

PD-A BE-558

53  
78453

**Monthly Progress Report  
for June 1992**

**Presented by: Jim R Palmore**

**Contract No.: 263-0194-C-00-1035-00**

**Project No. : 263-0194**

**Alexandria Electrical Network Modernization  
Distribution System**

**Black & Veatch International/Sabbour Associates  
USAID/Cairo**

**8 July 1992**

**CONTENTS**

- I. Summary**
- II. Project administration**
- III. Project activities**
- IV. Procurement**
- V. Training**
- VI. Design**
- VII. Schedule**

**Appendices**

- A Low Tension Overhead Network Design
- B Low Tension Overhead Network Design, Percent complete
- C Low Tension Overhead Network Construction
- D Low Tension Overhead Construction, Percent Complete
- E Service Box Rehabilitation
- F Low Tension Service Box Design, Percent Complete
- G Service Box Construction, Percent Complete
- H 11 kV Cable Design percent complete
- I 11 kV Cable Construction percent complete
- J Capacitor Program, Status
- K Project Procurement, Percent Complete
- L Project Design, Percent Complete
- M Project Monthly Status, Percent Complete

**I. Summary**

The purpose of this report is to present project activities during June and project status through June. Project activities during the period includes Low Tension Overhead Networks rehabilitation, Service Box Rehabilitation, Medium Tension Cable Data Gathering and construction monitoring, Capacitor Study Analysis, Preparation of Procurement Documents, and other tasks being implemented to help improve the distribution system operation.

**II. Project Administration**

1. The BVI staff did not change during this period. The current staff includes the following positions

- Resident Project Manager
- Resident Distribution Engineer
- Resident Autocad Specialist
- Resident construction Specialist

2. The Sabbour Associates Staff remained unchanged during this period. The current staff includes the following positions

- Project Coordinator (part time)
- Assistant Resident Project Manager
- Two Distribution Engineers
- Financial and Administration Director
- Assistant Financial Director
- Draftsman
- Secretary
- Secretary/ Receptionist
- Executive Secretary (Part Time)
- Executive Secretary

**III. Project activities**

1. Low Tension Overhead Network Design for the Low Tension Overhead System continued progressing ahead of schedule. Design has been completed for nine of the thirteen districts. Through the end of June design work and release of construction documents is 102.5 percent complete when based on the original estimate. Appendix A provides a summary of work in progress and completion through June. Appendix B provides a graphical presentation of LTOH design planned and actual completion.

Low Tension Overhead network construction was initiated during December. During June construction was completed in 17 Transformer Points with construction in progress on 15 Transformer Points in 12 districts. Appendix C presents a summary of construction in progress and completion through June. Appendix D provides a graphical presentation of LTOH construction, scheduled and actual completion.

2. Low Tension Underground Network Rehabilitation of the Low Tension Underground System involves application of proper electrical connections and installation of new Service Boxes. The design effort includes identification of the Service Boxes for rehabilitation and preparation of work orders itemizing the material required to complete the work. Through the end of June design work is 75.5 percent complete. Appendix E provides a summary of work in progress and completion through June. Appendix F provides a graphical presentation of the scheduled and actual completion of design activities. Until January the design rate was lagging behind the scheduled rate. The engineers responsible for Overhead Network rehabilitation design are also responsible for issuing Work Orders for Service Box rehabilitation. Overhead Network rehabilitation has been completed in several Districts allowing increased effort toward issuing Service Box Work Orders. During the period since January the rate has been ahead of schedule.

Construction for rehabilitation of Service Boxes is in progress utilizing surplus materials procured on the previous project. Construction was initiated in June 1991 with the monthly rate improving as construction was implemented in additional Districts. During January the districts conducted a detailed survey of the number of Service Boxes that require rehabilitation. During the survey the districts evaluated the rate they could carry out the construction. Based on information gathered during survey and evaluation the construction schedule was update at the end of January . Appendix E includes a report on construction completed during June and the total completion through the end of June. Appendix G is a graphical presentation of the scheduled and actual construction completion.

3. Medium Tension (11kV) Cable effort this month includes design for new cable placement and monitoring cable placement being carried out by AEDC Contractor. Construction is complete on 30.1 km, with construction in progress on 10.1 km of 11kV cable.

All underground cable installed under this project will be local purchase of cable produced in Egypt. AEDC does not have a design standard for application of this cable. The project will develop a design guide for use in installation of cable under this project. This guide will be developed into a standard for AEDC use in their cable installation design. Meetings were held with the responsible AEDC departments to establish criteria for use in developing the design guide. Cable data was obtained from Egyptian cable manufacturers that provide physical data of the cable. Ampacity calculations were made with the results being similar to the manufacturer's data when using the same parameters. The computer program was utilized to create ampacity tables for cable Application operating under various conditions and configurations.

A draft of the design guide standard was issued to AEDC for review during January. 11 kV Cable design and construction planned and actual are presented graphically in appendix H and I respectively.

4. Capacitor work and system analysis project activity related to the capacitor study included recording power factor and reactive power, and performing circuit analysis. During June recordings were completed for all transformers and circuits emanating from Moharem Bey Substation. Recordings were also taken in three Distribution Points fed from Moharam Bey Substation and two distribution points fed from central city substation.

The Capacitor study will identify the amount of reactive power to be compensated, determine where the capacitors will be located, and specify which locations will be fixed or switched. During June the computerized analysis was completed for analysis of feeders and circuits emanating from Semouha 66/11 kV Substation. Appendix J is a Graphical presentation of the Capacitor program status.

**IV. Procurement**

**1. US Dollar Purchase**

Activity relating to USAID purchased material involved the following items.

**1.1 IFB#1**

Bid documents for construction tools was issued for AEDC and USAID review on October 23. AEDC provided their comments on the technical section during December. This IFB was issued for final review in early February. After USAID issued a certificate for AEDC to administer a Host Country Contract, on 8 April, the announcement was sent for placement in the Commerce Business Daily. The announcement was published in CBD on April 17, 1992. Bid opening was held on June 22, 1992. Tender documents were sold to nine potential bidders. Bids were submitted by three bidders with each bidder quoting on all three line items.

**1.2 IFB#2**

This IFB will include 11kV and 380V Cable accessories, including splices, terminations, fault indicators, and other items not available from the local market. The IFB technical section was reviewed by AEDC during May. The document was updated to incorporate AEDC requirements, commercial section added, and issued for final AEDC and USAID review and approval during June.

**1.3 IFB#3**

Bid documents are under preparation for construction vehicles, including bucket trucks, crane trucks, and fork lift trucks. This IFB was issued for AEDC technical specifications review on March 26. A technical review was held with AEDC on 3 May. AEDC requirements, including quantities, have been incorporated and the document is being typed for final review by AEDC and USAID.

**1.4 IFB#4**

Technical specifications for 42 test equipment are being prepared. AEDC has reviewed the technical specifications for these items. Specifications for test van and for phase relation instruments have been added to the IFB.

### **1.5 Commercial Section**

The Commercial Sections were updated and reviewed by AEDC and USAID prior to issue with IFB #1. The review comments were incorporated into the IFB before issuing for final review.

### **2.0 Local Purchase**

AEDC will procure a major part of material and equipment from local sources, with payment in Egyptian Pounds. Material for local purchase will include LTOH cable, underground cable, transformers, switchgear, and miscellaneous hardware.

BVI/SA will prepare the technical specifications and bill of material for these purchases. AEDC will receive bids and issue purchase orders according to their standard purchase procedures. Items of material included in the Work Plan for USAID financing that will be procured from local manufacturer's must be inspected and tested to assure they are produced to acceptable quality standards. BVI/SA will assist AEDC in establishing test requirements and witnessing the tests.

BVI/SA accompanied AEDC on an inspection trip to witness production and testing of low tension overhead cable being manufactured by Electro-Cable. Based on observations during the trip BVI/SA provided AEDC the acceptance test requirements that are required to verify the cable quality.

### **3.0 Status**

Appendix K provides a graphical presentation of the scheduled and actual percent for the overall procurement activities. Procurement is 16.5 percent complete through the end of June.

## **V. Training**

Training AEDC personnel in proper operation and maintenance procedures is a vital part of this project. The major portion of training will be conducted by AEDC personnel actually performing the work assignments with the guidance of BVI/SA personnel. At the end of June AEDC have 12 employees assigned to the project. The following is a listing of titles for the personnel.

<u>Number</u>	<u>Title</u>
1	Manager
2	Distribution Engineer (Part time)
1	11kV Cable Engineer
4	Capacitor Engineer
3	Capacitor Technician
1	Warehouse Inventory

The project Work Plan requires autocad training to commence the first of October. The AEDC Provided Computers required for Autocad training were delivered on December 24 and the network was installed during January. Autocad training was implemented the first of February. Two engineers and three technicians have been assigned to the first group to receive autocad training. The trainees that did not have previous computer experience were enrolled in a short course to learn the basic computer operations. During June the trainees continued production training by working on single line diagrams and digitizing city maps. A second group of trainees, consisting of two engineers and two technicians, commenced training on the first of May.

## VI Design

Project design through this period involves design of Low Tension Network and 11kV cable design. Low Tension Overhead Design includes rehabilitation of 563 Transformer Points. Low Tension Underground design includes rehabilitation of 9,033 Service Boxes. Appendices A-F provide status of design for the Low Tension Network.

The composite design for all project design requirements is 36.2 percent complete through June. Appendix L is a graphical presentation for the project scheduled and actual completion.

## VII Schedule

Project planned and actual schedules are presented in earlier sections under their respective categories. The overall schedule for the entire project is presented in Appendix M. Through June the project is 23.96 percent complete.

The overall project is showing 4.59 percent behind schedule compared with 4.74 percent in May. This can be attributed to several factors. The project has been broken down into multiple tasks with each task assigned a budget. When an identifiable node within the tasks is reached a predetermined

Progress July 8, 1992

part of the budget is shown as complete. There is ongoing work on several tasks for which no identifiable nodes have been reached. Thus no completion credit has been given. The project budget, used for development of the project schedule, included the autocad specialist to commence training in July 1991. Since the Autocad Specialist was not assigned until February 1992, there is limited credit for autocad training. During the period while the conflict over conditions in the Commercial Section of the IFB was being resolved no IFB'S were issued. Until the IFB'S are issued no completion credit will be credited to the procurement activity.

USAID has issued the certificate authorizing AEDC to administer Host Country Contract with IFB'S being issued and tenders received. This will allow an improvement in progress of the procurement activity. The autocad specialist initiated training the first of February. Other computer training was also initiated during February. This will improve the training progress. With these improvements the monthly progress rate is above the scheduled completion rate.

**File:28.0200**  
**PC:PROGRESS**  
**B.E**

Appendix A

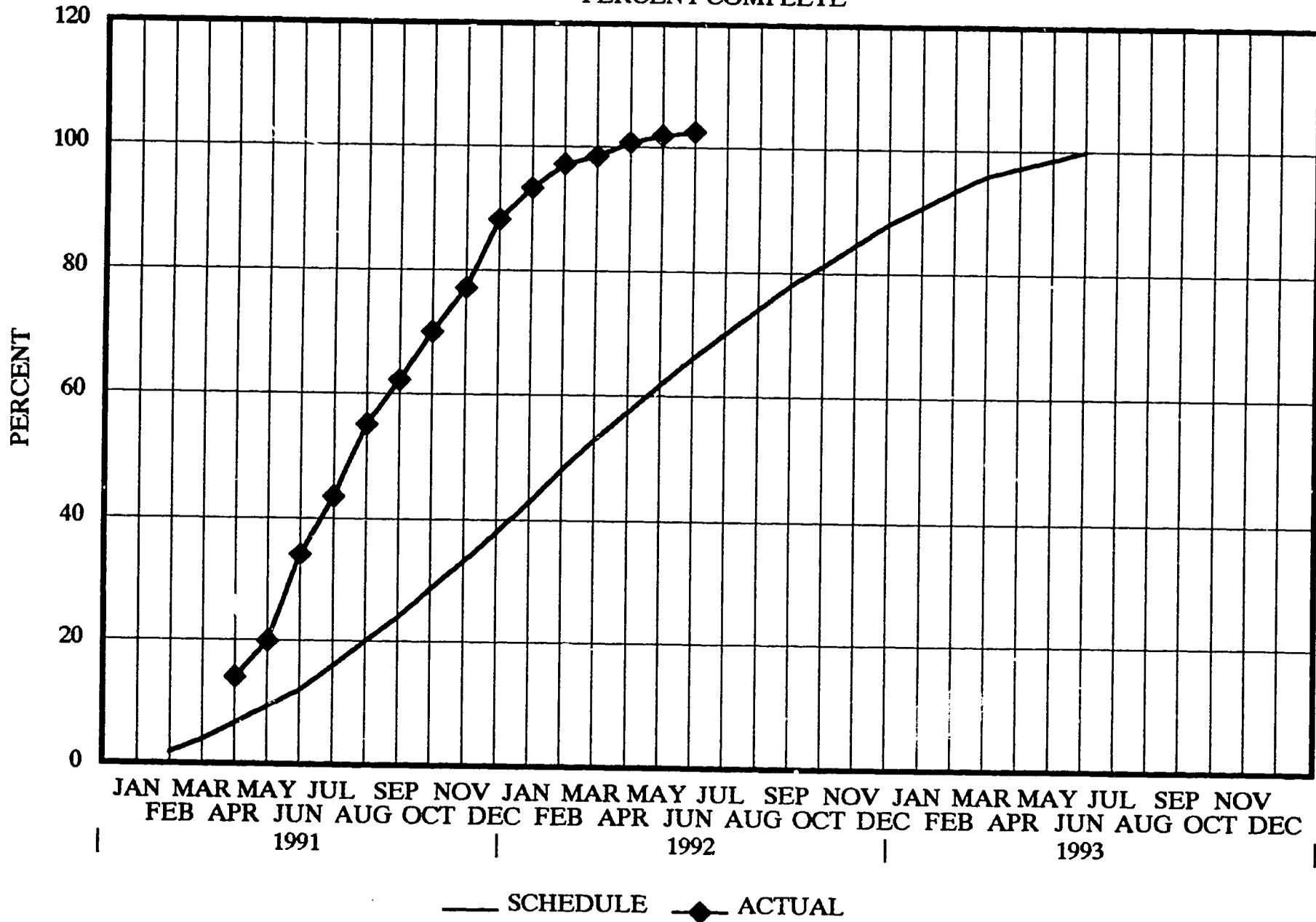
BVI/Sabbour  
Month: June 1992

Low Tension Overhead Network Design

District	Estimated Number of T.P.'s	Completed This Month				Completed To Date			
		Working Maps Prepared	Field Surveys Complete	Design Complete	Work Order Complete	Working Maps Prepared	Field Surveys Complete	Design Complete	Work Order Complete
<b>East/Central Zone</b>									
Abukir *	7	-	-	-	-	7	7	8	8 *
Sidi Bishr	150	-	-	-	-	144	144	159	159
Siouf *	97	-	-	-	-	97	97	118	118 *
Saba Pasha *	50	-	-	-	-	50	50	55	55 *
Semouha	32	-	-	-	-	32	32	31	31
<b>TOTAL</b>	<b>336</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>330</b>	<b>330</b>	<b>371</b>	<b>371</b>
<b>Central/West Zone</b>									
Ibrahimia *	45	-	-	-	-	45	45	49	49 *
Moharem Bey *	44	-	-	2	2	44	44	50	50 *
Gomrok *	76	-	-	-	-	76	76	86	86 *
Kabbary *	9	-	-	-	-	9	9	9	9 *
Dekhela *	12	-	-	-	-	12	12	14	14 *
Amria	13	2	2	2	2	9	9	9	9
Agami *	8	-	-	-	1	8	8	8	8 *
NW Coast	19	-	-	-	-	0	0	0	0
<b>Total</b>	<b>226</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>5</b>	<b>203</b>	<b>203</b>	<b>225</b>	<b>225</b>
<b>Grand Total</b>	<b>562</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>5</b>	<b>533</b>	<b>533</b>	<b>596</b>	<b>596</b>
<b>Percent Complete</b>	<b>99.8</b>	<b>0.4</b>	<b>0.4</b>	<b>0.7</b>	<b>0.9</b>	<b>94.7</b>	<b>94.7</b>	<b>105.9</b>	<b>105.9</b>

\* Design completed

LOW TENSION OVERHEAD NETWORK DESIGN  
PERCENT COMPLETE



Appendix B

//

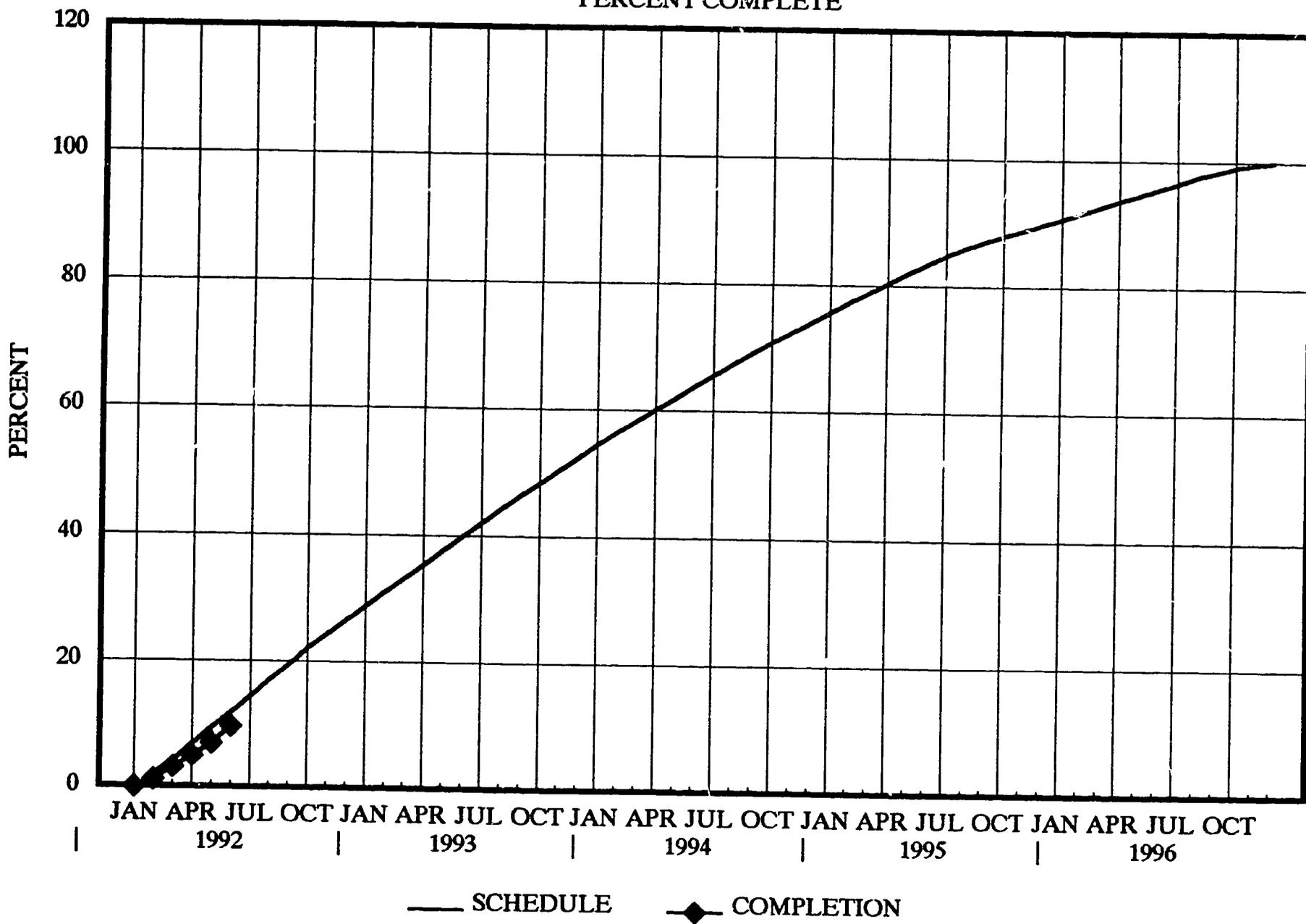
Low Tension Overhead Network Construction

District	Number of T.P.'s	Status This Month			Status To Date		
		Transformer Points			Transformer Points		
		Monthly Rate	Under Construction	Construction Complete	Scheduled Completion	Construction Complete	Status *
<b>East/Central Zone</b>							
Abukir	8	1	1	1	4	3	Bh.S.
Sidi Bishr	165	2 **	3	2	10	10	A.S.
Slouf	118	2	2	2	10	7	Bh.S.
Saba Pasha	55	1	1	1	5	5	A.S.
Semouha	35	1	1	1	5	4	Bh.S.
<b>TOTAL</b>	<b>381</b>		<b>8</b>	<b>7</b>	<b>34</b>	<b>29</b>	
<b>Central/West Zone</b>							
Ibrahimia	49	1.5	1	1	7.5	2	Bh.S.
Moharem Bey	50	2	1	4	10	10	Bh.S.
Gomrok	86	2	1	2	10	10	A.S.
Kabbary	9	1	1	1	5	5	A.S.
Dekhela	14	0.66	1	0.35	2.64	2.6	A.S.
Amria	13	0.66	1	1	1.98	1	Bh.S.
Agami	8	1	1	1	3	1	Bh.S.
NW Coast	19		-	-		-	
<b>Total</b>	<b>248</b>		<b>7</b>	<b>10.35</b>	<b>40.12</b>	<b>31.6</b>	
<b>Grand Total</b>	<b>629</b>		<b>15</b>	<b>17.35</b>	<b>74.12</b>	<b>60.6</b>	
<b>Percent Complete</b>	<b>100</b>		<b>2.4</b>	<b>2.8</b>	<b>11.8</b>	<b>9.6</b>	

\* A.S. : According to schedule; Ah.S. : Ahead of schedule;  
Bh.S.: Behind schedule.

\*\* Construction plan is based on 3 TPs per month from Oct.'92 - Oct.'96

LOW TENSION OVERHEAD CONSTRUCTION  
PERCENT COMPLETE



Appendix D

BV/Sabbour  
Month: June 1992

Appendix E

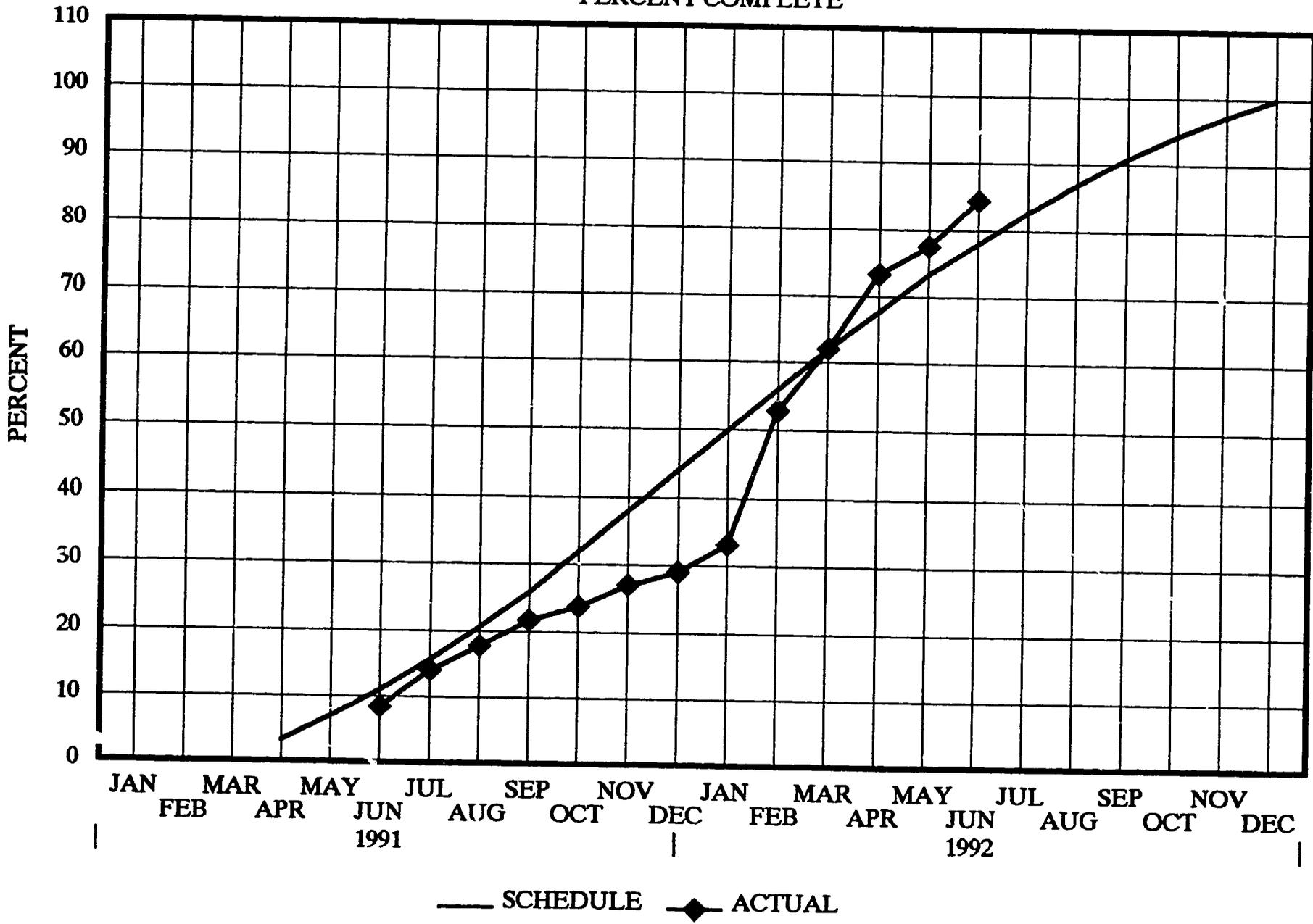
Service Box Rehabilitation

District	S.B's To Rehab.	Completed This Month				Completed To Date			
		Work Orders		Construction		Design	Construction		Status **
		No. Issued	No. of S.B.'s	Monthly Rate	S.B.'s Complete	No. of S.B.'s	Scheduled Completion	S.B.'s Complete	
<b>East/Central</b>									
Abukir	107	-	-	-	-	95	107	107	C.C.
Sidi Bishr	318	-	-	20	30	318	318	320	C.C.
Siouf	696	2	41	30	30	677	306	322	Ah.S.
Saba Paaha	1,454	6	191	40	40	1,213	404	413	Ah.S.
Semouha/ Sidi Gaber	432	2	34	20	20	404	332	232	A.S.
<b>Total</b>	<b>3,007</b>	<b>10</b>	<b>268</b>	<b>110</b>	<b>120</b>	<b>2,707</b>	<b>1,367</b>	<b>1,394</b>	
<b>Central/West</b>									
Ibrahimia	277	-	-	20	8	223	137	129	Bh.S.
Moharem Bey	255	-	-	20	30	115	105	115	Ah.S.
Gomrok	190	-	-	20	28	278	115	175	Ah.S.
Kabbary	163	-	-	20	20 *	198	155	151	Bh.S.
Dekheila	-	-	-	-	-	0		0	
Agamy	2,782	-	-	80	80 *	2,602	1,232	1,274	Ah.S.
Amria	2,359	8	346	60	60 *	1,489	459	409	Bh.S.
North West Villages	-	-	-	-	-	0		0	
<b>Total</b>	<b>6,026</b>	<b>8</b>	<b>346</b>	<b>220</b>	<b>226</b>	<b>4,903</b>	<b>2,203</b>	<b>2,253</b>	
<b>Grand Total</b>	<b>9,033</b>	<b>18</b>	<b>612</b>	<b>330</b>	<b>346</b>	<b>7,610</b>	<b>3,570</b>	<b>3,647</b>	
<b>Percent Complete</b>	<b>100</b>	<b>-</b>	<b>6.8</b>	<b>-</b>	<b>3.8</b>	<b>84.2</b>	<b>39.5</b>	<b>40.4</b>	

\* All service boxes have not been installed  
\*\* A.S. According to schedule; Ah.S. Ahead of schedule;  
Bh.S. Behind schedule; C.C. Construction completed.

12/

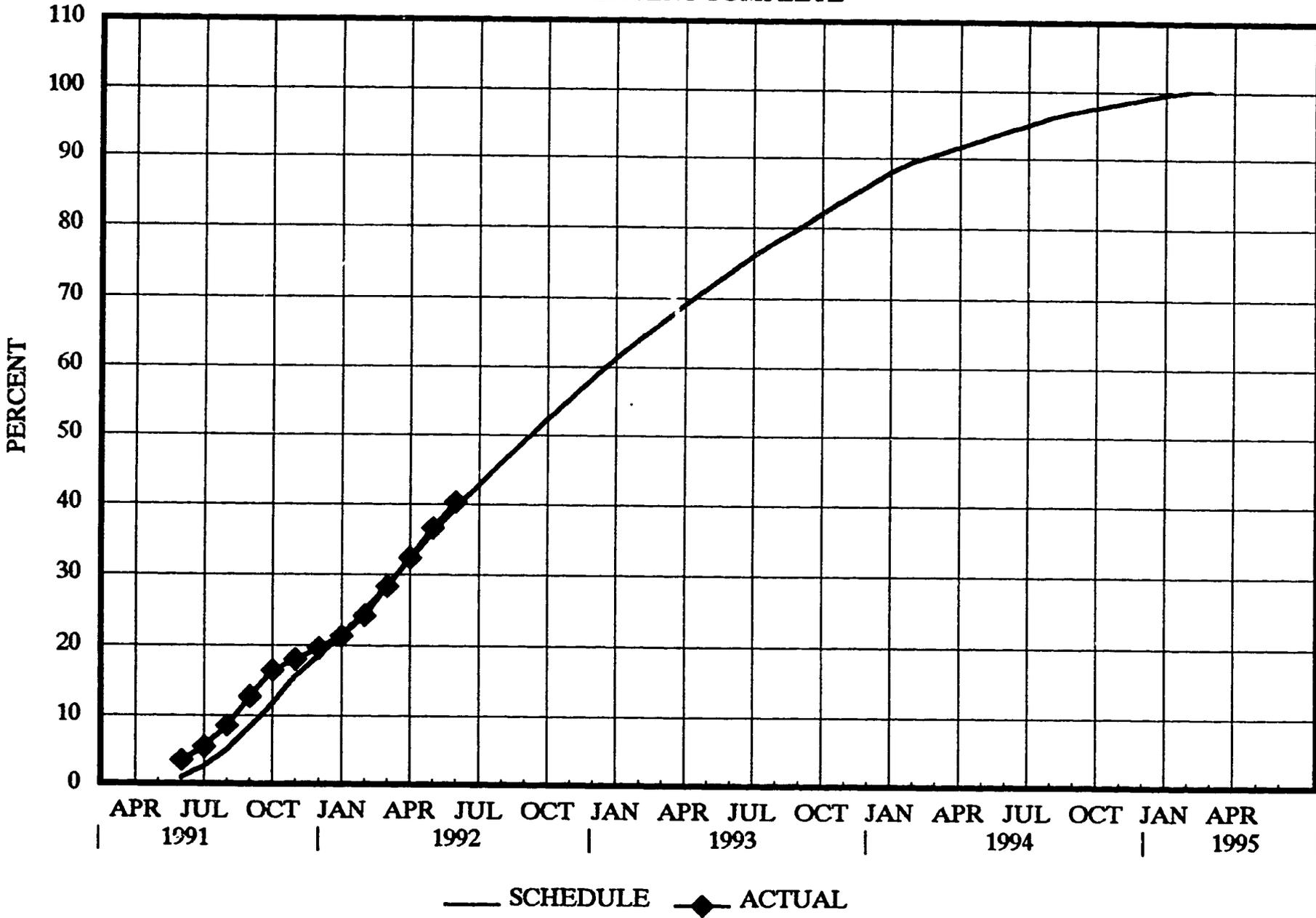
LOW TENSION SERVICE BOX DESIGN  
PERCENT COMPLETE



Appendix F

15

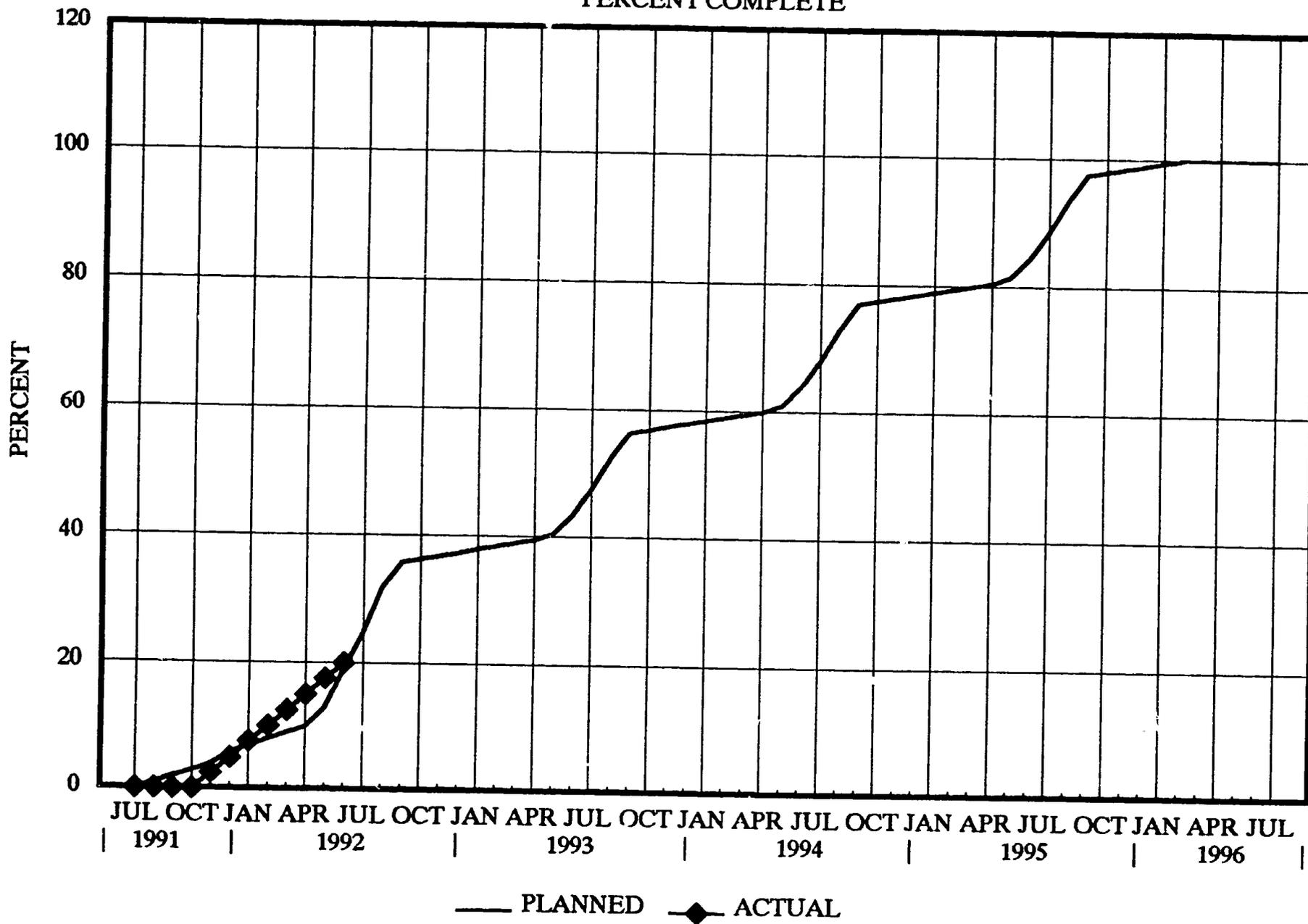
SERVICE BOX CONSTRUCTION  
PERCENT COMPLETE



Appendix G

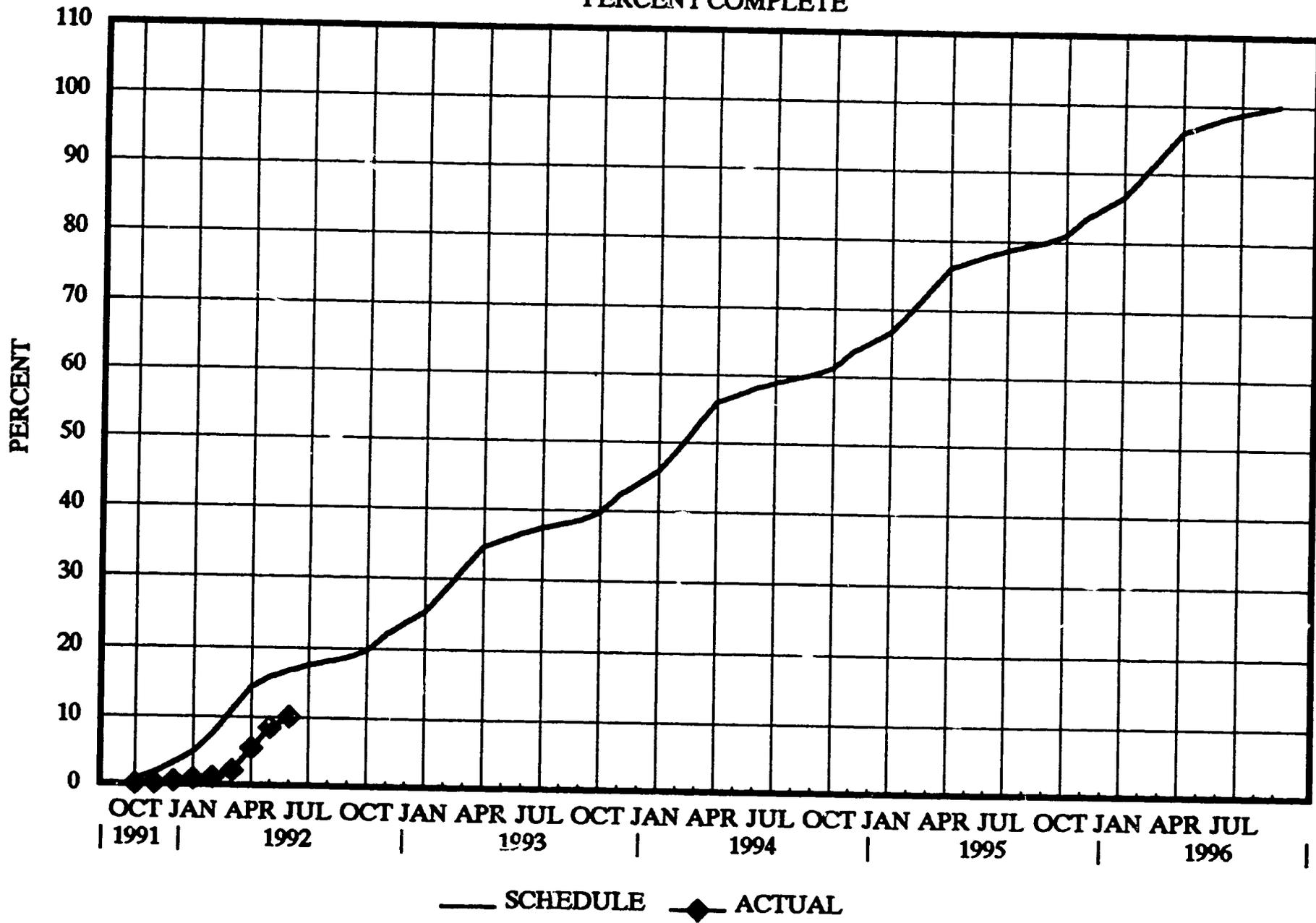
16

11KV CABLE DESIGN  
PERCENT COMPLETE



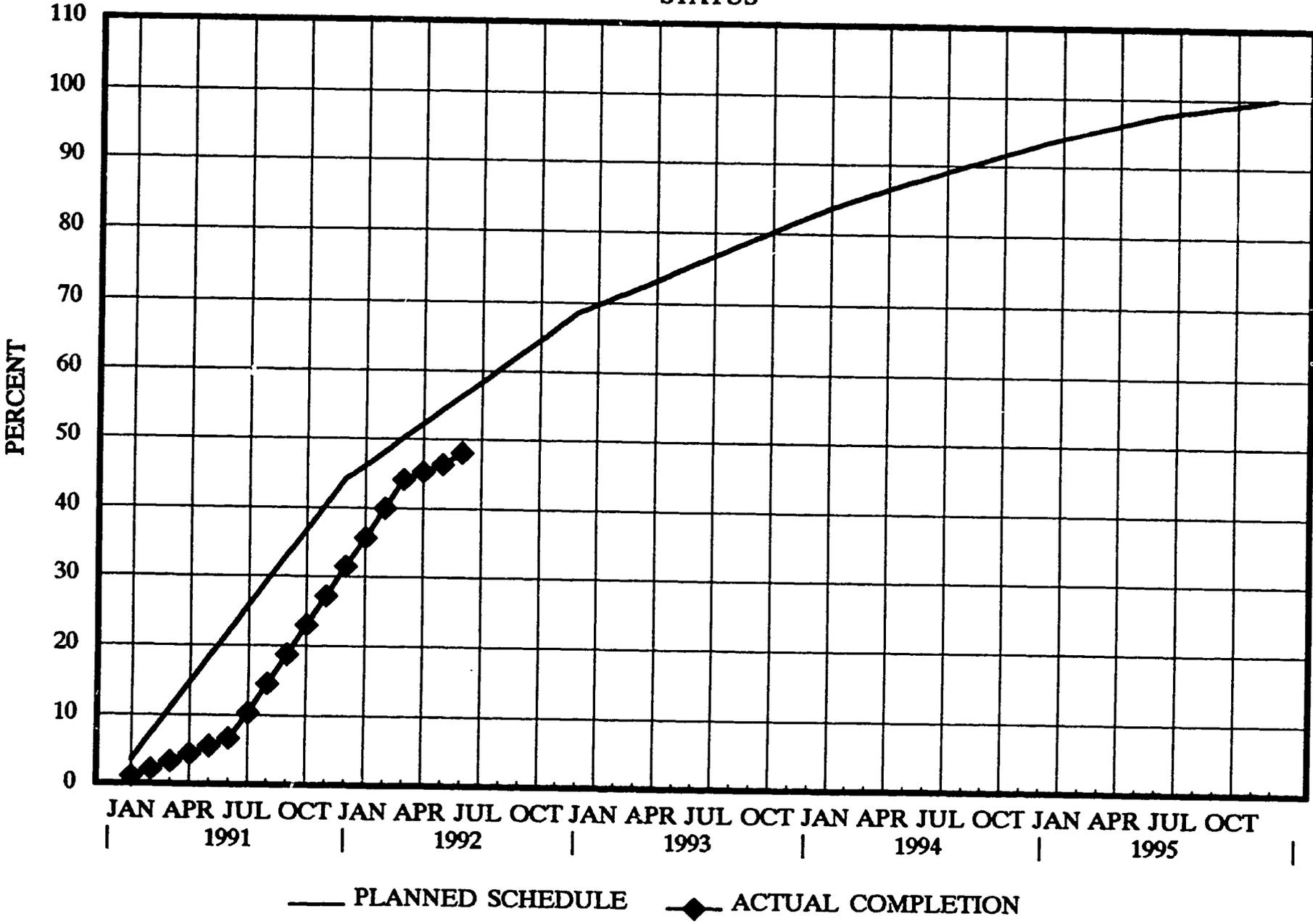
Appendix H

# 11KV CABLE CONSTRUCTION PERCENT COMPLETE



Appendix I

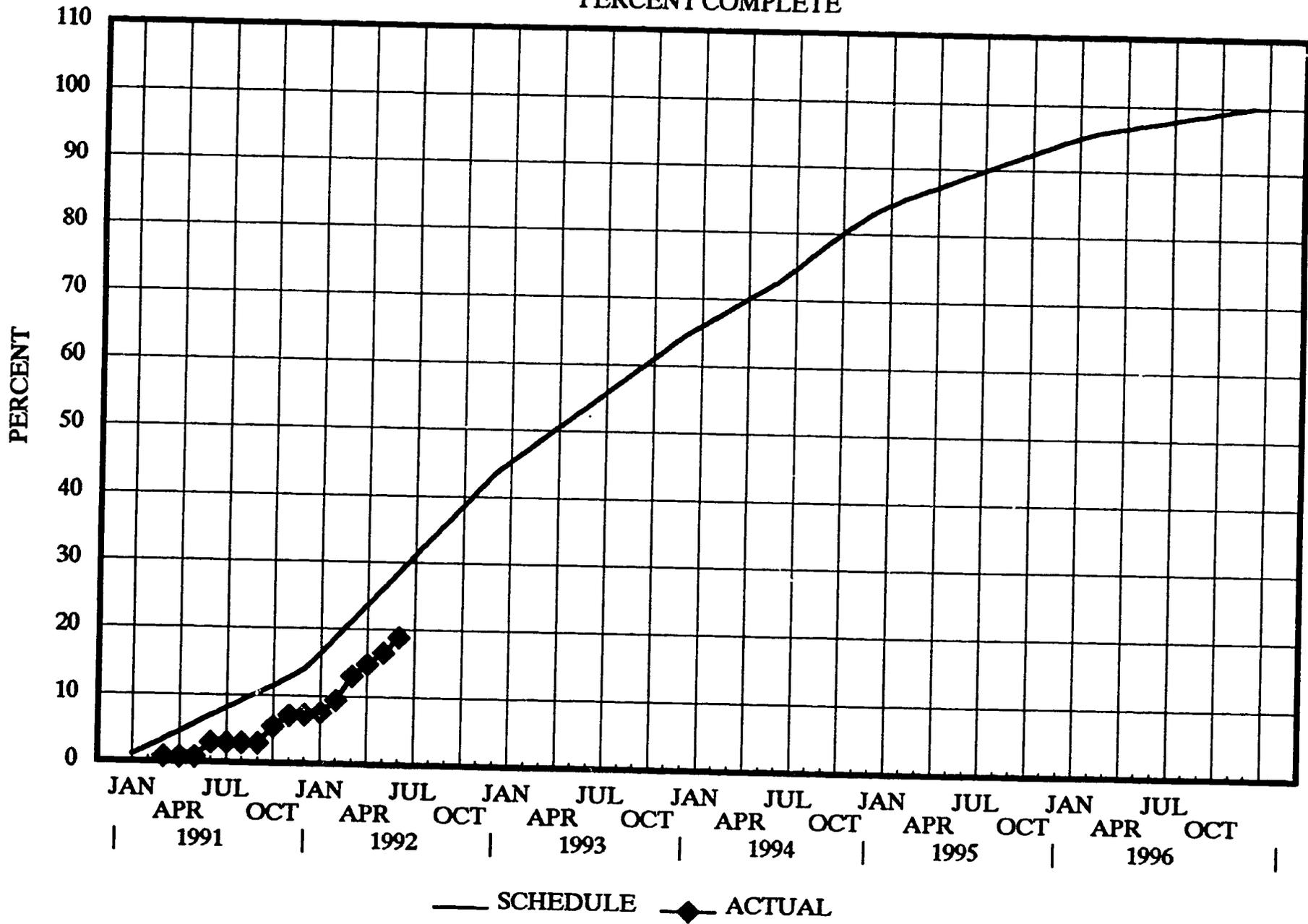
CAPACITOR PROGRAM  
STATUS



Appendix J

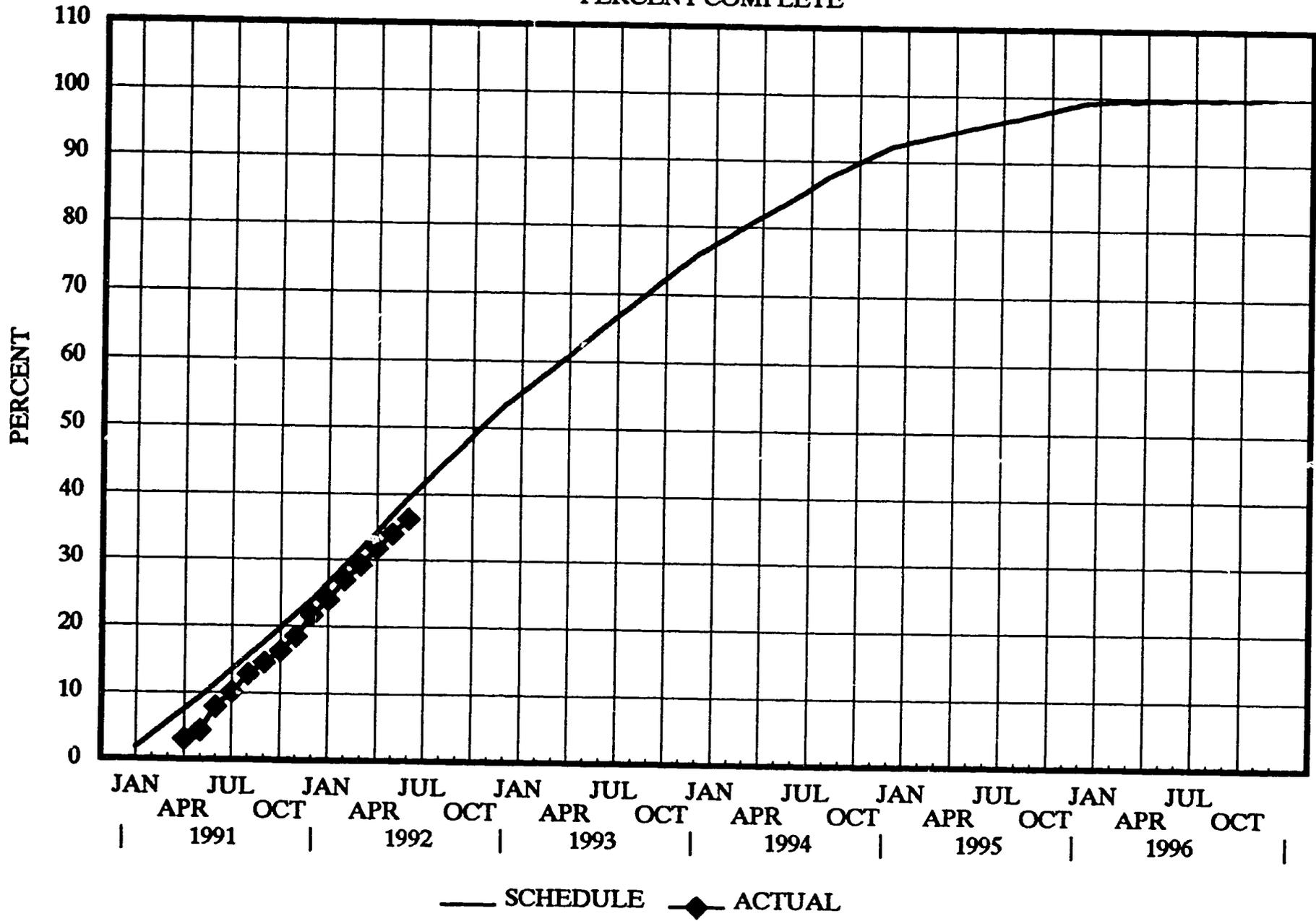
61

PROJECT PROCUREMENT  
PERCENT COMPLETE



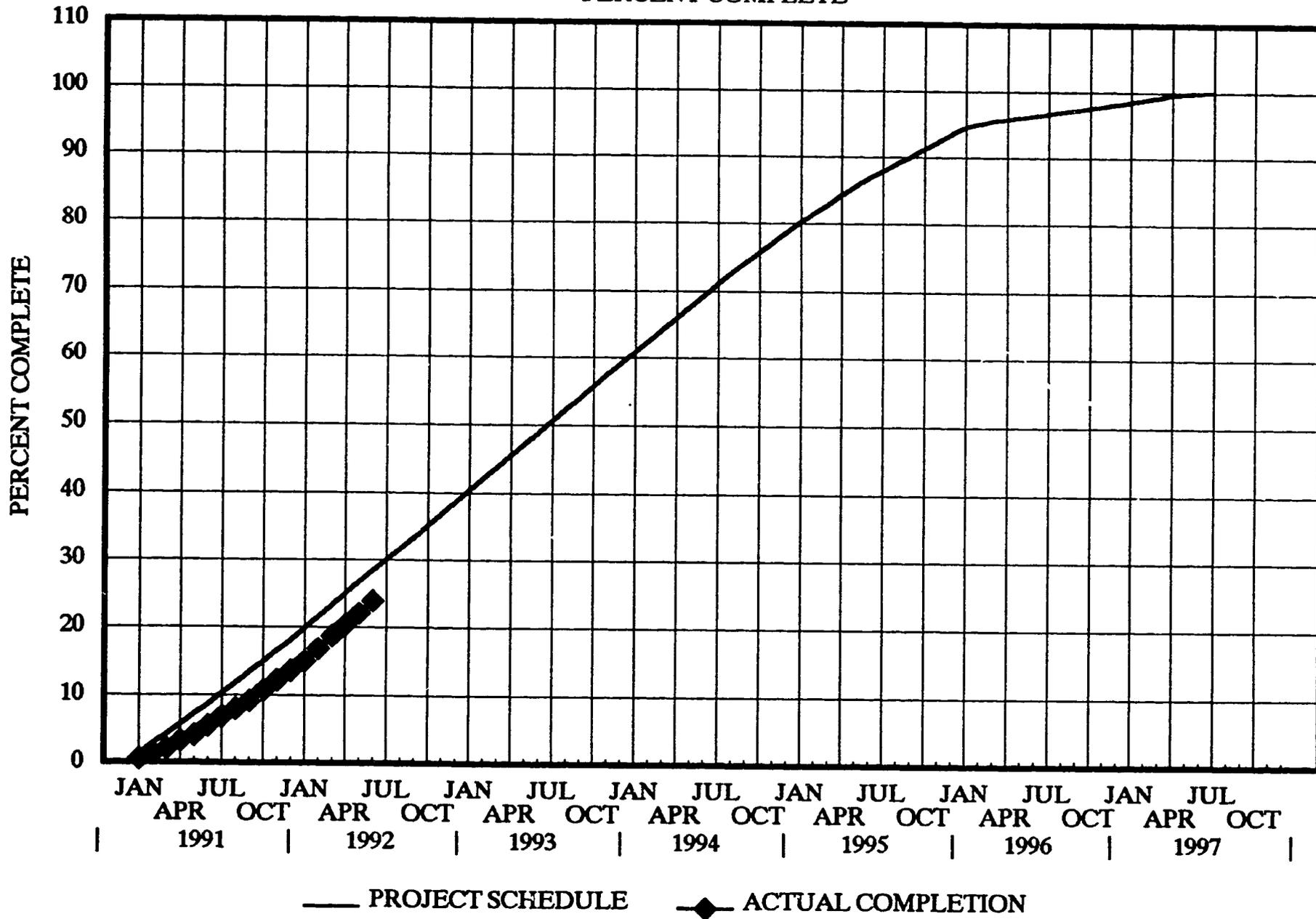
Appendix K

PROJECT DESIGN  
PERCENT COMPLETE



Appendix L

PROJECT MONTHLY STATUS  
PERCENT COMPLETE



Appendix M