DOE/MC/27363 -- 5654

Tampa Electric Company - IGCC Project

Quarterly Report
January 1 - March 31, 1996

Work Performed Under Contract No.: DE-FC21-91MC27363

For

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

By

TECO Power Services Corporation
Tampa, Florida

TECO
POWER SERVICES
A TECO ENERGY COMPANY

February 22, 1996

Mr. Nelson F. Rekos, Jr.
Project Manager
Clean Coal Branch
U.S. Department of Energy
Morgantown Energy Technology Center
3610 Collins Ferry Road.
Morgantown, WV 26505

Re: Tampa Electric Company IGCC Project
Quarterly Report - First Quarter 1996

Dear Nelson:

On February 7, 1996, representatives of Tampa Electric met with DOE personnel at METC to review the subject project status. The notes of this meeting will serve to meet the requirements of the First Quarter 1996 Technical Quarterly Report. For your review and use, attached is a complete set of all materials used by the Tampa Electric Team during this presentation.

In the way of a general summary of the meeting results, below is an overview of the current project status.

Mr. Black reported that the project is generally meeting its intended objectives. Polk is currently on schedule for completion about September 15, 1996. This would initiate the Demonstration Testing Period.

With the finalization of the recent overrun request via Amendment A-007, the project is generally on budget, with the major unknown piece being the costs for reclamation of the area west of SR 37. If TEC is successful in mitigating these reclamation requirements, the overall project cost should be at or below current estimates.

From a personnel standpoint, Deputy Project Managers Steve Jenkins and Dan Giel have been transferred to other areas in TECO Energy. Also, in addition to his current assignment as Project Construction Manager, Mike Rivers has been assigned the responsibilities of Deputy Project Manager following construction, start-up, spare parts, environmental and parts of the DOE activities.

Probably the most difficult of all project challenges is the hot gas clean-up system (HGCU). Physical construction of the HGCU system is progressing well. However, development of the required sorbent causes TEC great concern on all fronts; technically, schedule wise, cost wise, and

politically. There is a real possibility that after checkout of the HGCU system, operation may have to be delayed pending the development of a functionally and financially acceptable sorbent for actual plant operation.

As we begin to approach completion of the project's construction, TEC is initiating efforts related to the continuation application to proceed from Budget Period II to Budget Period III. We expect to submit that application in the spring of this year.

Bechtel has completed 99%+ of the detailed engineering and has completely shut down the engineering effort in their Houston office except for any specific requests or speciality support. The Bechtel overall quality of engineering remains good. Bechtel does have a resident engineering staff (Houston based engineers assigned to the site) comprised of generally one (1) engineer from each discipline, to rapidly resolve any problems or questions that arise in the field.

We have finally resolved almost all of the engineering problems related to the design of the Radiant Syngas Cooler (RSC) supplied by Man-GHH. There are still some outstanding commercial issues which should be resolved shortly.

General Electric has experienced several problems related to the 7F Combustion Turbine (CT). Throughout its worldwide fleet, the 7F CT has experienced a set of incidents, which are either isolated cases, affect only limited units, or affect all units. For our unit, several of the problems either don't exist or have already been corrected. The one most significant item for the Polk Unit is the cracking in the 3rd stage turbine wheel. To prevent this cracking, GE has developed a program to cut off a portion of the 2/3 spacer. GE is implementing this fix worldwide and should complete the Polk work by February 15, 1996.

The other modification currently being implemented by GE is the alteration of the Combustion Liners based on a testing program at Schenectady to optimize the firing characteristics of the 7F while burning syngas.

During our review meeting at METC, TEC asked for help from DOE to insure that operating issues which developed at the DOE Wabash River Project, would be passed on to Polk Project personnel to preclude our unit from being subjected to similar cost and schedule problems.

Essentially all equipment and material has been delivered to the site. There are a few minor valves and miscellaneous cable yet to be delivered, but none of them will have any significant negative impact on the project schedule.

Ordering of spare parts is a major effort. We have almost finished the effort required to support the plant start-up and are now concentrating on procurement of plant operating spares.

Another area requiring significant attention is the Process Safety Management (PSM) assessment which is currently underway. TEC is reviewing the OSHA requirements to confirm the specific efforts required for this area.

GEESI has essentially completed all their conceptual and detailed engineering. Remaining work is centered around finalizing drawings and instruction manuals. We are assessing the requirements for GEESI support for training and start-up of the HGCU system. GEESI is also heavily involved with the sorbent development and testing.

As mentioned above, sorbent development remains a critical path item for the HGCU system. Completion of the pilot plant testing at Schenectady was delayed last fall and TEC has serious concerns about all of the potential sorbents being ready to start the spring tests. Manufacture of the Z-Sorb 3M for the shakedown testing at the project site appears to be on schedule for a May 1, 1996 delivery. In order to support the supply of the operating sorbent, an order for a technically and financially acceptable operating sorbent also must be placed by May 1, 1996. If this date is missed, initial operation of the HGCU system will probably have to be delayed. The attached schedule details the project's requirements. In a recent meeting at METC, two (2) other promising sorbents under development were discussed. It is unlikely that either of these new sorbents would be available for the Polk start-up.

TEC still is concerned about the coverages of Phillip's patents related to sorbents for our HGCU. We still need to resolve the long term ownership interests of all the various parties involved with Polk sorbent supply, including Phillips, DOE, and GEESI. We are currently working with DOE METC to resolve the DOE patent position.

Tampa Electric has prepared a short video which covers the history of the project, discusses some of the key elements of the project, and provides an update of the project status. A copy of this video was left with project personnel at METC for their use.

Construction percentage complete continues to increase. We are currently about 2/3 complete with the overall site activities. During this quarter, we expect to mechanically complete the air separation unit, the sulfuric acid plant, and complete the combustion turbine lube oil flush. The project has consumed about 2,800,000 man-hours to date. Construction has completed about 1/3 of the system turnover packages. Start-up has turned over about 10% of the systems to the plant for operation. To date, this is slightly behind schedule but several packages/systems will be completed in the next few weeks.

The current project critical path is through the installation of piping in the gasification area. This item is currently showing slightly behind schedule but efforts are underway to restore the project schedule.

Environmental compliance continues. TEC notified the Florida Department of Environment Protection (FDEP) that the first firing of the auxiliary boiler occurred January 3, 1996. Reclamation of the main plant areas has been completed. The contractor is now planting the required trees, shrubs and other plants.

In the area west of SR 37, documents are being prepared for submittal to the agencies which would be asked for approval to revise the reclamation requirements for that area to a plan that is significantly more cost effective. We expect the Governor to act on this request late summer of 1996.

As of February 8, 1996, all plant operating personnel have been hired and training was well underway. Tampa Electric has undergone an extensive selection process to ensure the most qualified personnel available will be considered for selection. The operator associated training schedule is exhaustive and requires about 6 months for each individual. The permanent plant staff will consist of 72 people operating in a self-directed environment. All of the IGCC process teams will be multi-disciplined with each individual trained in two (2) different technical areas.

Tampa Electric is currently undergoing a review of the Polk unit by the Florida Public Service Commission to consider a mechanism which will allow inclusion of the Polk Unit in rate base without undue stress on the customers rates. This review is expected to continue for the next few months.

Attached is a copy of the revised project cash flow which reflects the recently approved cost growth request A-007. Also included are comparison cash flows for the most recent project cost updates.

From an overall aspect the project continues on schedule for a first gasifier fire in mid-July 1996. We currently have the start-up/light-off fuel oil on site, and expect to receive the first coal on site mid-March 1996. The cooling pond is complete and almost at operating level. The project simulator is being used for the first parts of the plant to be started-up: the ASU and the Auxiliary Boiler.

TEC has recently taken bids for the start-up coal supply, and are preparing a contract for submittal to DOE for its approval as a surveillance contract.

The project is currently developing a detailed plan for the period of time from first gasifier fire to full load operation/performance testing.

Very truly yours,

D. E. Pless

D.E. Pless
Project Manager

DEP:jm:A:\STQTRRP.LTR

cc: C.R. Black
R.N. Howell
Trimco

Tampa Electric Company - Project Review Meeting

First Quarter Review, February 7, 1996

Morgantown Energy Technology Center, Conf. Room G4a/b

8:00	Introductions & Welcome	Nelson Rekos, DOE
8:10	Overall Project Status	Chuck Black, Tampa Electric Co.
8:20	Project Management/Engineering	Don Pless
8:40	Construction	Mike Rivers
9:00	Environmental	" "
9:20	Start-Up	" "
9:40	Break	
10:00	Operations	Charles Shellnut
10:20	Regulatory	Bob Howell
10:30	Budget & Costs	Mike Hegarty
10:50	Schedule	Don Pless
11:00	Questions & Discussions	

Notes

TAMPA ELECTRIC COMPANY - DOE IGCC PROJECT
FIRST QUARTER 1996 - STATUS REVIEW
METC - FEBRUARY 7, 1996

OVERALL PROJECT STATUS	C.R. BLACK
PROJECT MANAGEMENT/ENGINEERING	D.E. PLESS
CONSTRUCTION/SAFETY	M.R. RIVERS
ENVIRONMENTAL	M.R. RIVERS
START-UP	M.R. RIVERS
BREAK	
OPERATIONS	C.A. SHELNUT
BUDGET/COSTS	M.E. HEGARTY
REGULATORY	R.N. HOWELL
SCHEDULE	D.E. PLESS
QUESTIONS AND DISCUSSIONS	ALL

TAMPA ELECTRIC COMPANY - DOE IGCC PROJECT
FIRST QUARTER 1996 - STATUS REVIEW
METC - FEBRUARY 7, 1996

Length	Time	Subject	
10 Minutes	8:00 am	Overall Project Status	C.R. Black
20 Mintues	8:10 am	Project Management/Engineering	D.E. Pless
20 Minutes	8:30 am	Construction/Safety	M.R. Rivers
10 Minutes	8:50 am	Environmental	M.R. Rivers
20 Minutes	9:00 am	Start-Up	M.R. Rivers
10 Mintues	9:20 am	BREAK	
20 Minutes	9:30 am	Operations	C.A. Shelnut
20 Minutes	9:50 am	Budget/Costs	M.E. Hegarty
10 Minutes	10:10 am	Regulartory	R.N. Howell
10 Minutes	10:20 am	Schedule	D.E. Pless
	10:30 am	Questions and Discussions	All

OVERALL PROJECT STATUS

- Approval of M-007
  - Cost/Envelope Growth of $12,600,000
  - METC's Effort
  - Importance to TEC
- General Project Status
  - Project Objectives
  - C.O. Date
  - Cost
  - HGCU
- Continuation Application
  - Starting The Process
  - Review Requirements
  - Submittal late this Spring

PROJECT MANAGEMENT AND ENGINEERING

- Personnel Changes
  - Deputy Project Managers
    - -- Steve Jenkins
    - -- Dan Giel
    - -- Mike Rivers

- Other Project Representatives
  - Charles Shelnut
  - Bob Howell
  - Mike Hegarty

PROJECT MANAGEMENT AND ENGINEERING

- Bechtel
- 99%+ Complete
- Houston Shutdown
- Resident Engineering Staff
- Man GHH

PROJECT MANAGEMENT AND ENGINEERING

- General Electric
  - 2/3 Spacer Modification
  - Combustion Liner Modifications
  - Other 7-F Fleet Problems
  - Hartford Insurance
  - Warranty Considerations
  - Comparison to Wabash River

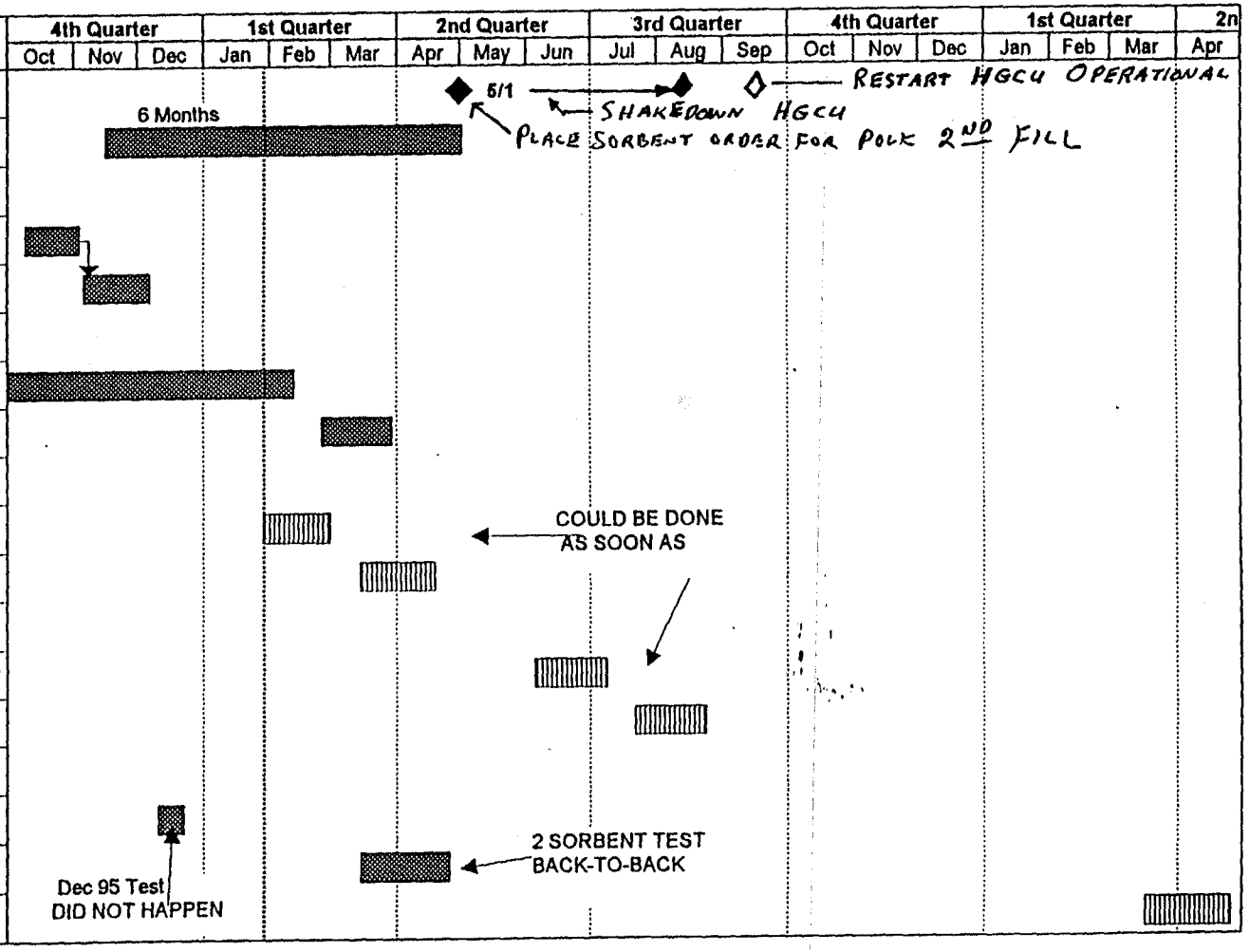
PROJECT MANAGEMENT AND ENGINEERING

- Material Delivery Status
- Process Safety Management (PSM)
- HGCU
  - GEESI Engineering
  - Sorbent
  - Phillips
  - Patent Positions
- Project Video

SIU and HU Schedules

Desulfurization Sorbents for TECo
D. Cicero 4:17 PM 1/30/96

Task Name	Start	Finish
1st Fill Delivery to TECo	5/1/96	5/1/96
Z-Sorb 3M Production	11/16/95	5/1/96
METC 50-Cycle Test	10/10/95	11/3/95
METC-10 Pilot Productio	11/6/95	12/6/95
PPCo 50-Cycle Test	10/2/95	2/12/96
Z-Sorb4 Pilot Production	2/26/96	3/29/96
SIU 50-Cycle Test	1/29/96	2/29/96
SIU Pilot Production	3/15/96	4/18/96
Hampton 50-Cycle Test	6/5/96	7/8/96
Hampton Pilot Producti	7/22/96	8/23/96
200 Hr GE Pilot Test	12/11/95	12/22/95
400 Hr GE Pilot Tests	3/15/96	4/25/96
1997 GE Pilot Tests	3/17/97	4/25/97



Z-SORB IV 50 CYCLE TEST

Z-SORB IV PILOT PLANT SORBENT PRODUCTION

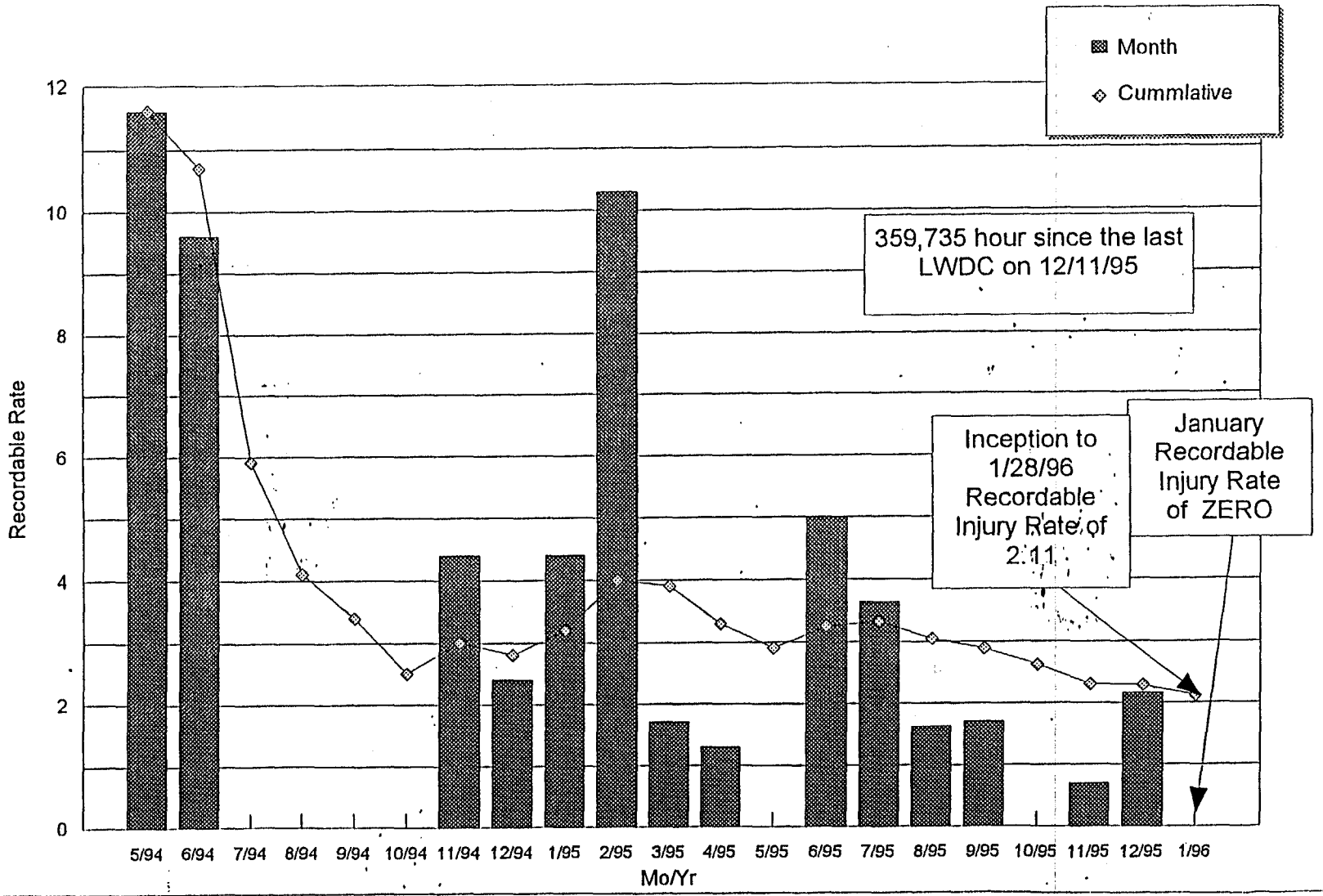
POLK POWER PROJECT
CONSTRUCTION

PROJECT MILESTONES

	PLANNED	ACTUAL
• SET RADIANT SYN GAS COOLER	01-JUL-95	26-JUN-95
• ENERGIZE PLANT SUBSTATION	01-AUG-95	27-JUL-95
• COOLING RESERVOIR COMPLETE	15-OCT-95	15-OCT-95
- COMPLETE WATER TRANSFER	01-FEB-96	01-FEB-96
• UTILITIES TO AIR SEPARATION UNIT	13-NOV-95	13-NOV-95
• STEAM TO AIR SEPARATION UNIT	10-JAN-96	15-JAN-96
• ACID PLANT COMPLETE	15-FEB-96	17-JAN-96
• FIRST COAL IN SILO	13-MAR-96	
• FIRST FIRE CTG (ON OIL)	19-APR-96	
• STEAM BLOWS COMPLETE	30-APR-96	
• ROLL STEAM TURBINE	01-JUN-96	
• MAKE FIRST SYNGAS	18-JUL-96	
• TURNOVER FOR OPERATION	15-SEP-96	
• COMPLETE WETLAND RESTORATION	MAY-97	

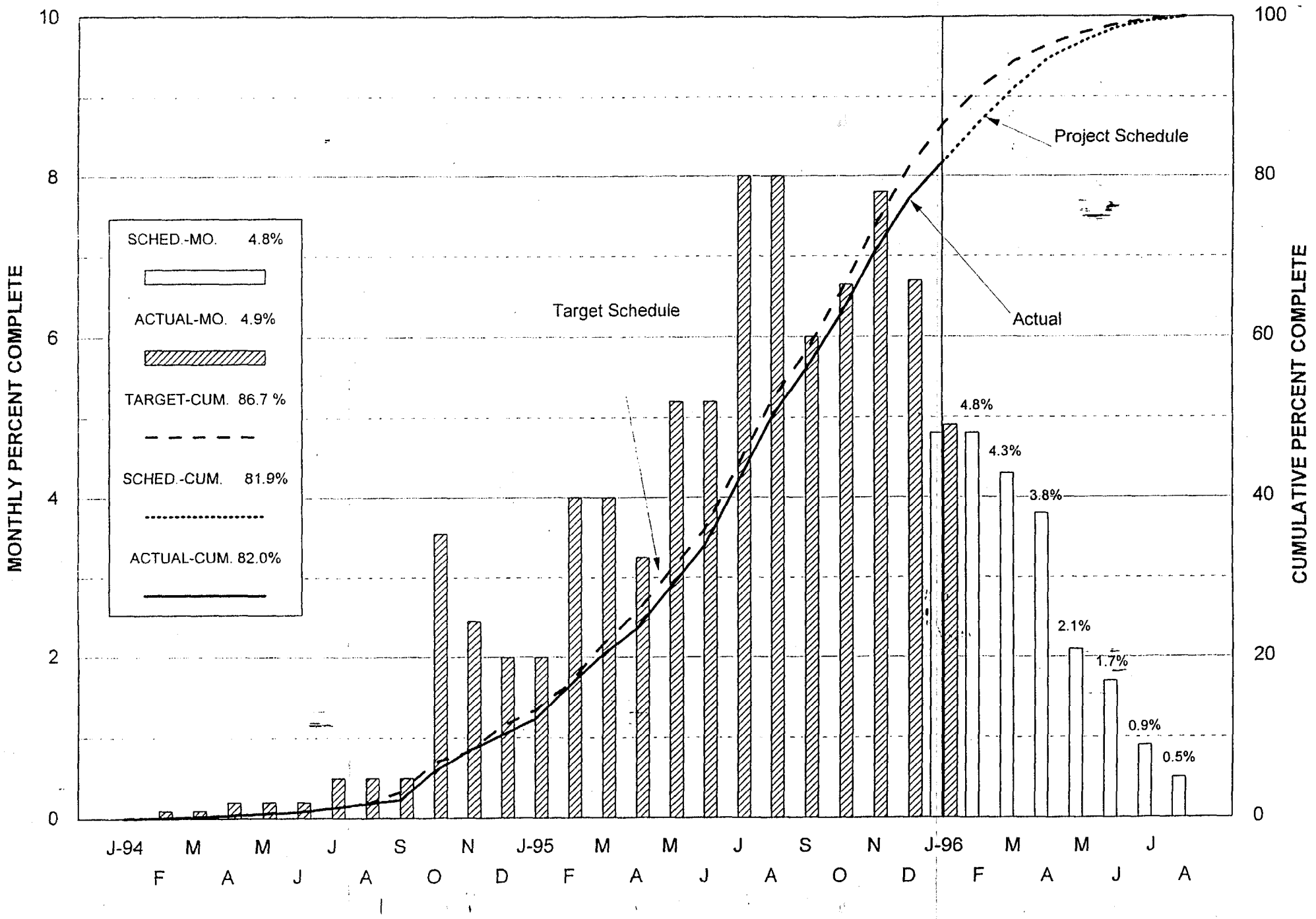
Polk Power Station Unit #1 OSHA Recordable Rate

Job Inception to Date By Month and Cummlative



POLK POWER STATION - UNIT 1

CONSTRUCTION PERCENT COMPLETE - JANUARY 1996



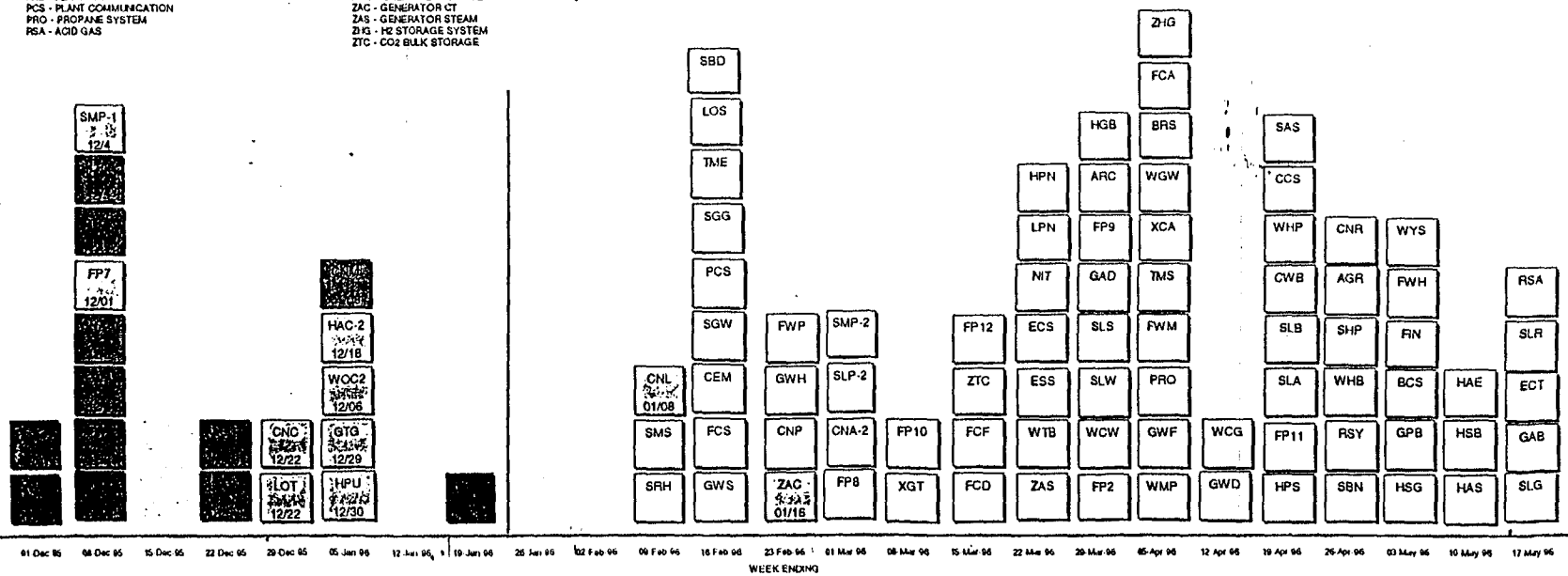
HISTOGRAM OF SCHEDULED SYSTEM TURNOVERS

STATUS AS OF JANUARY 24

STARTUP SYSTEM DESIGNATORS (PARTIAL LISTING)
AGR - ACID GAS/AMINE
ARC - AIR REMOVAL SYSTEM
ASU - AIR SEPARARTION UNIT
BCS - BRINE CAUSTIC SYSTEM
BRS - BRINE CONCENTRATION SUMP
CCS - SYNGAS COOLER HP/MP STEAM DRUMS CHEM INJ
CEM - CONTINUOUS EMMISSIONS MONITORING
CNA-1 CONDENSATE SYSTEM MAIN HEADER
CNA -2- CONDENSATE SYSTEM
CNC - CONDENSATE COLLECTION
CNL - LOW PRESSURE CONDEN
CNM - CONDENSATE MED PRESS EXCLUD GASIFIC/HGCU
CNP - PURGE WATER DISTRIBUTION (GASIFIC)
CNR - CONDENSATE RECOVERY SYST
CWB - BURNER COOLING WATER
ECS - STEAM TURBINE HYDRAULIC CONTROL
ECT - CLOSE CIRCUIT TV
ESS - EMERGENCY SHUTDWON SYSTEM
FCA - COAL AMMONIA INJECTION
FCD - DUST COLLECTION
FCF - COAL FEED SYSTEM
FCS - COAL STORAGE/RECLAIM
FIN - FINES HANDLING
FOG - FUEL OIL TO GAS TURBINE
FP2 - FIRE PROTECT POWER BLOCK
FP7 - FIRE PROTECT TRANSFORMERS
FP8 - FIRE PROTECT COAL UNLOADING
FP9 - FIRE PROTECT COAL CONVEYORS/SILO
FP10 - FIRE PROTECT COAL GRINDING SLURRY PREP
FP11 - FIRE PROTECT GASIFIC/SLAG/HGCU/AGR
FP12- SULFURIC ACID PLANT
FWA - HRSG FEEDWATER SYSTEM
FWH - FW TO SYNGAS COOLER HP STEAM DRUM
FWI - FW TO HRSG IP DRUM
FWM - FW TO SYNGAS COOLER MP DRUM
FWP - GASIFIER MP PURGE WATER
GAB - GASIFIER MAIN BURNER
GAD - GRINDING AREA DRAINS
GPB - PREHEAT BURNER
GTG - GAS TURBINE
GWD - SLAG DEWATERING SUMP
GWF - VACUUM FLUSH DRUM & PUMP SYSTEM
GWH - GREY WATER
GWS - GREY WATER DRAINS
HAE - GASIFICATION ELEVATOR
HAS - HGCU ABSORBER
HSB - GASIFICATION HOIST
HPN - HIGH PRESSURE NITROGEN
HPS - HGCU PRIMARY & SECONDARY CYCLONE
HPU - HYDRAULIC POWER UNIT GT
HSB - HGCU SODIUM BICARB STORAGE & TRANSFER
HSG - HGCU SYNGAS
LOS - STEAM TURBINE LUBE OIL
LOT - LUBE OIL STORAGE & TRANSFER
LPN - LOW PRESSURE NITROGEN
NIT - DILUENT NITROGEN TO GAS TURBINE
OXY - OXYGEN FEED
PAS - PLANT AIR
PCS - PLANT COMMUNICATION
PRO - PROPANE SYSTEM
RSA - ACID GAS

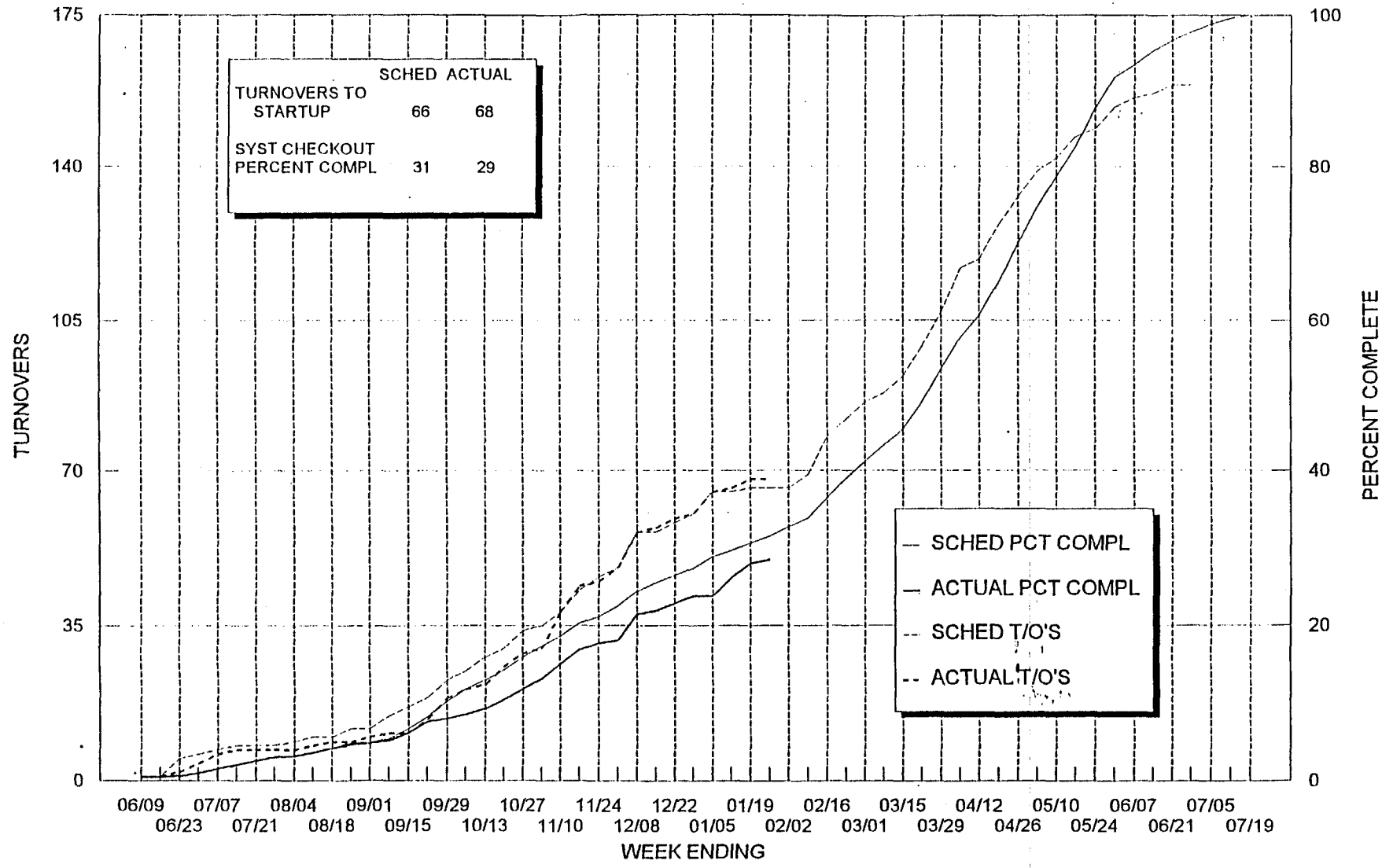
TURNOVER TO STARTUP BEHIND SCHEDULE
TURNOVER TO STARTUP EARLY
TURNOVER TO STARTUP ON SCHEDULE
TURNOVER TO STARTUP LATE

SMP-1 - MP STEAM EXCLUD GASIFIC
SMP-2 - MP STEAM GASIFIC
SMS - MAIN STEM
SRH - HOT/COLD REHEAT STEAM
SWS - STEAM WATER SAMPLING
TME - STEAM TURBINE
TMS - STEAM TURBINE SEALS & DRAINS
WCG - CLOSED LOOP COOLING GASIFIC
WCW - CONDENSER CIRCULATING WATER
WGW - GRINDING WATER
WHB - GASIFICATION HP PRESSURE BLOWDOWN
WHP - RSC HP STEAM/WATER
WMP - SYNGAS COOLER MP WATER/STEAM
WOC-2 - OPEN LOOP COOLING GASIFIC/HGCU
WSR-2 - SERVICE WATER C/O GASIFIC/HGCU/SLAG
WTB - WASTE TRANSFER BUILDING
WYS - SYNGAS SCRUBBER
XCA - COAL HANDLING AREA SUMPS
XGT - GAS TURBINE DRAIN COLLECTION
XWT - CHEM CLEAN WASTE TANK
ZAC - GENERATOR CT
ZAS - GENERATOR STEAM
ZHG - H2 STORAGE SYSTEM
ZTC - CO2 BULK STORAGE



STARTUP SYSTEM TURNOVER & PERCENT COMPLETE

STATUS AS OF 01/28/96



POLK POWER PROJECT

TOTAL PROJECT A/G LARGE BORE PIPE

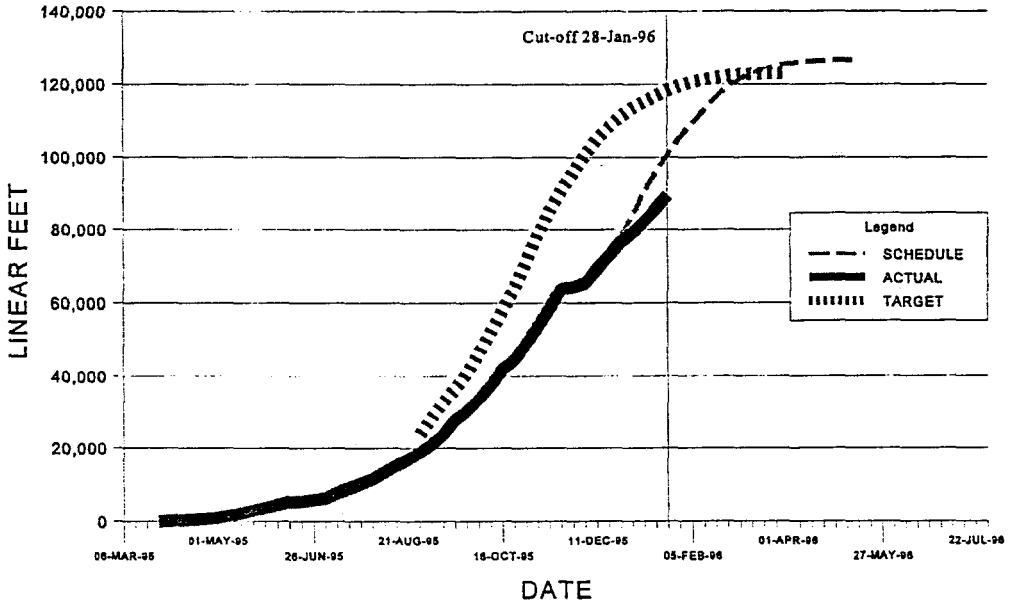


Figure 1

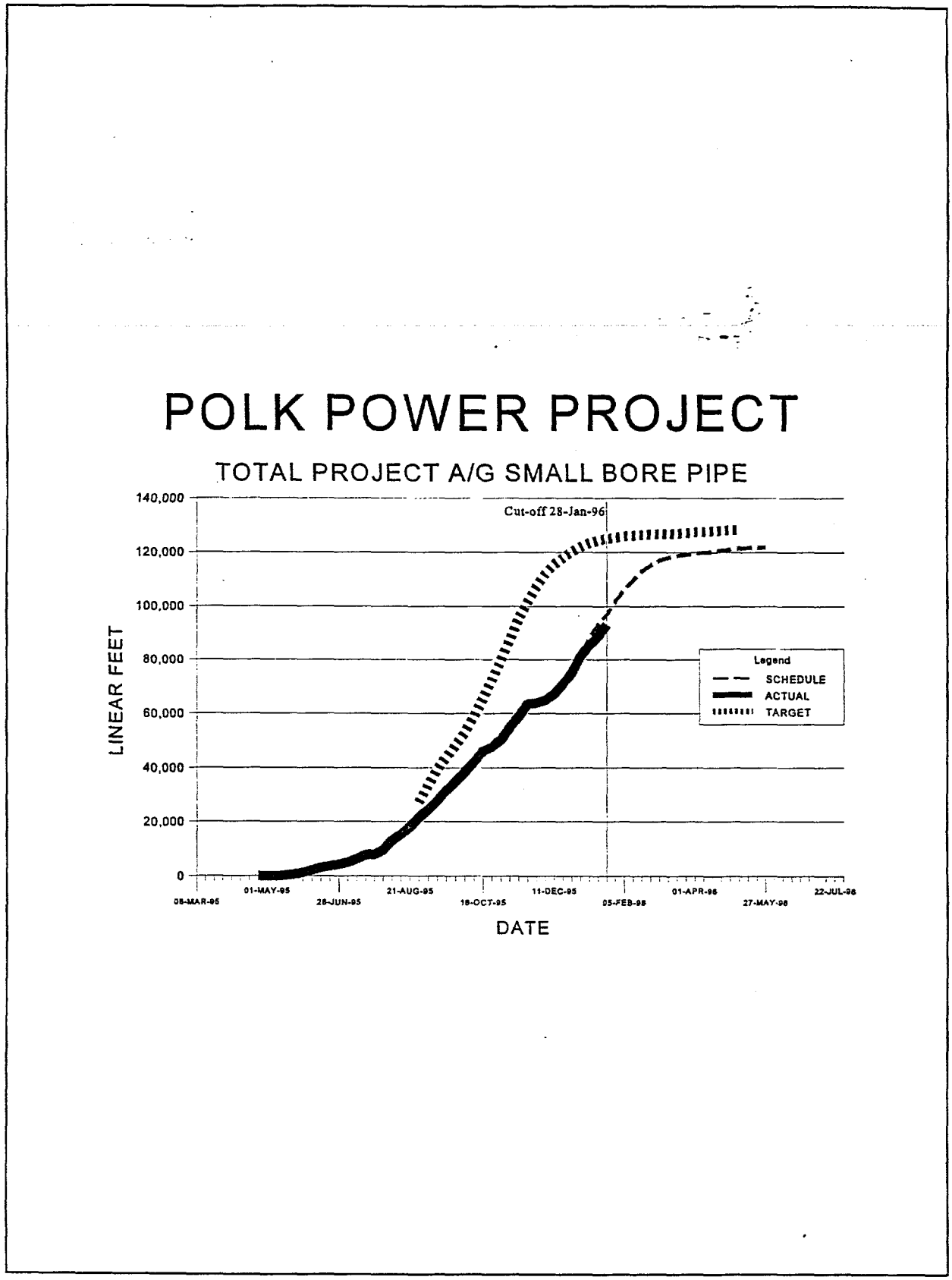

POLK POWER PROJECT
TOTAL PROJECT A/G SMALL BORE PIPE
Cut-off 28-Jan-96
LINEAR FEET
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
Legend
SCHEDULE
ACTUAL
TARGET
08-MAR-95
01-MAY-95
28-JUN-95
21-AUG-95
18-OCT-95
11-DEC-95
05-FEB-96
01-APR-96
27-MAY-96
22-JUL-96
DATE

Figure 1

POLK POWER PROJECT

TOTAL PROJECT A/G CONDUIT

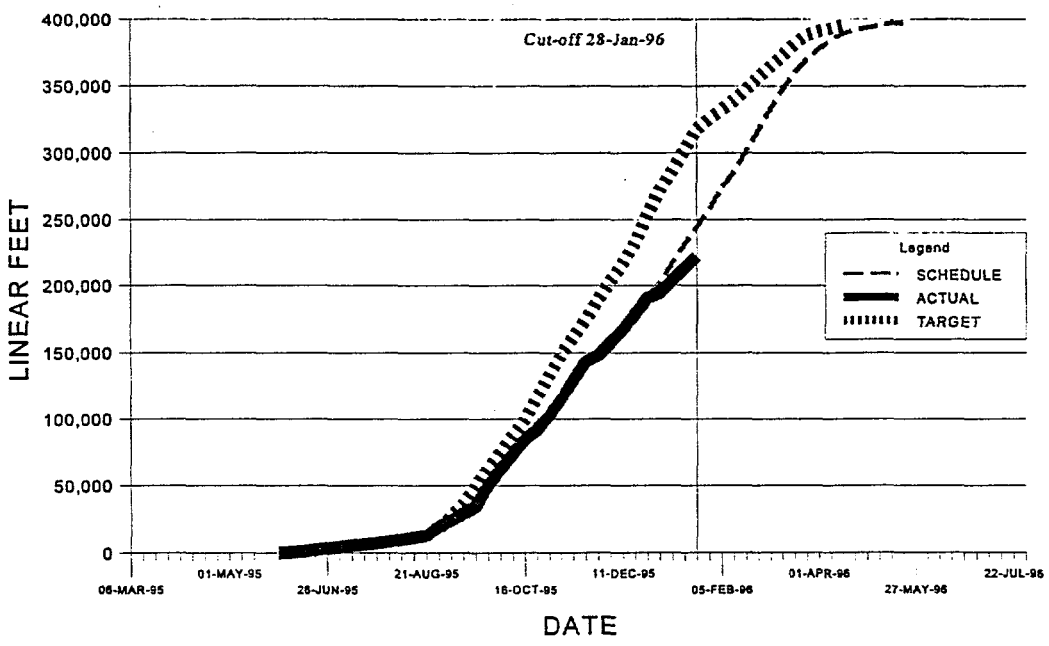


Figure 1

POLK POWER PROJECT

TOTAL PROJECT WIRE & CABLE (INCL TERMS)

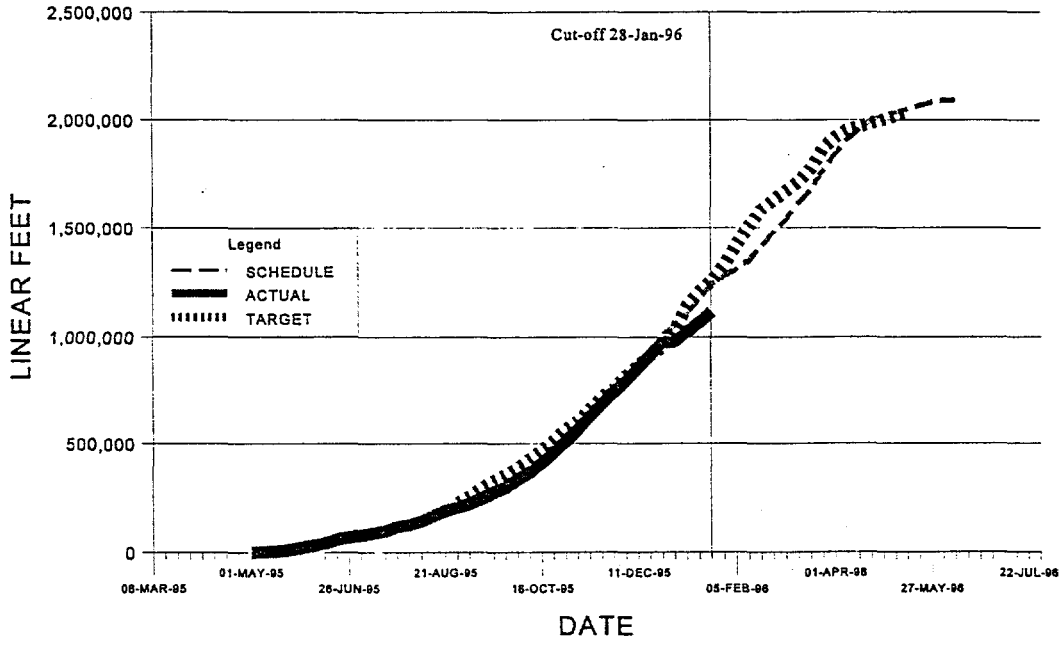


Figure 1

Polk Power Station Environmental Status

Notifications

- The Florida Department of Environmental Protection (FDEP) was notified of the first fire of the Auxiliary boiler which occurred on January 3, 1996. The Auxiliary Boiler Environmental Performance test protocol was submitted as required by the Conditions of Certification and PSD permit.

- Notification to place the domestic waste treatment system in service was submitted and approved and the system placed into service.

- FDEP was notified and gave approval to transfer up to 8,000 Acre-ft of accumulated storm water for the Polk Power Station site to a neighboring phosphate mine. This was required to dewater the reclamation area west of SR 37.

Reclamation Work

- Reclamation areas east SR 37 are on schedule as outlined in the Conditions of Certification. Some plants may have to be replanted due to recent frosts which have occurred on site. Final as-builts have been completed and are in the process of being prepared for submittal to FDEP as required in the Conditions of Certification.

- Revisions to the site reclamation plan are currently being developed for approval by FDEP and are expected to be submitted by the end of February. Negotiations with FDEP have been proceeding favorably for these reclamation changes. Approval of the modified plan is expected sometime after June 1996 (with a submittal by the end of February). Earth moving work for the modified plan is proceeding with a qualified approval (at owner's financial risk) by FDEP.

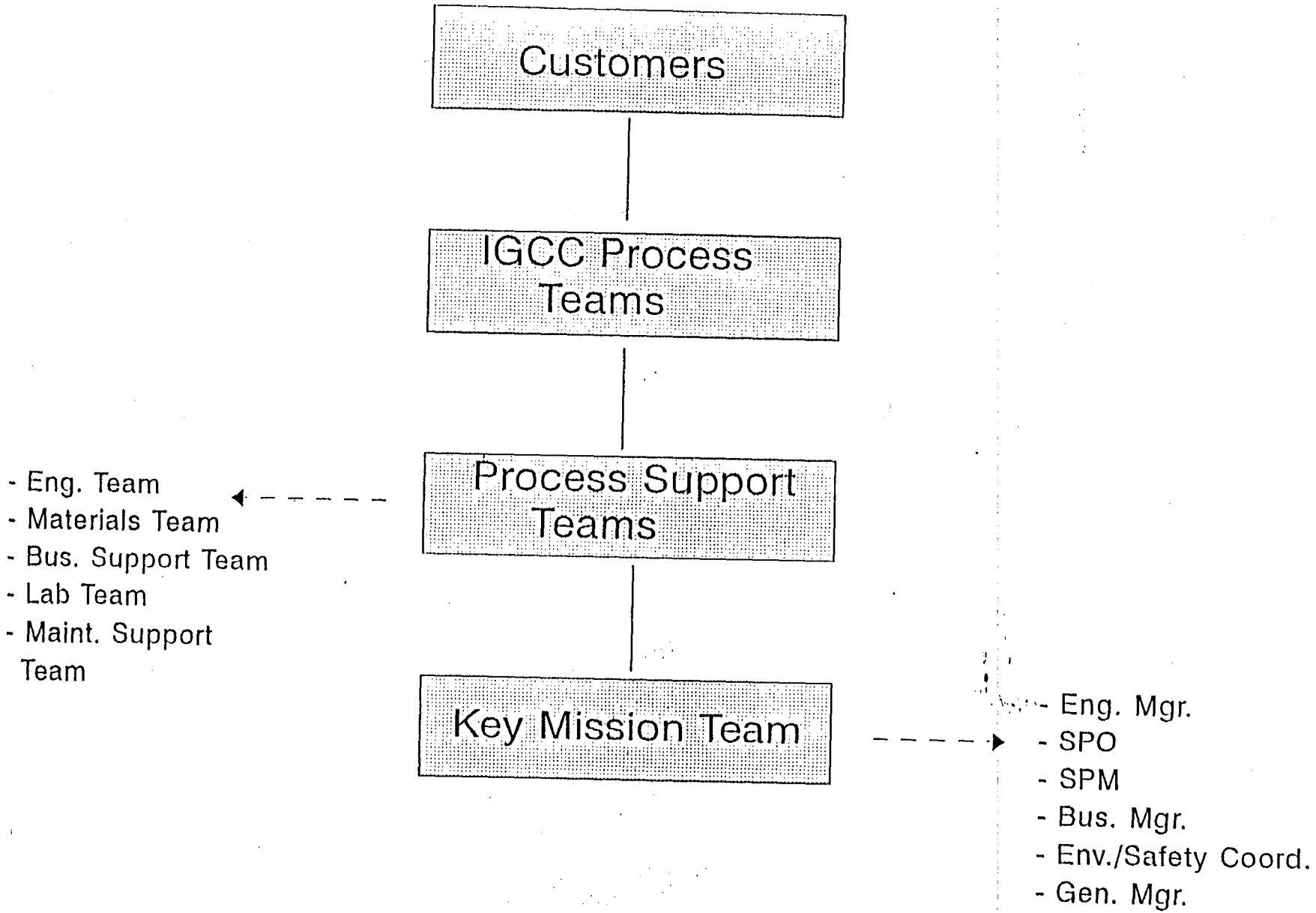
NPDES Discharge Points

- Outfall 002 was opened in the later part of December to support reclamation work on site. Automated sampling systems have been installed to support sampling and reporting requirements.

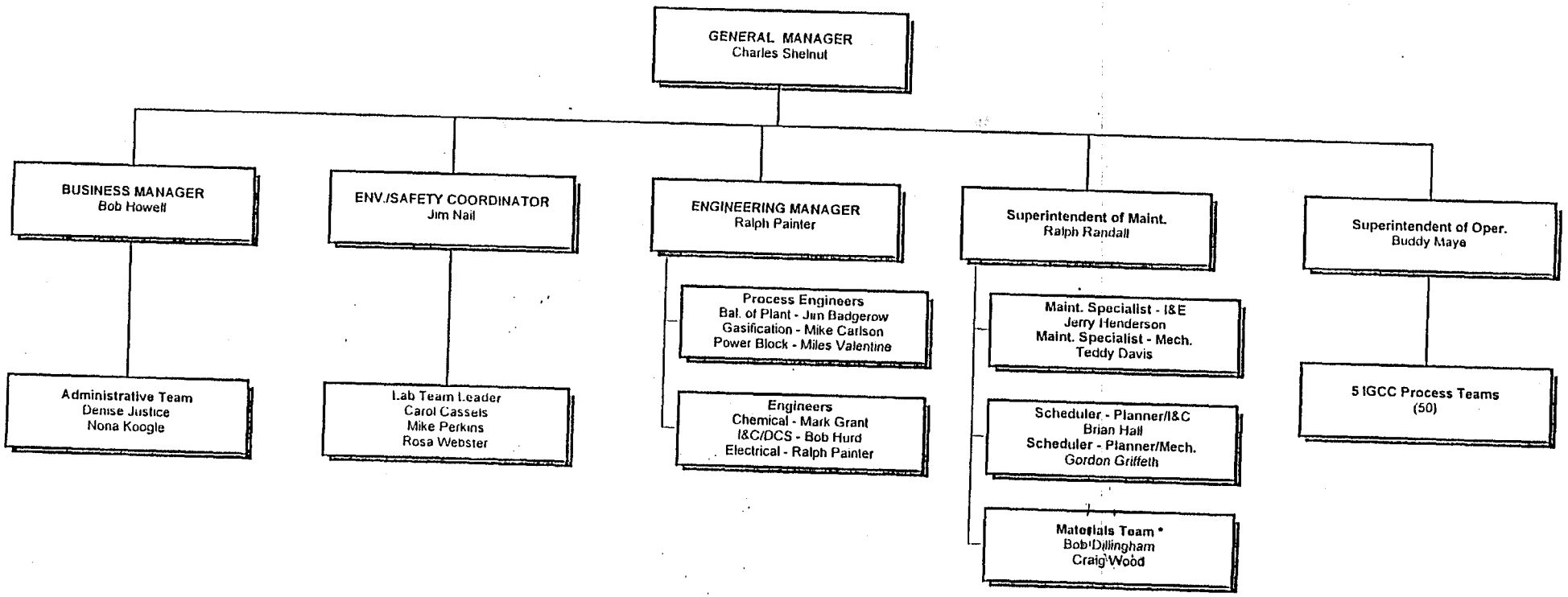
- Outfall 001 has not been opened for discharge. However, discharge is expected to begin within the first quarter of 1996.

Submittal Requirements

- With the exception of consumptive use reports required by South West Florida Water Management District (SWFWMD), all submittals required by the Conditions of Certification are on time. SWFWMD reporting will be brought current with the reports to be submitted by February 10, 1996.


Customers
IGCC Process Teams
Process Support Teams
- Eng. Team
- Materials Team
- Bus. Support Team
- Lab Team
- Maint. Support Team
Key Mission Team
- Eng. Mgr.
- SPO
- SPM
- Bus. Mgr.
- Env./Safety Coord.
- Gen. Mgr.

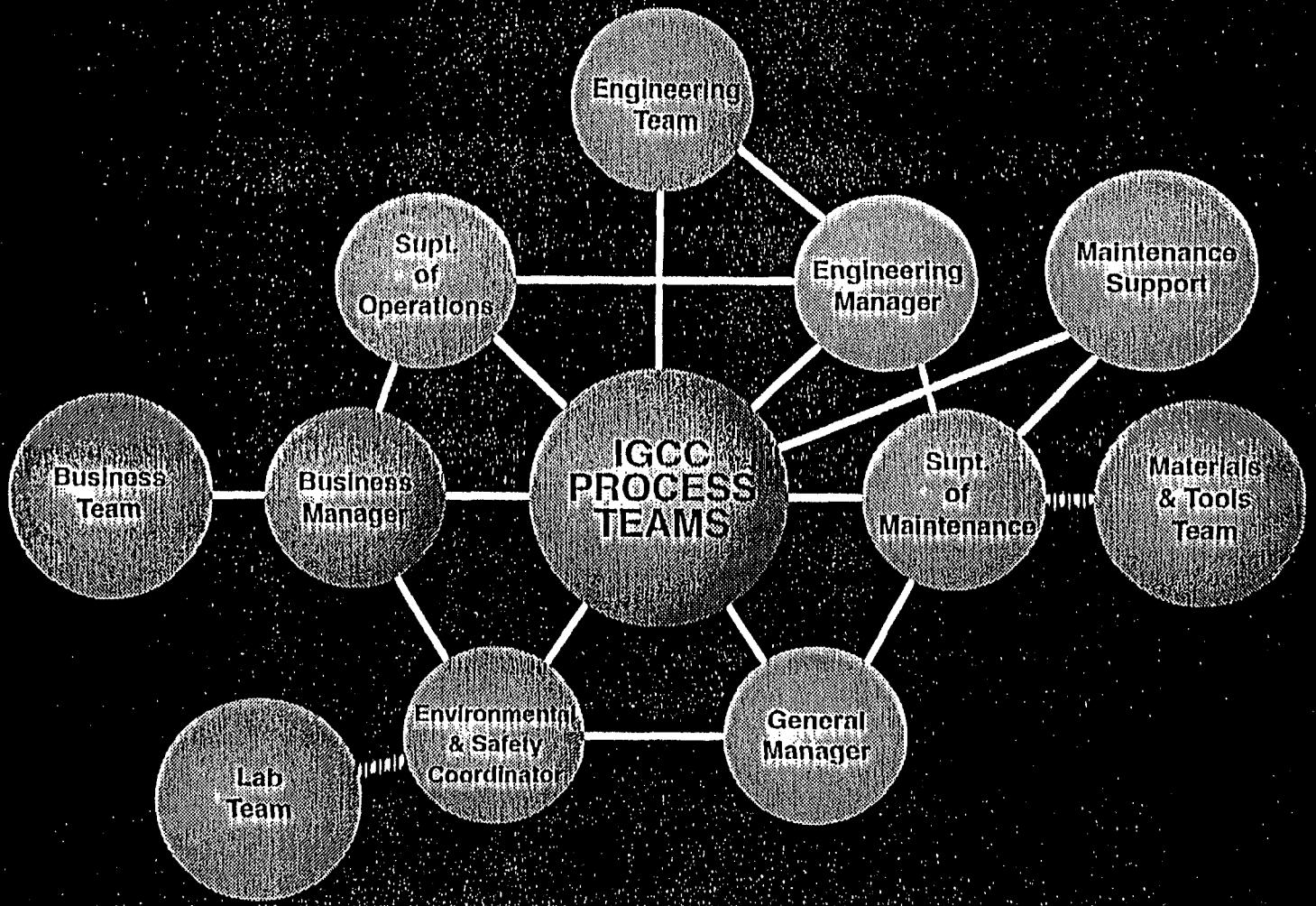
POLK POWER STATION



*Notes Materials Team reports admin to Materials Management

January 25, 1996

POLK POWER STATION
Organization



POLK POWER STATION
PERSONNEL REQUIREMENTS

KEY MISSION TEAM

GENERAL MANAGER	1
ENGINEERING MANAGER/ELECTRICAL ENG.	1
BUSINESS MANAGER	1
SUPERINTENDENT OF OPERATIONS	1
SUPERINTENDENT OF MAINTENANCE	1
ENVIRONMENTAL/SAFETY COORDINATOR	1
SUBTOTAL MANAGEMENT	5

ENGINEERING TEAM

GASIFICATION PROCESS ENGINEER	1
POWER BLOCK PROCESS ENGINEER	1
ASU, H_2SO_4, AUX. SYS. PROCESS ENGINEER	1
CHEMICAL ENGINEER	1
I&C/DCS ENGINEER	1
SUBTOTAL ENGINEERING	5

IGCC PROCESS TEAMS

IGCC PROCESS SPECIALIST	50

PROCESS SUPPORT

I&C/DCS/ELECTRICAL SPECIALIST	1
MECHANICAL MAINTENANCE SPECIALIST	1
I&C/ELECTRICAL SCHEDULER/PLANNER	1
MECHANICAL SCHEDULER/PLANNER	1
LAB SPECIALIST	3
MATERIALS/TOOLS SPECIALIST	2
SUBTOTAL SUPPORT	10

BUSINESS SUPPORT

ADMINISTRATIVE SPECIALIST	2

TOTAL STATION REQUIREMENTS	72

OPERATORS/SHIFT 1/24/96

10/TEAM

1 TEAM LEADER
2 CONTROL ROOM
2 GASIFICATION
1 POWER BLOCK OPERATOR
1 ASU/DEMIN. WATER TREATMENT
1 SLURRY PREP/BRINE CONCENTRATOR
1 SULFURIC ACID PLANT/AMINE SYSTEM
1 COAL AND SLAG HANDLING

SKILLS/PER SHIFT		TOTAL FOR 5 TEAMS
I&C	3	15
ELEC.	2	10
MECH./WELD.	1	5
M/MILLWRIGHT	3	15
OTHER SKILLS	1	5

TOTALS BY SKILLS

3 GENERAL MANAGER/MANAGERS
2 SPO/SPM
5 ENGINEERS
1 ENVIR./SAFETY
2 MAINTENANCE SPECIALIST
2 SCHEDULER/PLANNER
15 I&C
10 ELECTRICAL
3 LAB
5 MECH./WELDER
15 MECH./MILLWRIGHT/MACHINIST
2 ADMINISTRATIVE
2 WAREHOUSE
5 REMAINING COMPLIMENT - VARIED SKILLS SUCH AS OPERATIONS

72 TOTAL

POLK POWER STATION
IGCC PROCESS SPECIALIST

Employees were selected who had high *Technical Skills* in one or more of the following areas:

Mechanical Maintenance
Electrical Maintenance
Instrumentation & Controls
Plant Operations

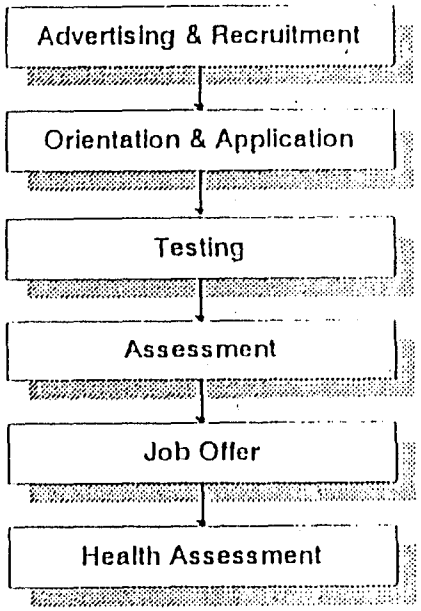
They will be required to complete a comprehensive training program in *Operations* and *Safety* and gain a base level of skill in a *Second Technical Area* of either:

Mechanical Maintenance
Electrical Maintenance
Instrumentation & Controls

The station was staffed using a *Self Directed Work Team* philosophy which required people have strengths in the following dimensions:

Teamwork
Ability to Learn
Judgement
Initiative
Work Standards
Adaptability
Problem Analysis

Major Steps in Selection System



- Expected selection ratio is low (many applicants per position)
- Designed as a funnel; expense and effort concentrated at later stages
- Decision rules and points clearly defined
- All applicants treated consistently

POLK POWER
OPERATOR TRAINING

7 wks. **Initial Training**
- Basic Power Plant
- Plant Auxiliary
- Basic Chemical Fundamentals, Water Treatment
- Safety Training - First Aid, Safety Regs., Hazwoper, Process Safety
- Systems Training

1 wk. **Bailey DCS**

1 wk. **Air Separation Unit**

1 wk. **Sulfuric Acid Plant**

3 wks. **GE Power Block Training**
- Combustion Turbine Familiarization and Routine Maintenance
- Heat Recovery Steam Generator
- Steam Turbine Operations and Maintenance
- Mark V Controls
- Generator Controls and Excitation

2 wks. **Texaco Gasification**

1 wk. **Brine Concentrator**

1 wk. **Hot Gas Cleanup**

1 wk. **PC Training**
- Work Order Management
- TEC System

2 wks. **Tech. Level Specialized Training**
- CEM's
- Analyzer's
- Bailey
- GE - Mark V, Exciter
- BWIP - Mag. Bearings
- Reliance - GEHO

10 wks. **Simulator**
- All areas of plant, followed by integrated plant control

POLK POWER STATION
TRAINING OVERVIEW

		DATES	INSTRUCTOR
7 WEEKS	BASIC	JULY 17, 1995 OCTOBER 6, 1995 JANUARY 8, 1996	TECO
1 WEEK	BAILEY (DCS)	AUGUST 28, 1995	BAILEY
1 WEEK	AIR PRODUCTS (ASU)	OCTOBER 9, 1995 NOVEMBER 27, 1995	AIR PRODUCTS
2 WEEKS	TEXACO (GASIFICATION)	MARCH 4, 1996 APRIL 1, 1996	TEXACO
1 WEEK	MONSANTO (SULFURIC ACID PLANT)	DECEMBER 11, 1995 FEBRUARY 12, 1996 AUGUST 19, 1996	MONSANTO
3 WEEKS	GE (POWER BLOCK)	JANUARY 8, 1996 MARCH 18, 1996	GE VOGT
10 WEEKS	SIMULATOR	NOVEMBER 6, 1995 THROUGH SEPTEMBER 15, 1996	TECO OUTSIDE

DOE PPS
STATUS REVIEW
FEBRUARY 7, 1996

Operations

A. Staffing

1. Organization charts (3)
2. Total staffing (2)
3. Requirements for job applicants
4. Selection plan
5. Skills required/team and totals selected

B. Training

1. 27 weeks of classroom training
   - operator and safety
2. 10 weeks simulator training for some
3. 3 groups - last group - January 8th
4. 18 people in group 3
   14 people working operating shifts
   20 people in vendor training, instructors, spare parts, procedures, startup support, etc.

TAMPA ELECTRIC COMPANY

REGULATORY UPDATE

$100M REVENUE REQUIREMENT FOR POLK POWER STATION

NO IMPACT TO CUSTOMER - NO PRICE CHANGE

Restructing Efforts
Reductions in O&M & Construction Costs
O&M Held Flat

DEFERRED REVENUE PLAN - APPROVED BY FPSC

1995	1996
$50M	$10-12M

ALLOCATE DEFERRED REVENUES FROM 1995/1996

To offset 1997/1998 Possibly 1999 Revenue Requirements associated with Polk Power Station

Other continuing cost control efforts

CURRENT REGULATORY ISSUES

Cost of Polk Power Station - Prudency

Interrogatories due to PSC 02/25/96

Fuel Pricing Issues Lower Gas Prices vs IGCC

SCHEDULE

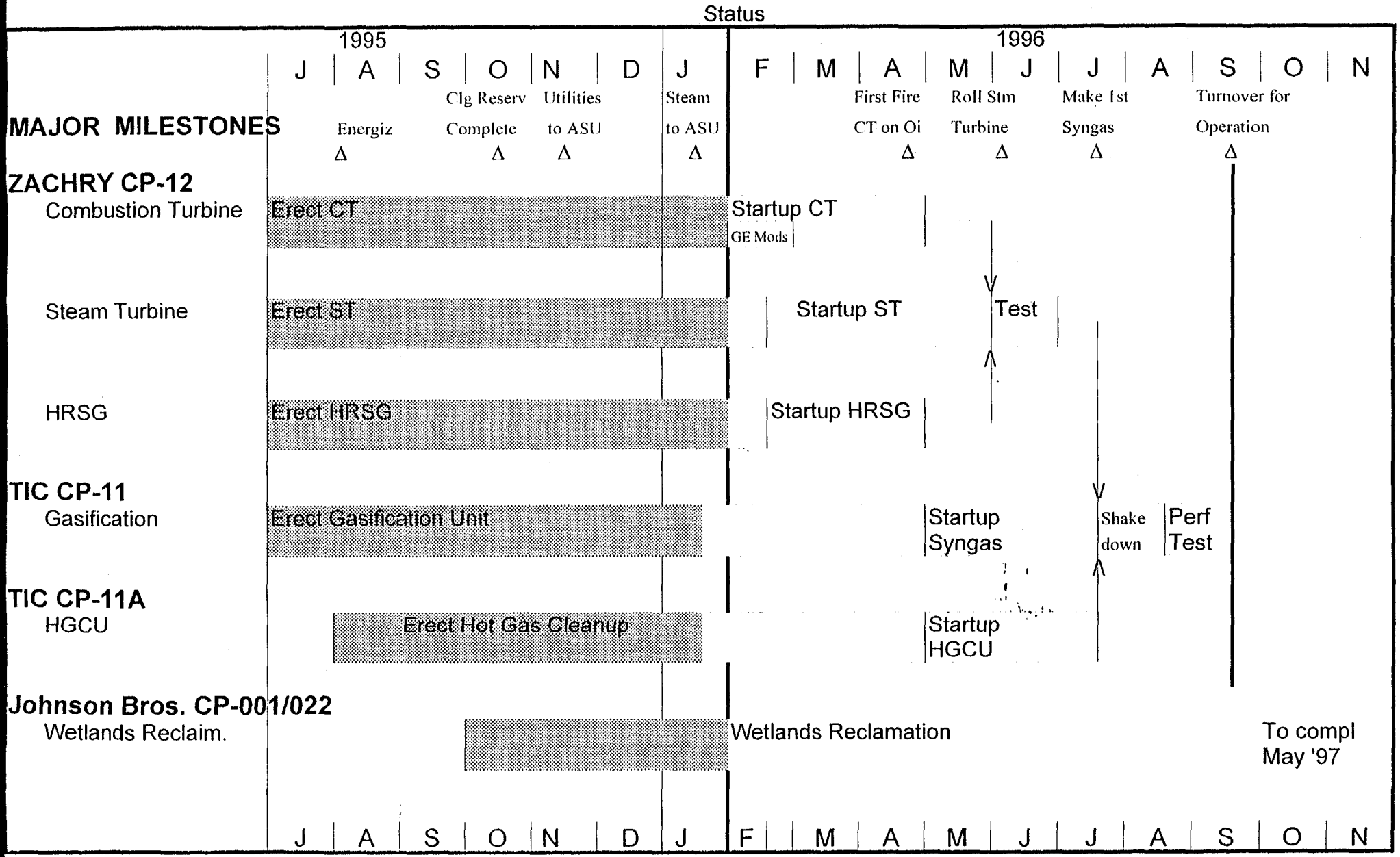
- Turnover for Operation Date
  - Current Projection
  - Critical Path
  - Fuel Oil On-Site
  - ASU and Sulfuric Acid Plant Construction
  - Cooling Pond Complete
  - Beginning Coal Procurement
  - Big Bend Coal Yard Changes
  - Start-Up
  - Shakedown and Performance Test Plan
  - Simulator
  - Continuation Application

POLK POWER PROJECT

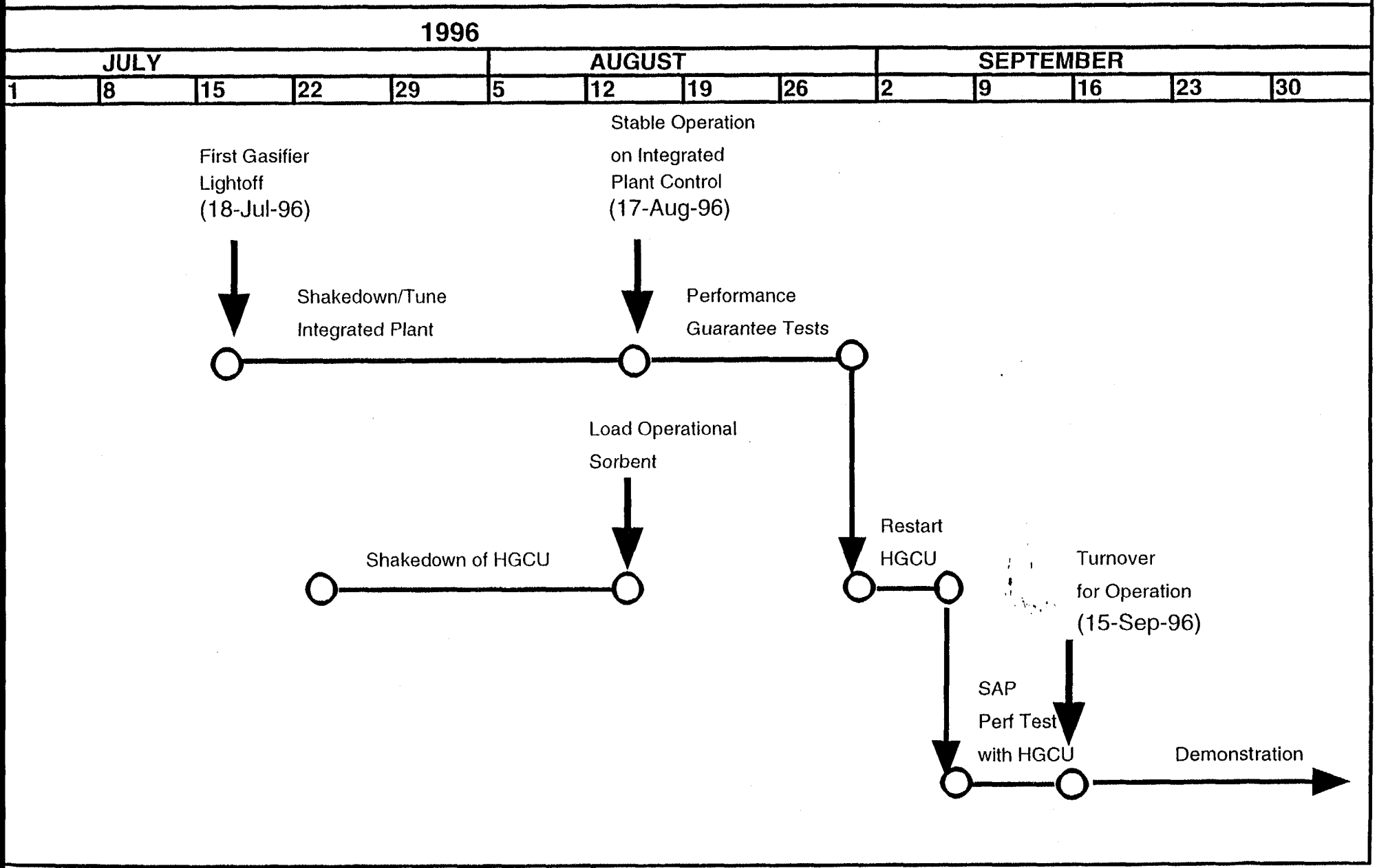
PROJECT MILESTONES

	PLANNED	ACTUAL
• SET RSC	01-JUL-95	26-JUN-95
• ENERGIZE BUS SUB 0	01-AUG-95	27-JUL-95
• COOLING RESERVOIR COMPLETE	15-OCT-95	15-OCT-95
• UTILITIES TO ASU	13-NOV-95	13-NOV-95
• STEAM TO ASU	10-JAN-96	15-JAN-96
• ACID PLANT COMPLETE	15-FEB-96	
• FIRST COAL IN SILO	13-MAR-96	
• FIRST FIRE CTG (ON OIL)	19-APR-96	
• STEAM BLOWS COMPLETE	30-APR-96	
• ROLL STEAM TURBINE	01-JUN-96	
• MAKE FIRST SYNGAS	18-JUL-96	
• TURNOVER FOR OPERATION	15-SEP-96	

POLK POWER PROJECT
SUMMARY SCHEDULE statused thru 31-Jan-96



SHAKEDOWN & PERFORMANCE GUARANTEE TEST PLAN
POLK POWER STATION



Polk Power Station
Fall 1995 Reforecast

		PTD Dec94	Jan95	Feb95	Mar95	Apr95	May95	Jun95	Jul95	Aug95	Sep95	Oct95	Nov95	Dec95
Fall 95 Reforecast														
"Net" TEC Costs														
	Mth	184,330	6,544	12,105	28,247	17,892	15,149	36,337	8,904	23,133	11,651	14,642	12,821	18,922
	Cum	184,330	190,874	202,978	231,226	249,118	264,267	300,604	309,508	332,641	344,292	358,934	371,755	390,676
	Yearly	184,330												206,346
Fall 95 Reforecast														
"Gross" TEC Costs														
	Mth	227,508	5,394	13,255	33,745	21,177	18,983	40,350	16,549	28,991	15,693	24,325	16,736	25,691
	Cum	227,508	232,902	246,156	279,901	301,078	320,061	360,411	376,961	405,951	421,644	445,970	462,706	488,397
	Yearly	227,508												260,889
Fall 95 Reforecast														
DOE Costs														
	Mth	(43,178)	1,150	(1,150)	(5,497)	(3,285)	(3,834)	(4,013)	(7,645)	(5,858)	(4,042)	(9,684)	(3,915)	(6,768)
	Cum	(43,178)	(42,028)	(43,178)	(48,675)	(51,960)	(55,794)	(59,807)	(67,452)	(73,310)	(77,352)	(87,036)	(90,951)	(97,719)
	Yearly	(43,178)												(54,541)

Polk Power Station
Fall 1995 Reforecast

		Jan96	Feb96	Mar96	Apr96	May96	Jun96	Jul96	Aug96	Sep96	Oct96	Nov96	Dec96
Fall 95 Reforecast													
"Net" TEC Costs													
	Mth	10,808	10,779	8,349	7,699	6,737	6,039	7,552	4,727	3,987	7,066	4,109	2,740
	Cum	401,485	412,265	420,614	428,313	435,050	441,089	448,642	453,369	457,356	464,422	468,531	471,272
	Yearly												80,594

		Jan96	Feb96	Mar96	Apr96	May96	Jun96	Jul96	Aug96	Sep96	Oct96	Nov96	Dec96
Fall 95 Reforecast													
"Gross" TEC Costs													
	Mth	13,902	13,476	10,491	9,616	8,575	7,705	10,112	6,003	5,086	8,936	5,227	3,523
	Cum	502,299	515,774	526,266	535,882	544,457	552,162	562,274	568,277	573,363	582,301	587,528	591,051
	Yearly												102,655

		Jan96	Feb96	Mar96	Apr96	May96	Jun96	Jul96	Aug96	Sep96	Oct96	Nov96	Dec96
Fall 95 Reforecast													
DOE Costs													
	Mth	(3,094)	(2,696)	(2,143)	(1,917)	(1,838)	(1,666)	(2,559)	(1,275)	(1,099)	(1,872)	(1,118)	(783)
	Cum	(100,813)	(103,509)	(105,652)	(107,569)	(109,407)	(111,073)	(113,632)	(114,906)	(116,007)	(117,879)	(118,997)	(119,780)
	Yearly												(22,061)

Polk Power Station
Fall 1994 Bechtel Estimate No. 2

		PTD Dec94	Jan95	Feb95	Mar95	Apr95	May95	Jun95	Jul95	Aug95	Sep95	Oct95	Nov95	Dec95
Fall 94 Bechtel Estimate No. 2														
"Net" TEC Costs														
	Mth	180,815	6,031	25,798	33,692	22,695	19,236	17,193	14,553	16,915	13,979	10,854	12,149	11,817
	Cum	180,815	186,846	212,645	246,336	269,031	288,267	305,460	320,013	336,928	350,907	361,760	373,909	385,726
	Yearly	180,815												204,911
Fall 94 Bechtel Estimate No. 2														
"Gross" TEC Costs														
	Mth	223,189	7,846	31,901	42,057	28,352	24,996	22,357	18,442	21,395	18,110	13,736	15,321	14,928
	Cum	223,189	230,835	262,736	304,793	333,145	358,140	380,497	398,939	420,334	438,444	452,180	467,501	482,430
	Yearly	223,189												259,240
Fall 94 Bechtel Estimate No. 2														
DOE Costs														
	Mth	42,374	1,615	6,103	8,365	5,656	5,760	5,164	3,889	4,481	4,132	2,882	3,172	3,111
	Cum	42,374	43,989	50,091	58,457	64,113	69,873	75,037	78,925	83,406	87,538	90,420	93,592	96,703
	Yearly	42,374												54,329

Polk Power Station
Fall 1994 Bechtel Estimate No. 2

		Jan96	Feb96	Mar96	Apr96	May96	Jun96	Jul96	Aug96	Sep96	Oct96	Nov96	Dec96
Fall 94 Bechtel Estimate No. 2													
"Net" TEC Costs													
	Mth	9,035	9,377	9,029	7,850	6,424	6,729	6,613	2,826	3,371	1,909	395	520
	Cum	394,761	404,139	413,167	421,017	427,441	434,170	440,782	443,608	446,980	448,889	449,284	449,804
	Yearly												64,078
Fall 94 Bechtel Estimate No. 2													
"Gross" TEC Costs													
	Mth	11,410	11,854	11,382	9,901	8,106	8,427	7,524	2,828	3,371	1,909	395	520
	Cum	493,840	505,694	517,075	526,976	535,084	543,512	551,036	553,862	557,233	559,142	559,537	560,057
	Yearly												77,828
Fall 94 Bechtel Estimate No. 2													
DOE Costs													
	Mth	2,375	2,476	2,353	2,052	1,684	1,699	911					
	Cum	99,079	101,555	103,908	105,959	107,643	109,342	110,253	110,253	110,253	110,253	110,253	110,253
	Yearly												13,550

Polk Power Station
Fall 1994 Bechtel Estimate No. 2

		Jan97	Feb97	Mar97	Apr97	May97	Jun97	Jul97	Aug97	Sep97	Oct97	Nov97	Dec97
Fall 94 Bechtel Estimate No. 2													
"Net" TEC Costs													
	Mth	0	0	0	0	0	0	0	0	0	0	0	0
	Cum	449,804	449,804	449,804	449,804	449,804	449,804	449,804	449,804	449,804	449,804	449,804	449,804
	Yearly												0
Fall 94 Bechtel Estimate No. 2													
"Gross" TEC Costs													
	Mth												
	Cum	560,057	560,057	560,057	560,057	560,057	560,057	560,057	560,057	560,057	560,057	560,057	560,057
	Yearly												0
Fall 94 Bechtel Estimate No. 2													
DOE Costs													
	Mth												
	Cum	110,253	110,253	110,253	110,253	110,253	110,253	110,253	110,253	110,253	110,253	110,253	110,253
	Yearly												0

Polk Power Station
DOE 3/95 Overrun Request

		PTD Dec94	Jan95	Feb95	Mar95	Apr95	May95	Jun95	Jul95	Aug95	Sep95	Oct95	Nov95	Dec95
March 1995 DOE Overrun Request														
"Net" TEC Costs														
	Mth	184,330	6,544	12,105	28,247	17,892	15,149	36,337	8,904	23,133	11,651	14,642	12,821	18,916
	Cum	184,330	190,874	202,978	231,226	249,118	264,267	300,604	309,508	332,641	344,292	358,934	371,755	390,671
	Yearly	184,330												206,342
March 1995 DOE Overrun Request														
"Gross" TEC Costs														
	Mth	227,508	5,394	13,255	33,745	21,177	18,963	40,350	16,549	28,991	15,693	24,325	16,738	25,684
	Cum	227,508	232,902	246,156	279,901	301,078	320,061	360,411	376,961	405,951	421,644	445,970	462,708	488,390
	Yearly	227,508												260,883
March 1995 DOE Overrun Request														
DOE Costs														
	Mth	(43,178)	1,150	(1,150)	(5,497)	(3,285)	(3,834)	(4,013)	(7,645)	(5,858)	(4,042)	(9,684)	(3,915)	(6,768)
	Cum	(43,178)	(42,028)	(43,178)	(48,675)	(51,960)	(55,794)	(59,807)	(67,452)	(73,310)	(77,352)	(87,036)	(90,951)	(97,719)
	Yearly	(43,178)												(54,541)

Polk Power Station
DOE 3/95 Overrun Request

		Jan96	Feb96	Mar96	Apr96	May96	Jun96	Jul96	Aug96	Sep96	Oct96	Nov96	Dec96
March 1995 DOE Overrun Request													
"Net" TEC Costs													
	Mth	10,806	10,779	8,349	7,699	6,737	6,039	7,552	4,727	3,987	8,722	5,078	3,393
	Cum	401,478	412,257	420,606	428,305	435,043	441,082	448,634	453,361	457,348	466,070	471,148	474,541
	Yearly												83,869
March 1995 DOE Overrun Request													
"Gross" TEC Costs													
	Mth	13,900	13,476	10,491	9,616	8,575	7,705	10,112	6,003	5,086	10,697	8,256	4,216
	Cum	502,291	515,766	526,258	535,874	544,450	552,155	562,266	568,269	573,355	584,052	590,307	594,524
	Yearly												106,133
March 1995 DOE Overrun Request													
DOE Costs													
	Mth	(3,094)	(2,696)	(2,143)	(1,917)	(1,838)	(1,666)	(2,559)	(1,275)	(1,099)	(1,975)	(1,178)	(823)
	Cum	(100,813)	(103,509)	(105,652)	(107,569)	(109,407)	(111,073)	(113,632)	(114,908)	(116,007)	(117,981)	(119,159)	(119,983)
	Yearly												(22,264)

Polk Power Station
DOE 3/95 Overrun Request

		Jan97	Feb97	Mar97	Apr97	May97	Jun97	Jul97	Aug97	Sep97	Oct97	Nov97	Dec97
March 1995 DOE Overrun Request													
"Net" TEC Costs													
	Mth	2,753	2,753	2,753	2,760	2,507	0	0	0	0	0	0	0
	Cum	477,294	480,046	482,799	485,559	488,066	488,066	488,066	488,066	488,066	488,066	488,066	488,066
	Yearly												13,525

		Jan97	Feb97	Mar97	Apr97	May97	Jun97	Jul97	Aug97	Sep97	Oct97	Nov97	Dec97
March 1995 DOE Overrun Request													
"Gross" TEC Costs													
	Mth	3,345	3,345	3,345	3,354	3,046	0	0	0	0	0	0	0
	Cum	597,869	601,214	604,560	607,914	610,960	610,960	610,960	610,960	610,960	610,960	610,960	610,960
	Yearly												16,436

		Jan97	Feb97	Mar97	Apr97	May97	Jun97	Jul97	Aug97	Sep97	Oct97	Nov97	Dec97
March 1995 DOE Overrun Request													
DOE Costs													
	Mth	(593)	(593)	(593)	(594)	(540)	0	0	0	0	0	0	0
	Cum	(120,575)	(121,168)	(121,761)	(122,355)	(122,894)	(122,894)	(122,894)	(122,894)	(122,894)	(122,894)	(122,894)	(122,894)
	Yearly												(2,911)