S02	1	1	19SEP95	19SEP95	26	NFK																									
CF-ASH-S03	1	1	19SEP95	19SEP95	26	NFK																									
CF-ASH-S04	1	1	19SEP95	19SEP95	26	NFK																									
CF-ASH-S05	1	1	19SEP95	19SEP95	26	NFK																									
CF-ASH-S06	1	1	19SEP95	19SEP95	26	NFK																									
CF-ASH-S07	1	1	19SEP95	19SEP95	26	NFK																									
COAL HANDLING MCC																															
CF-CH	4	4	30AUG95	06SEP95	-15	NFK																									
CF-CH-S01	4	4	19SEP95	25SEP95	5	NFK																									
CF-CH-S02	4	4	19SEP95	25SEP95	-15	NFK																									
CF-CH-S03	4	4	19SEP95	25SEP95	-15	NFK																									
CF-CH-S04	4	4	19SEP95	25SEP95	-15	NFK																									
CF-CH-S05	4	4	19SEP95	25SEP95	-15	NFK																									
CF-CH-S06	4	4	19SEP95	25SEP95	15	NFK																									
CF-CH-S07	4	4	19SEP95	25SEP95	5	NFK																									
CF-CH-S08	4	4	19SEP95	25SEP95	5	NFK																									
CF-CH-S09	4	4	19SEP95	25SEP95	5	NFK																									
CF-CH-S10	4	4	19SEP95	25SEP95	5	NFK																									
CF-CH-S11	4	4	19SEP95	25SEP95	5	NFK																									

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
CF-CH-S12	4	4	19SEP95	25SEP95	5	NFK																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	</

Activity		Qty	Unit	Est. Start	Est. Finish	Early Float	Total Float	EAU
ID		Dur	Dur					
1995								
1996								
D J F M A M J J A S O N D J F M A M J J A S O N D								
CF-ES2-S08	1	1	19SEP95	19SEP95	264	NFK		I BREAKER HEAT TRACE PWR 480V PANEL B
CF-ES2-S09	1	1	19SEP95	19SEP95	-33	NFK		I STARTER JOCKEY PUMP PU2400
CF-ES2-S10	1	1	19SEP95	19SEP95	24	NFK		I STARTER QUENCH PUMP A PG0252
CF-ES2-S11	1	1	19SEP95	19SEP95	24	NFK		I STARTER QUENCH PUMP B PG0252
CF-ES2-S12	1	1	19SEP95	19SEP95	20	NFK		I STARTER SCS COOLING WTR PUMP PU2109A
ESSENTIAL #3 MCC								
CF-ESS3	4	4	30AUG95	06SEP95	26	NFK		I INSTALL ESSENTIAL #3 MCC
CF-ES3-S01	1	1	19SEP95	19SEP95	26	NFK		I STARTER HEAT XFER FLUID SYS FAN ME0540
CF-ES3-S02	1	1	19SEP95	19SEP95	26	NFK		I STARTER HEAT XFER FLUID SYS FEEDER ME0540
CF-ES3-S03	1	1	19SEP95	19SEP95	26	NFK		I STARTER HEAT XFER FLUID SYS HTR #1 ME0540
CF-ES3-S04	1	1	19SEP95	19SEP95	26	NFK		I STARTER HEAT XFER FLUID SYS HTR #2 ME0540
CF-ES3-S05	1	1	19SEP95	19SEP95	26	NFK		I STARTER HEAT XFER FLUID SYS PUMP #1 ME0540
CF-ES3-S06	1	1	19SEP95	19SEP95	26	NFK		I STARTER HEAT XFER FLUID SYS PUMP #2 ME0540
CF-ES3-S07	1	1	19SEP95	19SEP95	74	NFK		I STARTER SULFATOR AIR COMP CQ0601
ESSENTIAL #4 MCC								
CF-ESS4	4	4	30AUG95	06SEP95	-1	NFK		I INSTALL ESSENTIAL #4 MCC
CF-ES4-S01	1	1	19SEP95	19SEP95	20	NFK		I STARTER AIR COMPRESSOR CQ2201A
CF-ES4-S02	1	1	19SEP95	19SEP95	20	NFK		I STARTER AIR COMPRESSOR CQ2201B
CF-ES4-S03	1	1	19SEP95	19SEP95	36	NFK		I STARTER BATTERY CHARGER NO.2
CF-ES4-S04	1	1	19SEP95	19SEP95	14	NFK		I STARTER AUX FUELS LP GAS TRANSFER PUMP PU2300
CF-ES4-S05	1	1	19SEP95	19SEP95	-1	NFK		I STARTER NITROGEN PUMP
FW #1 MGC								
CF-FW1	4	4	30AUG95	06SEP95	2	NFK		I INSTALL FW #1 MGC
CF-FW1-S01	1	1	19SEP95	19SEP95	264	NFK		I BREAKER MISC POWER 120/208V PANEL A
CF-FW1-S02	1	1	19SEP95	19SEP95	72	NFK		I STARTER BOOSTER AIR COMP LUBE OIL CQ0251
CF-FW1-S03	1	1	19SEP95	19SEP95	72	NFK		I STARTER CARB. COAL FEEDER FDD252
CF-FW1-S04	1	1	19SEP95	19SEP95	6	NFK		I STARTER CHEMINJ PUMP PU2900B
CF-FW1-S05	1	1	19SEP95	19SEP95	72	NFK		I STARTER COMBUSTOR COAL FEEDER FDD253
CF-FW1-S06	1	1	19SEP95	19SEP95	8	NFK		I STARTER CT MAKEUP PUMP PU2102B
CF-FW1-S07	1	1	19SEP95	19SEP95	2	NFK		I STARTER FW CONDENSATE PUMP PU2001B
CF-FW1-S08	1	1	19SEP95	19SEP95	20	NFK		I STARTER FW COOLING WATER PUMP PU2110B
CF-FW1-S09	1	1	19SEP95	19SEP95	20	NFK		I STARTER SCS COOLING WATER PUMP PU2109B
CF-FW1-S10	1	1	19SEP95	19SEP95	16	NFK		I STARTER SERVICE WTR PUMP PU2101B
CF-FW1-S11	1	1	19SEP95	19SEP95	72	NFK		I STARTER FW SORBENT FEEDER FDD251
CF-FW1-S02T	1	1	20SEP95	20SEP95	72	NFK		I STARTER BOOSTER AIR COMP LUBE OIL CQ0251
FW #2 MGC								
CF-FW2	4	4	30AUG95	06SEP95	-39	NFK		I INSTALL FW #2 MGC
CF-FW2-S01	1	1	19SEP95	19SEP95	264	NFK		I BREAKER MISC POWER B 120/208V PANEL
CF-FW2-S02	1	1	19SEP95	19SEP95	4	NFK		I STARTER 60 TON CRANE
CF-FW2-S03	1	1	19SEP95	19SEP95	20	NFK		I STARTER AUX BOILER FD FAN FN2002
CF-FW2-S04	1	1	19SEP95	19SEP95	20	NFK		I STARTER AUX BOILER FEEDWATER PUMP PU2002
CF-FW2-S05	1	1	19SEP95	19SEP95	6	NFK		I STARTER CHEMINJ PUMP PU2900A
CF-FW2-S06	1	1	19SEP95	19SEP95	6	NFK		I STARTER CHEMINJ PUMP PU2900C

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float		1995												1996											
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
SA01DA	32	32	01JUN95*	17JUL95	41	DLE																								
SA01D	32	32	29DEC95*	13FEB96	62	DLE																								
SA01E	38	38	14FEB96	05APR96	62	DLE																								
4100 SERVICE/ADMIN BUILDING																														
SERVICE BUILDING ARCHITECTURAL																														
CC01230	88	10	22DEC94A	16APR95	-3	NFK																								
ELECTRICAL																														
CC01231	1	1	20SEP95*	20SEP95	5	NFK																								
OPS - SYSTEM COMPLETE																														
FIN-ADMIN	0	0	14APR95*		0	NFK																								
4200 WAREHOUSE																														
OPS - SYSTEM COMPLETE																														
FIN-WAREH	0	0	28APR95*		0	NFK																								

APPENDIX B

OPERATIONS - SHAKEDOWN SCHEDULE

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996												
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
100/101 COAL & LIMESTONE																															
OPS - COAL & LIMESTONE START-UP																															
SUCR104	1	1	15OCT95	15OCT95	0	C_P																									
SUCV100	1	1	15OCT95	15OCT95	0	C_P																									
SUCV101	1	1	15OCT95	15OCT95	0	C_P																									
SUCV102	1	1	15OCT95	15OCT95	0	C_P																									
SUCV103	1	1	15OCT95	15OCT95	0	C_P																									
SUXX11XK	5	5	15OCT95	19OCT95	0	C_P																									
SUXX16XK	5	5	15OCT95	19OCT95	0	C_P																									
SUME100	1	1	16OCT95	16OCT95	-18	C_P																									
SURCLM	1	1	17OCT95	17OCT95	-18	C_P																									
SUMLSYSK	3	3	20OCT95	22OCT95	-20	C_P																									
SUMLSYSL	3	3	20OCT95	22OCT95	-18	C_P																									
RDY0210K	0	0	24OCT95		17	C_P																									
SUME104A	3	3	24OCT95	26OCT95	17	C_P																									
RDY0220K	0	0	25OCT95		0	C_P																									
SUME167	3	3	02NOV95	04NOV95	-4	C_P																									
RDY0100K	0	0	13NOV95		0	C_P																									
RDY0150K	0	0	20NOV95		-19	C_P																									
SUME104N	1	1	02DEC95	02DEC95	-16	C_P																									
OPS - COAL FEEDER SYSTEM																															
TUSH210	1	1	07APR95	07APR95	211	C_P																									
SUSH210	1	1	30SEP95	30SEP95	38	C_P																									
INBH210	1	1	01OCT95	01OCT95	452	C_P																									
SUFD210	1	1	04OCT95	04OCT95	34	C_P																									
FCFD21A	1	1	05OCT95	05OCT95	34	C_P																									
FCFD21N	1	1	06OCT95	06OCT95	34	C_P																									
OPS - LIMESTONE FEEDER SYSTEM																															
INBH220	1	1	07APR95	07APR95	202	C_P																									
INSH210	1	1	07APR95	07APR95	626	C_P																									
INSH220	1	1	07APR95	07APR95	202	C_P																									
TUSH220	1	1	07APR95	07APR95	203	C_P																									
SUFD220	1	1	21SEP95	21SEP95	23	C_P																									
SUSH220	1	1	30SEP95	30SEP95	30	C_P																									
FCFD22A	1	1	01OCT95	01OCT95	30	C_P																									
200/400 PROCESS STRUCTURE																															
OPS - KELLOGG TRANSPORT REACTOR to PCD's																															
SUCY201	1	1	16OCT95	16OCT95	7	C_P																									
SURX203	1	1	16OCT95	16OCT95	7	C_P																									

Project Start 01JAN91
Project Finish 25JUL96
Data Date 07APR95
Plot Date 25APR95

Early Bar
Progress Bar
Critical Activity

PSR1

SOUTHERN COMPANY SERVICES
POWER SYSTEMS DEVELOPMENT FACILITY
OPERATIONS ACT ONLY BY AREA & STEP

Sheet 1 of 7

(c) Primavera Systems, Inc

Activity ID	Ong Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
SUFD602	1	1	06FEB96	06FEB96	23	C_P																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996												
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
LDLFL301	2	2	25OCT95	26OCT95	8	C_P																									
SUUVLV301	6	6	02DEC95	07DEC95	-59	C_P																									
TUFL301	2	2	03DEC95	04DEC95	-20	C_P																									
COMBUSTION POWER COMPANY GBF PCD																															
SUHX302	1	1	16JUN95	16JUN95	134	C_P																									
TUFL302	1	1	17JUN95	17JUN95	134	C_P																									
SUBL302	1	1	20SEP95	20SEP95	42	C_P																									
SUUVLV302	1	1	02DEC95	02DEC95	-29	C_P																									
SUFL302	2	2	03DEC95	04DEC95	-29	C_P																									
SUPCK302	7	7	05DEC95	11DEC95	-29	C_P																									
SUHTR302	7	7	12DEC95	18DEC95	-29	C_P																									
700 FINAL GAS CLEANUP																															
OPS - FINAL GAS CLEANUP																															
RDY0510K	0	0	07APR95		198	C_P																									
SUBL700	1	1	21SEP95	21SEP95	42	C_P																									
SUFL700	1	1	02DEC95	02DEC95	-32	C_P																									
INME700	1	1	03DEC95	03DEC95	-32	C_P																									
2000 BOILER/STEAM/CONDENSATE																															
OPS - STEAM & CONDENSATE																															
INTRK200K	0	0	22JUN95		69	C_P																									
FILLTK2000	2	2	26AUG95	27AUG95	34	C_P																									
SUPU20AK	0	0	02OCT95		13	C_P																									
SUPU20BK	0	0	02OCT95		13	C_P																									
SUTK200K	0	0	02OCT95		0	C_P																									
FLSYS200K	0	0	21OCT95		-6	C_P																									
TUVL2008	0	0	21OCT95		-6	C_P																									
READY-DRY	0	0		28OCT95	3	C_P																									
BOBR401	4	4	01NOV95	04NOV95	0	C_P																									
2100 COOL/CIRC/SERVICE WATER																															
OPS - COOLING WATER																															
SUHX2101	1	1	07APR95	07APR95	211	C_P																									
INTRK2100	1	1	15AUG95	15AUG95	0	C_P																									
SUPU210A	1	1	15AUG95	15AUG95	0	C_P																									
SUPU210B	1	1	15AUG95	15AUG95	0	C_P																									
FLSYS2100	5	5	16AUG95	20AUG95	46	C_P																									
TUSYS2102	1	1	19AUG95	19AUG95	61	C_P																									
RDY2102	0	0		19AUG95	61	C_P																									
SUCL2100	1	1	20AUG95	20AUG95	61	C_P																									
FLSYS2103	5	5	22SEP95	26SEP95	37	C_P																									
SUPU211A	1	1	22SEP95	22SEP95	30	C_P																									
SUPU211B	1	1	22SEP95	22SEP95	30	C_P																									
FLSYS2101	5	5	23SEP95	27SEP95	30	C_P																									
SUHX2100	1	1	27SEP95	27SEP95	37	C_P																									

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	EAD	1995												1996												
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	J	F	M	A	M	J	J	A	S	O	N
OPS - AUX FUEL SYSTEM CHECK-OUT																															
SU2300	7	7	11OCT95	17OCT95	42	C_P																									
SUHT2300	1	1	02DEC95	02DEC95	-36	C_P																									
SUPU2300	1	1	02DEC95	02DEC95	-36	C_P																									
RDY2300	1	1	03DEC95	03DEC95	-36	C_P																									
2400 FIRE PROTECTION																															
OPS - SYSTEM COMPLETE																															
RDY2400	0	0		30SEP95	52	C_P																									
2500 WASTE WATER TREATMENT																															
OPS - SYSTEM COMPLETE																															
RDY2500	1	1	29SEP95	29SEP95	0	C_P																									
2600 NITROGEN SYSTEM																															
OPS - NITROGEN SYSTEM																															
RDYHPN2	0	0		01DEC95	-61	C_P																									
RDYLPN2	0	0		01DEC95	-61	C_P																									
2700 WATER TREATMENT (DEMIN)																															
OPS - SYSTEM COMPLETE																															
INTK2700	1	1	16MAY95	16MAY95	126	C_P																									
FLSYS2700	1	1	19AUG95	19AUG95	34	C_P																									
SUPU2701	3	3	20AUG95	22AUG95	34	C_P																									
SUPU2700	1	1	23AUG95	23AUG95	34	C_P																									
TUSYS2700	1	1	24AUG95	24AUG95	34	C_P																									
RDY2700	1	1	25AUG95	25AUG95	34	C_P																									
2900 MISC UTILITIES																															
OPS - UTILITY STEAM SYSTEM																															
HYB2901	1	1	26AUG95	26AUG95	45	C_P																									
FLB2901	0	0		26AUG95	45	C_P																									
INB2901	1	1	03NOV95	03NOV95	419	C_P																									
RDY2901	0	0		03NOV95	419	C_P																									
SUB2901	1	1	04DEC95	04DEC95	-31	C_P																									
OPS - CHEMICAL INJECTION																															
VENDW1	1	1	07APR95	07APR95	169	C_P																									
HY2903	1	1	26AUG95	26AUG95	45	C_P																									
FL2903	1	1	27AUG95	27AUG95	45	C_P																									
SUPU2900	1	1	01OCT95	01OCT95	12	C_P																									
SUPU2901	1	1	01OCT95	01OCT95	12	C_P																									
SUPU2902	1	1	01OCT95	01OCT95	12	C_P																									
SUPU2903	1	1	01OCT95	01OCT95	12	C_P																									
RDY2903	1	1	02OCT95	02OCT95	12	C_P																									
OPS - POTABLE WATER																															
HY2910	1	1	06JUN95	06JUN95	-8	C_P																									
FL2910	1	1	07JUN95	07JUN95	-8	C_P																									
SUPU2910	1	1	08JUN95	08JUN95	-8	C_P																									

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float		1995												1996											
							D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
RDY2910	1	1	09JUN95	09JUN95	-8	C_P																								
3000 ELECTRICAL NON-SYSTEM																														
OPS - PERMANENT STATION SERVICE																														
SU3000.003	5	5	29JUN95	03JUL95	7	C_P																								
SU3000.001	5	5	07JUL95	11JUL95	-1	C_P																								
SU3000.002	5	5	07JUL95	11JUL95	-2	C_P																								
SU3000.005	1	1	12JUL95	12JUL95	-2	C_P																								
SU3000.004	1	1	13JUL95	13JUL95	-2	C_P																								
SU3000.006	1	1	14JUL95	14JUL95	-2	C_P																								
SU3000.007	1	1	15JUL95	15JUL95	529	C_P																								
SU3000.008	1	1	15JUL95	15JUL95	529	C_P																								
SU3000.009	1	1	15JUL95	15JUL95	30	C_P																								