PERRY

PERRY NUCLEAR POWER PLANT

CASELOAD FORECAST PANEL SITE VISIT

MEETING AGENDA

MARCH 6-8, 1984

1. Overview of project construction and preoperational testing schedule, including progress and major milestones completed, current problems and any anticipated problem areas that may impact the current projected fuel load date.

2. Detailed review and current status of design and engineering effort (by major discipline), including any potential problems that may arise from necessary rework.

3. Detailed review and current status of procurement activities, including valves, pipe, instruments, cable, major components, spare parts, etc.

4. Actual and proposed craft work force (by major craft), craft availability, productivity, potential labor negotiations and problems.

5. Detailed review and current status of all large and small bore pipe hangers, restraints, snubbers, etc., including design, rework, procurement, fabrication, delivery and installation.

6. Detailed review of project schedule identifying critical path items, near critical items, amount of float for various activities, the current critical path to fuel loading, methods of implementation of corrective action for any activities with negative float, and provisions for contingencies. The estimated project percent complete as of January 31, 1984.

7. Detailed review and current status of bulk quantities, including current estimated quantities, quantities installed to date, quantities scheduled to date, current percent complete for each, actual versus forecast installation rates, in cubic yards/mo., linear feet/mo., or number/mo., and basis for figures.

   (a) Concrete (CY)

   (b) Process Pipe (LF)

      - Large Bore Pipe (2 1/2" and larger)
      - Small Bore Pipe (2" and smaller)

   (c) Yard Pipe (LF)

   (d) Large Bore Pipe Hangers, Restraints, Snubbers (ea)

ATTACHMENT A

LIST OF ATTENDEES

CASELOAD FORECAST TEAM MEETING WITH CEI

MARCH 6, 1984

NRC Caseload Forecast Team

W. H. Lovelace
M. L. Gildner
J. E. Konklin*
J. J. Stefano
H. F. Lopez (NRC observer)

CEI

M. R. Edelman
W. Coleman
P. A. Solanics
F. R. Stead
G. Heffner
F. Hayes
A. Kaplan
J. Waldron

Ohio Edison

A. J. Rushnuk

Toledo Edison

A. Timme

Ohio Office of Consumers Council

R. Ganulin
J. Migoen

International Energy Assoc., Ltd.

P. Thurman

Others

M. Kraus, Lake County Telegraph
S. L. Hiatt, OCRE

---

*Not present at the CEI meeting. Participated in the detailed data review and site tour on March 7 and 8, 1984.

(e) Small Bore Pipe Hangers, Restraints (ea)

(f) Cable Tray (LF)

(g) Total Conduit (LF)

(h) Total Exposed Metal Conduit (LF)

(i) Cable (LF)

- Power
- Control
- Security
- Instrumentation
- Plant Lighting

(j) Terminations (ea)

- Power
- Control
- Security
- Instrumentation
- Plant Lighting

(k) Electrical Circuits (ea)

- Power
- Control
- Security

(l) Instrumentation (ea)

8. Detailed review and current status of preparation of preop and acceptance test procedures, integration of preop and acceptance test activities with construction schedule, system turnover schedule identifying each system and status, preop and acceptance tests schedule identifying each test and status, current and proposed preop and acceptance tests program manpower.

(a) Total number of procedures required for fuel load.

(b) Number of draft procedures not started.

(c) Number of draft procedures being written.

(d) Number of procedures approved.

(e) Number of procedures in review.

(f) Total number of preop and acceptance tests required for fuel load identifying each.

(g) Number of preop and acceptance tests completed identifying each.

(h) Number of preop and acceptance tests currently in progress identifying each and status.

(i) Number of systems and/or subsystems turned over to start-up identifying each.

(j) Number of systems turned over to Operations Group identifying each and outstanding open items for each system.

(k) Number of retests expected, if any, identifying each and cause for retest.

9. Detailed discussion of potential schedular influence due to changes attributed to NUREG-0737 and other recent licensing requirements.

10. Discussion of schedular impact, if any, regarding potential deficiencies reported in accordanced with 10 CFR 50.55(e).

11. Overview of current construction and startup management organization showing interfaces between the two.

12. Detailed review and current status of design, engineering and construction effort including quantities and work off rates for:

(a) ATWS design changes

(b) Appendix - R design implementation

(c) NSSS loads adequacy evaluation

(d) High energy line break (HELB)

(e) Moderate energy line break (MELB)

(f) Control room panel modifications (HED's)

(g) Pipe Stress (as-built) analysis

(h) N-Stamp certificatioo program

(i) Updating drawings and specifications to as-built condition

(j) Environmental qualification of safety-related equipment

(k) Seismic qualification of safety-related equipment

(l) Piping hanger/support reconcilliation program

(m) Tech support center . . . .

(n) Cable tray rack seismic barriers

(o) All work remaining in containment including schedule for completion

13. Detailed review of room/area turnover schedule and status.

14. Review of open punch list items by category (hardware/paper work) identifying each, and work off rate vs add on rate.

15. Status and schedule for seismic II/I review

16. Discussion of your actions regarding the issue of pipe cracking experienced at operating plants.

17. Review and status of Power assension test procedures including safety-related and non safety-related.

(a) Number required

(b) Number not started

(c) Number in preparation and approval process

(d) Number approved

18. Review and status of operating procedures required for fuel loading; including station administrative, station operational, surveillance (e.g. technical specification), maintenance and emergency procedures.

(a) Numbers required

(b) Numbers not started

(c) Numbers in preparation and approval process

(d) Nummbers approved

19. Detailed review and current status of permanent station and support staffing, training and licensing.

(a) Staffing for Unit 1 operation, including presently employed, projected and authorized for each group, (Reference FSAR Fig 13.1-2).

(b) Staffing of Perry (Unit 1) station organization including presently employed or contracted, projected, and authorized for each organizational subgroup (Reference FSAR Fig 13.1-4).

(c) Training program; outstanding training courses required prior to fuel load; identifying job titles, numbers of personnel, and projected completion.

(d) Operator and senior operator licenses presently onsite, contracted, projected, and required for fuel loading.

20. Site tour and observation of construction activities.

PROGRESS THRU JANUARY 1984

	SCHEDULED	ACTUAL
UNIT 1 & COMMON	94.6	92.1
PIPING	96.6	95.4
ELECTRICAL	93.1	90.9
INSTRUMENTATION	92.7	86.1

ATTACHMENT C

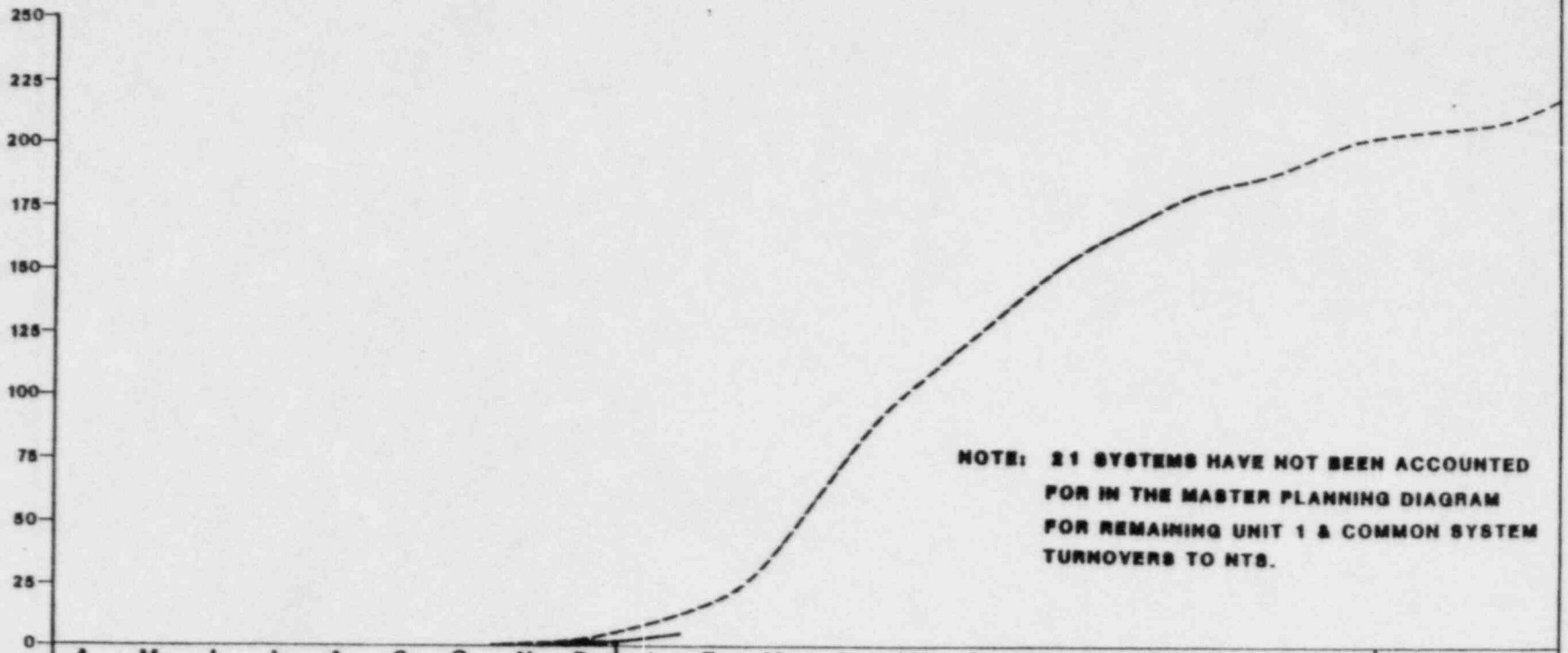
PROJECT PROGRESS SUMMARY

92.1 % UNIT #1 & COMMON

99.7 %	CIVIL STRUCTURAL
98.9 %	L B PIPE
97.1 %	S B PIPE
89.1 %	L B HANGERS
99.1 %	CABLE TRAY
85.5 %	CONDUIT
82.0 %	CABLE

NUCLEAR TEST SECTION

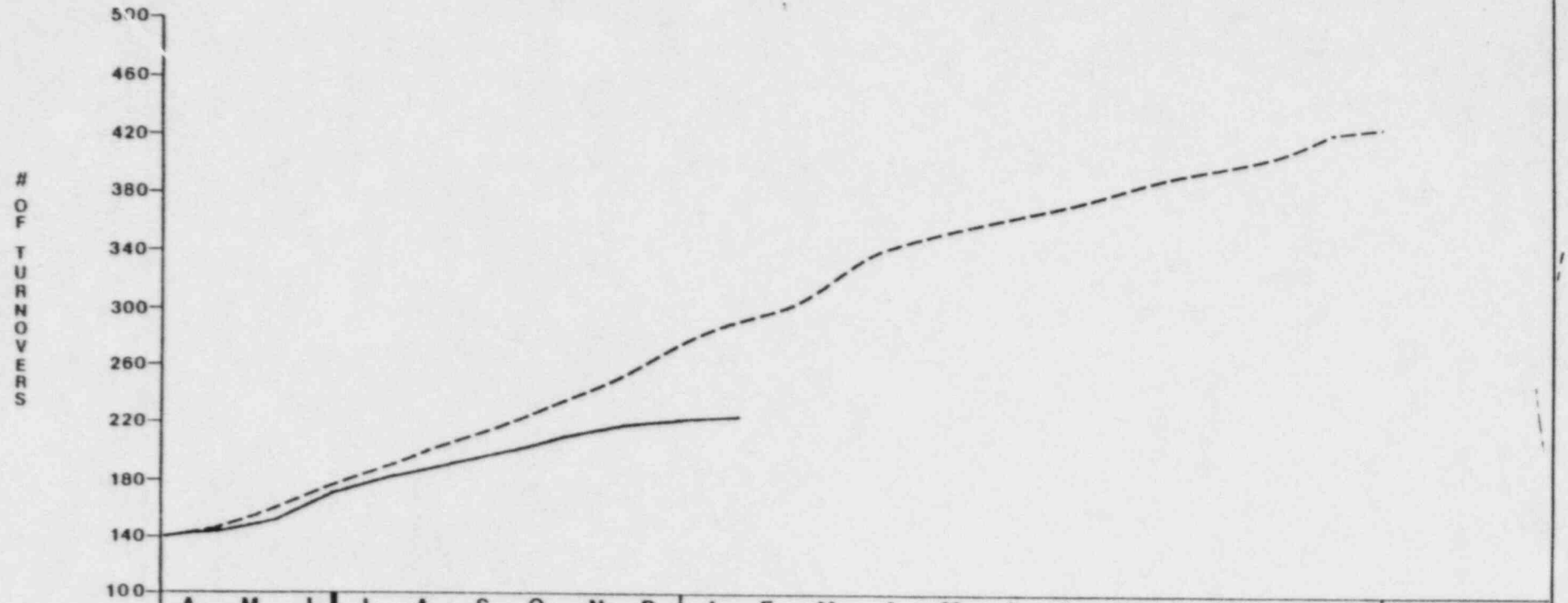
REMAINING SYSTEM TURNOVERS TO NTS-UNIT 0 & 1
MASTER PLANNING DIAGRAM



		A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
		1983									1984												1985		
THIS PERIOD	SCHEDULED								1	6	6	9	19	39	32	16	24	9	13	6	13	7	3	3	10
	ACTUAL									2	4														
TODATE	SCHEDULED								1	7	13	22	41	80	112	128	152	161	174	180	193	200	203	208	216
	ACTUAL									2	6														

NUCLEAR TEST SECTION

UNIT 1 & COMMON*
TURNOVERS TO NTS



		A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
		1983									1984												1985		
THIS PERIOD	SCHEDULED	3	14	18	13	15	12	18	17	26	18	8	27	17	10	5	14	14	4	5	26	5			
	ACTUAL	1	9	18	4	14	9	8	6	4	4														
TODATE	SCHEDULED	143	157	175	189	204	216	234	251	277	295	303	330	347	357	362	376	390	394	399	425	430			
	ACTUAL	141	150	168	180	194	203	211	217	221	225														

* INCLUDES UNIT 2 COMPLETION REQUIREMENTS

PERRY NUCLEAR POWER PLANT

MAJOR PROJECT MILESTONES (UNIT #1)

COMPLETED 1983 MILESTONES

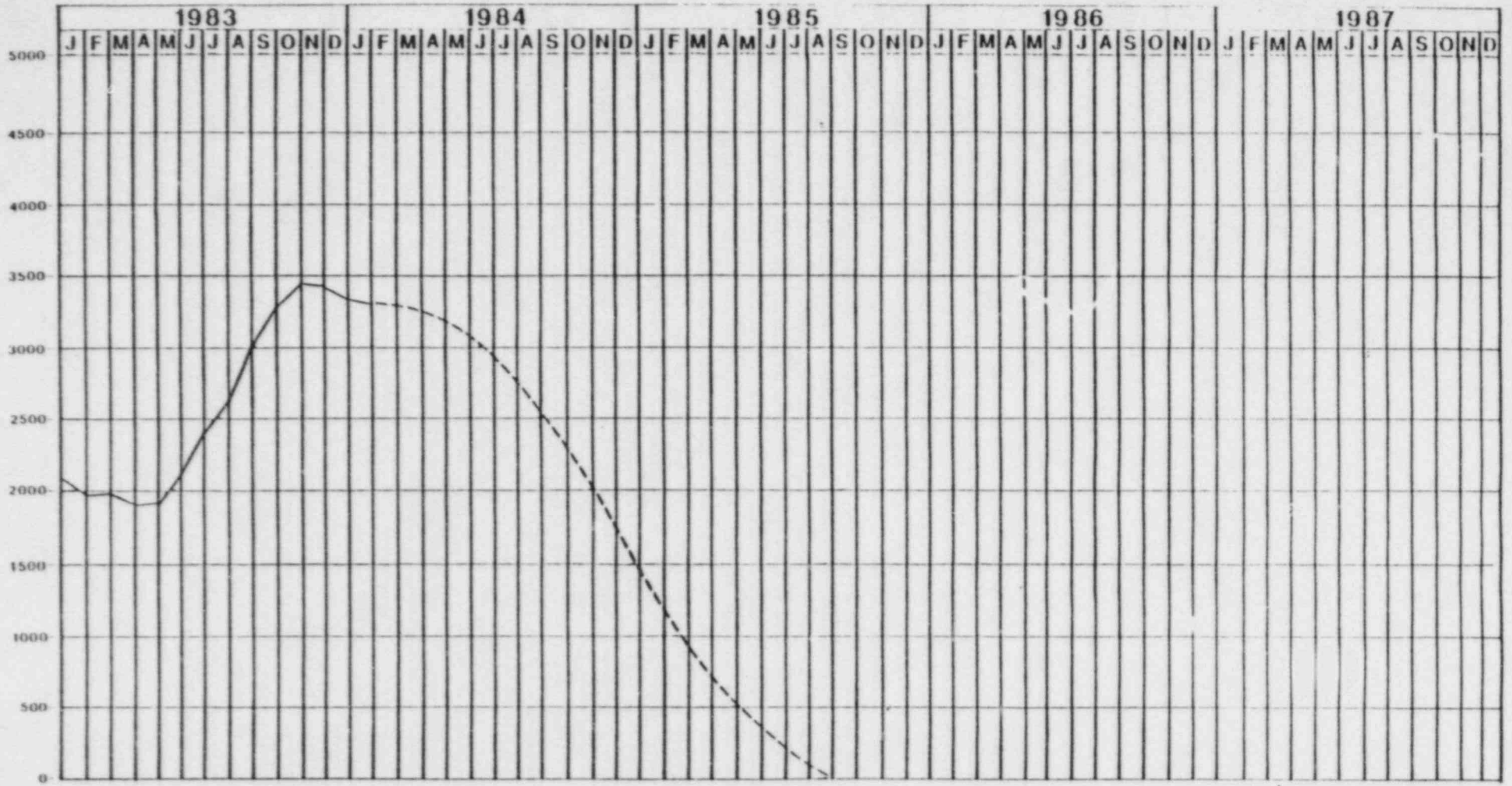
MILESTONES	SCHEDULED	ACTUAL
FLUSH AND PLACE IN OPERATION CONDENSATE SYST (INCLUDING FILTER AND DEMINS)	20 JUL 83	07 JUL 83
BEGIN INITIAL FILL OF SUPPRESSION POOL	26 AUG 83	26 AUG 83
BEGIN INITIAL ECCS FLUSHES	07 SEP 83	31 AUG 83
COMPLETE CRD INSERT/WITHDRAWAL LINE HYDRO TEST	07 FEB 84	15 DEC 83
BEGIN CRD INSERT/WITHDRAWAL LINE FLUSH (COMPLETED 10 FEB 84)	14 NOV 83	01 DEC 83
BEGIN FLUSH/RUN IN CIRCULATING WATER (THRU COOLING TOWER)	02 MAR 84	12 NOV 83

EQUIPMENT RECEIVED

ITEM	RECEIVED	% TOTAL REQUIRED
VALVES	9,900	99%
INSTRUMENTATION	3,660	97%
MAJOR EQUIPMENT	112 Orders	99%
CABLE	5,845,684 LF	99%
REBAR	23,100 Tons	100%
STRUCTURAL	9,200	99%
EMBEDMENTS	1,900	100%
SPOOLS (2 1/2" LARGER)	12,753	99%
HANGERS (INCLUDES RESTRAINTS)	14,187	99%

FINAL DELIVERY DATES

ITEM	REMAINING	DELIVERY DATE
VALVES	38	10/84
INSTRUMENTATION	123	10/84
MAJOR EQUIPMENT	1 Order (2 Pieces) Sp-573	4/84
CABLE	18,500 LF	5/84
REBAR	0	-
STRUCTURAL	1-5 Ton (Misc Pieces)	-
EMBEDMENTS	0	-
SPOOLS	5	6/84
HANGERS (INCLUDES RESTRAINTS)	63	4/84



ACTUAL: _____

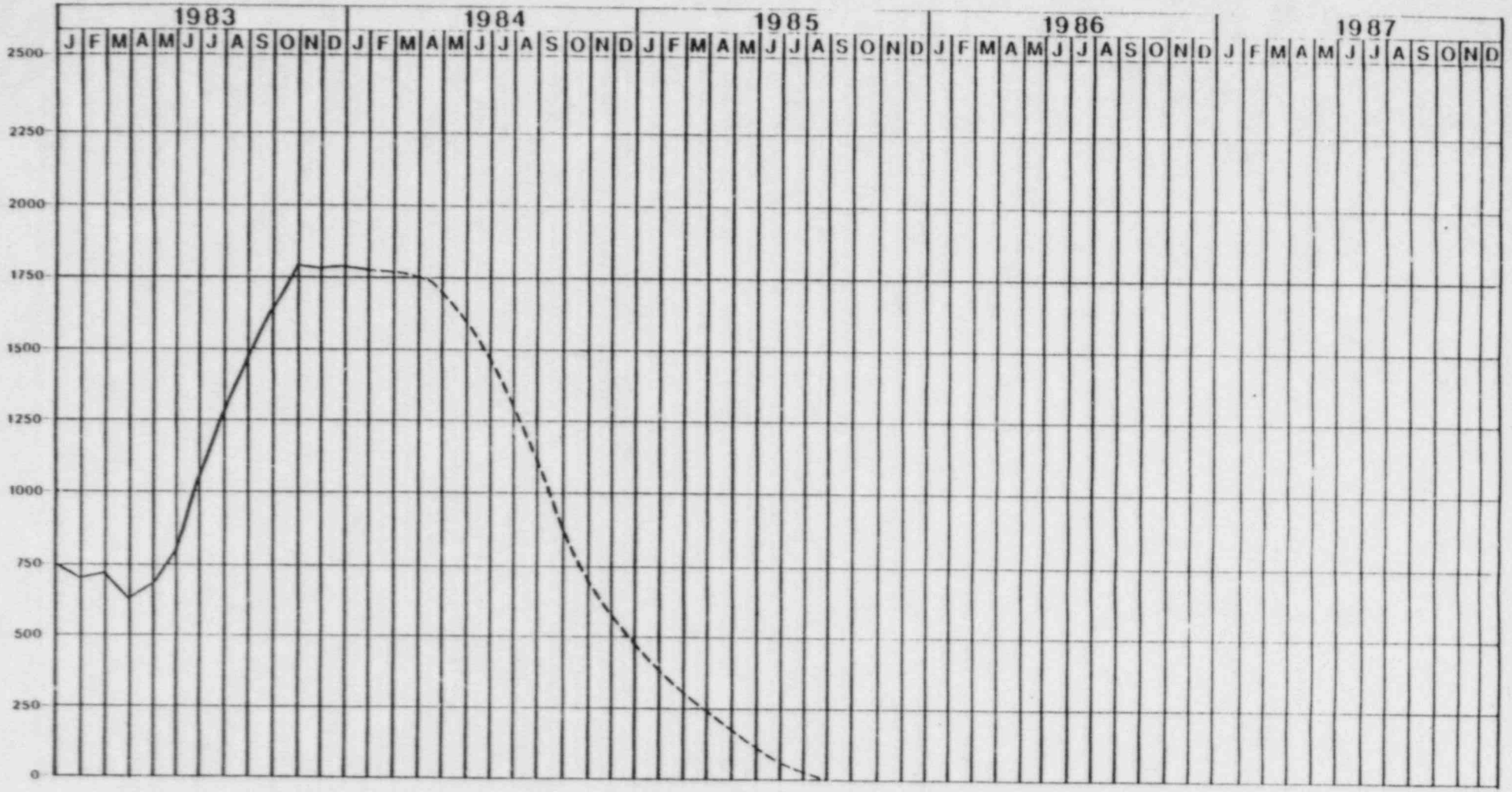
SCHEDULED: - - - - - -

NO.	REVISION	DATE		DATE

PROJECT SCHEDULING

CRAFT MANPOWER

UNIT 0 & 1



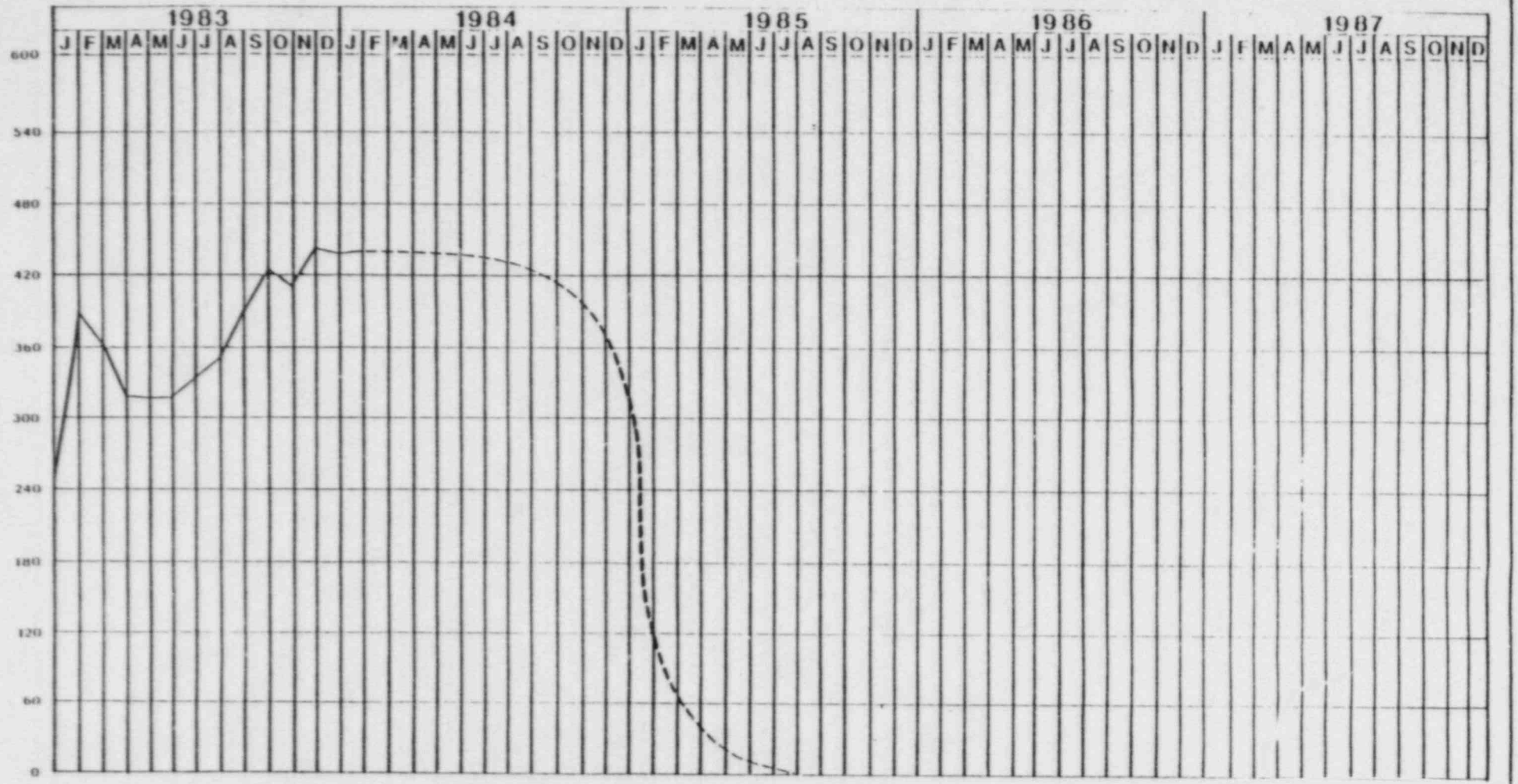
ACTUAL: _____

SCHEDULED: - - - - - -

NO.	REVISION	DATE		DATE

PROJECT SCHEDULING

PIPEFITTERS
UNIT 0 & 1



ACTUAL: _____

SCHEDULED: _____

NO.	REVISION	DATE	DATE

PROJECT SCHEDULING

ELECTRICIANS
UNIT 0 & 1

SP 44/45 UNIT 1 & COMMON HANGERS

THRU JANUARY 1984

	EAC	INSTALLED	PHYSICAL % COMPLETE	REWORK % COMPLETE
LARGE BORE	13,515	12,063	89.3	69.1
SMALL BORE	18,900	15,850	83.9	72.1
RESTRAINTS	250	150	60.0	

CRITICAL PATH UNIT #1

A. PIPING AND MECHANICAL

- -RPV HYDRO TEST BOUNDARY (B13)
- -STANDBY LIQUID CONTROL (C41)
- -RESIDUAL HEAT REMOVAL (E12)
- -LOW PRESSURE COP[illegible] SPRAY (E21)
- -HIGH PRESSURE C SPRAY (E22)
- -REACTOR WATER C[illegible]EAN-UP (G33)
- -FUEL POOL COOLING & CLEAN-UP (G41A)
- -SUPPRESSION POOL TURNOVER (T21)
- -DIESEL GENERATORS (R43)

B. ELECTRICAL

- -CONDUIT INSTALLATION TO SUSTAIN CABLE PULLING & TERMINATIONS IN SUPPORT OF SYSTEM TURNOVERS

C. INSTRUMENTATION & CONTROLS

- -RPV HYDRO TEST BOUNDARY (B13)
- -HIGH PRESSURE CORE SPRAY (E22A)
- -REACTOR WATER CLEAN-UP FILTER/DEMINS (G36)
- -FUEL POOL COOLING & CLEAN-UP (G41A)

By: William Crawford
2/22/84

PERRY PROJECT
SIGNIFICANT QUANTITIES

	UNIT 1 & COMMON EAC	UNIT 1 & COMMON INSTALLED
CONCRETE	310,000 CY	309,000 CY
PIPING		
Large Bore	169,169 LF	167,244 LF
Small Bore	177,286 LF	172,229 LF
Total	346,455 LF	339,473 LF
* LB Hangers (Includes Restraints)	14,250 EA	12,700 EA
SB Hangers	23,902 EA	20,045 EA
Yard	38,000 LF	38,000 LF
ELECTRICAL CABLE		
Power	217,460 LF	179,000 LF
Control	3,536,380 LF	3,000,000 LF
Security	396,000 LF	330,000 LF
Instrumentation	2,116,160 LF	1,632,000 LF
Total	6,266,000 LF	5,141,000 LF
ELECTRICAL RACEWAY		
Exposed Metal Conduit	545,000 LF	465,750 LF
Cable Tray	115,825 LF	114,800 LF
ELECTRICAL TERMINATIONS		
Power	6,320 EA	4,747 EA
Control	153,071 EA	109,190 EA
Security	13,001 EA	7,722 EA
Instrumentation	102,608 EA	55,592 EA
Total	275,000 EA	177,251 EA
ELECTRICAL CIRCUITS		
Power	502 EA	359 EA
Control	16,833 EA	12,025 EA
Security	7,788 EA	5,567 EA
Total	25,123 EA	17,951 EA
INSTRUMENTATION		
Tubing	211,500 LF	210,030 LF
Piping	23,160 LF	10,375 LF
Valves	3,240 EA	2,234 EA
Instruments	2,760 EA	1,969 EA
Panels-Racks	492 EA	491 EA
PAINTING		
Arch. Painting	3,212,900 SF	2,162,000 SF
Nuclear Coating	365,800 SF	297,700 SF
Valves	2,550 EA	N/A
Piping	30,000 LF	17,700 LF
Hangers	3,900 EA	N/A

* Includes expected future new and revised hangers coming out of final analysis and verification effort.

CASE LOAD QUESTION RESPONSE NO. 8

QUESTION: Detailed review and current status of preparation of preop and acceptance test procedures, integration of preop and acceptance test activities with construction schedule, system turnover schedule identifying each system and status, preop and acceptance tests schedule identifying each test and status, current and proposed preop and acceptance tests program manpower.

RESPONSE:

8(a) 224 Procedures are required for Fuel Load.

8(b) 2 Draft Procedures are not started.

8(c) 41 Draft Procedures are being written.

8(d) 114 Procedures approved.

8(e) 67 Procedures are in review.

8(f) 213 Preop (98) and Acceptance (115) Tests are required for Fuel Load and are identified in attachment 1.

8(g) 32 Preop (2) and Acceptance (30) Tests are complete and are identified in attachment 2.

8(h) 3 Preop (1) and Acceptance (2) Tests are currently in progress and are identified in attachment 3.

8(i) 238 Systems/Subsystems are Turned Over to NTS and are identified in attachement 4.

8(j) 65 Systems/Subsystems are Turned Over to PPD and are identified along with their outstanding open items in attachment 5.

CASE LOAD QUESTION RESPONSE NO. 12

QUESTION: Detailed review and current status of design, engineering and construction effort including quantities and work off rates for:

(a) ATWS design changes

(b) Appendix - R design implementation

(c) NSSS loads adequancy evaluation

(d) High energy line break (HELB)

(e) Moderate energy line break (MELB)

(f) Control Room panel modifications (HED's)

(g) Pipe Stress (as builts) analysis

(h) N-Stamp certification program

(i) Updating drawings and specifications to as-built condition

(j) Environmental qualification of safety-related equipment

(k) Seismic qualification of safety-related equipment

(l) Piping hanger/support reconcilliation program

(m) Tech support center

(n) Cable tray rack seismic barriers

(o) All work remaining in Containment including schedule for completion

RESPONSE: See attached information

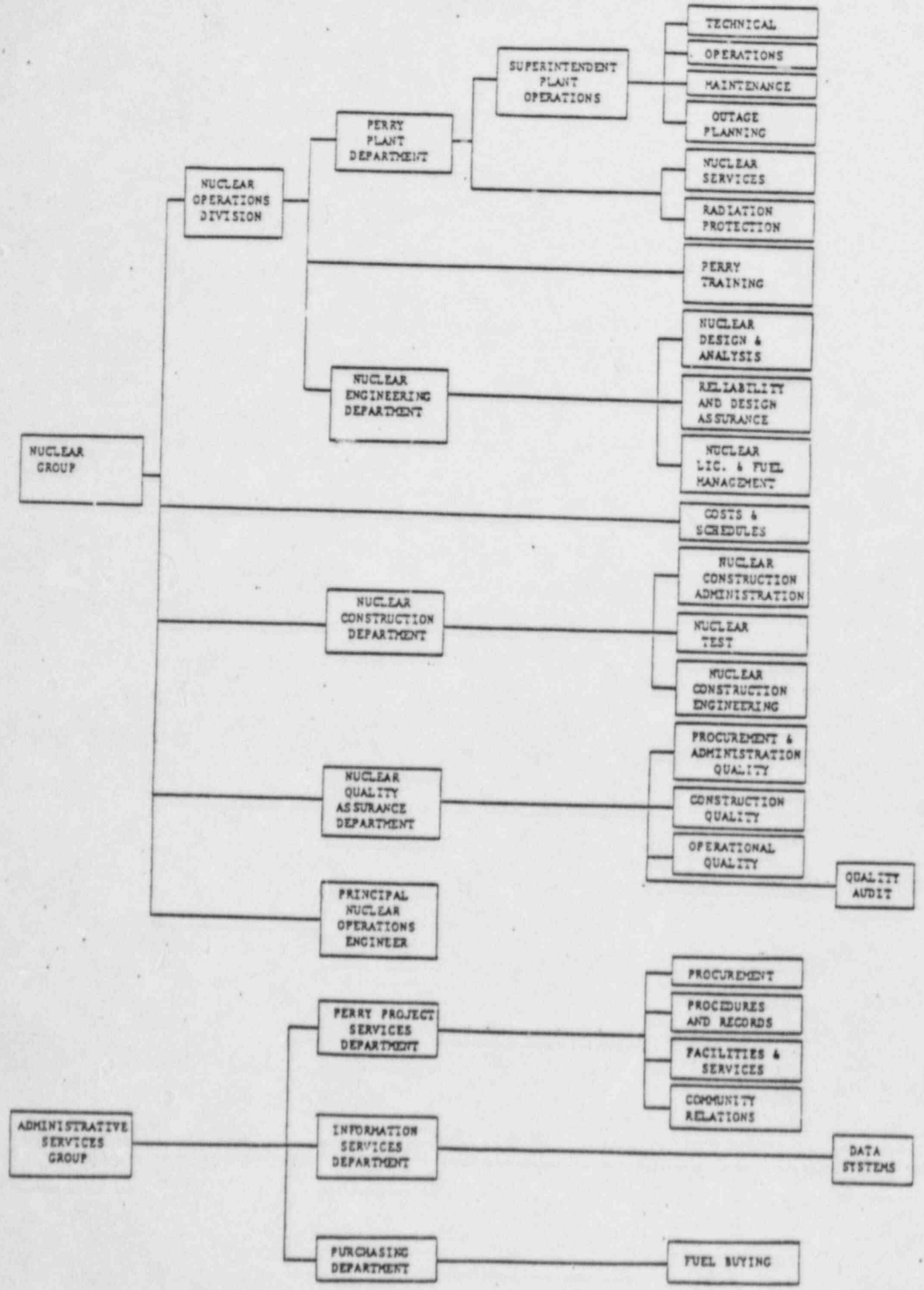
PERRY NUCLEAR POWER PLANT

AREA PROGRESS

UNIT #1 & COMMON

AREA	% COMPLETE
NUCLEAR ISLAND	90.3
REACTOR BUILDING	84.9
TURBINE BUILDING	96.6
CONTROL COMPLEX	90.2
YARD	97.1

Figure 1-2
PNPP
ORGANIZATION



PERRY NUCLEAR POWER PLANT

MAJOR PROJECT MILESTONES (UNIT #1)

COMPLETED 1983 MILESTONES

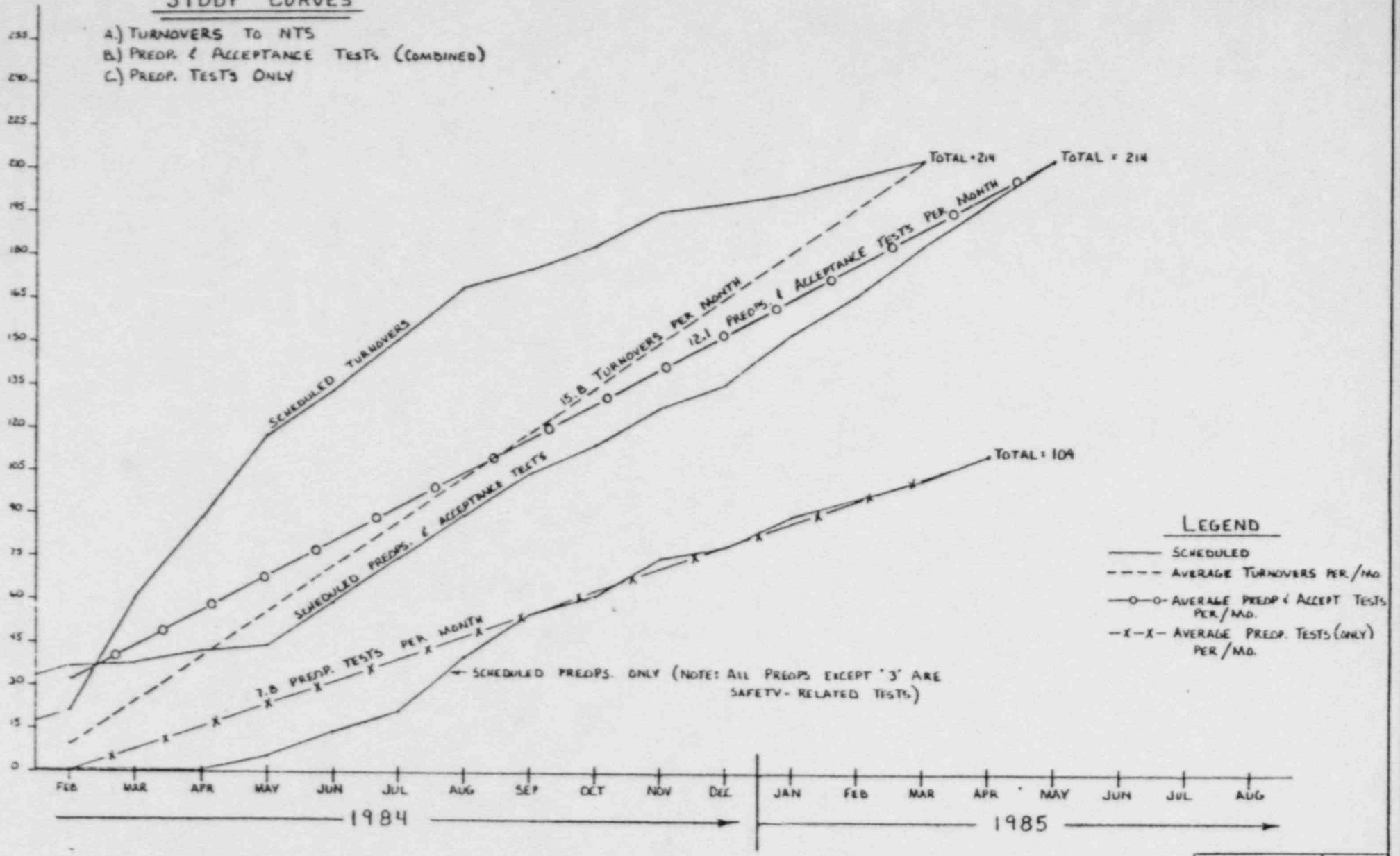
MILESTONES	SCHEDULED	ACTUAL
FLUSH AND PLACE IN OPERATION CONDENSATE SYST (INCLUDING FILTER AND DEMINS)	20 JUL 83	07 JUL 83
BEGIN INITIAL FILL OF SUPPRESSION POOL	26 AUG 83	26 AUG 83
BEGIN INITIAL ECCS FLUSHES	07 SEP 83	31 AUG 83
COMPLETE CRD INSERT/WITHDRAWAL LINE HYDRO TEST	07 FEB 84	15 DEC 83
BEGIN CRD INSERT/WITHDRAWAL LINE FLUSH (COMPLETED 10 FEB 84)	14 NOV 83	01 DEC 83
BEGIN FLUSH/RUN IN CIRCULATING WATER (THRU COOLING TOWER)	02 MAR 84	12 NOV 83

MAJOR MILESTONES UNIT 1 & COMMON

MILESTONES	FORECAST
SUPPRESSION POOL TURNOVER	15 FEB 84
START INTEG FLUSH (INCLUDING OUTFLUSH)	22 JUN 84
COMPLETE RPV INTEGRATED FLUSH	10 AUG 84
COMPLETE CONTAINMENT I. L. R. T.	22 MAR 85
OPERATING LICENSE	15 JUN 85
START FUEL LOAD	15 JUN 85

STUDY CURVES

A.) TURNOVERS TO NTS
B.) PREOP. & ACCEPTANCE TESTS (COMBINED)
C.) PREOP. TEST'S ONLY



LEGEND

- SCHEDULED
- AVERAGE TURNOVERS PER/MO
- AVERAGE PREOP & ACCEPT TESTS PER/MO.
- AVERAGE PREOP. TESTS (ONLY) PER/MO.

KWP | 2/29/84

William Crawford
2/22/84
3/8/84

PERRY PROJECT
SIGNIFICANT QUANTITIES

	UNIT 1 & COMMON EAC	UNIT 1 & COMMON INSTALLED
CONCRETE	310,000 CY	309,000 CY
PIPING		
Large Bore	169,169 LF	167,244 LF
Small Bore	177,286 LF	172,229 LF
Total	346,455 LF	339,473 LF
LB Hangers (Includes Restraints)	14,250 EA	12,980 EA
SM Hangers (Includes Restraints)	23,902 EA	20,045 EA
Yard	38,000 LF	38,000 LF
ELECTRICAL CABLE		
Power	240,000 LF	233,000 LF
Control	3,536,380 LF	3,000,000 LF
Security	396,000 LF	330,000 LF
Instrumentation	2,116,160 LF	1,950,000 LF
Total	6,288,540 LF	5,513,000 LF
ELECTRICAL CONDUIT		
Exposed Metal	545,000 LF	465,750 LF
Cable Tray	115,825 LF	114,800 LF
ELECTRICAL TERMINATIONS		
Power	6,320 EA	6,220 EA
Control	153,071 EA	113,928 EA
Security	13,001 EA	9,023 EA
Instrumentation	102,608 EA	59,570 EA
Total	275,000 EA	188,740 EA
ELECTRICAL CIRCUITS		
Power	502 EA	359 EA
Control	16,833 EA	12,025 EA
Security	7,788 EA	5,567 EA
Total	25,123 EA	17,951 EA
INSTRUMENTATION		
Tubing	211,500 LF	210,030 LF
Piping	23,160	10,375 LF
Valves	3,240 EA	2,234 EA
Instruments	2,760 EA	1,969 EA
Panels/Racks	492 EA	491 EA
PAINTING		
Arch. Painting	3,212,900 SF	2,162,000 SF
Nuclear Coating	365,800 SF	297,700 SF
Valves	2,550 EA	N/A
Piping	30,000	17,700 LF
Hangers	3,900 EA	N/A

Restraints 250 EAC - 150 Installed

* Includes expected future new and revised hangers coming out of final analysis and verification effort.

PERRY PROJECT
SIGNIFICANT QUANTITIES

(2)

	UNIT 1 & COMMON EAC (12/28/82)	UNIT 1 & COMMON EAC (01/84)	UNIT 1 & COMMON INSTALLED (12/28/82)	UNIT 1 & COMMON INSTALLED (01/84)
CONCRETE	310,000 CY	310,000 CY	308,000	
PIPING				
Large Bore	160,623 LF	169,169 LF	149,944 LF	167,244 LF
Small Bore	156,128 LF	177,286 LF	144,225 LF	172,229 LF
Total	316,751 LF	346,455 LF	294,169 LF	339,473 LF
LB Hangers (Includes Restraints)	13,500 EA	14,250 EA	10,514 EA	12,980 EA
SB Hangers (Includes Restraints)	22,500 EA	23,902 EA	19,000 EA	20,045 EA
Yard	38,000 LF	38,000 LF	38,000 LF	38,000 LF
ELECTRICAL CABLE				
Power	217,460 LF	240,000 LF	184,990 LF	233,000 LF
Control	3,926,380 LF	3,536,380 LF	2,774,866 LF	300,000 LF
Security	396,000 LF	396,000 LF	323,733 LF	330,000 LF
Instrumentation	2,116,160 LF	2,116,160 LF	1,341,180 LF	1,950,000 LF
Total	6,656,000 LF	6,288,540 LF	4,624,769 LF	5,513,000 LF
ELECTRICAL CONDUIT				
Exposed Metal	525,156 LF	545,000 LF	404,180 LF	465,750 LF
Cable Tray	115,825 LF	115,825 LF	110,000 LF	114,800 LF
ELECTRICAL TERMINATIONS				
Power	6,320 EA	6,320 EA	4,633 EA	6,220 EA
Control	153,071 EA	153,071 EA	86,482 EA	113,928 EA
Security	13,001 EA	13,001 EA	7,722 EA	9,023 EA
Instrumentation	102,608 EA	102,608 EA	55,595 EA	59,570 EA
Total	275,000 EA	275,000	154,432 EA	188,740 EA
ELECTRICAL CIRCUITS				
Power	502 EA	502 EA	315 EA	359 EA
Control	16,833 EA	16,833 EA	10,553 EA	12,025 EA
Security	7,788 EA	7,788 EA	4,882 EA	5,567 EA
Total	25,123 EA	25,123 EA	15,750 EA	17,951
INSTRUMENTATION				
Tubing	318,600 LF	211,500 LF	172,106 LF	210,030 LF
Piping	38,600 LF	23,160 LF	6,434 LF	10,375 LF
Valves	5,400 EA	3,240 EA	1,845 EA	2,234 LF
Instruments	4,600 EA	2,760 EA	1,352 EA	1,969 EA
Panels/Racks	800 EA	492 EA	360 EA	491 EA
PAINTING				
Arch. Painting	916,700 SF	3,212,900 SF	797,529 SF	2,162,000 SF
Nuclear Coating	1,370,100 SF	365,800 SF	808,359 SF	297,700 SF
Valves	2,550 EA	2,550 EA	N/A	N/A
Piping	30,000 LF	30,000 LF	17,700 LF	17,700 LF
Hangers	3,900 EA	3,900 EA	N/A	N/A

WC:jms
3/8/84 *Includes expected future new and revised hangers coming out of final analysis and verification effort.

TOTAL ELECTRICAL

	NOV. 1982 EAC	NOV. 1982 INSTALLED	JAN. 1984 EAC	JAN. 1984 INSTALLED	Δ INSTALLED
CABLE					
Power	217,460 LF	184,990 LF	240,000 LF	233,000 LF	48,100 LF
Control	3,926,380 LF	2,774,866 LF	3,536,000	3,000,000 LF	225,134 LF
Security	396,000 LF	323,733 LF	396,000 LF	330,000 LF	7,000 LF
I&C	2,116,160 LF	1,341,180 LF	2,116,160 LF	1,950,000 LF	608,820 LF
Total	6,656,000 LF	4,624,769 LF	6,288,160 LF	5,513,000 LF	889,054 LF
TERMINATIONS					
Power	6,320 EA	4,633 EA	6,320 EA	6,220 EA	1,537 EA
Control	153,071 EA	86,432 EA	153,071 EA	113,928 EA	27,496 EA
Security	13,001 EA	7,722 EA	13,001 EA	9,023 EA	1,301 EA
Instr.	102,608 EA	55,595 EA	102,608 EA	59,570 EA	3,975 EA
Total	275,000 EA	154,432 EA	275,000 EA	188,740 EA	34,309 EA

WC:jms
3/8/84

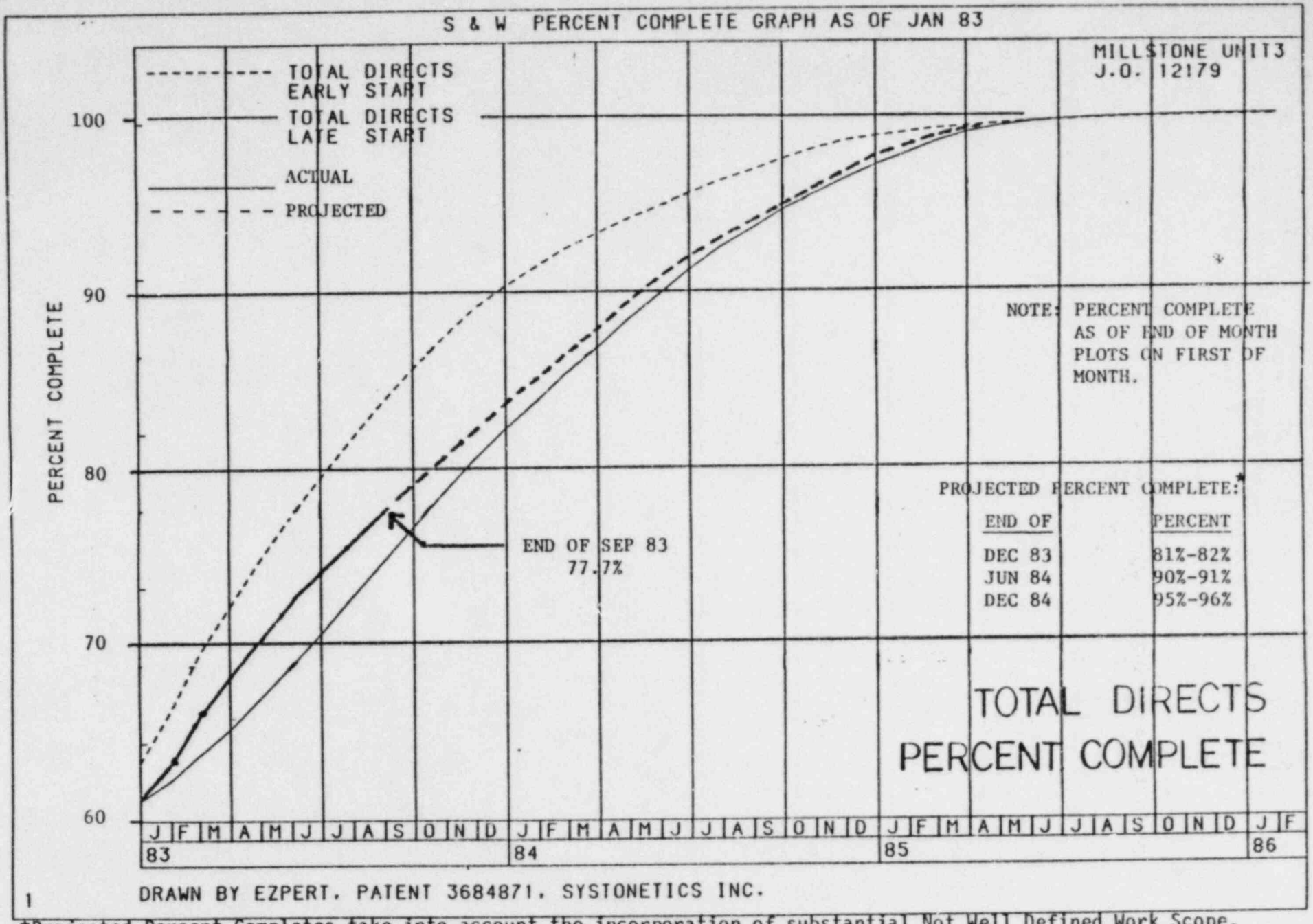
SP-33/34

CABLE	EAC	INSTALLED
Power	240,000	233,000
Control	3,000,000	2,700,000
Security	150,000	160,000
Instrumentation	1,910,000	1,601,500
Total	5,300,000 `	4,634,500

TERMINATIONS		
Power	6,320	6,220
Control	130,000	113,928
Security	4,601	2,734
Instrumentation	91,000	35,444
Total	231,921	158,326

` This number includes 499,000 LF in Common Buildings (Pumphouses, etc.) with Unit 2 designations and 200,000 LF of Unit 2 cable that is required to support Unit 1. (Unit 2 Buildings)

WC:jms
3/8/84



*Projected Percent Completes take into account the incorporation of substantial Not Well Defined Work Scope.

79% complete as of week of 10/24

I. PROJECT OVERVIEW

A. Overall Project Management.

1. Northeast Utilities has contracted with Stone & Webster to act as the architect/engineer and constructor for Millstone Unit No. 3. Stone & Webster directly manages all construction with the exception of: HVAC, physical fire protection, and some tanks which are subcontracted.

2. Northeast Utilities manages Stone & Webster's efforts through a Project office consisting of twenty-six personnel. Total Northeast Utilities support for Millstone Unit No. 3 (excluding NNECO) averages seventy people.

3. Stone & Webster's project organization is broken down into two areas supporting Millstone Unit No. 3.

   a. Engineering supplies staffing for the Headquarters Engineering effort and for the Site Engineering Office.

   b. Construction supplies supervisory personnel to manage and direct the construction effort.

B. Site Plan/General Status.

1. Millstone Unit No. 3 is an 1150 MWe Westinghouse PWR being built on a site with two existing units. Its layout is as shown in the site plan (Figure IB-1).

   a. Millstone utilizes an open cycle cooling system with Long Island Sound as the heat sink.

   b. A subatmospheric reinforced concrete steel lined containment houses the four loop primary system.

* 2. The Project is currently 78.3% complete against a project goal of 80.0% by the end of 1983.

   a. Forty out of two-hundred-and-twenty-two system turnovers have been made.

   b. Five important fluid systems were accelerated during November, 1982, to enhance meeting the cold hydro schedule.

1st ASME turnover pack. To exercise N-5 process →

			Old Date	New Date
(1)	RHS	Residual Heat Removal	10/22/84	12/5/83
(2)	SWP	Service Water	3/26/84	1/2/84
(3)	CCP	Reactor Plant Component Cooling	4/23/84	1/23/84
(4)	CHS	Charging System	7/16/84	4 16/84
(5)	CCE	Charging Pump Cooling	6/4/84	3/5/84

NU - on track on these systems

As of September 26, 1983

c. The Service Water System has been hydrostatically tested and is on schedule for a January 2, 1984, complete system turnover.

d. The Residual Heat Removal System was accelerated eleven months to December 5, 1983, to become the first ASME turnover to exercise the N-5 sign-off process early.

e. MIPS (Millstone Inspection Planning System) was instituted to provide detailed commodity installation and inspection status on a system basis down to the component level to support system turnovers. (computerized 'punchlist' broken down by buildings, systems

f. Both Stone & Webster and NUSCO/NNECO have been reorganized on a system basis to support system completion and turnover/startup. (from area basis)
1°, 2° and Aux. systems
∴ people oriented on turnover basis instead of const.

As of September 26, 1983

MILLSTONE POINT POWER STATION - MILLSTONE UNIT NO. 3

MILESTONES COMPLETED

Structure	Completion Date
Containment:	
Construct Containment Mat	Nov. 1975
Load Test Polar Crane	July 1980
Weld Out Dome Liner	Aug. 1980
Final Set Reactor Vessel	Aug. 1980
Set Steam Generators	Aug. 1981
Place Dome Concrete	Oct. 1981
Place Operating Floor Slab	June 1982
Weld Reactor Coolant Pipe	July 1982
Enclosure Bldg. Struc. Steel	Oct. 1982
Place Steam Gen. on Perm. Sup.	Feb. 1983
Auxiliary Building:	
Place Mat Concrete, Section 1	Nov. 1976
Erect Boric Acid Tank	July 1978
Start Building Piping	Dec. 1978
Set Component Cooling Heat Exchanger	Sep. 1979
Set Motor Control Centers	Nov. 1981
Start Electrical Penetrations	Nov. 1981
Complete Roof Slab	June 1982
Complete Electrical Tunnels	Sep. 1983
Set Load Centers 24' 45'	Aug. 1983
Start Work Elev. 66'	Sep. 1983

Structure	Completion Date
Turbine Building:	
Place Turbine Pedestal	June 1975
Set Main Steam Header	Apr. 1978
Start Install Cable Tray	Oct. 1978
Erect Structural Steel	Dec. 1978
Load Test Building Crane	Dec. 1978
Set Main Steam Reheaters	Dec. 1978
Place Turbine Bay Floor Slab	Feb. 1979
Install Building Siding	May 1979
Final Set Stator	July 1979
Start Cable Pull	Oct. 1979
Set Motor Control Centers	Oct. 1979
Start Install Bldg. Lighting	Dec. 1979
Start Turbine Erection	Dec. 1982
T.O. Battery 6	Mar. 1983
Fuel Building:	
Sub-structure Excavation	Aug. 1981
Start Pipe Tunnel Concrete	Sep. 1981
Place Fuel Pool Mat	Jan. 1982
Install Fuel Pool Liner	Aug. 1982
Start R.R. Canopy	Jan. 1983
Complete Concrete Fuel Pool	Mar. 1983
Complete Walls to 106'	Sep. 1983

As of September 26, 1983

MILLSTONE POINT POWER STATION - MILLSTONE UNIT NO. 3

MILESTONES COMPLETED (Continued)

Structure	Completion Date
Control Building:	
Place Foundation Concrete	Dec. 1974
Set Normal Switch Gear	Nov. 1977
Start Cable Tray	Nov. 1978
Start Conduit	Nov. 1979
Erect Structural Steel	Nov. 1981
Place Wall and Slab Concrete	Jan. 1982
Main Control Boards in Place	July 1982
Start Pulling Electrical Cable	July 1982
T.O. 125V DC	May 1983
Control Room Occupancy	July 1983
Service Building:	
Place Mat Concrete	Sep. 1980
Start HVAC Installation	Oct. 1981
Start Building Lighting	Dec. 1981
Erect Structural Steel	Apr. 1982
Place Slab Concrete	July 1982
Complete Machine Shop Steel	Sep. 1983

Structure	Completion Date
Safety Features Building:	
Place Mat Concrete	Sep. 1975
Start Piping Installation	June 1980
Set HVAC Units	June 1981
Place Roof Slab	Jan. 1982
Install Cable Tray	Feb. 1982
Set RHS HT Exchanger	Aug. 1983
Circulating Water System:	
Excavate for Pump House	Nov. 1979
Place Foundation Concrete	Dec. 1979
Install Circulating Water Pipe	Nov. 1981
Install Service Water Pipe From Main Building Complex to Pump House	Nov. 1981
Place Pump House Roof Concrete	Dec. 1981
Install Electrical Ducts to Pump House	May 1982
Start Pump House Electrical	May 1982

As of September 26, 1983

MILLSTONE POINT POWER STATION - MILLSTONE UNIT NO. 3

MILESTONES COMPLETED (Continued)

Structure	Completion Date
Diesel Generator Building:	
Place fuel Oil Storage Vault Concrete	Dec. 1979
Place Concrete to Roof Line	July 1982
Install Diesels	Oct. 1982
Yard Area:	
Install Railroad Spur to Turbine Building	Sep. 1981
Major Underground Pipe Complete	Dec. 1981
Set Main Transformers	Jan. 1982
Complete Last Section of the Discharge Tunnel	Nov. 1982
Purge and Fill Main Transformer	Apr. 1982
Complete Yard Tank Erection	Aug. 1983
Complete Quarry Discharge Channel	Nov. 1982
Major Underground Electrical Duct Lines Complete	July 1982
Start Security Perimeter Duct Line	July 1983
Remove Coffer Dam at I.S.	Sep. 1983
T.O. RSST	July 1983

Structure	Completion Date
Hydrogen Recombiner Building:	
Place Foundation Concrete	Feb. 1982
Complete Structure	July 1982
Waste Disposal Building:	
Excavate and Place Substructure	July 1981
Start First Wall Lift Concrete	Feb. 1982
Place Binder Vault Concrete	July 1982
Solid WDB Struc. Steel Comp.	Sep. 1983
Liquid WDB Roof 68	Oct. 1983
Main Steam Valve Building:	
Place Foundation Concrete	Aug. 1981
Start Electrical Conduit	Feb. 1982
Start Final Wall Installation	July 1982
Complete MSV Roof	May 1983
Start FWS Piping	July 1982

As of September 26, 1983

C. Major Milestones Completed (Charts IC-1, 2, 3).

1. The construction of an 1,150 MWe nuclear plant was authorized by Northeast Utilities management on July, 1971.

2. A Limited Work Authorization was granted by the NRC on May 1, 1974.

3. The Construction Permit was issued by the NRC in August, 1974.

4. Completed containment base mat November, 1975.

5. Completed turbine pedestal February, 1976.

6. Final setting of reactor vessel August, 1980.

7. Completed containment dome concrete October, 1981.

8. Completed welding of reactor coolant piping July, 1982.

9. Set main control boards and commenced cable pulling July, 1982.

10. Completed Auxiliary Building structure July, 1982.

11. Set reactor coolant system components on permanent supports February, 1983.

12. Control Room occupied by Northeast Nuclear Energy Co. July 1983.

13. Energized RSST August 1983.

As of September 26, 1983

D. Future Milestones.

1. Complete residual heat removal system - December 5, 1983.

2. Complete service water - January 2, 1984.

3. Complete containment piping - November 15, 1984.

4. Complete electrical cable installation - November, 1984.

5. Cold hydro - March 18, 1985.

6. Hot functional - July 16, 1985.

7. Fuel load - November 1, 1985.

As of September 26, 1983

E. Project Management Philosophy.

1. Millstone Unit No. 3 uses highly integrated management systems (Figure IE-1).

2. Highly sophisticated management and planning tools are used to properly guide Millstone.

3. Schedules are developed conservatively based on past experience.

   a. Project schedules are developed with ambitious yet realistic milestones to push construction to high levels of performance.

   b. Activities are scheduled based on single shift durations. Second shift is used to compensate for schedule slippages and accelerations.

4. Sufficient flexibility exists to improve critical path activities through the use of increased manpower and/or two shift operations when deemed appropriate.

OL APPLICATION SUBMITTAL AND REVIEW SCHEDULE

Date	Event
October 29, 1982	Submitted OL Application which Included the Following: o FSAR o ER o FMEA o Fire Protection Evaluation Report o R. G. 1.97 Compliance Report o Antitrust Information o General Information o Emergency Plan
January 31, 1983	Acceptance Review for FSAR and ER Completed.
February 2, 1983	FSAR and ER Docketed.
February 28, 1983	SRP Conformance Review Submitted.
May - June, 1983	Round 1 Questions Issued.
August 1, 1983	Probabilistic Safety Study (PSS) Submitted.
September 29, 1983	Round 1 Questions Answered.
December, 1983	Draft SER Issued.
April, 1984	DES Issued.
July, 1984	SER Issued.
August, 1984	ACRS Review Completed. Hearings Begin (FSAR).
September, 1984	SER Supplement Issued.
October-November, 1984	FES Issued. Begin Hearings (ER).
February, 1985	Hearings Completed (ER).
June, 1985	Hearings Completed (FSAR).
July, 1985	Earliest OL Issuance. NO believes realistic since no hearings

As of September 26, 1983

a. R. E. Busch involvement in early selection and development.

b. First on-line interactive use of Project/2.

c. First on-line interactive graphics.

4. Interface procedures and reports are now being developed to support the hardware/software personnel available on site.

   a. Staffing level increase from three (October, 1982) to seven currently.

5. Stone & Webster is using Project/2 to accomplish the transition from bulk area construction to system completion and turnover six-to-nine months prior to turnover.

6. Project/2 is being utilized for cost, schedule, and resource management.

7. NUSCO involvement in Project/2 Utility Users Group, Electric Utility Cost Group, etc., helps identify problems and their resolution faced throughout the industry.

As of September 26, 1983

B. NUSCO Project/2 Management System.

1. Project/2 is being used by NUSCO/NNECO as a tool to plan, manage, and control the preoperational test and startup schedule.

   a. Procedures preparation.

   b. Pre-turnover construction milestones.

   c. Turnover, Phase I, Phase II testing.

   d. Phase III - IX testing (Level 3).

2. Project/2 has been used extensively by NUSCO for four and one-half years for managing backfit construction projects at Millstone Units 1 & 2 and at Connecticut Yankee; also, for outage planning/management for nine major refueling/maintenance outages.

   a. Full on-site hardware capability.

3. NUSCO personnel have developed considerable expertise in the use of Project/2 in the above applications and have worked closely with PSDI on new developments and enhancements.

As of September 26, 1983

PROJECT/2 STARTUP SCHEDULING

- o NUSCO has four and one-half years experience with Project/2.
  - Hundreds of backfit and betterment projects.
  - Nine major refueling/maintenance outages.
  - Planners have extensive plant operations, navy backgrounds.
  - R. E. Busch, others instrumental in selection, development of Project/2 at NU.
- o NU has full control of startup test program.
  - NNECO has full responsibility to perform tests and prepare procedures.
  - NUSCO Planners/NNECO Startup Engineers are collaborating on detailed input.
  - Resource-loaded schedule provides greater assurance of manpower and schedule control.
- o Status of startup schedule development.
  - Under development for two years.

As of September 26, 1983

- 222 system/subsystem turnovers.

- 3,300 activities, 3,108 milestones scheduled.

- Covers procedure preparation, pre-turnover construction milestones, Phase I-IX testing.

o Project/2 is being used by Stone & Webster to augment control of pre-turnover, system-oriented construction activities.

o NU startup/scheduling experience + S&W construction/startup/scheduling experience + Project/2 hardware/software capability = Effective planning and management controls.

As of September 26, 1983

4. Systems must also be integrated through the various phases of the project from engineering through procurement and design construction and startup. The management system is the tool we use to simulate where the project stands and where it is going.

5. Primary tool for defining scope of project is work breakdown structure - provides vehicle for planning, estimating, quantity takeoffs, change control, and performance evaluation.

6. Quantities are the basic scope of work in construction from which we estimate man-hours to do work, and relate these man-hours to schedule. Schedule credibility is based on rates of quantities required to be placed and man-hours required in critical crafts to meet the schedule.

7. As we perform the work, we continuously measure performance against man-hour estimates to insure we are in fact performing the work in accordance with estimated man-hour unit rates. Where we deviate, we investigate and take corrective action as appropriate.

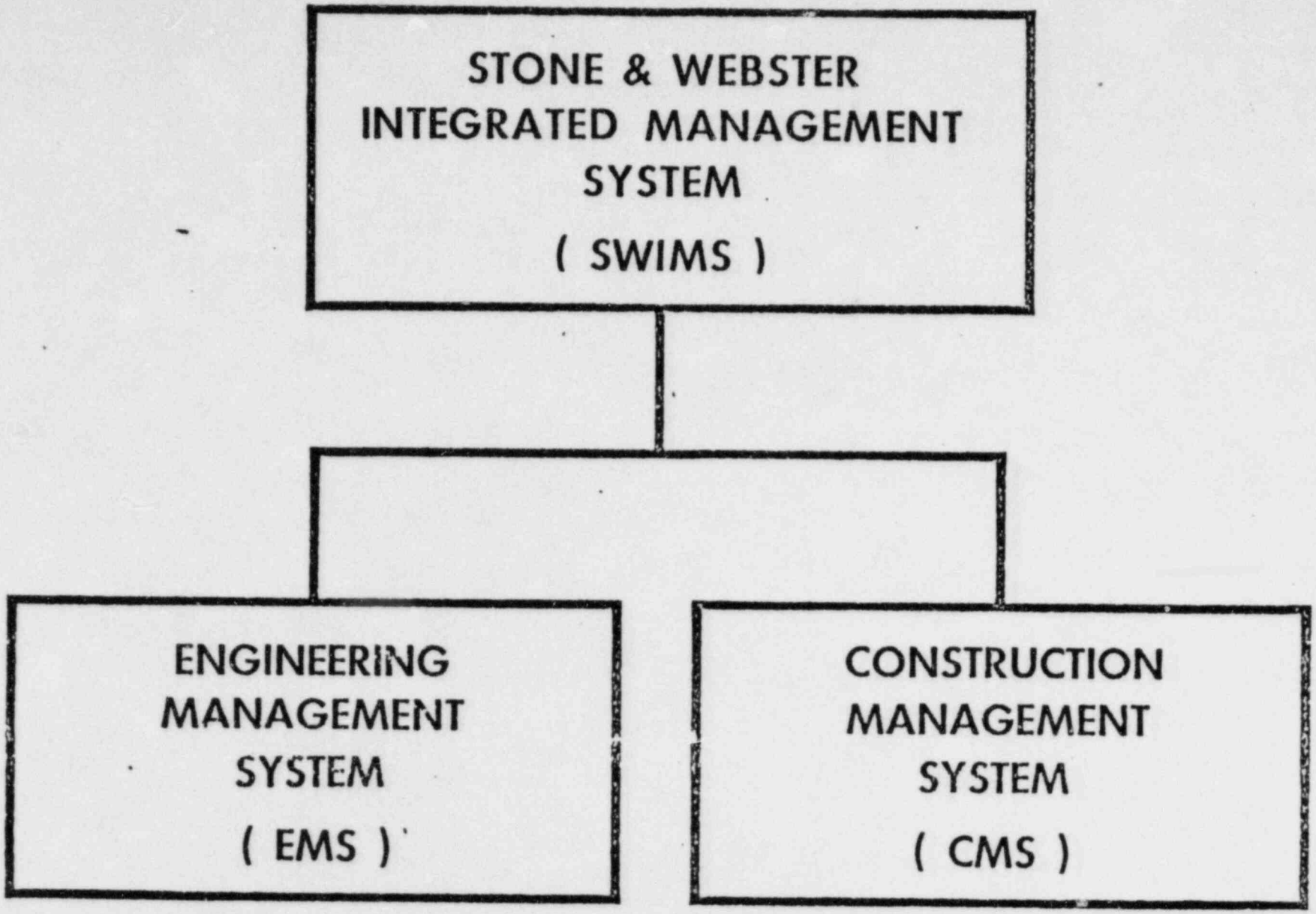
III. MANAGEMENT SYSTEMS

A. Stone & Webster Integrated Management System (SWIMS).

1. SWIMS consists of two subsystems. One to plan and control the headquarters and the other to control construction and startup effort.

2. These systems were implemented early in the Millstone Unit No. 3 Project. CMS was first implemented on Millstone Unit No. 3 in 1975 and EMS in 1977. CMS was developed with the cooperation of NUSCO's Project Manager, Mr. Busch, who was head of their Cost and Schedule Control Group at that time. EMS was developed on another S&W nuclear project and was subsequently implemented on Millstone at Mr. Busch's urging. S&W has since had experience controlling over 123 million field man-hours and 39 million headquarter man-hours on this system.

3. The basis of a good management system is the planning process inherent in its application. Defining objectives with participation of technical people responsible for doing the work, breaking the work into manageable work packages, scheduling the work and assessing if the resources for accomplishing the work are available are all critical to the planning process. After the plan has been established, accurate methods of assessing progress and performance against the plan are of prime importance.


STONE & WEBSTER
INTEGRATED MANAGEMENT
SYSTEM
(SWIMS)
ENGINEERING
MANAGEMENT
SYSTEM
(EMS)
CONSTRUCTION
MANAGEMENT
SYSTEM
(CMS)

HISTORY OF SWIMS UTILIZATION

UNIT—CLIENT	DATE OF IMPLEMENTATION EMS	DATE OF IMPLEMENTATION CMS	CONSTRUCTION CONTRACT	TYPE PROJECT
MILLSTONE UNIT 3 NORTHEAST UTILITIES	1977	1975	FORCE	NUCLEAR - PWR
RIVER BEND UNITS 1 AND 2 GULF STATES UTILITIES	1978	1979	FORCE	NUCLEAR - BWR
NINE MILE UNIT 2 NIAGARA MOHAWK	1978	1976	CONTRACTED	NUCLEAR - BWR
BEAVER VALLEY DUQUESNE LIGHT	1978	1976	CONTRACTED	NUCLEAR - PWR
PETERSBURG UNIT 4 INDIANAPOLIS P&L	—	1977	CONTRACTED	FOSSIL - COAL
NORTH VALMY UNITS 1 AND 2 SIERRA PACIFIC	—	1978	FORCE-CONTRACTED	FOSSIL - COAL
MILLSTONE UNIT 2 NORTHEAST UTILITIES	—	1976	FORCE-CONTRACTED	CONDENSATE POLISHING
BRAYTON POINT NEW ENGLAND POWER SERVICE	1979	1979	FORCE-CONTRACTED	COAL CONVERSION
SEBOYETA PUBLIC SERVICE OF NEW MEXICO	1979	—	—	PUMPED STORAGE

17,484 B

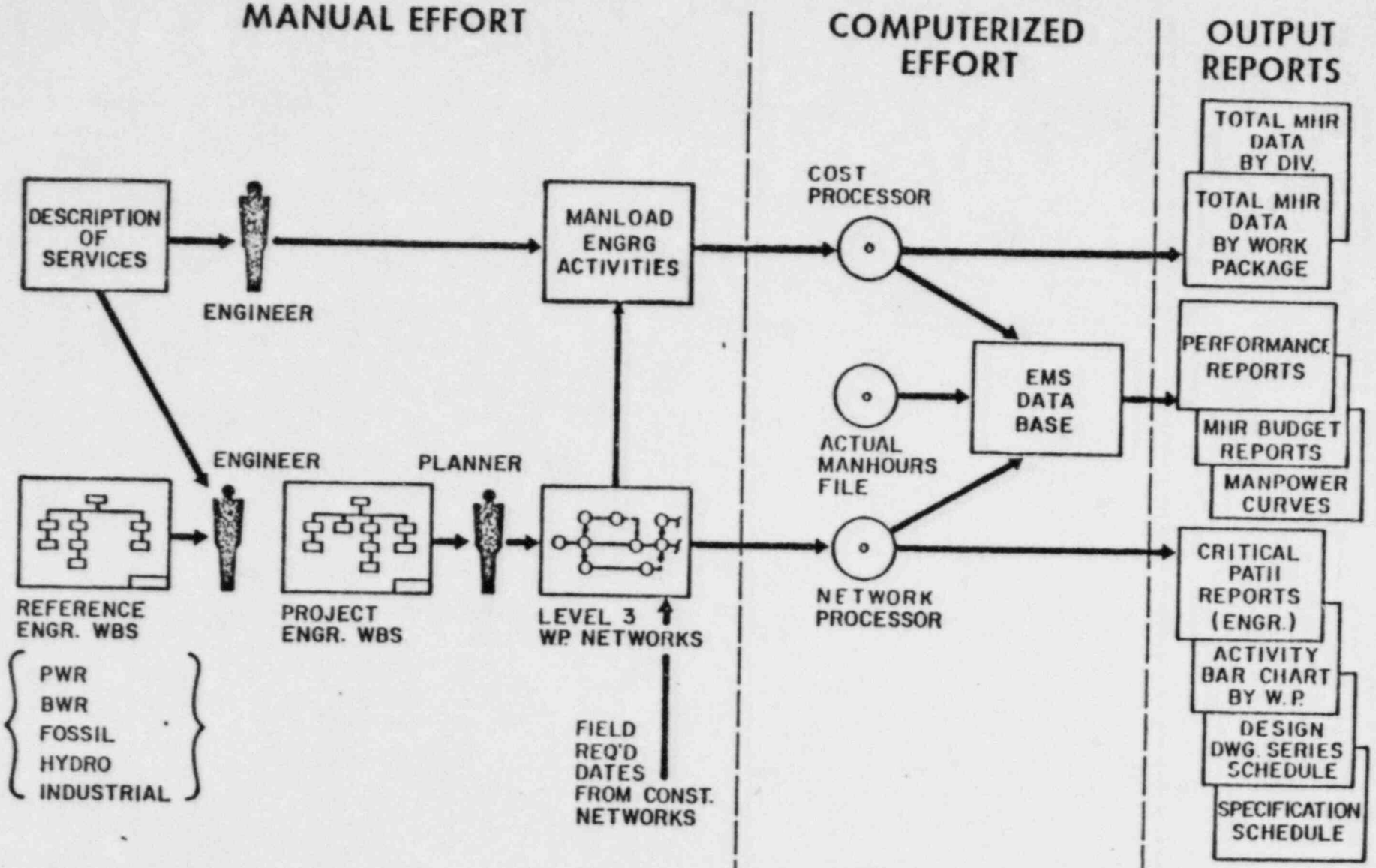
HISTORY OF SWIMS UTILIZATION (CONT.)

UNIT—CLIENT	DATE OF IMPLEMENTATION EMS	CMS	TYPE CONSTRUCTION CONTRACT	TYPE PROJECT
CLINCH RIVER DOE	—	MODIFIED		FAST BREEDER REACTOR
PETERSBURG UNIT 2 INDIANAPOLIS P&L	1980	—	CONTRACTED	PRECIP. ADDITION
ATMOSPHERIC FLUIDIZED BED BOILER TVA	1980	1980	FORCE - CONTRACTED	FOSSIL - AFB COAL
SHOREHAM UNIT 1 LONG ISLAND LIGHTING	1978	—	CONTRACTED	NUCLEAR - BWR
ETHYLENE MODERNIZATION PROJECT MOBIL CORPORATION	I-1979 II-1980	—		PROCESS - MODIF. - ETHYLENE
METHANOL PLANT GETTY OIL	I-1980 II-1981	— 1981		PROCESS - METHANOL
CAT. FEED HYDROTREATER UNIT AMOCO OIL	1980	— —		AGRICULTURAL - PROCESS
BEAVER VALLEY UNIT 1 DUQUESNE LIGHT	1980	—		NUCLEAR CONTINUING SERVICES
MILLINOCKET GREAT NORTHERN PAPER	1980	—		PAPER MILL COAL CONVERSION

HISTORY OF SWIMS UTILIZATION (CONT.)

UNIT - CLIENT	DATE OF IMPLEMENTATION EMS	CMS	CONSTRUCTION CONTRACT	TYPE PROJECT
RAS LANUF ETHYLENE ARC/LIBYA	1980	–		PROCESS
GANNON STATION TAMPA ELECTRIC	1980	–		COAL CONVERSION
DOE/CENTRAL MAINE	1980	–		COAL GASIFICATION STUDY
DOE/FLORIDA POWER	1980	–		COAL GASIFICATION STUDY
DOE/E. KOPPELMAN	1980	–		PEAT & WOOD WASTE STUDY
PERMIAN BASIN ONWI/BATTELLE MEMORIAL INSTITUTE	1980	–		GEOTECHNICAL SURVEY
LIGNITE GENERATING STATIONS 1 & 2 HOUSTON LIGHTING & POWER	1980	–		FOSSIL - COAL
80 MW GEOTHERMAL OCCIDENTAL GEOTHERMAL INC.	1981			GEOTHERMAL
DEEPWATER ATLANTIC CITY ELECTRIC	–	1981	CONTRACTED	COAL CONVERSION
TOTAL MANHOURS	39,215,000	123,235,000		

EMS OVERVIEW



CMS-FR-2
JOB NUMBER 12179.00
CLIENT NUSCO
PROJECT MILLSTONE UNIT 3

STONE & WEBSTER ENGINEERING COMPORATION
SELECTED BUILDINGS REPORT
USER SELECTED PERCENT 20
ESTIMATED DATA FROM MOD-01

RUN DATE 09/21/82
AS OF DATE 09/19/82

			MAN-HOURS	RATE RATIO	PERCENT COMPLETE	BCWP	PROJECTED MAN-HOURS SUMMARIZED	UNDER(OVER) MAN--HOURS
STEMS-	000							
DESC-	PLANT WIDE ACCOUNTS	ESTIMATE DATA	1,477,062				1,545,704	(68,642)
		ACTUAL DATA	676,368	1.11	41.1	607,726	1,566,587	(89,525)
STEMS-	110 111 112 113							
DESC-	REACTOR CONTAINMENT	ESTIMATE DATA	3,730,241				3,833,377	(103,136)
		ACTUAL DATA	2,467,525	1.04	63.4	2,364,394	3,946,266	(216,025)
STEMS-	210							
DESC-	TURBINE BUILDING	ESTIMATE DATA	2,619,058				2,647,536	(28,478)
		ACTUAL DATA	1,621,713	1.02	60.8	1,593,260	2,651,464	(32,406)
STEMS-	213							
DESC-	AUX. BOILER BLDG	ESTIMATE DATA	145,282				146,249	(967)
		ACTUAL DATA	9,366	1.11	5.8	8,401	146,033	(751)
STEMS-	214							
DESC-	CONDEN. POLISHING BLDG	ESTIMATE DATA	189,863				183,470	6,393
		ACTUAL DATA	46,002	.88	27.6	52,395	184,060	5,803
STEMS-	311							
DESC-	INTAKE STRUCTURE	ESTIMATE DATA	462,594				455,167	7,427
		ACTUAL DATA	294,750	.98	65.3	302,177	456,778	5,816
STEMS-	314 342 343 344 345							
STEMS-	370 390 392							
DESC-	YARD AREA	ESTIMATE DATA	1,852,005				1,814,459	37,546
		ACTUAL DATA	1,190,824	.97	66.3	1,228,369	1,802,454	49,551
STEMS-	410							
DESC-	AUXILIARY BUILDING	ESTIMATE DATA	2,475,660				2,471,939	3,721
		ACTUAL DATA	1,135,014	1.00	46.0	1,138,749	2,487,830	(12,170)
STEMS-	510							
DESC-	MAIN STEAM VALVE BLDG	ESTIMATE DATA	417,498				412,872	4,626
		ACTUAL DATA	143,050	.97	35.4	147,677	402,048	15,450
STEMS-	520							
DESC-	ENG. SAFTY FEATURES BLDG	ESTIMATE DATA	836,600				871,882	(35,282)
		ACTUAL DATA	452,532	1.08	49.9	417,253	885,268	(48,668)
STEMS-	540							
DESC-	HYDROGEN RECOMB. BLDG	ESTIMATE DATA	98,995				98,773	222
		ACTUAL DATA	46,053	1.00	46.7	46,276	99,188	(193)
STEMS-	610							

DETAIL WORK PACKAGE REPORT
(WEEKLY UPDATE)

CMS 5
SORT WORKPACKAGE
100.1271

DETAIL WORK PACKAGE REPORT

DATE OF REPORT

DISCRIPTION / WORK PACKAGE NO.	DATA EXCEPT CODE	*** REPORTING SECTION *** QUANTITY	UM	UNIT RATE	MANHOURS	*** ANALYSIS SECTION *** PERCENT COMPLETE	BCWP MANHOURS	PROJECTED MANHOURS	UNDER(OVER) MANHOURS
TURB GEN FDN EXCAVT EARTH	EST DATA	522	CY	.213	111			111	(1)
100.1271.1120 AE	ACT DATA	261		.214	56	50	56	111	(1)
TURB GEN FDN - BACKFILL	EST DATA B	290	CY	.435	126			126	0
100.1271.1130 AE	ACT DATA	0		.000	0	0	0	126	0
TURB GEN FDN - REINF.	EST DATA	128	TN	20.625	2640			2446	194
100.1271.1404 AE	ACT DATA	19		10.421	198	15	392	1334	1306
TURB GEN FDNS FORMS	EST DATA B	3712	SF	1.092	4054			4054	0
100.1271.1424 AE	ACT DATA	0		.000	0	0	0	4054	0
TURB GEN FDNS CONCRETE	EST DATA B	1740	CY	.736	1281			1281	0
100.1271.1444 AE	ACT DATA	0		.000	0	0	0	1281	0
TURB GEN MISC CONCRETE WORK	EST DATA	100	UN	2.440	244			244	0
100.1271.1467 AE	ACT DATA	5		2.440	12	5	12	240	4
TURB GEN FDNS EMBEDDED IRON	EST DATA	1740	LB	.115	200			231	(31)
100.1271.1501 AE	ACT DATA	261		.233	61	15	30	406	(206)
WORK PACKAGE SUBTOTAL	EST DATA			8656				8494	162
100.1271	ACT DATA			327		6	490	7553	1103

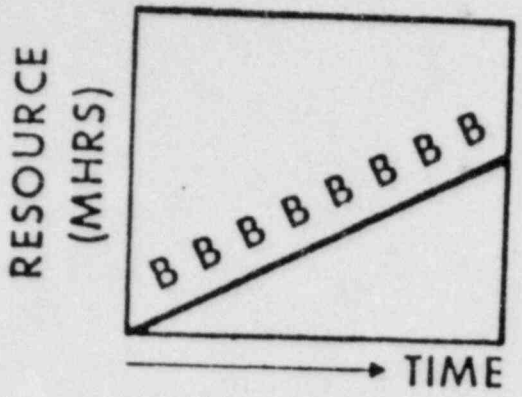
REWORK SUBTOTAL

100.1271 ****

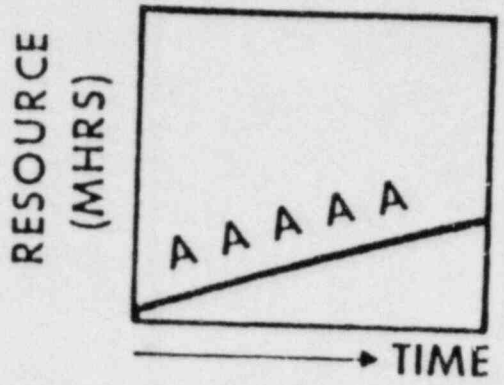
NO REWORK HOURS FOR THIS WORK PACKAGE

FIGURE 4

PERFORMANCE MEASUREMENT



PLANNED RATE OF EXPENDITURE (BUDGET)



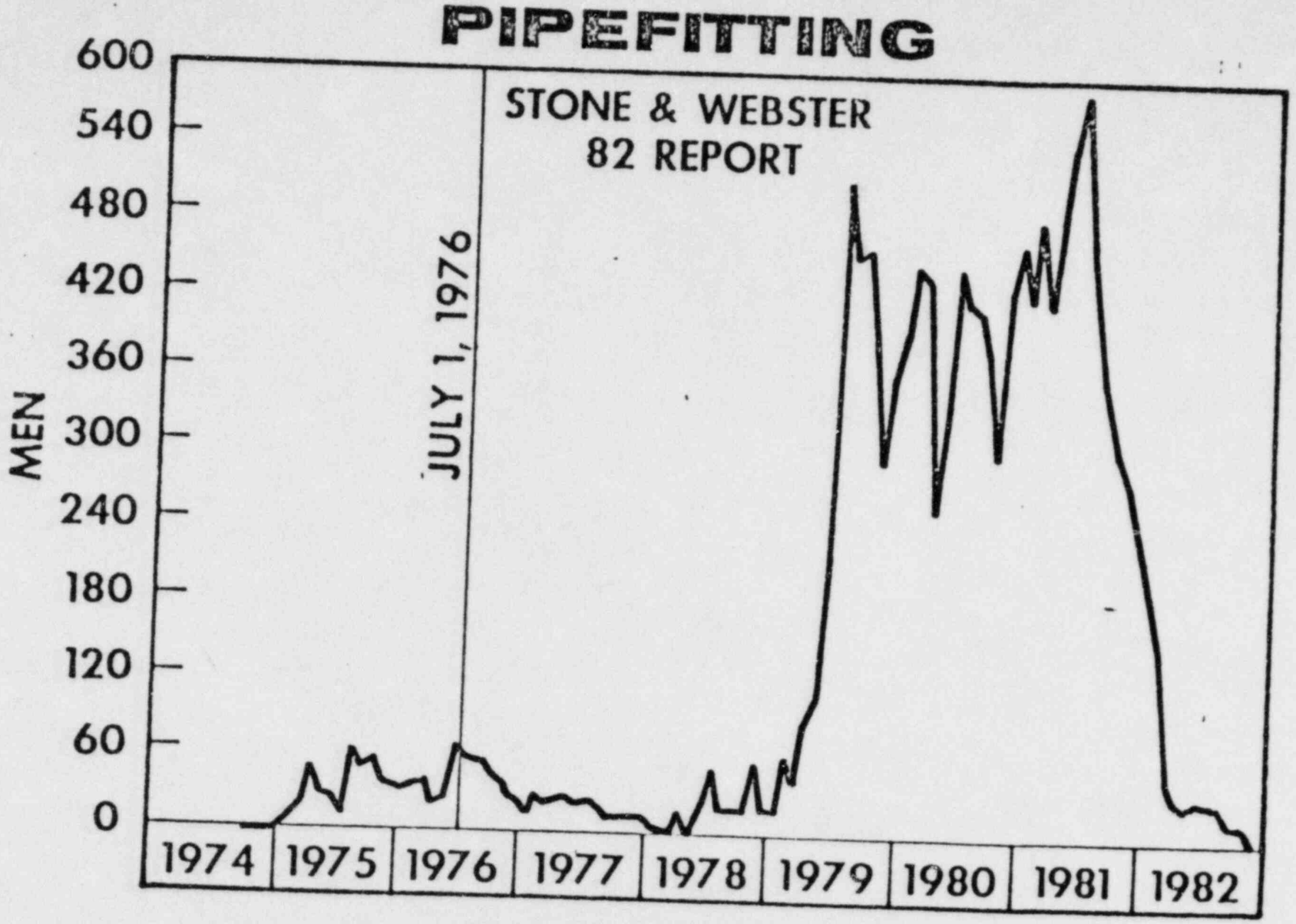
ACTUAL RATE OF EXPENDITURE

WHAT WAS ACCOMPLISHED ?

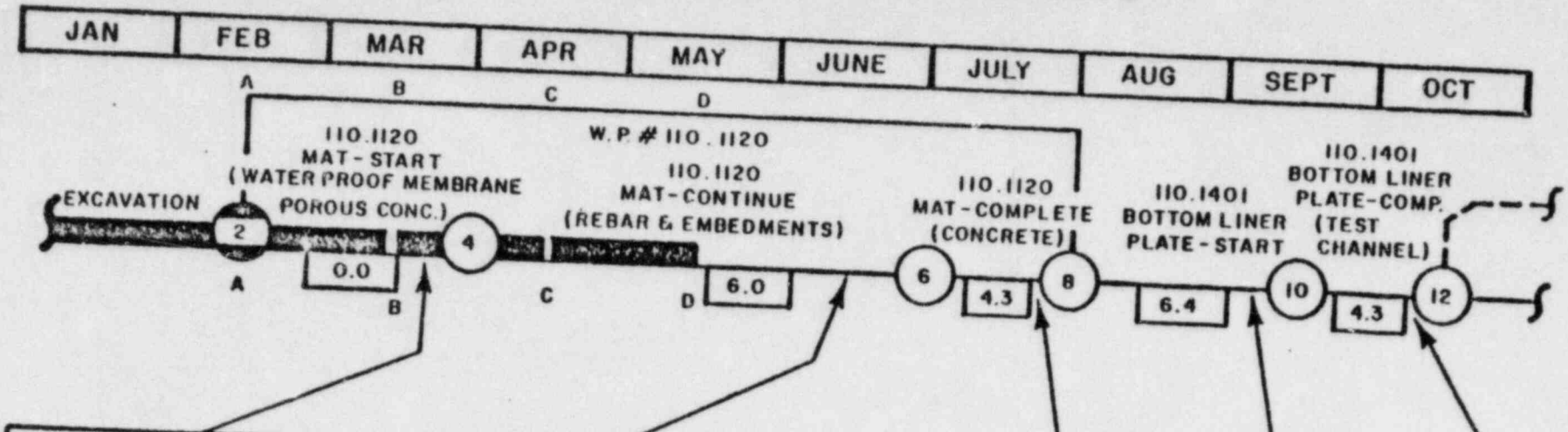
BCWP = BUDGETED (ESTIMATED) COST OF WORK PERFORMED

= ACTUAL QUANTITY IN PLACE × ESTIMATED MANHOURS

= EQUIVALENT WORK ACCOMPLISHED IN TERMS OF MANHOURS


PIPEFITTING
STONE & WEBSTER
82 REPORT
JULY 1, 1976
MEN
600
540
480
420
360
300
240
180
120
60
0
1974
1975
1976
1977
1978
1979
1980
1981
1982

LEVEL II NETWORK



110.1120.1465 CONC. POR. 1331 CY
110.1120.1466 CONC. LN MIX 2100 CY
110.1120.1472 WTRPRF. MEM. 28960 SF
110.1120.1474 CONC. WEEPS & DRN. 795 LF
110.1120.1403 REBAR-TRENCH & TUNNEL 76 LF
110.1120.1443 CONC. TRENCH & TUNNEL 12 CY
110.1120.1441 CONC.-FDN. & SUB. 143 CY
110.1120.1467 MORTAR SEALER 104 CY
110.1120.1300 CONC. BLOCK 8126 SF

110.1120.1401 REBAR 1549 TNS.
110.1120.1501 EMB. IRON 155,216 LBS.
110.1120.1520 CADWELDS 2184 EA.
110.1120.1310 CONC. BLOCK 6470 SF

110.1120.1476 GROUT 261 CF
110.1120.1441 CONC. 7629 CY
110.1120.1421 FORMS 5080 SF
110.1120.1467 ICE 38,695 CF

110.1401.1531 MAT PLATE 14,958 SF

110.1401.1533 TEST CHANNEL 211 EA.

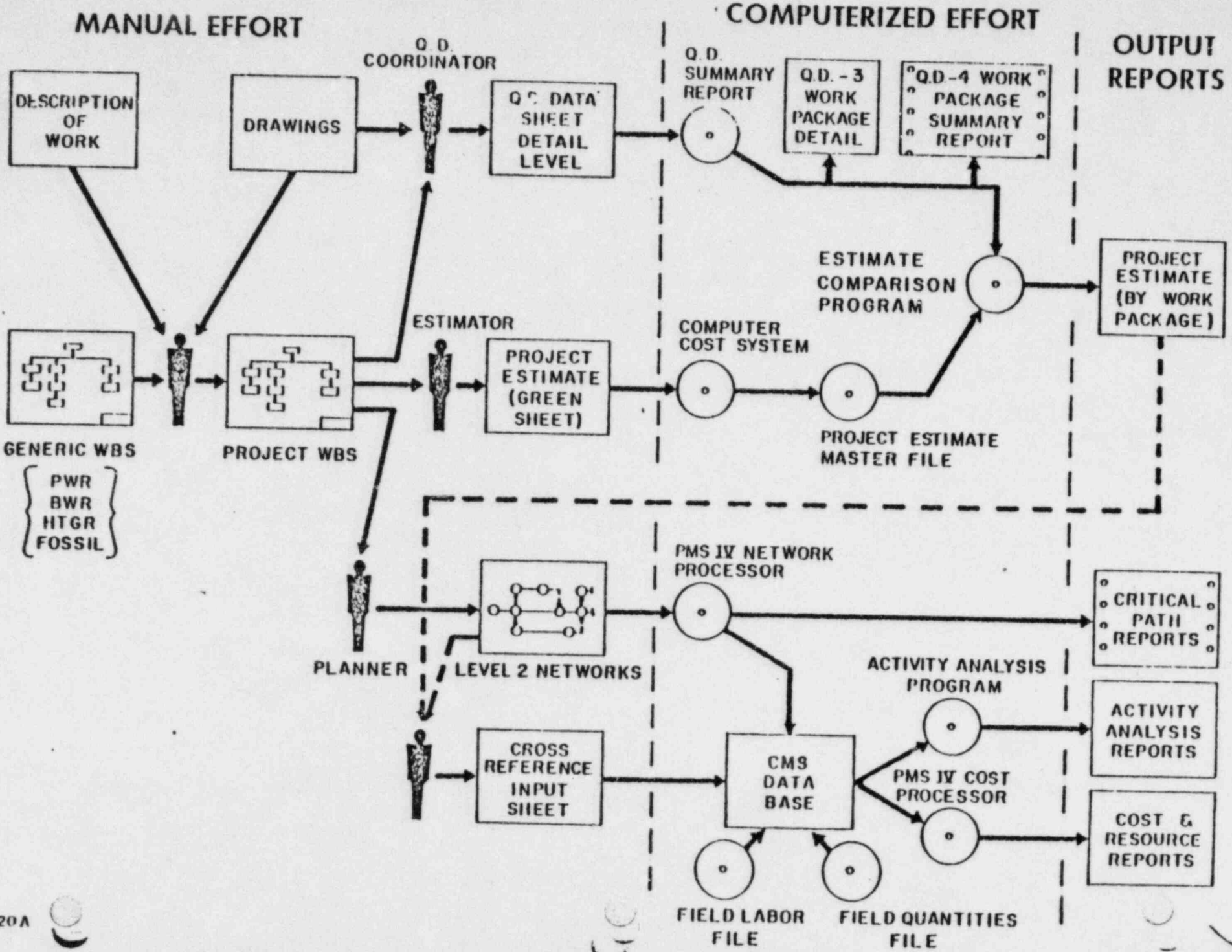
AS OF
MAY 15

-RC-2

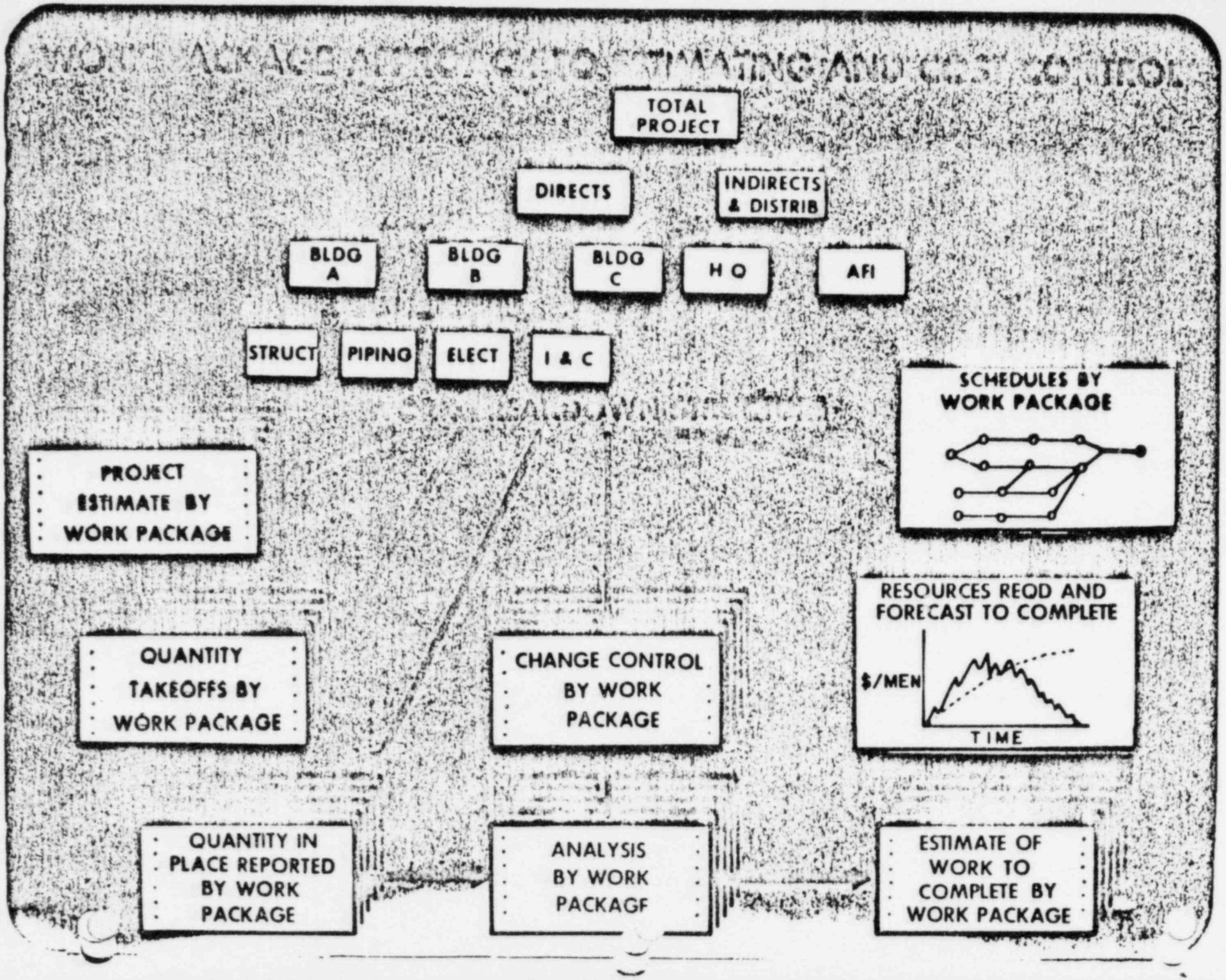
MGT AREA I

REACTOR CONTAINMENT NETWORK
TYPICAL LEVEL 2
WK. PKG. REPRESENTATION

STONE & WEBSTER ENGINEERING COR[illegible]CATION


MANUAL EFFORT
COMPUTERIZED EFFORT
OUTPUT REPORTS
DESCRIPTION OF WORK
DRAWINGS
Q.D. COORDINATOR
Q.D. DATA SHEET DETAIL LEVEL
Q.D. SUMMARY REPORT
Q.D. - 3 WORK PACKAGE DETAIL
Q.D.-4 WORK PACKAGE SUMMARY REPORT
ESTIMATE COMPARISON PROGRAM
PROJECT ESTIMATE (BY WORK PACKAGE)
ESTIMATOR
COMPUTER COST SYSTEM
PROJECT ESTIMATE (GREEN SHEET)
GENERIC WBS
PWR
BWR
HTGR
FOSSIL
PROJECT WBS
PROJECT ESTIMATE MASTER FILE
PMS IV NETWORK PROCESSOR
CRITICAL PATH REPORTS
PLANNER
LEVEL 2 NETWORKS
ACTIVITY ANALYSIS PROGRAM
ACTIVITY ANALYSIS REPORTS
CROSS REFERENCE INPUT SHEET
CMS DATA BASE
PMS IV COST PROCESSOR
COST & RESOURCE REPORTS
FIELD LABOR FILE
FIELD QUANTITIES FILE

75-5320A


TOTAL PROJECT
DIRECTS
INDIRECTS & DISTRIB
BLDG A
BLDG B
BLDG C
H O
AFI
STRUCT
PIPING
ELECT
I & C
SCHEDULES BY WORK PACKAGE
PROJECT ESTIMATE BY WORK PACKAGE
RESOURCES REOD AND FORECAST TO COMPLETE
$/MEN
TIME
QUANTITY TAKEOFFS BY WORK PACKAGE
CHANGE CONTROL BY WORK PACKAGE
QUANTITY IN PLACE REPORTED BY WORK PACKAGE
ANALYSIS BY WORK PACKAGE
ESTIMATE OF WORK TO COMPLETE BY WORK PACKAGE

POWER PLANT AND FACILITIES

MILLSTONE UNIT NO. 3 - 78.3% COMPLETE

Structure	Percent Complete	Structure	Percent Complete
Containment Building	83.2	Hydrogen Recombiner Building	67.9
Turbine Building	79.7	Waste Disposal Building	66.6
Control Building	82.1	Main Steam Valve Building	65.6
Auxiliary Building	74.7	Condensate Polishing Building	80.4
Fuel Building	75.7	Auxiliary Boiler Building	69.0
Safety Features Building	77.1	Circulating Water Pump House	92.9
Service Building	78.2	Circulating Water Tunnel	100.0
Diesel Generator Building	75.3	Yard Area	81.7

As of September 26, 1983

IV. DETAILED REVIEW OF PROJECT SCHEDULE

A. As of October 15, 1983, construction of Millstone Unit No. 3 is 78.3% complete. This is based on earned construction man-hours. Between now and physical completion in the end of 1984, the majority of work centers on systems installation consisting of piping and electrical work. Individual building percent completes are shown on Chart IV A-1.

B. The initial Headquarter's Production Engineering effort is essentially complete. The remaining Engineering Production effort is associated with recently identified required changes. Site engineering 500 people to support field run small bore piping, electrical conduit, instrument tubing, and interference/problem resolution is 46% complete. The total Headquarters effort including engineering design, project support, procurement, licensing, quality assurance, management and the Site Engineering Group is 84% complete. 46% vs. 17% last yr. (Bill L.) based on total effort

C. The project is on schedule with all turnovers scheduled to date having been made essentially on time without having to break packages into partial turnovers. Current craft manning levels, essentially complete engineering and procurement activities, and current construction schedules make obtainment of the remaining turnover schedule highly realistic.

STONE & WEBSTER ENGINEERING CORPORATION

PROJECT MANAGEMENT SYSTEM

INFORMATION CURRENT AS OF 030CT83

TURNOVER SCHEDULE

COMPUTER RUN DATE 030CT83

MILL3 J.O. 12179 NUSCO CONS ONLY

RUN 6899UP3

PRED. EVENT	SUCC. EVENT	ACTIVITY	DESCRIPTION	DURATION (WEEKS)	EXPECTED OR ACTUAL (A)	SCHEDULED	SLACK (WEEKS)	SCHEDULE DATE	DEPT RESP	CY CD
8AD03001	8AD03003	3344B-5	T.O. MCC'S TO SUPPORT WTS /	010.0	10JAN83 A	17JAN83	1.0		TEST	
8AD03C54	8AD03C56	33408-3	T.O. (WTS) ULTRAFILTRATION /	010.0	31JAN83 A	31JAN83	.0		TEST	
8AD03352	8AD03354	33408-1	T.O.(WTS)WTR TREAT'G SYS /	010.0	04FE883 A	31JAN83	- .8		TEST	
8AD03340	8AD03342	33408-2	T.O.(WTW) WASTE WTR TREAT /	010.0	21FE883 A	21FE883	.0		TEST	
8AD03269	8AD03276	33198-1	T.O. (CNS) CNS STORAGE TK /	010.0	15MAR83 A	14MAR83	- .2		TEST	
8AD0314A	8AD0316A	3345D	T.O.(BAT)TURB 125V DC /	010.0	28MAR83 A	28MAR83	.0		TEST	
8AD03066	8AD03068	3319C-3	T.O.(CCD)COND DEMIN COMP CLG/	010.0	28APR83 A	02MAY83	.4		TEST	
8AD03389	8AD03390	3325C-1	CATHODIC PROTECTION @ INTAKE/	010.0	16MAY83 A	16MAY83	.0		TEST	
8AD03128	8AD03130	3319C-2	T.O.(LWC)LIQUID WASTE /	010.0	17MAY83 A	16MAY83	- .2		TEST	
8AD03391	8AD03393	3345C	T.O. (BAT) 125V DC C.B. /	010.0	17MAY83 A	16MAY83	- .2		TEST	
8AD03733	8AD03735	33448-1	T.O.(NHS)MOTOR CONTROL CTRS /	010.0	03JUN83 A	11JUL83	5.2		TEST	
8AD03802	8AD03804	3341D	T.O. FIRE DET ZN 4 & ZN PNL9/	010.0	13JUN83 A	01JUN83	- 1.6		TEST	
8AD03412	8AD03414	3408	T.O. (ANN) ANNUNCIATOR SYSTE/	010.0	16JUN83 A	15JUN83	- .2		TEST	
8AD03002	8AD03004	3341A-1	T.O.(FPW)FIRE PROT WATER /	010.0	20JUN83 A	20JUN83	.0		TEST	
8AD03740	8AD03742	3351	T.O.(YXW)345 KV SWYD /	010.0	20JUN83 A	20JUN83	.0		TEST	
8AD03409	8AD03411	3349	T.O. COMPUTER-POWER SUPPLY /	010.0	05JUL83 A	05JUL83	.0		TEST	
8AD03353	8AD*3353	3720C-1	T.O. STATION GROUND (YD) /	010.0	11JUL83 A	11JUL83	.0		TEST	
8AD03295	8AD03297	3347A-1	T.O.(RTX)RSST XFMR 'B' /	010.0	18JUL83 A	18JUL83	.0		TEST	
8AD03790	8AD03792	3347A-2	T.O. (RTX) RSST A XFMR /	010.0	18JUL83 A	18JUL83	.0		TEST	
8AD03474	8AD03476	3414	MN CONTR BD 1-8 (CONT RM OC)/	010.0	21JUL83 A	18JUL83	.0		TEST	
8AD03850	8AD03852	3415A	T.O. ISOL CAB(CSR-AO-024/057)	010.0	29JUL83 A	18JUL83	- .6		TEST	
8AD03834	8AD03836	3348C-4	T.O. OPERATOR CONSOLE /	010.0	03AUG83 A	01AUG83	- 1.8		TEST	
8AD03826	8AD03828	3348C-2	T.O. UHF RADIO SYS INTERFACE/	010.0	08AUG83 A	01AUG83	- .4		TEST	
8AD03531	8AD03537	3348A-1	T.O. 5 CHAN MAINT JACK SYS /	010.0	08AUG83 A	01AUG83	- 1.0		TEST	
8AD03445	8AD03447	33318-1	T.O. AUX BLR FEEDWATER & CND/	010.0	16AUG83 A	16AUG83	.0		TEST	
8AD03485	8AD03487	3331A-1	T.O. AUXILAIRY STEAM (CPF) /	010.0	16AUG83 A	16AUG83	.0		TEST	
8AD03818	8AD03820	3341D-7	T.O.(FPA) FIRE DET. ZONE 7 /	010.0	23AUG83 A	02SEP83	1.6		TEST	
8AD03165	8AD03166	3343-1	4160V EMERG SWGR BUS A /	010.0	26AUG83 A	15AUG83	- 1.8		TEST	
8AD03167	8AD03168	3343-2	4160V NORM SWGR BUS A /	010.0	26AUG83 A	15AUG83	- 1.8		TEST	
8AD03169	8AD03170	3343-3	4160V EMERG SWGR BUS B /	010.0	26AUG83 A	15AUG83	- 1.8		TEST	
8AD03171	8AD03172	3343-4	4160V NORM SWGR BUS B /	010.0	26AUG83 A	15AUG83	- 1.8		TEST	
8AD03819	8AD03821	3341D-8	T.O. (FPA) FIRE DET. ZONE 8 /	010.0	29AUG83 A	02SEP83	.8		TEST	
8AD03854	8AD03856	3415B	T.O.1700 ISOL CAB(CSR-AO-025)	010.0	06SEP83 A	12SEP83	.8		TEST	
8AD03866	8AD03868	3720C-2	T.O. BUILDING GROUNDING /	010.0	12SEP83 A	12SEP83	.0		TEST	
8AD03015	8AD03019	3344A-1	T.O.(EJS/NJS)480V LOAD CTR /	010.0	26SEP83 A	12SEP83	- 2.0		TEST	
8AD03040	8AD03042	3336A-1	T.O. (PBS)SANIT WASTE SYS /	010.0	28SEP83 A	26SEP83	.0		TEST	
8AD03298	8AD03300	3345A-1	T.O. 120V AC NONVITAL GRP 1 /	010.0	30SEP83 A	26SEP83	.0		TEST	
8AD03334	8AD03336	3340A-1	T.O.(DWS) DOMESTIC WATER /	010.0	03OCT83 A	26SEP83	.0		TEST	
8AD03343	8AD03345	3720A-1	T.O. NORM STA LTG GROUP 1 /	010.0	17OCT83 A	26SEP83	.0		TEST	
8AD03360	8AD03361	3720B-1	T.O. EMERG STA LTG GROUP 1 /	010.0	21OCT83 A	26SEP83	.0		TEST	

TURNOVER SCHEDULE

INFORMATION CURRENT AS OF 030CT83 COMPUTER RUN DATE 030CT83

MILL3 J.O. 12179 NUSCO CONS ONLY RUN 6899UP3

PRED. EVENT	SUCC. EVENT	ACTIVITY DESCRIPTION	DURATION (WEEKS)	EXPECTED OR ACTUAL (A)	SCHEDULED	SLACK (WEEKS)	SCHEDULE DATE	DEPT CY RESP CD
8AD03376	8AD03378	33458-1 T.O. 120V AC VITAL GROUP 1 /	010.0	120CT83A	26SEP83	.0		TEST
8AD03439	8AD03441	33448-2 T.O.(NHS) MOTOR CONTROL CTRS/	010.0	230CT83A	26SEP83	.0		TEST
8AD03C58	8AD03C60	A3900G SERVICE BLDG/MACH SHOP AVAIL.	010.0	01NOV83	01NOV83	.0		TEST
8AD03097	8AD03098	3332C-1 T.O. (SAS) SERVICE AIR SYS /	010.0	07NOV83	07NOV83	.0		TEST
8AD03136	8AD03138	3332A-1 T.O (IAS)INSTRM AIR SYS /	010.0	07NOV83	07NOV83	.0		TEST
8AD03383	8AD03385	3341B T.O. (FPG) HALON FIRE PROT /	010.0	05DEC83	05DEC83	.0		TEST
8AD03920	8AD03922	33078 T.O.(RHS) RESID HEAT REMOV /	010.0	05DEC83	05DEC83	.0		TEST
8AD03858	8AD03860	3415C T.O.1700 ISOL CAB(CSR-AO-026)	010.0	02JAN84	02JAN84	.0		TEST
8AD03938	8AD03940	3326 T.O.(SWP) SER WTR SYS /	010.0	02JAN84	02JAN84	.0		TEST
8AD03482	8AD03484	33198-2 T.O.(CNS) CND MKUP & DRAWOFF/	010.0	03JAN84	03JAN84	.0		TEST
8AD03814	8AD03816	3341D-6 T.O. (FPA) FIRE DET. ZONE 6 /	010.0	05JAN84	05JAN84	.0		TEST
8AD03008	8AD03010	3341A-2 T.O. FIRE PROTEC WATER /	010.0	23JAN84	23JAN84	.0		TEST
8AD0334A	8AD0336A	3407B T.O.FOXBORO 200 RACKS /	010.0	23JAN84	23JAN84	.0		TEST
8AD03448	8AD03450	33318 T.O.(ABF/CNA)AUX BLR CND&F.W/	010.0	23JAN84	23JAN84	.0		TEST
8AD03714	8AD03718	3330A T.O.(CCP)RX PLNT COMP CLG WTR	010.0	23JAN84	23JAN84	.0		TEST
8AD03304	8AD03306	3345A-2 T.O. 120V AC NONVITAL GRP 2 /	010.0	30JAN84	30JAN84	.0		TEST
8AD03350	8AD03351	3720A-2 T.O. NORM STA LTG GROUP 2 /	010.0	30JAN84	30JAN84	.0		TEST
8AD03362	8AD03363	3720B-2 T.O. EMERG STA LTG GROUP 2 /	010.0	30JAN84	30JAN84	.0		TEST
8AD03380	8AD03382	3345B-2 T.O. 120V AC VITAL GROUP 2 /	010.0	30JAN84	30JAN84	.0		TEST
8AD03711	8AD03713	3344B-3 T.O.(NHS,EHS)MOTOR CONT CTRS/	010.0	30JAN84	30JAN84	.0		TEST
8AD03034	8AD03036	3341A-3 T.O.(FPW)FIRE PROT WATER /	010.0	06FEB84	06FEB84	.0		TEST
8AD03142	8AD03144	3332A-2 T.O.(IAS)INSTR. AIR /	010.0	06FEB84	06FEB84	.0		TEST
8AD03488	8AD03490	3331 T.O.(ASS&ABM)AUXILAIRY STEAM/	010.0	06FEB84	06FEB84	.0		TEST
8AD03511	8AD03513	3331C-1 T.O. AUX BLR COMBUS AIR ABA /	010.0	06FEB84	06FEB84	.0		TEST
8AD03512	8AD03514	3331C-2 T.O. AUX. BLR CONT BLWDN ABD/	010.0	06FEB84	06FEB84	.0		TEST
8AD03518	8AD03520	3331C-3 T.O. AUX BLR MN CNT PNLS ABS/	010.0	06FEB84	06FEB84	.0		TEST
8AD03538	8AD03540	3331E T.O.(FOA)AUX BLR F.O. SYS /	010.0	06FEB84	06FEB84	.0		TEST
8AD03584	8AD03586	3315E T.O.(HVI)AUX BOILER RM VENT /	010.0	06FEB84	06FEB84	.0		TEST
8AD03176	8AD03178	3333 T.O.(GSN)NITROGEN SYS /	010.0	13FEB84	13FEB84	.0		TEST
8AD03248	8AD03250	3330B-1 T.O(CCS)TURB PL COMP CLG WTR/	010.0	13FEB84	13FEB84	.0		TEST
8AD0342A	8AD0344A	3407A T.O. SPEC 7300 RACKS /	010.0	13FEB84	13FEB84	.0		TEST
8AD03688	8AD03690	3330B-2 T.O.(CCS)TURB PL COMP CLG WTR	010.0	13FEB84	13FEB84	.0		TEST
8AD03822	8AD03824	3314G T.O.(HVY)YARD STRUCT.VENT /	010.0	13FEB84	13FEB84	.0		TEST
8AD03811	8AD03813	3340A-2 T.O.(DWS) DOMESTIC WATER /	010.0	20FEB84	20FEB84	.0		TEST
8AD03562	8AD03564	3331D T.O.(HVH)HOT WTR HTG SYS /	010.0	27FEB84	27FEB84	.0		TEST
8AD03768	8AD03770	3721A T.O.SEC SYS VITAL AREAS(BLDG)	010.0	01MAR84	01MAR84	.0		TEST
8AD0304A	8AD0306A	33368 T.O. (WOS)WASTE OIL SYS /	010.0	05MAR84	05MAR84	.0		TEST
8AD03067	8AD03072	3332C-4 T.O. (SAS) SERV AIR CONTAIN /	010.0	05MAR84	05MAR84	.0		TEST
8AD03778	8AD03779	3330D T.O. (CCF)CHARGING PUMP CLG /	010.0	05MAR84	05MAR84	.0		TEST
8AD03842	8AD03844	3340C T.O (PGS)PRIM GRADE WTR SYS /	010.0	05MAR84	05MAR84	.0		TEST

INFORMATION CURRENT AS OF 030CT83

TURNOVER SCHEDULE

COMPUTER RUN DATE 030CT83

MILL3 J.O. 12179 NUSCO CONS ONLY

RUN 6899UP3

PRED. EVENT	SUCC. EVENT	ACTIVITY	DESCRIPTION	DURATION (WEEKS)	EXPECTED OR ACTUAL (A)	SCHEDULED	SLACK (WEEKS)	SCHEDULE DATE	DEPT RESP	CY CD
8AD03461	8AD03463	3344A-2	T.O. (NJS) 480V LOAD CTR /	010.0	12MAR84	12MAR84	.0		TEST	
8AD03866	8AD03868	3327	T.O. (SWT)TRAV SRN WASH /	010.0	12MAR84	12MAR84	.0		TEST	
8AD03046	8AD03048	3336A-2	T.O.(PBS)SANIT WASTE SYS /	010.0	19MAR84	19MAR84	.0		TEST	
8AD03182	8AD03184	33328	T.O.(IAC)CONT INST AIR SYS /	010.0	26MAR84	26MAR84	.0		TEST	
8AD03313	8AD03315	3314F	T.O.(HVC,HVK)CONT.BLDG HVAC /	010.0	26MAR84	26MAR84	.0		TEST	
8AD03870	8AD03872	33238-1	T.O. LUBE OIL STORAGE (LOS) /	010.0	26MAR84	26MAR84	.0		TEST	
8AD03908	8AD03910	3328	T.O.(WTC) CHEM FEED-CHLORINE/	010.0	26MAR84	26MAR84	.0		TEST	
8AD03260	8AD03262	3322A	T.O. DEMIN WTR STOR TK /	010.0	02APR84	02APR84	.0		TEST	
8AD03972	8AD03974	33448-4	T.O.(NHS)MOTOR CONTROL CTRS /	010.0	09APR84	09APR84	.0		TEST	
8AD03664	8AD03666	3315A	T.O.(HVT)TURB PLANT VENT /	010.0	16APR84	16APR84	.0		TEST	
8AD03670	8AD03672	3304A	T.O.(CHS) VOLUME CONTROL SYS/	010.0	16APR84	16APR84	.0		TEST	
8AD03874	8AD03876	33238-2	T.O.(TML,TMJ) LUBE OIL/LF PMP	010.0	16APR84	16APR84	.0		TEST	
8AD03862	8AD03864	3415D	T.O.1700 ISOL CAB(CSR-AO-027)	010.0	07MAY84	07MAY84	.0		TEST	
8AD03155	8AD03157	33248	T.O.(GMO)MAIN GEN SEAL OIL /	010.0	07MAY84	07MAY84	.0		TEST	
8AD03610	8AD03612	3314E	T.O.(HVL,HVE)SERV BLDG HVAC /	010.0	07MAY84	07MAY84	.0		TEST	
8AD03633	8AD03635	3406	T.O.RX-TRIP(SOLID STATE PROT/	010.0	07MAY84	07MAY84	.0		TEST	
8AD03646	8AD03648	3302A-1	T.O. ROD CONTROL CABINETS /	010.0	07MAY84	07MAY84	.0		TEST	
8AD03120	8AD03122	33210-1	T.O.(FWL/TFC/TFE)F.W.PP DR&LO	010.0	14MAY84	14MAY84	.0		TEST	
8AD03458	8AD03460	3325B	T.O.(VPS) VACUUM PRIMING SYS/	010.0	14MAY84	14MAY84	.0		TEST	
8AD03074	8AD03076	3341C	T.O.(FPC/FPL)FIRE PROT CO2 /	010.0	16MAY84	16MAY84	.0		TEST	
8AD03327	8AD03329	3342	T.O.(NDS) 6.9 KV SWITCHGEAR /	010.0	21MAY84	21MAY84	.0		TEST	
8AD03148	8AD03150	3332A-3	T.O.(IAS)INSTR. AIR /	010.0	04JUN84	04JUN84	.0		TEST	
8AD03241	8AD03243	3314H	T.O.(HVP)EGE BLDG HVAC /	010.0	04JUN84	04JUN84	.0		TEST	
8AD03838	8AD03840	3348C-5	T.O. EMERG SND POWER PHONE /	010.0	18JUN84	18JUN84	.0		TEST	
8AD03C34	8AD03C36	3417	T.O.EMER OPS FAC COMM LINK /	010.0	18JUN84	18JUN84	.0		TEST	
8AD03285	8AD03287	33488	T.O. PAGE SYS&SITE EVAC ALR /	010.0	18JUN84	18JUN84	.0		TEST	
8AD03386	8AD03388	3325C-2	T.O. (PCS/CSW) PL CATH.PROT /	010.0	25JUN84	25JUN84	.0		TEST	
8AD03801	8AD03803	3341D-2	T.O. (FPA) FIRE DET ZONE 2 /	010.0	02JUL84	02JUL84	.0		TEST	
8AD03805	8AD03807	3341D-3	T.O. (FPA) FIRE DET ZONE 3 /	010.0	02JUL84	02JUL84	.0		TEST	
8AD03806	8AD03808	3341D-1	T.O.(FPA)FIRE DET.ZN 1 /	010.0	02JUL84	02JUL84	.0		TEST	
8AD03809	8AD03811	3341D-5	T.O. (FPA) FIRE DET ZONE 5 /	010.0	02JUL84	02JUL84	.0		TEST	
8AD03812	8AD03813	3341D-9	T.O. (FPA) FIRE DET ZN 9 /	010.0	02JUL84	02JUL84	.0		TEST	
8AD03089	8AD03091	3324C	T.O.(GMH)GEN H2&CO2 CLG /	010.0	02JUL84	02JUL84	.0		TEST	
8AD03271	8AD03273	33468-1	T.O.(EGF)EMRG D/G FUEL OIL'A'	010.0	02JUL84	02JUL84	.0		TEST	
8AD03357	8AD03359	33468-2	T.O.(EGF)EMRG D/G F.O.'B' /	010.0	02JUL84	02JUL84	.0		TEST	
8AD03640	8AD03644	33048	T.O.(CHS) PURIFICATION SYS /	010.0	02JUL84	02JUL84	.0		TEST	
8AD03154	8AD03156	3332A-4	T.O.(IAS)INSTRM AIR SYS /	010.0	09JUL84	09JUL84	.0		TEST	
8AD03346	8AD03348	3330C	T.O.(CDS) RX PLANT CHILL WTR/	010.0	09JUL84	09JUL84	.0		TEST	
8AD03544	8AD03501	3325A	T.O.(CWS) CIRC WTR SYS /	010.0	09JUL84	09JUL84	.0		TEST	
8AD03254	8AD03256	33308-3	T.O.(CCS)TURB PL COMP CLG WTR	010.0	16JUL84	16JUL84	.0		TEST	

INFORMATION CURRENT AS OF 030CT83

TURNOVER SCHEDULE

COMPUTER RUN DATE 030CT83

MILL3 J.O. 12179 NUSCO CONS ONLY

RUN 6899UP3

PRED. EVENT	SUCC. EVENT	ACTIVITY	DESCRIPTION	DURATION (WEEKS)	EXPECTED OR ACTUAL (A)	SCHEDULED	SLACK (WEEKS)	SCHEDULE DATE	DEPT RESP	CY CD
8AD03071	8AD03077	3324E	T.O. (GMS/EXS)GEN&EXCITER /	010.0	23JUL84	23JUL84	.0		TEST	
8AD03595	8AD03597	3411	T.O. AUX SHUTDOWN PNL /	010.0	23JUL84	23JUL84	.0		TEST	
8AD03014	8AD03016	3341A-4	T.O. (FPW) FIRE PROT WATER /	010.0	30JUL84	30JUL84	.0		TEST	
8AD03257	8AD03259	3346A-1	T.O.(EGA,D,O,&S)EMER D/G EG1A	010.0	30JUL84	30JUL84	.0		TEST	
8AD03333	8AD03335	3346A-2	T.O. (EGA,D,O,S) GEN'B'	010.0	30JUL84	30JUL84	.0		TEST	
8AD03822	8AD03824	3348C-1	T.O. CONT FUEL HAND CARR SYS/	010.0	01AUG84	01AUG84	.0		TEST	
8AD03534	8AD03536	3348A-2	T.O. 5 CHAN MAINT JACK SYS /	010.0	01AUG84	01AUG84	.0		TEST	
8AD03162	8AD03164	3316A	T.O.(MSS,SVV)MN STM, VNT&DRN/	010.0	06AUG84	06AUG84	.0		TEST	
8AD03656	8AD03658	3304D	T.O.(CHS) BORON THERMAL REGEN	010.0	06AUG84	06AUG84	.0		TEST	
8AD03848	8AD03830	3323A	T.O. MAIN TURBINE /	010.0	06AUG84	06AUG84	.0		TEST	
8AD03494	8AD03496	3325D	T.O.(CWA) CND TUBE CLNG SYS /	010.0	20AUG84	20AUG84	.0		TEST	
8AD03602	8AD03604	3331P	T.O.(HVG)HOT WTR PRE-HTG /	010.0	20AUG84	20AUG84	.0		TEST	
8AD03430	8AD03509	3329	T.O.(DTM/ARC)COND & AIR REMOV	010.0	27AUG84	27AUG84	.0		TEST	
8AD03073	8AD03075	3324A	T.O.(GMS/EXS)GEN&EXCITER /	010.0	03SEP84	03SEP84	.0		TEST	
8AD03748	8AD03750	3330A-1	T.O.(CCP)RX PLNT COMP CLG /	010.0	03SEP84	03SEP84	.0		TEST	
8AD03310	8AD03312	3314A	T.O.(HVR)-AUX BLDG HVAC	010.0	04SEP84	04SEP84	.0		TEST	
8AD03368	8AD03370	3318	T.O. (ESS) EXTRACTION STEAM /	010.0	10SEP84	10SEP84	.0		TEST	
8AD03572	8AD03574	3314D	T.O. (HVQ) ESP B'DG VENT /	010.0	10SEP84	10SEP84	.0		TEST	
8AD03616	8AD03618	3309	T.O.(QSS) QUENCH SPRAY SYS /	010.0	10SEP84	10SEP84	.0		TEST	
8AD03986	8AD03988	3330E	T.O.(CCI)SFTY INJ CLG /	010.0	10SEP84	10SEP84	.0		TEST	
8AD03026	8AD03028	3341A-6	T.O.(FPW)FIRE PROT WATER /	010.0	24SEP84	24SEP84	.0		TEST	
8AD03280	8AD03282	3339A	T.O.(CNC)CHEM FED CND SYS /	010.0	24SEP84	24SEP84	.0		TEST	
8AD03397	8AD03399	3347C	T.O.(GML,MTX)MN XFMR &ISOBUS/	010.0	24SEP84	24SEP84	.0		TEST	
8AD03050	8AD03052	3900K	T.O. INTAKE STRUCTURE /	010.0	01OCT84	01OCT84	.0		TEST	
8AD03402	8AD03404	3319A	T.O.(CNM)CONDENSATE SYS /	010.0	01OCT84	01OCT84	.0		TEST	
8AD03948	8AD03950	3308	T.O.(SIH)HP SAFETY INJEC /	010.0	05OCT84	05OCT84	.0		TEST	
8AD03226	8AD03228	3321A	T.O.(FWS/FWR)FDWTR&RECIRC /	010.0	09OCT84	09OCT84	.0		TEST	
8AD03264	8AD03266	3322	T.O.(FWA)AUX FDWTR&RECIRC /	010.0	15OCT84	15OCT84	.0		TEST	
8AD03466	8AD03468	3317	T.O.(CRS,OSM&R,HRS)RHT&MOIST.	010.0	15OCT84	15OCT84	.0		TEST	
8AD03916	8AD03918	3307A	T.O.(SIL)LOW PRESS SAF INJ /	010.0	22OCT84	22OCT84	.0		TEST	
8AD03726	8AD03728	3301	T.O.(RCS)REACTOR COOLANT /	010.0	24OCT84	24OCT84	.0		TEST	
8AD03212	8AD03214	3321D-2	T.O.(TFM)FDWTR PP STM & EXH	010.0	29OCT84	29OCT84	.0		TEST	
8AD03524	8AD03526	3314J	T.O.(HVR)WST DISP BLDG VENT /	010.0	29OCT84	29OCT84	.0		TEST	
8AD03552	8AD03554	3314C	T.O.(HVR,HVF) FUEL BLDG HVAC/	010.0	29OCT84	29OCT84	.0		TEST	
8AD03434	8AD03436	3320	T.O.(HDH,HDL,SVH)FW HTR,DR&V/	010.0	05NOV84	05NOV84	.0		TEST	
8AD03316	8AD03318	3316C	T.O.(BDG,SVV)STM GEN BLW DWN/	010.0	07NOV84	07NOV84	.0		TEST	
8AD03020	8AD03022	3341A-5	T.O.(FPW)FIRE PROT WATER /	010.0	13NOV84	13NOV84	.0		TEST	
8AD03107	8AD03109	3335B-1	T.O.(DAS)RX PLNT AERATED DRN/	010.0	19NOV84	19NOV84	.0		TEST	
8AD03240	8AD03242	3339B	T.O.(SGF)CHEM FD STM GEN SYS/	010.0	19NOV84	19NOV84	.0		TEST	
8AD03113	8AD03115	3311B	T.O.(SST)TURB PLANT SAMPLG /	010.0	03DEC84	03DEC84	.0		TEST	

INFORMATION CURRENT AS OF 030CT83

TURNOVER SCHEDULE

COMPUTER RUN DATE 030CT83

MILL3 J.O. 12179 NUSCO CONS ONLY

RUN 6899UP3

PRED. EVENT	SUCC. EVENT	ACTIVITY	DESCRIPTION	DURATION (WEEKS)	EXPECTED OR ACTUAL (A)	SCHEDULED	SLACK (WEEKS)	SCHEDULE DATE	DEPT RESP	CY CD
8AD03684	8AD03686	3306	T.O.(RSS)CONT RECIRC SPRAY /	010.0	03DEC84	03DEC84	.0		TEST	
8AD03033	8AD03035	3323C	T.O.(TMB)TURBINE CONTROLS /	010.0	17DEC84	17DEC84	.0		TEST	
8AD03053	8AD03055	3324D	T.O.(GMC)MN GEN STATOR CLG /	010.0	17DEC84	17DEC84	.0		TEST	
8AD03194	8AD03196	3313E	T.O.(HVR,HVU) CONT PURGE AIR/	010.0	17DEC84	17DEC84	.0		TEST	
8AD03218	8AD03220	33218-2	T.O.(FWP)FDWTR PP SEAL&LK-OFF	010.0	17DEC84	17DEC84	.0		TEST	
8AD03650	8AD03652	3304C	T.O.(CHS)BORIC ACID SYS /	010.0	17DEC84	17DEC84	.0		TEST	
8AD03506	8AD03507	3319C-1	T.O.(CND)FDWTR,COND,MIX BED /	010.0	24DEC84	24DEC84	.0		TEST	
8AD0324A	8AD0326A	3407C	T.O.NUC.PROC INSTR CTRLS /	010.0	02JAN85	02JAN85	.0		TEST	
8AD03086	8AD03088	33138	T.O.(HVU)CONT. AIR RECIRC /	010.0	07JAN85	07JAN85	.0		TEST	
8AD03508	8AD03510	0000	INTEGRATED SYSTEMS FLUSH /	010.0	07JAN85	07JAN85	.0		TEST	
8AD03519	8AD03521	3402B	T.O. RCP VIBRATION MONIT /	010.0	07JAN85	07JAN85	.0		TEST	
8AD03525	8AD03527	3412	T.O.LOOSE PARTS MONIT SYS /	010.0	07JAN85	07JAN85	.0		TEST	
8AD03758	8AD03760	3330A-2	T.O. (CCP)RX PLNT COMP CLG /	010.0	07JAN85	07JAN85	.0		TEST	
8AD03828	8AD03830	3311A	T.O.REAC PL SAMPLING (SSR) /	010.0	07JAN85	07JAN85	.0		TEST	
8AD03*30	8AD03*32	39001	T.O. EMER GEN ENCL-EGE /	010.0	14JAN85	14JAN85	.0		TEST	
8AD03081	8AD03083	3323D	T.O.(TME)GLAND SEAL&EXHST /	010.0	14JAN85	14JAN85	.0		TEST	
8AD03782	8AD03784	3305	T.O.(SFC) SPT FUEL COOL&PURF/	010.0	14JAN85	14JAN85	.0		TEST	
8AD03307	8AD03309	3313A	T.O.(HCS)HYDROGEN RECOMBINERS	010.0	21JAN85	21JAN85	.0		TEST	
8AD03373	8AD03375	33478	T.O. (STX) NSST A&B XFMR /	010.0	21JAN85	21JAN85	.0		TEST	
8AD03590	8AD03592	3338	T.O.(WSS)RAD WST SOLID /	010.0	21JAN85	21JAN85	.0		TEST	
8AD03108	8AD03110	33130	T.O(HVU)CONTAIN FILTRATION /	010.0	28JAN85	28JAN85	.0		TEST	
8AD03C46	8AD03C48	3311C	(SSP)POST ACCIDENT SAMPLING /	010.0	04FEB85	04FEB85	.0		TEST	
8AD03175	8AD03177	33128	T.O.(LMS)CONT.LEAKG MONIT /	010.0	05FEB85	05FEB85	.0		TEST	
8AD03094	8AD03096	3337	T.O.(GWS/VAS/VRS)RADWST GAS /	010.0	11FEB85	11FEB85	.0		TEST	
8AD03277	8AD03279	3303	T.O.(FNR)FUEL&RX COMP HANDLG/	010.0	12FEB85	12FEB85	.0		TEST	
8AD03247	8AD03249	3405	T.O.(RPS)ENGR.SFGRD-DIES SEQ/	010.0	19FEB85	19FEB85	.0		TEST	
8AD03530	8AD03532	3335A	T.O.(DGS)RX PL GASEOUS DRNS /	010.0	20FEB85	20FEB85	.0		TEST	
8AD03578	8AD03580	33358-2	T.O.(LWS)RX PL LIQ WASTE /	010.0	20FEB85	20FEB85	.0		TEST	
8AD03205	8AD03207	3312C	T.O.(CMS)CONT.ATMOSPHER MONIT	010.0	25FEB85	25FEB85	.0		TEST	
8AD03694	8AD*3696	0000	R.C.S. INITIAL FILL /	010.0	04MAR85	04MAR85	.0		TEST	
8AD03200	8AD03202	3313F	T.O.(CVS/HVU)CONT AIR VAC /	010.0	11MAR85	11MAR85	.0		TEST	
8AD03*18	8AD03*20	3900F	T.O. HYDR REC BLDG-HRB /	010.0	18MAR85	18MAR85	.0		TEST	
8AD03125	8AD03127	3323E	T.O.(TSI)TURB.SUPER.INSTR /	010.0	18MAR85	18MAR85	.0		TEST	
8AD03696	8AD03698	0000	COLD HYDRO /	010.0	18MAR85	18MAR85	.0		TEST	
8AD03928	8AD03930	3312A	T.O. CONTAINMENT STR. /	010.0	22MAR85	22MAR85	.0		TEST	
8AD03005	8AD03007	3334	T.O.(GSH) HYDROGEN SYS /	010.0	01APR85	01APR85	.0		TEST	
8AD03442	8AD03444	3313C	T.O.(HVU)CNTRL ROD DRV CLNG /	010.0	08APR85	08APR85	.0		TEST	
8AD03626	8AD03628	3335C	T.O.(BRS)BORON REC SYS /	010.0	24APR85	24APR85	.0		TEST	
8AD03043	8AD03045	0000	TURBINE ON TURNING GEAR /	010.0	29APR85	29APR85	.0		TEST	
8AD03056	8AD03058	33158	T.O.(HVY/HVW)MSV BLDG HVAC /	010.0	29APR85	29APR85	.0		TEST	

INFORMATION CURRENT AS OF 030CT83

TURNOVER SCHEDULED

COMPUTER RUN DATE 030CT83

MILL3 J.O. 12179 NUSCO CONS ONLY

RUN 6899UP3

PRED. EVENT	SUCC. EVENT	ACTIVITY DESCRIPTION		DURATION (WEEKS)	EXPECTED OR ACTUAL (A)	SCHEDULED	SLACK (WEEKS)	SCHEDULE DATE	DEPT CY RESP CD
8AD03*58	8AD03*60	3900G	T.O. SERVICE BLDG.	/	010.0	30APR85	30APR85	.0	TEST
8AD03814	8AD03816	3404	T.O. (RMS)RAD MONITRG SYS	/	010.0	30APR85	30APR85	.0	TEST
8AD03C30	8AD03C32	3416	T.O.SAFETY PARAM.DISPLAY SYS	/	010.0	06MAY85	06MAY85	.0	TEST
8AD03C38	8AD03C40	3418	T.O.(NCORE THERMOCOUPLE SYS	/	010.0	06MAY85	06MAY85	.0	TEST
8AD03C42	8AD03C44	3419	T.O.ACOUSTIC MONITORING SYS	/	010.0	06MAY85	06MAY85	.0	TEST
8AD03213	8AD03215	3401	T.O.(NME)NUCLEAR INSTRUMENT	/	010.0	13MAY85	13MAY85	.0	TEST
8AD03*42	8AD03*44	3900P	T.O. AUX BLR RM-ABR	/	010.0	14MAY85	14MAY85	.0	TEST
8AD03663	8AD03665	3409	T.O.ROD POSITION INDICATION	/	010.0	20MAY85	20MAY85	.0	TEST
8AD03700	8AD03702	3312A	SIT & ILRT TEST (JR8)	/	010.0	20MAY85	20MAY85	.0	TEST
8AD03651	8AD03653	3302A-2	T.O.(RDS)ROD CTRL DRV MECH	/	010.0	27MAY85	27MAY85	.0	TEST
8AD0358A	8AD0360A	3413	T.O.SEISMIC MONIT.SYS	/	010.0	28MAY85	28MAY85	.0	TEST
8AD03657	8AD03659	3302B	T.O.(RDS) ROD CRTL (PWR RX)	/	010.0	28MAY85	28MAY85	.0	TEST
8AD03114	8AD03116	3314I	T.O.(LCS)SUPL LK COL&REL HVAC		010.0	10JUN85	10JUN85	.0	TEST
8AD03*46	8AD03*48	3900C	T.O. FUEL BLDG-FB	/	010.0	17JUN85	17JUN85	.0	TEST
8AD03*14	8AD03*16	3900E	T.O. ENG SAF FEA-ESF	/	010.0	24JUN85	24JUN85	.0	TEST
8AD03*02	8AD03*04	3900A	T.O.TURB BLDG-TB	/	010.0	01JUL85	01JUL85	.0	TEST
8AD03*06	8AD03*08	39008	T.O. AUXILARY BLDG-AB	/	010.0	01JUL85	01JUL85	.0	TEST
8AD03*38	8AD03*40	3900N	T.O. CON POL ENCL-CPE	/	010.0	01JUL85	01JUL85	.0	TEST
8AD03*54	8AD03*56	3900Q	T.O.YARD AREA	/	010.0	01JUL85	01JUL85	.0	TEST
8AD03533	8AD03535	3721B	T.O. YARD SECURITY SYSTEM	/	010.0	01JUL85	01JUL85	.0	TEST
8AD03*34	8AD03*36	3900M	T.O. MAIN STM VALVE-MSV	/	010.0	08JUL85	08JUL85	.0	TEST
8AD03416	8AD03418	3330F	T.O.(NSS) NEUTR SHLD TK CLG	/	010.0	08JUL85	08JUL85	.0	TEST
8AD03*26	8AD03*28	3900H-2	T.O. CONTROL ROOM/MN BD	/	010.0	15JUL85	15JUL85	.0	TEST
8AD03818	8AD03820	3818	T.O. REC&INSPECT NEW FUEL	/	010.0	15JUL85	15JUL85	.0	TEST
8AD03704	8AD03705	0000	HOT FUNCTIONAL	/	010.0	16JUL85	16JUL85	.0	TEST
8AD03*22	8AD03*24	3900H-1	T.O. CONTROL BLDG-CB	/	010.0	18JUL85	18JUL85	.0	TEST
8AD03706	8AD03708	0000	PREP FOR LOAD FUEL	/	010.6	20AUG85	20AUG85	.0	TEST
8AD03847	8AD03849	3403	T.O. DIG INCORE SYS	/	010.0	26AUG85	26AUG85	.0	TEST
8AD03*10	8AD03*12	3900D	T.O. WASTE DSP BLDG-WDB	/	010.0	23SEP85	23SEP85	.0	TEST
8AD0366A	8AD0368A	3660A	T.O.BUILDINGS	/	010.0	07OCT85	07OCT85	.0	TEST
8AD03708	8AD03710	0000	LOAD FUEL	/	010.0	01NOV85	01NOV85	.0	TEST

c. All seismic duct supports have been issued for field installation.

5. Nonseismic Duct Supports.

   a. Nonseismic duct supports are designed and fabricated by the HVAC subcontractor to industry standards.

6. Pipe Whip Restraints.

   a. Pipe whip restraints are provided to restrict damage in the event of a pipe break and are all custom designed.

   b. Ninety-four percent of whip restraints have been issued for fabrication.

   c. Pipe whip restraints are fabricated by various steel fabricators.

7. Snubbers.

   a. Snubbers are used in conjunction with pipe and equipment supports and are selected from standard designs available in the industry.

   b. Snubbers are identified and purchased at the time of the issuance of the BZ support drawing.

   c. Snubbers are installed late in the construction phase to avoid damage.

As of September 26, 1983

H. Piping Instrument, Conduit and Duct Systems Support Status.

1. Large Bore Pipe Supports (greater than 2½" pipe).

   a. The majority large supports are custom designed to support standards.

   b. Eighty-nine percent of all identified Large Bore Supports have been issued for fabrication.

   c. Large Bore Supports are fabricated at the site.

2. Small Bore Supports.

   a. Small Bore Pipe Supports are both customer designed or selected from generic standards, depending on the support application.

   b. Isometric issued supports are considered issued when the Isometric identifying its need and referencing its design is issued.

   c. Small Bore Supports are fabricated at the site.

3. Instrument Supports.

   a. Seismic Supports are custom designed from EMD standards.

   b. Nonseismic Supports are nonengineered. Generic designs are available, however.

   c. Supports are fabricated at the site.

4. Seismic Duct Supports.

   a. All seismic HVAC duct supports are custom designed to EM support standards.

   b. HVAC duct supports are fabricated and installed by the HVAC subconductor.

As of September 26, 1983

SUPPORT STATUS

Commodity	U/M	Current Estimate	Issued	Installed
1. Large Bore Pipe Support				
BZ Issued Supports	EA	11,226	11,226	8,052
Field Run Supports	EA	1,843	N/A	1,437
TOTALS		13,080		9,489
2. Small Bore Supports				
ISO Issued Supports	EA	14,000		N/A
Field Run Supports	EA	10,628	N/A	
TOTALS		24,628	N/A	14,329
3. Instrument Supports	EA	12,904	3,845	3,460
4. Seismic Duct Supports	EA	3,118	3,118	2,547
5. Nonseismic Duct Supports	EA	2,388	N/A	1,772
6. Whip Restraints		240	225	137
7. Snubbers		1,000	742	*

*Except for large Snubbers (Steam Generator, Reactor Coolant Pump Supports), Snubbers will not be installed until late in the Construction phase to avoid potential damage.

e. Piping reconciliation program, including pipe rupture analysis.

f. Support of System Turnover.

g. Preparation to issue of ASME Class 1 pipe Stress Reports.

h. Seismic Qualification Review.

As of September 26, 1983

ENGINEERING MECHANICS

Drawing Type		Total Number Estimated	Number Issued	Number Issued 100%
Stress	(AX)	425	420	420
Supports	(BZ)	187	187	186
Machine Design	(EV)	278	276	269

SPECIFICATION STATUS

Total Number Estimated	Number Issued
44	42

MAJOR EQUIPMENT STATUS

Description	Total Number Estimated	Total Number Remaining	Delivery Date of Last Component
Tanks	75	2	10/83
Equipment Snubbers	48	0	---
Equipment Supports	37	7	Field Fab
Restraints	231	31	Field Fab

As of September 26, 1983

STRUCTURAL

DRAWING STATUS

Drawing Type		Total Estimated Number	Number Issued	Number Issued 100%
Architectural	(EA)	83	83	75
Civil	(EY)	26	26	26
Concrete	(EC)	629	629	609
Steel	(ES)	288	288	281

SPECIFICATION STATUS

Total Estimated Number	Number Issued
61	60

MAJOR EQUIPMENT STATUS

Description	Total Estimated Number	Total Number Remaining	Delivery Date of Last Component
Liner (Containment)	1	0	---
Penetration Cooler	18	0	---
Elevators	5	0	---
Seismic Instrumentation	10	0	---
Metal Siding (Bldgs.)	13 (Bldgs.)	2	12/83
Shield Doors	12	0	---
Airtight & Watertight Doors	7	0	---

As of September 26, 1983

6. Major Remaining Electrical Group Effort.

   a. Support of cable pulling and termination effort.

   b. Administration of the Environmental Qualification Program.

   c. Support of licensing effort.

   d. Support of system turnover.

As of September 26, 1983

G. Status of Engineering Mechanics Group Activities.

1. The Engineering Mechanics Group is responsible for pipe stress analysis and design; design of supports for piping, HVAC equipment ducts; responsible for design and procurement of pipe rupture restraints, component supports, pool liner, tanks, vessels and seismic qualification of component and equipment supports.

2. Drawings.

   a. Except for stress data package review, as-built reconciliation and stress report preparation, stress analysis effort is essentially complete.

   b. Pipe support drawing packages are essentially complete.

   c. All machine design and vessel drawings will be issued by March, 1984.

3. Specification.

   a. Forty-two of forty-four specifications have been issued.

4. Procurement and Delivery of Engineering Mechanics Equipment.

   a. Major equipment supports, pipe rupture restraints, tanks delivery is essentially complete.

5. Major Remaining Engineering Mechanics Group Effort.

   a. Support of field installation - resolution of interferences.

   b. Support of licensing effort.

   c. Jet impingement/internally Generated Missile Evaluation.

   → d. Seismic/Nonseismic Interaction and Gravity Missile Evaluation. } Hazards Analysis programs being developed, but nothing done

2/1

As of September 26, 1983

E. Status of Electrical Group Activities.

1. The Electrical Group is responsible for the design and procurement of all cable systems and electrical equipment.

2. Drawing.

   a. Electrical drawings are being issued to support an orderly and efficient cable pulling effort, as well as system turnover effort.

   b. Completion of EE drawings is constrained by completion of elementary diagrams which are constrained by vendor information. Physical electrical drawings are essentially complete. Electrical wiring diagrams are being issued to support terminating and will be essentially complete by third quarter of 1983.

3. Specifications.

   a. All electrical specifications have been issued.

4. Procurement and delivery of electrical equipment.

   a. The majority of electrical equipment is on site.

   b. All ordered cable will be delivered by February, 1984.

5. Cable.

   a. Eighty-three percent of estimated cables have been routed as of September, 1983.

   b. The estimate has gone from 22,400 in September, 1982, to 26,125 in September, 1983.

As of September 26, 1983

MAJOR EQUIPMENT STATUS

Description	Total Number Estimated	Total Number Remaining	Delivery Date Of Last Component
Diesel Generator	2	0	---
Generator Breaker	1	0	---
Nonsegregated Phase Bus Duct	1 LOT	0	---
Isophase Bus Duct	1 LOT	0	---
Isophase Bus Duct (Modifications)	1 LOT	0	---

CABLE STATUS

Scheduling

Total Estimated	Number Scheduled	Number Routed	Number Pull Ticketed	Number Termination Ticketed
26,125	22,880	21,075	20,665	20,800

Electrical Cable Procurement

	Feet Estimated	Feet Ordered	Feet of Cable Scheduled	Feet Delivered
Power	808,200	936,157	721,166	852,876
Control & Instrument	5,696,550	5,931,088	4,998,249	4,851,598

As of September 26, 1983

D. Status of Instrumentation & Controls Group Activities.

1. The Instrumentation & Controls Group is responsible for the design and procurement of all plant control functions and all plant instrumentation.

2. Drawings.

   a. All Logic Diagrams are being reviewed and reissued if necessary to reflect any change in system design.

   b. Elementary Diagrams are in the process of being updated to recent FSK revision and vendor information. This update will be complete in November, 1983. Subsequent issues will be under strict change control.

3. Specification.

   a. All Instrumentation & Controls' specifications have been issued.

4. Procurement and Delivery of Instrumentation & Controls Equipment.

   a. The majority of I&C equipment is on site.

5. Major remaining I&C Group effort.

   a. Final issue of ESK's.

   b. Support of procurement deliveries for remaining equipment.

   c. Support of field installation.

   d. Support of Licensing effort.

   e. Support of System Turnover effort.

As of September 26, 1983

INSTRUMENT AND CONTROLS

DRAWING STATUS:

Drawing Type	Total Estimated Number	Number Issued	Total Number Reviewed
Logic (LSK)	576	576	296
Elementary (ESK)	1,883	1,883	1,200
Instrument (EK)	85	85	81
Loop Diagrams	4,400	4,400	4,350

Specification Status

Total Estimated Number	Number Issued
70	70

Major Equipment Status

Description	Total Estimated Number	Total Number Remaining	Delivery Date Of Last Component
Main Control Boards	8	0	--
Termination Cabinets	26	0	--
Panels	20	0	--
Instruments & Relay Racks	22	1	12/1/83
Annunciator Logic Cabinets	9	0	--
Air and Motor Operated	154	0	--
Isolator Cabinets	32	0	--
PASS Panel	1	1	2/85
FT Panel	1	1	2/84

As of September 26, 1983

INSTRUMENT STATUS:

Description	Total Estimated Number	Total Number Remaining	Delivery Date Of Last Component
Control Valves	610	30	
Safety & Relief Valves	338	31	
Bypass/Recirc. Valves	17	0	
Solenoid Valves	139	50	3/83
Transmitters -	470	113	2/84
Switches (Flow, Pressure, Temp)	304	19	1/84
Flow Switches	48	1	1/84
Rotameters	58	6	10/83
Pressure Indicators	591	7	11/83
RTDs and Thermowells	501	9	11/83
Temperature Indicators	328	0	
Conductivity/Ph Analyzers	48	10	10/83
Orifice Plates	322	120	11/83
Level Gages/Flow Glasses	116	0	
Switches (Level)	167	2	10/83
Transmitters (Level, Displaces)	51	0	
Controllers and Converters (Local)	65	0	

As of September 26, 1983

C. Status of Power Group Activities.

1. The Power Group is responsible for all nuclear, piping fluid, and facilities systems.

2. Drawings

   a. All flow diagrams are issued, up-to-date, and are under strict change control.

   b. Machinery drawings are essentially complete.

   c. Piping drawings are issued essentially complete.

   d. Facilities drawings are issued essentially complete.

3. Specifications.

   a. One-hundred-and-sixty of one-hundred-and-sixty-two power specifications have been issued.

4. Procurement and delivery of power equipment. All major power equipment will be delivered by the end of 1983.

5. Major Remaining Power Group Effort.

   a. Level of effort to support field installation.

   b. Procurement activities associated with remaining equipment deliveries.

   c. Support of Licensing effort.

   d. Support of Turnover.

As of September 26, 1983

POWER

DRAWING STATUS:

Drawing Type		Total Estimated Number	Number Issued	Number Issued 100%
Flow Diagrams	(FSK)	546	546	546
Mechanical	(EM)	86	86	64
P&D	(EM)	115	115	115
Piping	(EP)	828	821	454
Facilities	(EB)	227	227	151
Arrangement	(EF)	21	21	18

SPECIFICATION STATUS:

Total Estimated Number	Number Issued
162	160

MAJOR EQUIPMENT STATUS:

Description	Total Estimated Number	Total Number Remaining	Delivery Date Of Last Component
Pumps	284	1	12/83
Fans	130	0	--
Large Bore Pipe Spools	8,169	0	--
Valves - Large Bore	3,128	21	12 83

As of September 26, 1983

Description	Total Estimated Number	Total Number Remaining	Delivery Date Of Last Component
Valves - Small Bore	15,164	1,602	2/84
Cranes, Hoists, Trolleys	96	1	10/83
Dampers	73	0	--
Air Conditioning Units	23	0	--
Auxiliary Boilers	2	0	--
Sample Sink	4	0	
Tanks	55	0	
Fire Protection System	1	(Partial)	Contract Erection 5/84

As of September 26, 1983

V. ENGINEERING, DESIGN, AND PROCUREMENT REVIEW

A. The Headquarters' Engineering effort is broken down into the following subdivisions:

1. Those work packages which result in production drawings, specifications, and procurement of materials. This effort is essentially complete. Remaining work consists of recently identified changes resulting from the regulatory process, stress reconciliation, and final design review prior to system turnover.

2. The Site Engineering Group which engineers field run small bore pipe and tubing, electrical conduit and base plates, and resolves interferences and problems as they arise. This effort is forty-six percent (46%) complete.

3. The total Headquarters' effort including Numbers 1 and 2 above plus Licensing support, Quality Assurance, Project support, Management is approximately eighty-four percent (84%) complete.

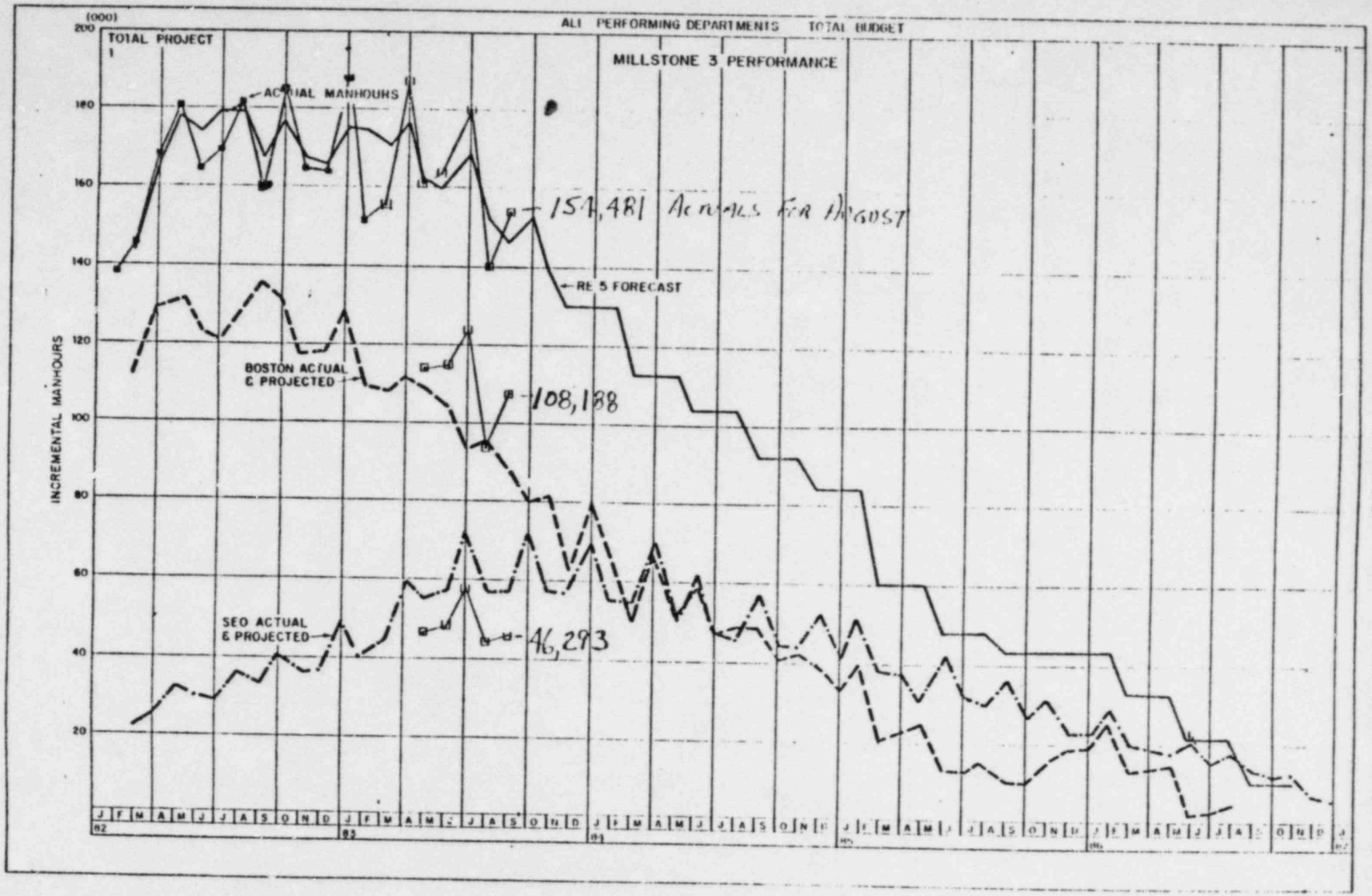
B. Engineering Resources.

1. The current total Headquarters manning of 523 is sufficient to meet all scheduled activities.

2. Sufficient budgetary and manpower reserve exists for contingencies.

3. The enclosed chart shows projected manloading through 1986 and actuals to date.

As of September 26, 1983


(000)
ALL PERFORMING DEPARTMENTS TOTAL BUDGET
TOTAL PROJECT
1
MILLSTONE 3 PERFORMANCE
ACTUAL MANHOURS
154,481 Actuals For August
RE 5 FORECAST
BOSTON ACTUAL
& PROJECTED
108,188
SEO ACTUAL
& PROJECTED
46,293
INCREMENTAL MANHOURS
200
180
160
140
120
100
80
60
40
20
J F M A M J J A S O N 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 J F M A M J J A S O N D J F M A M J J A S O N D J
82
83
84
85
86

AVERAGE CRAFT WORK FORCE

Equivalent Men At 40 Hrs. Per Week

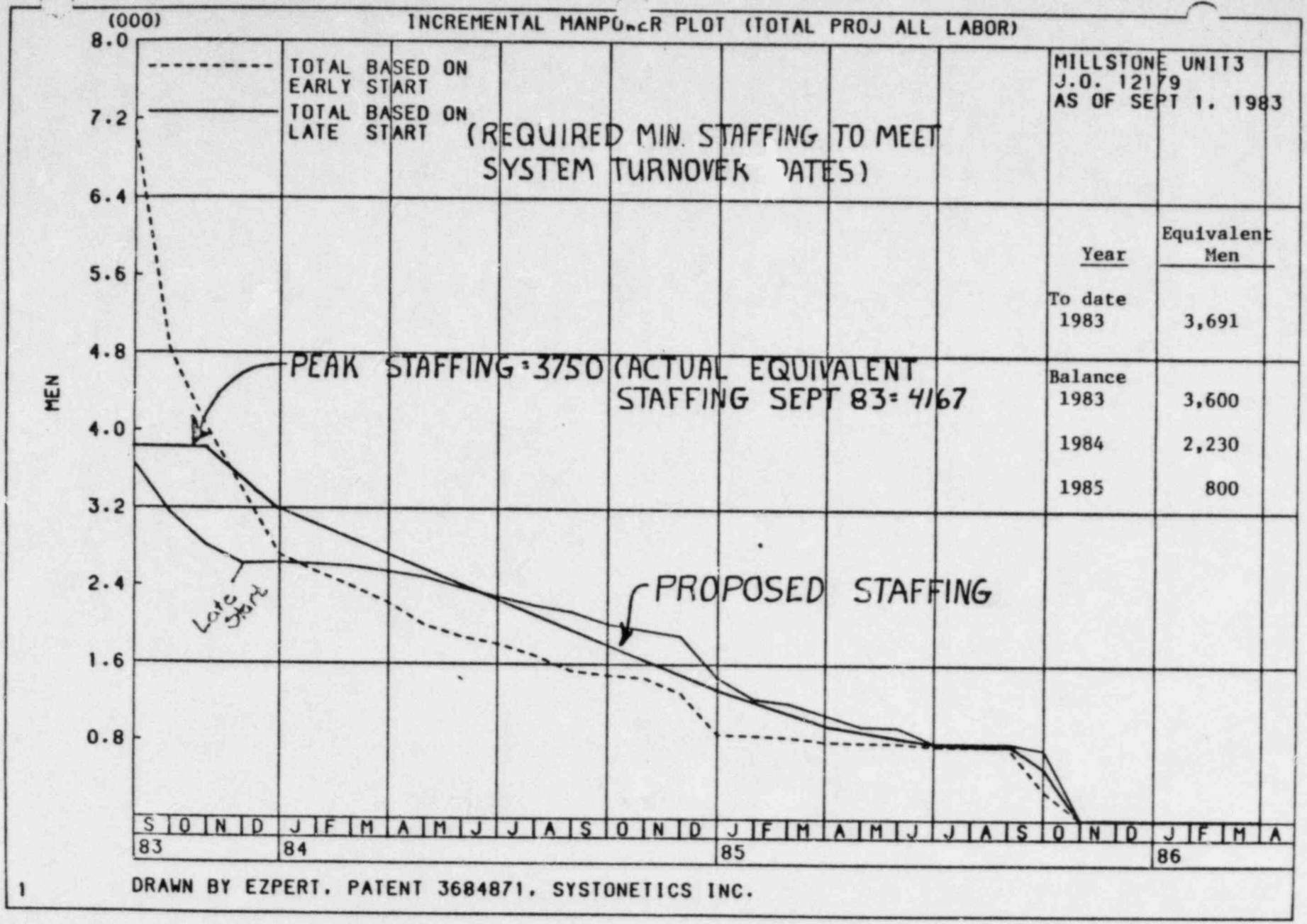
Year	Average	Year		Average
1974	175	1980		1,500
1975	560	1981		1,650
1976	480	1982		2,723
1977	920	1983	(Projected)	3,664
1978	450	1984	(Projected)	2,230
1979	880	1985	(Projected)	800

TOTAL WORK FORCE

Actual Assigned Personnel

	First Shift	Second Shift	Total
Manual	3,142	944	4,086 3100/944 shifts
Non-Manual	722	123	845
SEO	493	41	534

As of September 26, 1983



DATA AS OF 9/26/83

VI. CONSTRUCTION WORK FORCE OVERVIEW

A. Currently, Millstone Unit No. 3 has 4,086 craft manual personnel assigned against a requirement of 3,750 equivalent full time workers.

1. During 1984, the work force will reduce considerably to approximately 2,500 equivalent full time personnel.

2. The work force is currently split with 3,142 on first shift and 944 on second shift.

3. The craft force is supported by 845 non-manual construction personnel and 534 Site Engineering Group personnel working as an extension of Headquarters Engineering in Boston.

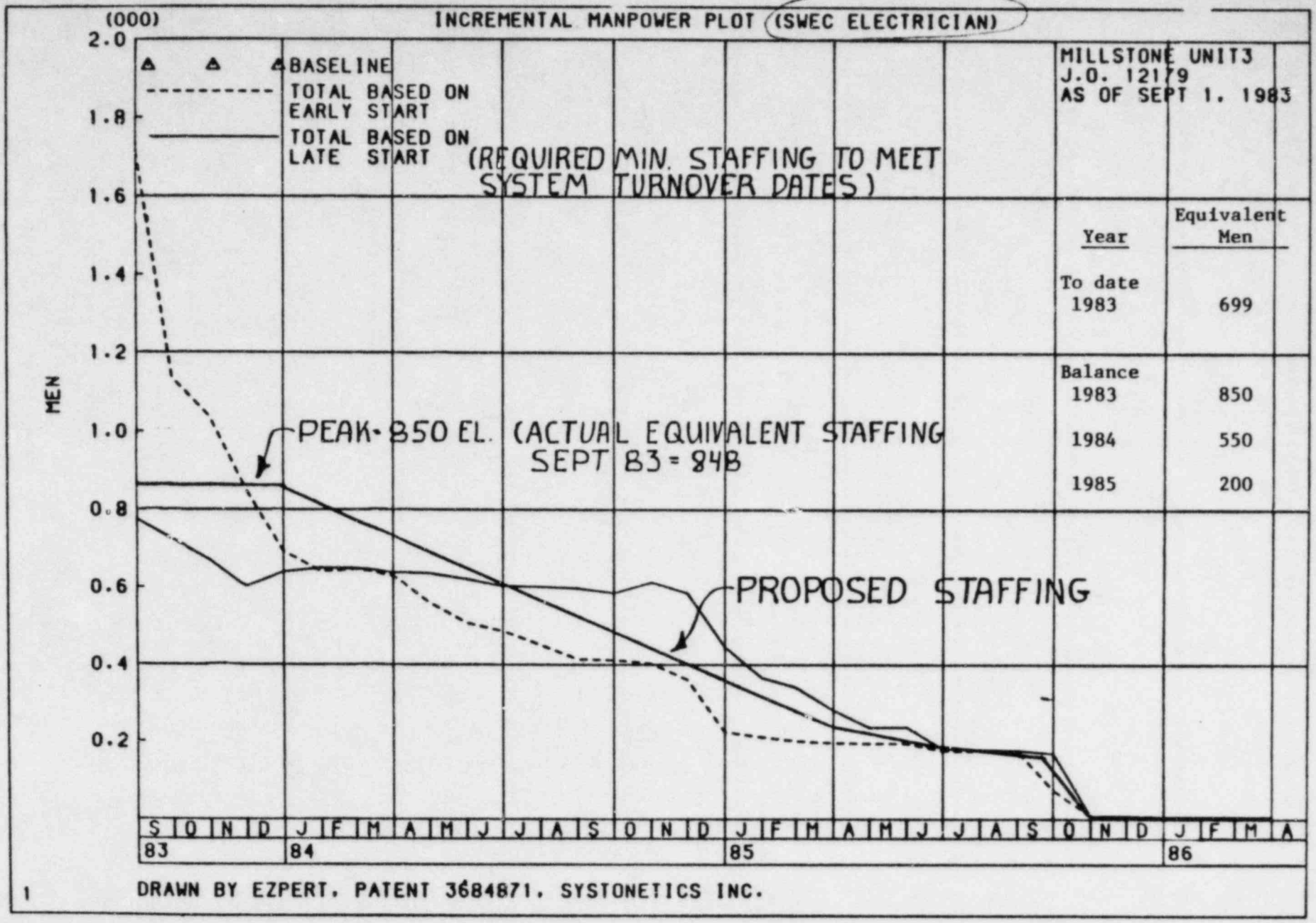
As of September 26, 1983

B. Craft Labor Force Breakdown.

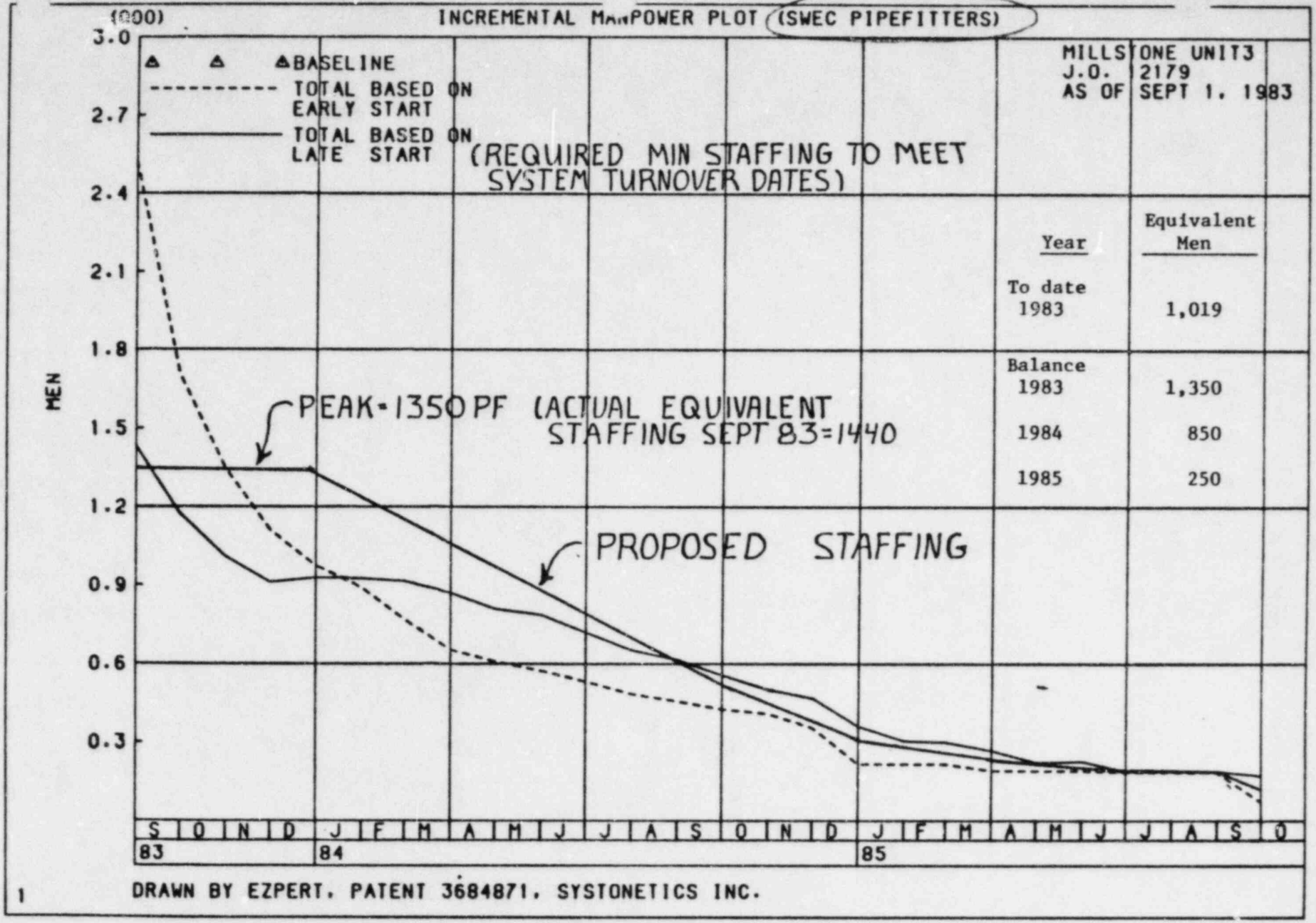
1. The above figure shows the equivalent manpower requirements by craft for the remainder of 1983 and each year beyond. The first column gives actual personnel on the payroll for each craft (for example, 1,377 pipefitters). The second column converts each craft's real people to equivalent 40-hour per week workers (1,440 pipefitters). The difference is due to absenteeism and overtime. The third column gives required average number of equivalent men for the remainder of 1983, and the remaining columns show the requirements for 1984 and beyond.

2. The following figures show the pipefitter and electricians manpower loading curves.

As of September 26, 1983



DATA AS OF 9/26/83



DATA AS OF 9/2[illegible]'83

MILLSTONE UNIT NO. 3

CRAFT LABOR AGREEMENT EXPIRATIONS

Craft	1984	1985	1986
Asbestos Workers	July 31		
Boilermakers	September 30		
Carpenters	March 31		
Cement Finishers	March 31		
Electricians		February 28	
Ironworkers		June 24	
Laborers	March 31		
Millwrights	March 31		
Operating Engineers	March 31		
Painters			May 31
Pipefitters	July 31		
Teamsters	April 30		

As of September 26, 198?

C. Craft Labor Contract Expirations.

1. The above table lists the dates on which the current craft labor contracts expire.

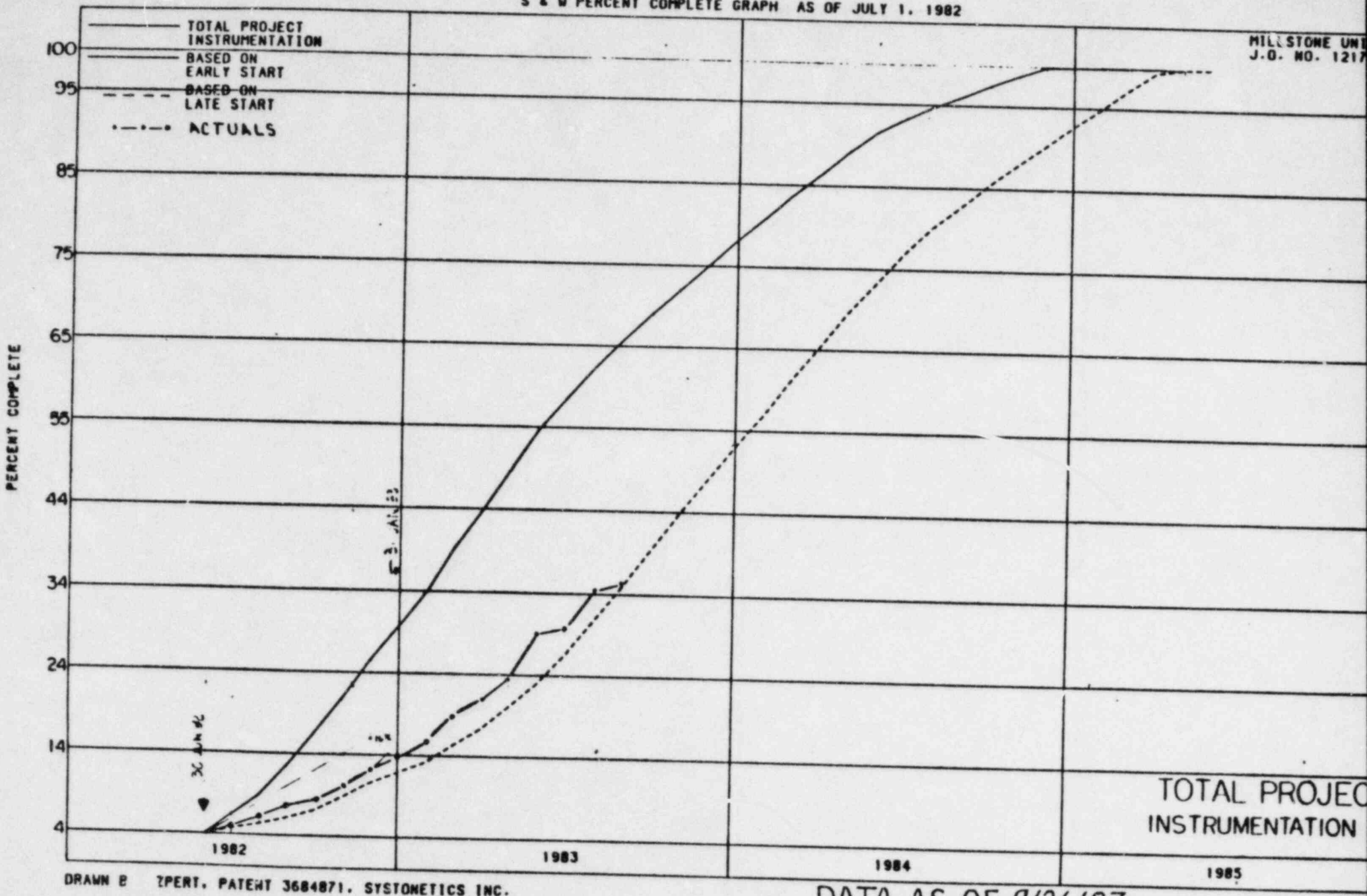
2. The longest strike in Millstone's history was the Carpenter's Union in 1975 for a period of five weeks.

3. Our estimates and schedules do not allow for extended strikes.

4. Our ability to recover from an extended strike depends on the craft which is involved, length of strike, and timing.

As of September 26, 1983

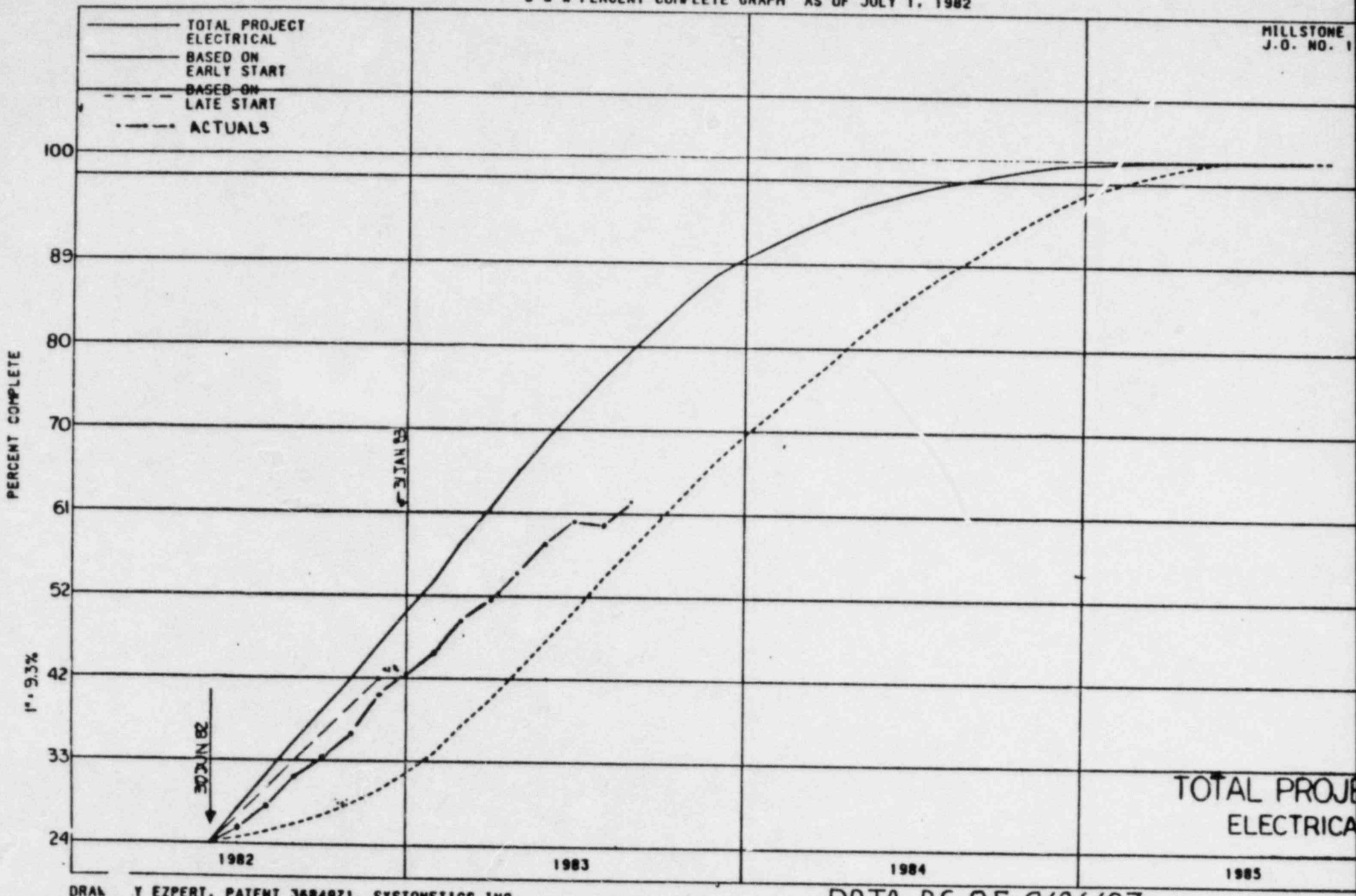
S & W PERCENT COMPLETE GRAPH AS OF JULY 1, 1982



DRAWN B ZPERT. PATENT 3684871. SYSTONETICS INC.

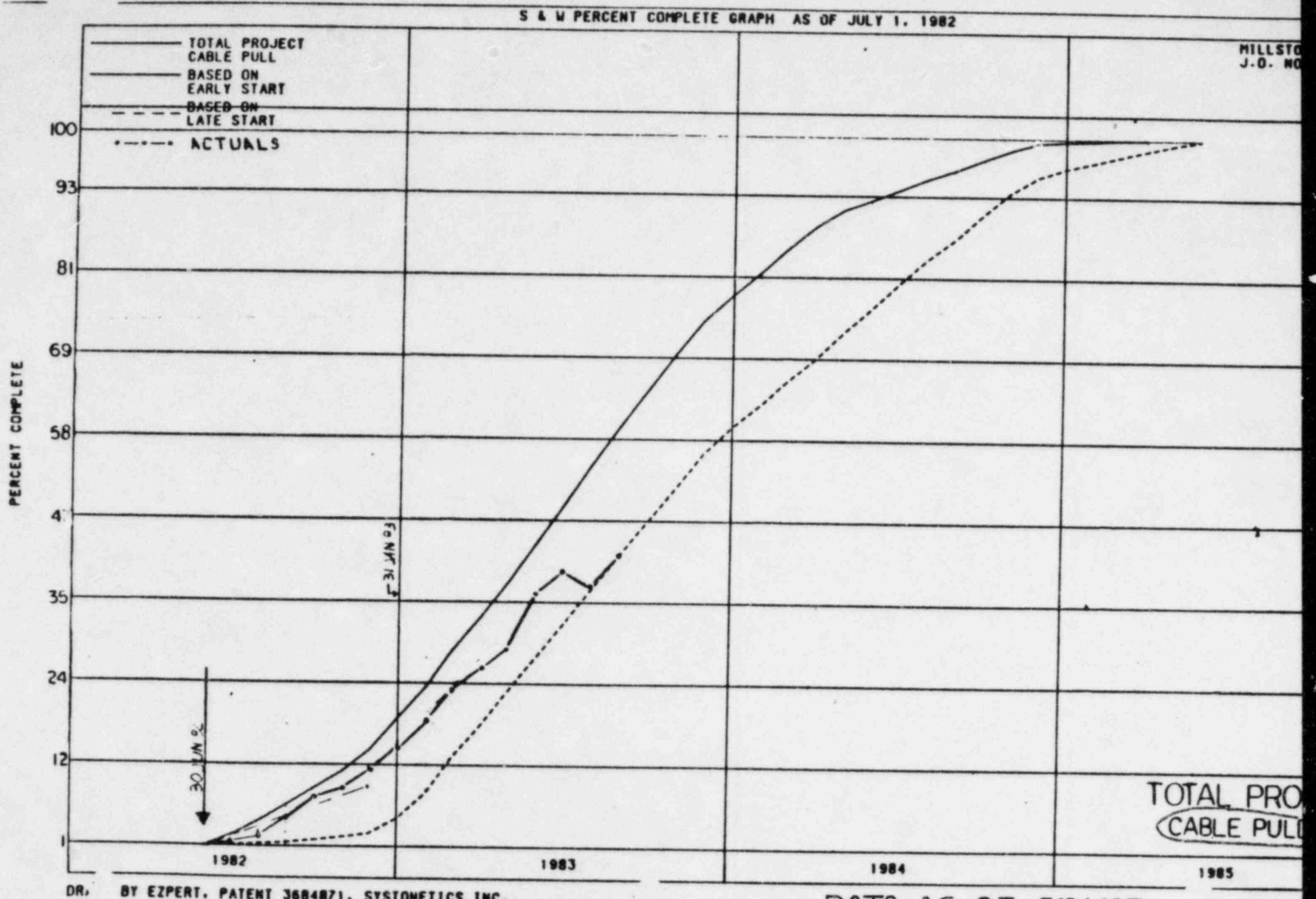
DATA AS OF 9/26/83

S & W PERCENT COMPLETE GRAPH AS OF JULY 1, 1982

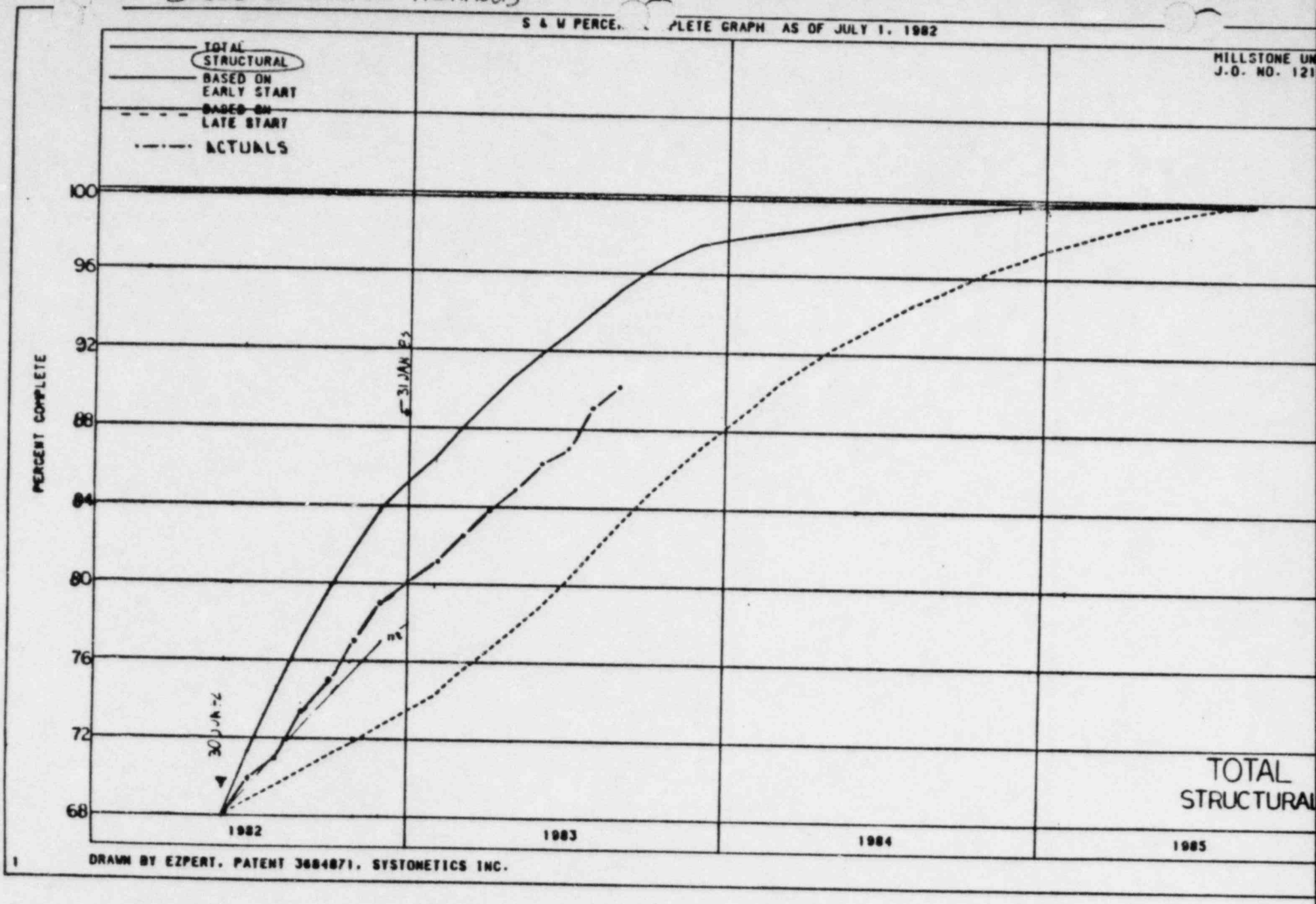


DRAW EZPERT. PATENT 3684871. SYSTONETICS INC.

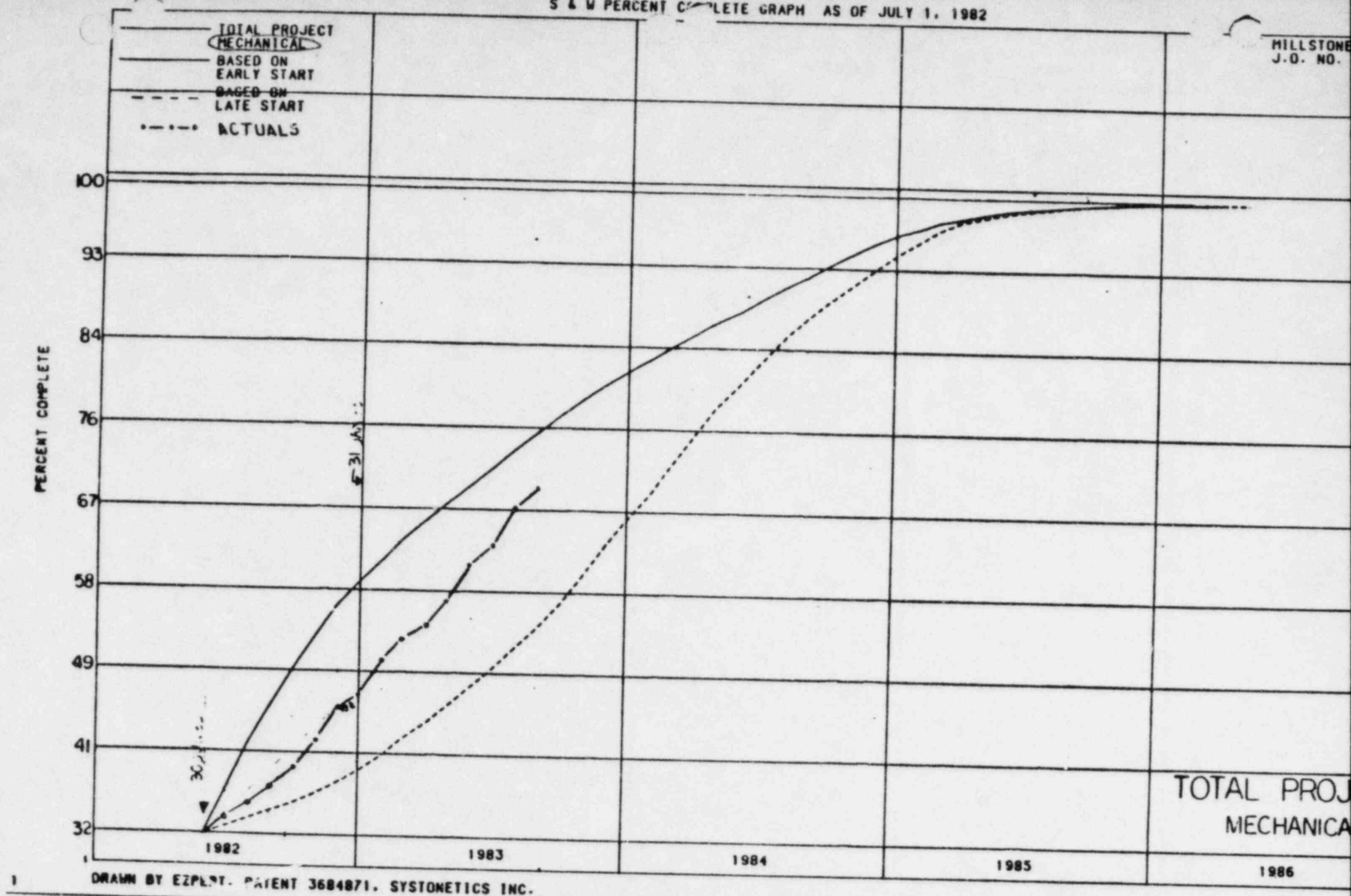
DATA AS OF 9/26/83


S & W PERCENT COMPLETE GRAPH AS OF JULY 1, 1982
TOTAL PROJECT CABLE PULL
BASED ON EARLY START
BASED ON LATE START
ACTUALS
PERCENT COMPLETE
100
93
81
69
58
47
35
24
12
1
1982
1983
1984
1985
30 JUN 82
30 JUN 83
DR. BY EZPERT. PATENT 3684871. SYSTONETICS INC.
DATA AS OF 9/26/83

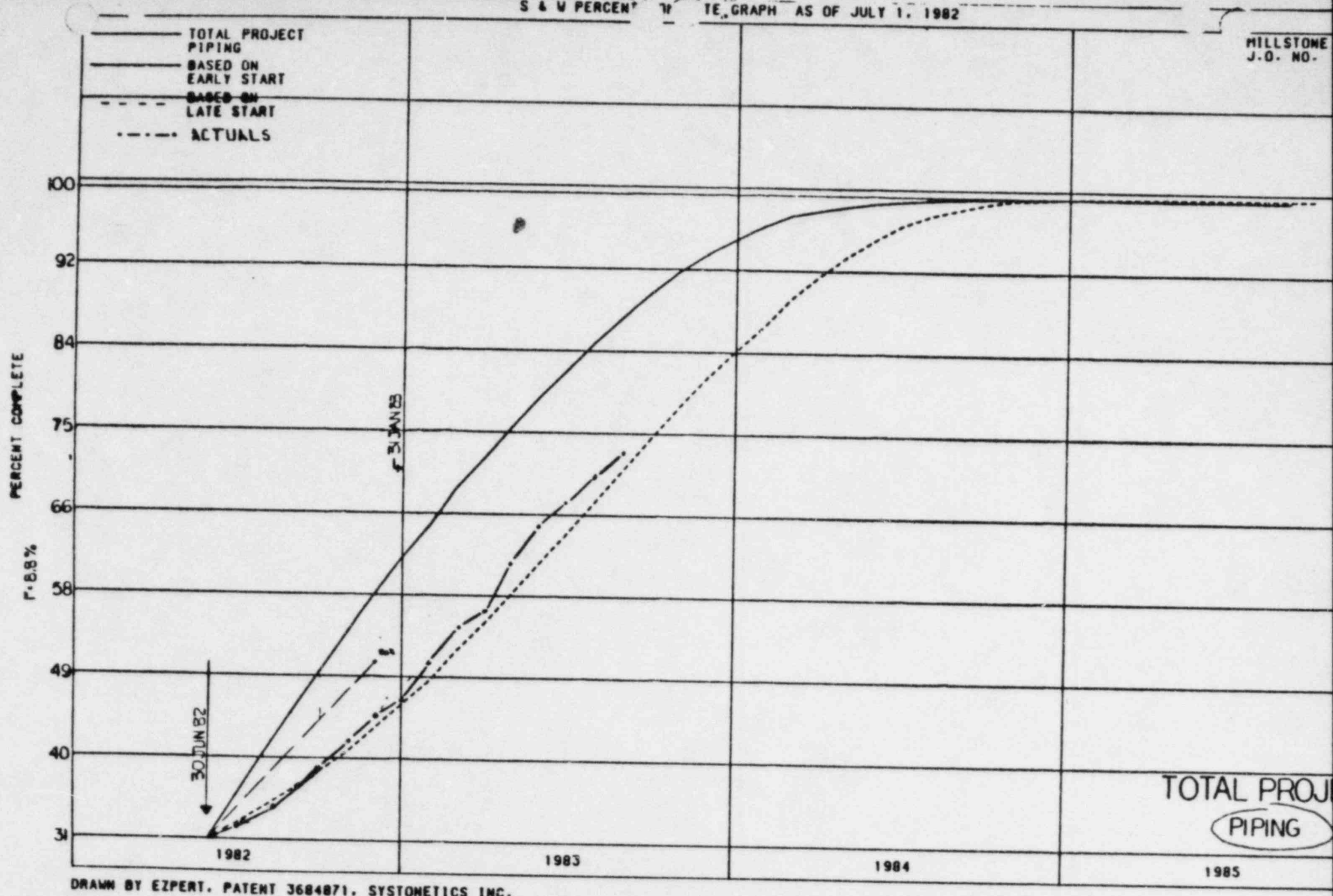
Based on earned manhours



DATA AS OF 9/26/83



DATA AS OF 9/26/83

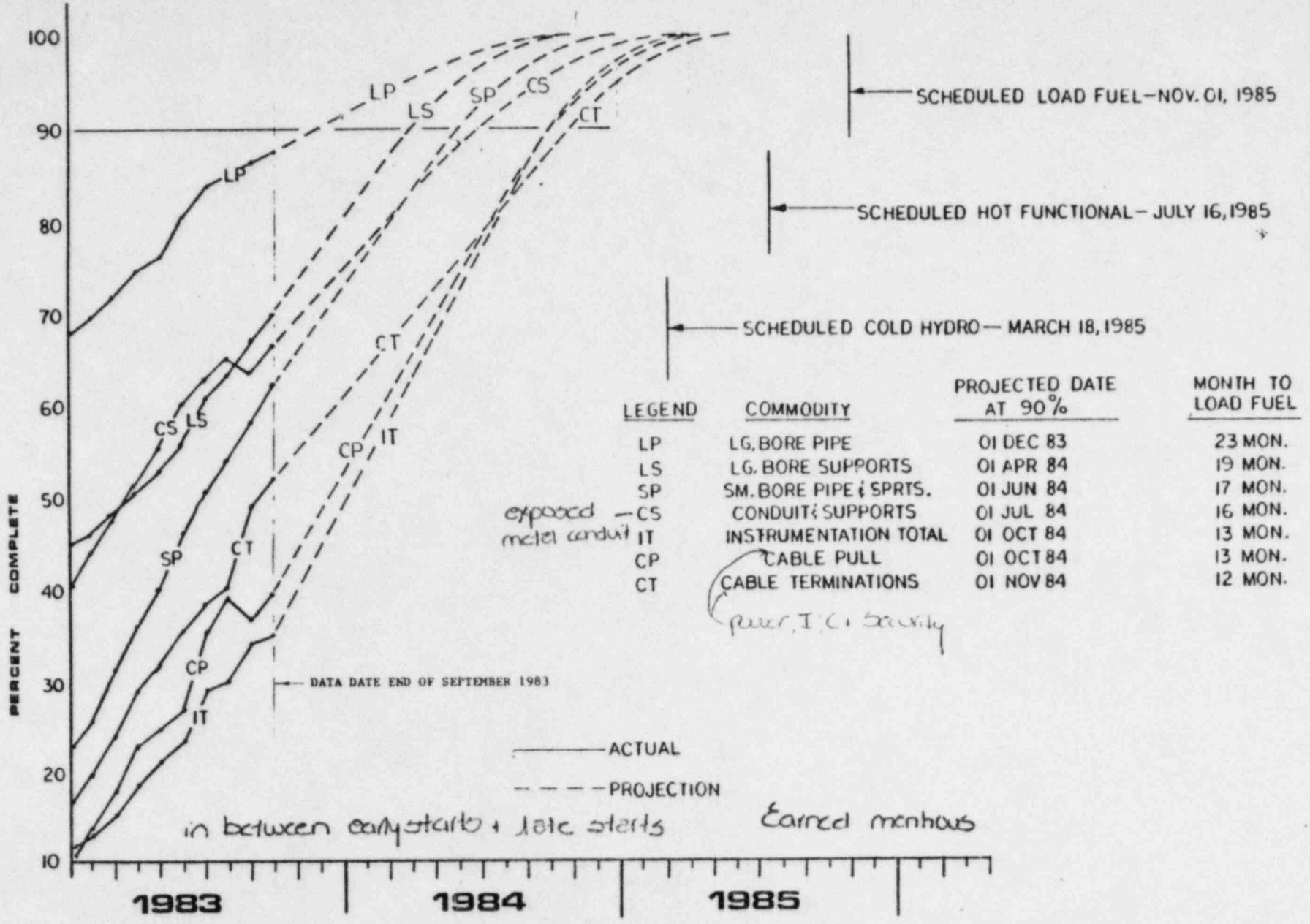


DATA AS OF 9/26/83

PIPING TO-GO MANHOUR SUMMARY

BUILDING	TOTAL PIPING TO GO MANHOURS	ASME PIPING TO GO MANHOURS	NON-ASME PIPING TO GO MANHOURS
Containment	124,000	86,000	38,000
Turbine Bldg.	197,000	10,000	187,000
Auxiliary Bldg.	169,000	75,000	94,000
Main Steam Valve Bldg.	46,000	13,000	33,000
Eng. Safety Features Bldg.	35,000	5,000	30,000
All Other Areas	319,000	57,000	262,000
Total To-Go Manhours	890,000	246,000	644,000
Total Estimated Manhours	3,540,000	1,440,000	2,100,000
% of Manhours To-Go	25%	17%	31%

COMMODITY PERCENT COMPLETE



SCHEDULED LOAD FUEL – NOV. 01, 1985

SCHEDULED HOT FUNCTIONAL – JULY 16, 1985

SCHEDULED COLD HYDRO – MARCH 18, 1985

LEGEND	COMMODITY	PROJECTED DATE AT 90%	MONTH TO LOAD FUEL
LP	LG. BORE PIPE	01 DEC 83	23 MON.
LS	LG. BORE SUPPORTS	01 APR 84	19 MON.
SP	SM. BORE PIPE & SPRTS.	01 JUN 84	17 MON.
CS	CONDUIT & SUPPORTS	01 JUL 84	16 MON.
IT	INSTRUMENTATION TOTAL	01 OCT 84	13 MON.
CP	CABLE PULL	01 OCT 84	13 MON.
CT	CABLE TERMINATIONS	01 NOV 84	12 MON.

exposed metal conduit

Power, I & C, Security

in between early starts + late starts

Earned manhours

E. Bulk Commodity Installation

1. The above table lists bulk commodity installation rates for 1983 and for future years.

2. The attached Early Start/Late Start Curves show the actual progress since Revised Estimated No. 5 was rolled into CMS.

As of September 26, 1983

MILLSTONE UNIT NO. 3

COMMODITY INSTALLATION

(Average Units Per Month)

Commodity	August 1983	September 1983	(Aug-Sep) 2-Month Average	1983 To Date Average	Oct-Dec 1983	1984	1985
Large Bore Pipe (LF)	3,474	2,689	3,082	4,102	3,370	1,400	---
Large Bore Hangers (EA)	369	332	351	344	475	180	---
Small Bore Pipe (LF)	8,394	7,516	7,955	7,498	9,100	3,600	---
Small Bore Hangers (EA)	1,192	1,124	1,158	918	1,150	430	---
Conduit - Exposed (LF)	22,752	20,922	21,837	17,745	12,900	10,000	3,000 (4 Mo.)
Cable - Power (LF)	18,535	31,646	25,090	24,267	35,000	30,300	---
Cable - I&C (LF) + Security	202,882	89,003	145,943	190,049	270,000	203,000	43,400 (5 Mo.)
Terminations	17,749	8,690	13,219	13,617	10,150	7,920	3,450 (5 Mo.)
Instrumentation Tubing (LF)	8,845	9,370	9,082	4,713	6,750	5,775	2,850 (3 Mo.)
Instrumentation Supports (EA)	404	373	389	300	(740) should be lower	555	190 (3 Mo.)

*Approximate projected estimate revision.

As of September 26, 1983

D. Instrumentation Installation.

1. Twenty percent (20%) of all Instruments and Controls are currently installed.

2. Sixty percent (60%) of Instrument Stands are installed and Forty percent (40%) of Tubing is installed.

3. Twenty-seven percent (27%) of instrument tube supports are installed.

As of September 26, 1983

MILLSTONE UNIT NO. 3

INSTRUMENTATION

Item	Estimated Quantity	Quantity Installed To date	Quantity To Go	% Complete	Estimated Installation Rate (MH/Unit)	Actual Installation Rate (MH/Unit)
Locally Mounted Instruments and Controls (EA)	4,964	984	3,980	20.0	10.00	11.32
Instrument Stands (EA)	3,113	1,883	1,250	60.0	13.44	13.37
Instrument Tubing (LF)						
Stainless	78,892	25,871	53,021	32.8	1.07	1.35
Copper	82,916	37,895	45,021	46.0	0.76	0.72
Tube Track & Supports (LF)	27,685	11,549	16,136	42.0	3.00	1.93
Instrument Tubing Supports (EA)	12,904 (10,500)*	3,460	9,444 (7,040)*	27.0 (33.0)*	18.90	18.17

*Approximate projected estimate revision.
S&W has not yet reestimated

As of September 26, 1983

C. Electrical Tray, Conduit, & Cable Installation.

1. Electrical Cable Tray is currently ninety-seven percent (97%) complete.

2. Exposed Conduit is sixty-nine percent (69%) complete.

3. Cable Pulling is forty-two percent (42%) complete.

4. Termination work is fifty-two percent (52%) complete.

As of September 26, 1983

MILLSTONE UNIT NO. 3

ELECTRICAL

Item	Estimated Quantity	Quantity Installed To Date	Quantity To Go	% Complete	Estimated Installation Rate (MH/Unit)	Actual Installation Rate (MH/Unit)
Cable Tray (LF)	72,722	70,149	2,573	96.6	0.93	1.28
Conduit (LF)						
Embedded	58,847	54,718	4,129	93.0	1.16	1.21
Non-Mettalic Duct	332,385	266,725	65,660	80.0	0.13	0.16
Exposed Rigid	550,636	378,820	171,816	66.5	1.62	1.70
Cable (LF)						
Power	808,200	342,615	465,585	43.0	0.14	0.18
Instrument & Control + Security	5,696,550	2,183,951	3,512,599	39.0	0.07	0.07
Lighting	370,433	253,068	117,365	71.0	0.05	0.05
ALS	90,145	21,537	68,608	24.0	0.60	0.58
Terminations (EA)						
Power	25,786	9,285	16,501	36.0	1.27	1.89
Instrument & Control	285,342	159,070	126,272	56.0	0.50	0.30

As of September 26, 1983

B. Pipe.

1. Large bore pipe is all pipe 2½" in diameter and larger and is supported with custom designed hangers when seismically installed.

   a. Eighty-seven percent (87%) of large bore pipe is installed with seventy-nine percent (79%) of all welds complete.

   b. Seventy percent (70%) of all large bore hangers are installed.

2. Small bore pipe is laid out on isometrics generated by the Site Engineering Office to a generic piping & support standard. The isometrics are computer generated using the DIPS Program.

   a. Sixty-six percent (66%) of small bore pipe is currently installed.

   b. Fifty-nine percent (59%) of small bore hangers are complete.

3. Yard pipe is over eighty-five percent (85%) complete.

4. The concrete circulating water is one-hundred percent (100%) complete.

As of September 26, 1983

MILLSTONE UNIT NO. 3

PIPING

Item	Estimated Quantity	Quantity Installed To Date	Quantity To Go	(Weighted) % Complete	Average Estimated Installation Rate (MH/Unit)	Average Actual Installation Rate (MH/Unit)
Large Bore Pipe (LF)	191,158	165,679	25,479	87.3	3.99	4.26
Large Bore Pipe Hangers (EA)	13,080	9,489	3,591	69.9	65.70	72.90
Large Bore Pipe Welds (EA)	14,206	10,934	3,272	79.2	18.60	19.78
Small Bore Pipe* (LF)	206,985	136,996	69,989	65.6	2.42	2.47
Small Bore Hangers and Supports (EA)	22,912	14,329	8,583	59.2	21.10	17.35
Yard Piping (LF)	46,729	39,962	6,767	84.5	3.90	3.65
Concrete Circulating Water	3,652	3,652	---	100.0	9.34	9.34

Weighted Value

/ Bill reads actual no. installed

*Includes valves, welds

As of September 26, 1983

VII. DETAILED REVIEW OF CONSTRUCTION

A. Concrete.

1. Concrete placement is indicative of civil/structural progress.

2. Overall concrete placement is 97.1% complete.

3. With the exception of wall plugs, the Containment construction opening, and the yard concrete is essentially complete.

As of September 26, 1983

MILLSTONE UNIT NO. 3

CONCRETE (CY)

Structure	Estimated Quantity	Quantity Installed To Date	Quantity To Go	(Weighted) % Complete	Estimated Installation Rate (MH/Unit)	Actual Installation Rate (MH/Unit)
Containment	43,757	43,033	724	96.9	3.17	3.46
Turbine Building	28,813	28,778	35	99.1	2.75	2.82
Control Building	8,351	8,244	107	98.6	4.38	4.59
Auxiliary Building	18,847	18,112	735	94.5	3.39	3.99
Fuel Building	15,956	14,927	1,029	93.0	3.65	3.49
Safety Features Building	5,871	5,683	188	91.3	3.59	3.47
Service Building	3,645	3,645	---	100.0	3.53	4.34
Diesel Generator Building	4,502	4,379	123	95.8	3.04	2.79
Hydrogen Recombiner	1,889	1,823	66	96.2	3.69	3.61
Waste Disposal Building	9,704	9,168	536	91.1	3.20	2.39
Main Steam Valve Building	4,283	4,263	20	99.4	2.92	4.54
Intake Structure, Discharge Structures & Yard	65,302	62,937	2,365	96.3	2.15	2.13
Other	4,897	4,571	326	93.3	4.14	4.33

As of September 26, 1983

VIII. MILLSTONE UNIT NO. 3 STARTUP

A. Startup Test Program Organization and Responsibilities.

1. The Startup Test Program is under the control of Northeast Nuclear Energy Company, the Millstone Station operating company.

2. Northeast Nuclear Energy Company has the responsibility for:

   a. Operation, maintenance, refueling, and design change/backfit of inservice units.

   b. Preoperational and startup testing of new nuclear units.

   c. Fuel financing.

   d. Lead applicant for the Unit 3 OL.

3. Northeast Nuclear Energy Company (NNECO) tasks during the startup phase include:

   a. Startup schedule development and follow.

   b. Procedure development - operations, maintenance, and test.

As of September 26, 1983

B. Test Program Overview

1. Test Program Objectives.

a. Provide additional assurance that the plant has been adequately designed.

b. Provide assurance that construction and installation of equipment is in conformance to the design.

c. Verify, to the maximum extent possible, the adequacy of the plant operating procedures - operating, emergency, maintenance, engineering, and surveillance test.

d. Train the entire operating staff.

2. Test Program Sequence.

a. The Startup Test Program is broken into three overlapping and six sequential phases. These are:

(1) Phase I - Component test phase.

(2) Phase II - Preoperational and acceptance system testing.

(3) Phase III - Pre-core hot functional testing.

(a) These three phases are necesarily overlapping.

(4) Phase IV - Initial fuel load.

(5) Phase V - Post-core hot functional.

(6) Phase VI - Initial Criticality.

(7) Phase VII - Low power physics testing.

(8) Phase VIII - Power ascension test.

(9) Phase IX - Warranty run.

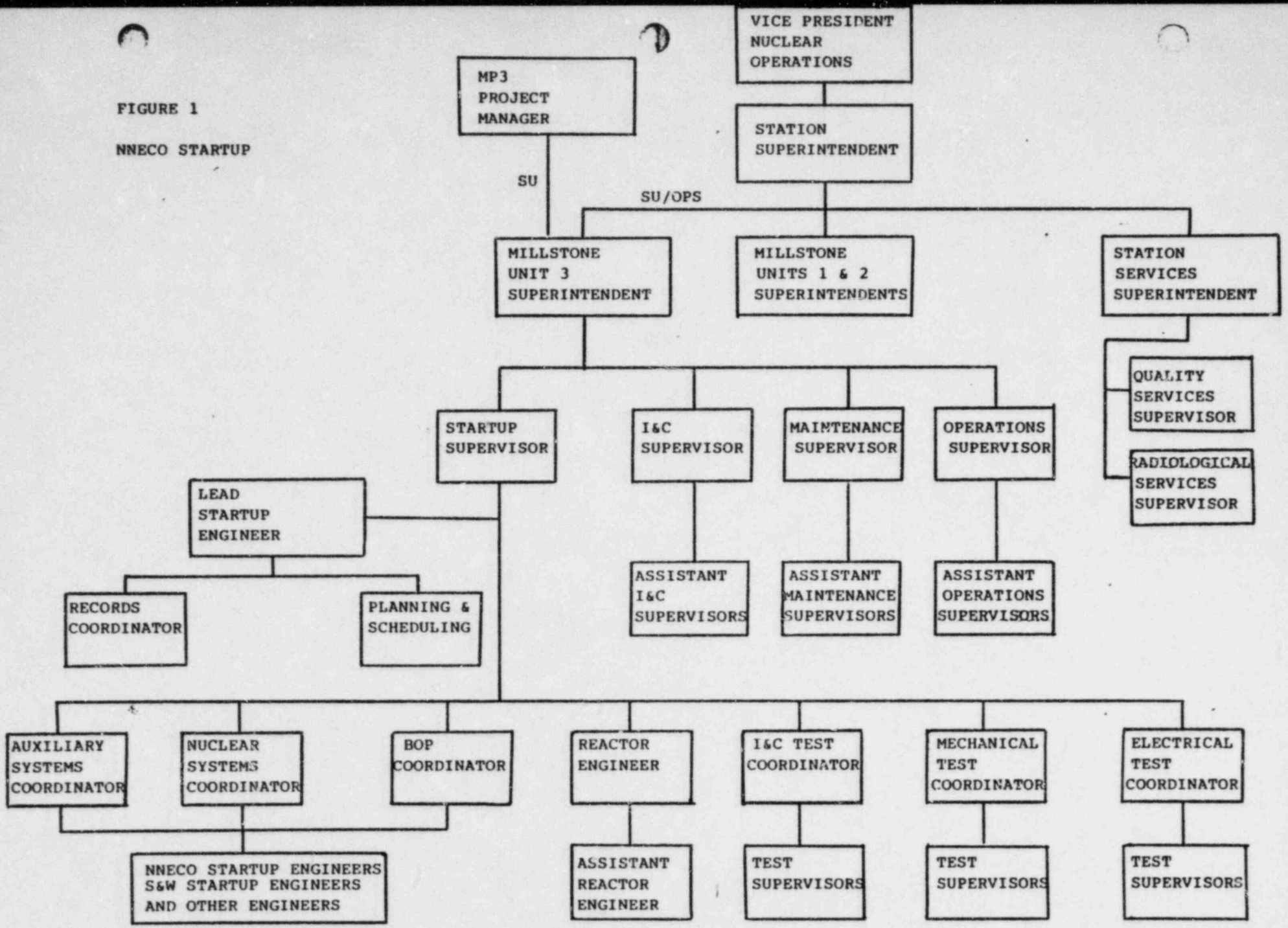
3. Test Procedure status.

a. The current status of test procedure preparation for Phase I and II tests is as shown on Figure 2.

As of September 26, 1983

FIGURE 1

NNECO STARTUP



c. Startup testing.

d. Staffing.

e. Training - technical and licensing.

f. Preventive and corrective maintenance.

g. System/plant operation.

h. Security.

i. Health Physics, Operations QA/QC, and all other NNECO support functions.

4. Organization.

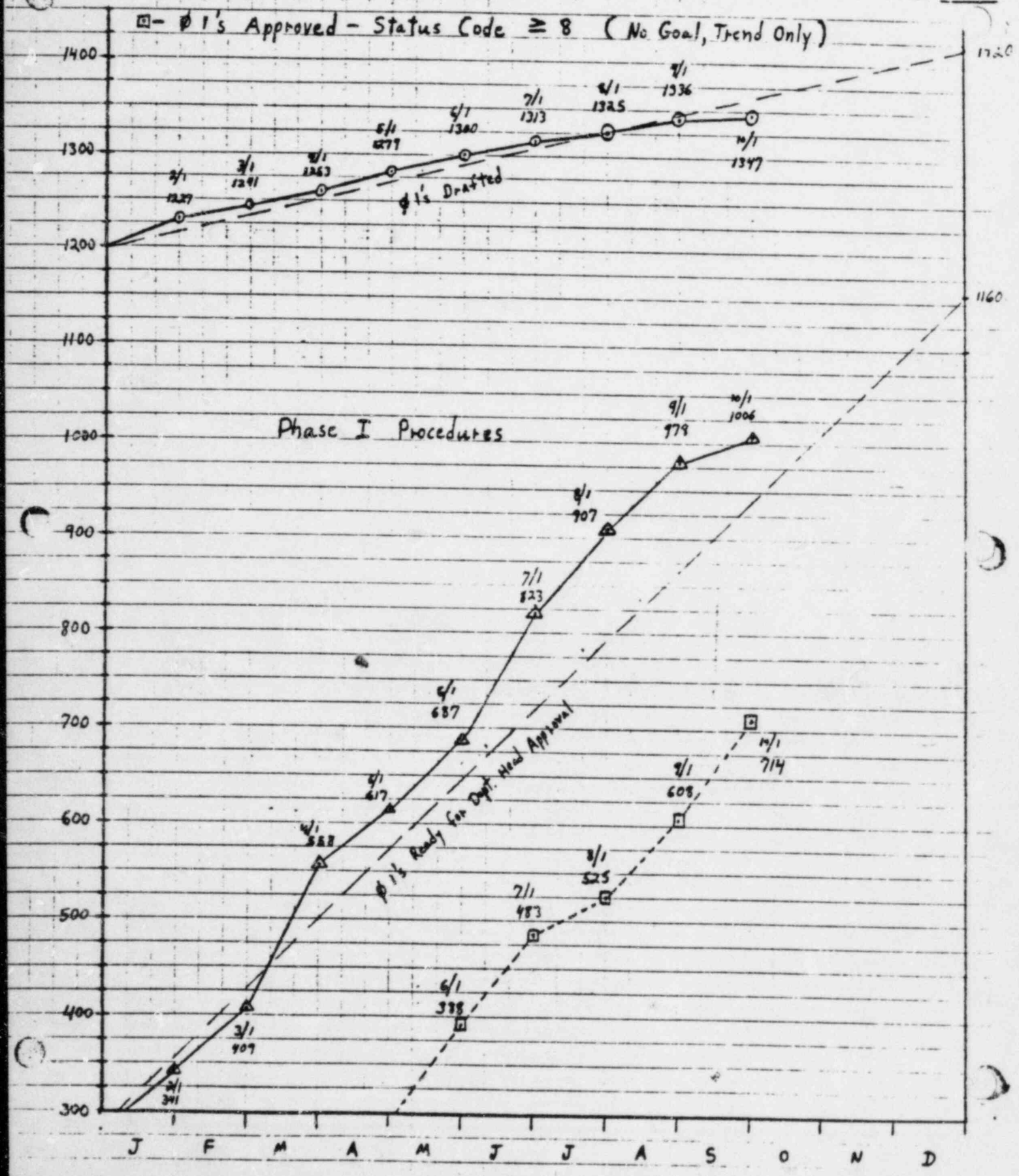
a. An organizational chart of NNECO arranged to show the functional organization for startup testing is shown on Figure 1.

1103 Procedure Preparation Goals

○ - ϕ 1's Drafted - Status Code ≥ 1

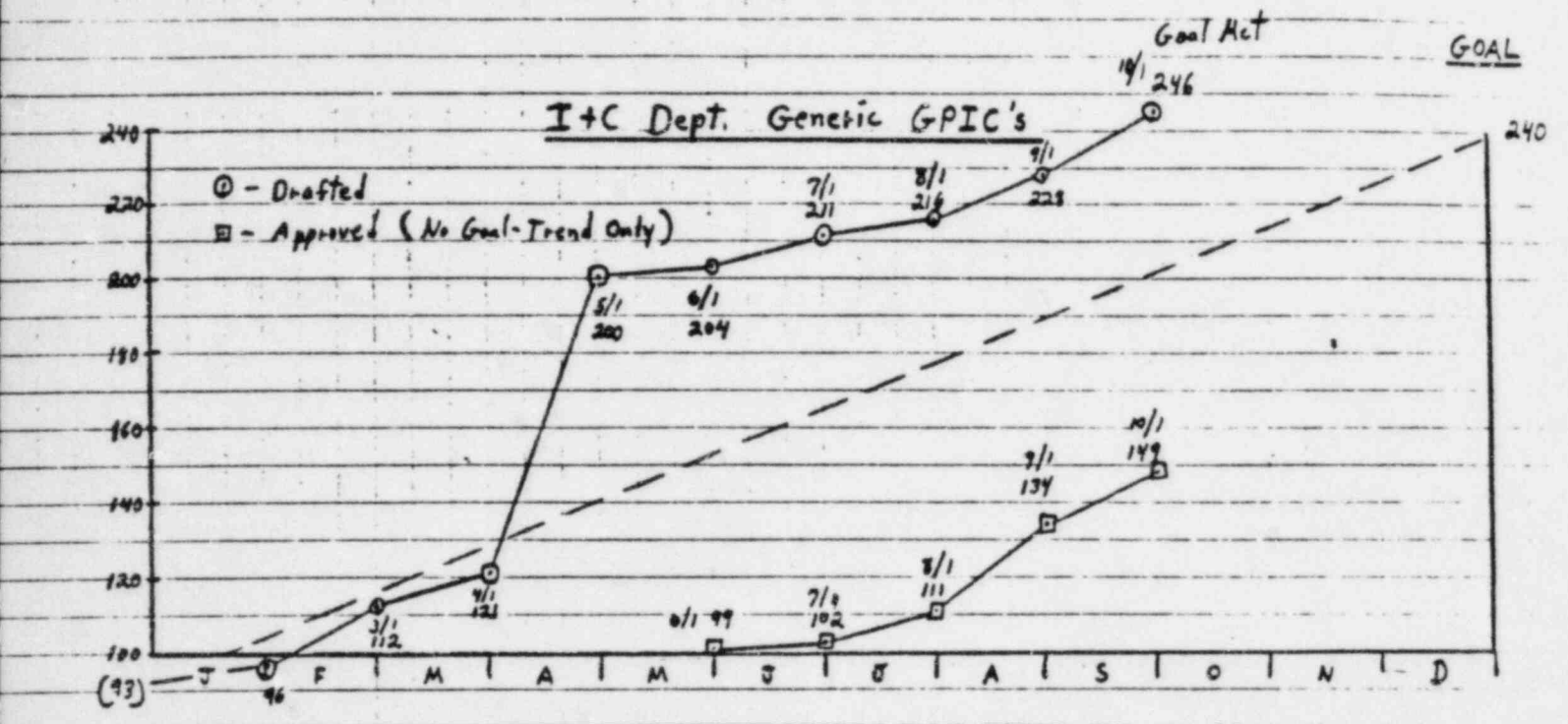
△ - ϕ 1's Typed and Ready For Dept. Head Approval - Status Code ≥ 5

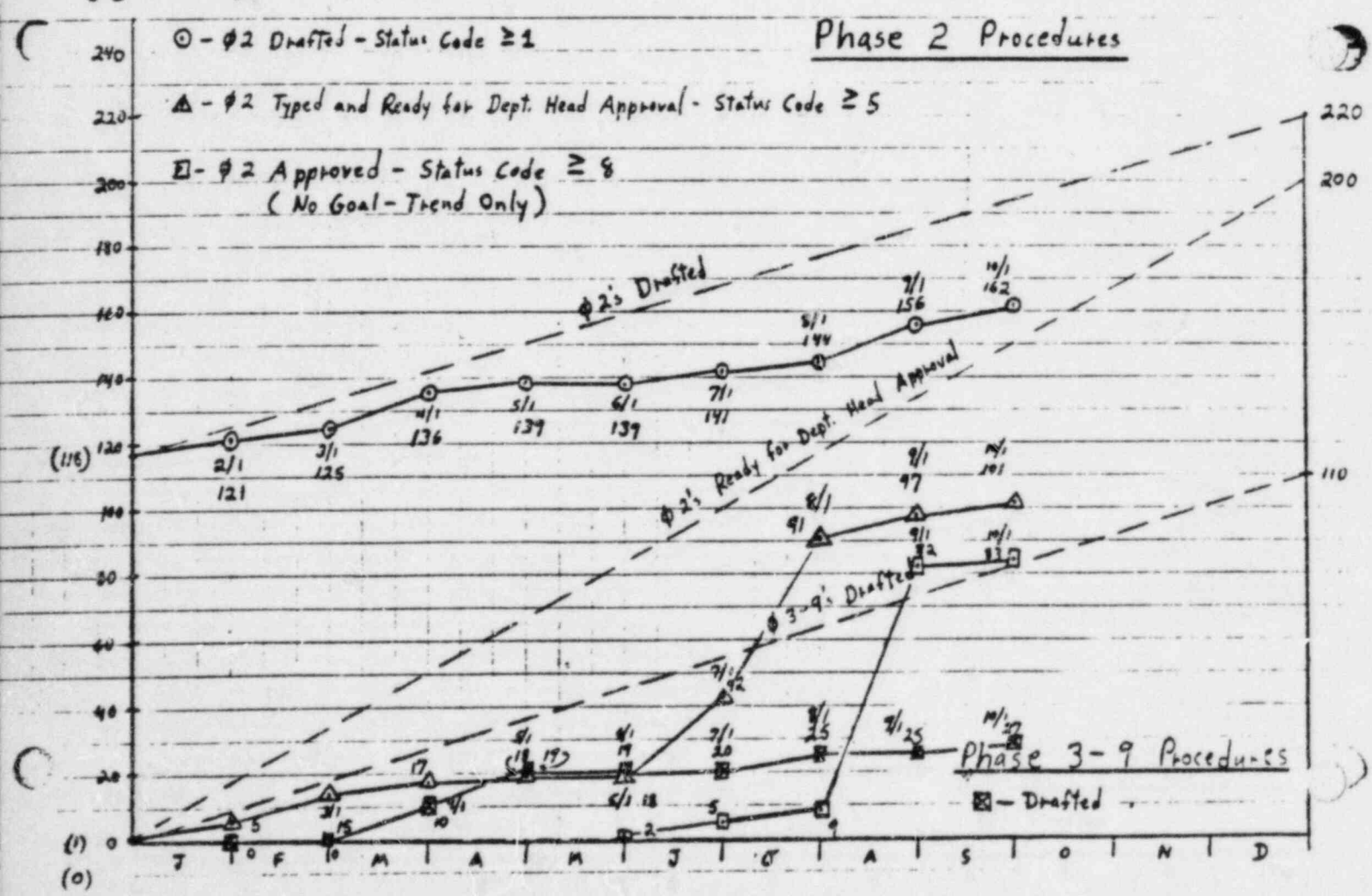
□ - ϕ 1's Approved - Status Code ≥ 8 (No Goal, Trend Only)



Total Number of Generic Procedures Identified as of 5/1/83

GPE's - 63
GPM's - 14
GPIc's - 246





C. Startup Schedule.

1. The startup schedule is on the Project/2 system to allow full integration of all activities and interactive schedule manipulation.

2. The startup schedule assumptions/inputs include:

   a. The startup schedule to construction schedule ties are the construction schedule turnover dates.

   b. Startup testing will be conducted on a day shift basis until Phase III.

   c. The schedule is predicated on completed system or subsystem turnovers.

3. Construction schedule interface.

   a. The primary interface is via the turnover dates.

   b. In addition, a by-system scheduling effort coordinates construction completion, as shown on Figure 4. This assures all activities necessary to complete turnover are accomplished.

   c. The detailed efforts preceeding an individual system turnover are shown on Figure 5.

As of September 26, 1983

d. All proposed changes to the construction or startup schedules affecting turnover dates are approved by Startup, Construction, and Project Management.

STARTUP KEY DATES

First Turnover - Water Treatment	January, 1983
RSST Energized/Shift Coverage	August, 1983
First Preoperational Test - Service Water	May, 1984
RCS Cold Hydro	March, 1985
Turbine LO Flush	June, 1984
Integrated ESF Test	June, 1985
Pre-Core Hot Functional	July, 1985
Fuel Load	October, 1985
Post-Core Hot Functional	November, 1985
Initial Criticality	December, 1985
Low Power Physics Test	December, 1985
Power Ascension	January, 1986
Commercial Operation	May, 1986

As of September 26, 1983

4. Test Program Key Dates.

a. Milestone dates for the Startup Test Program are shown on Figure 3.

As of September 26, 1983

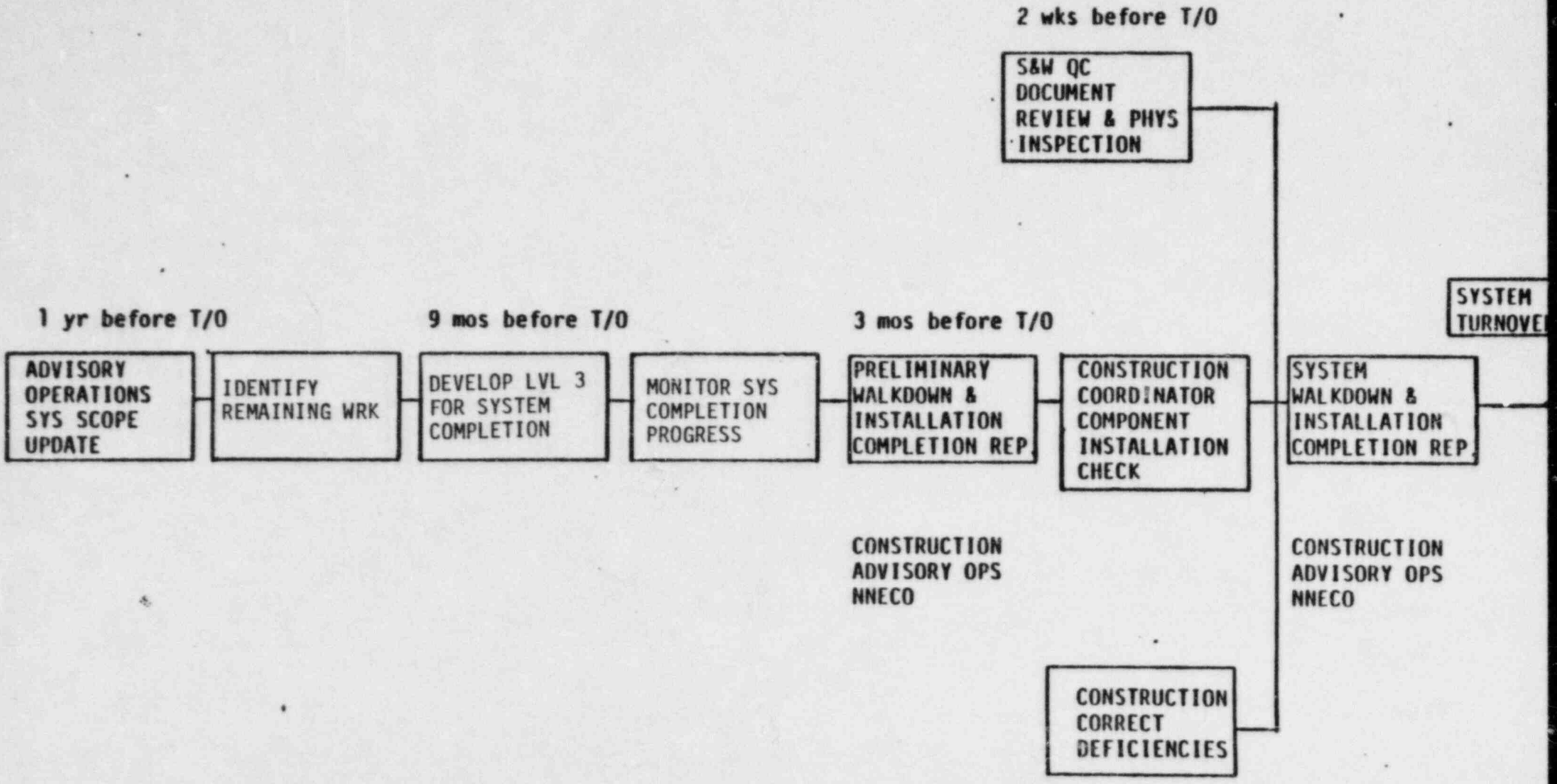
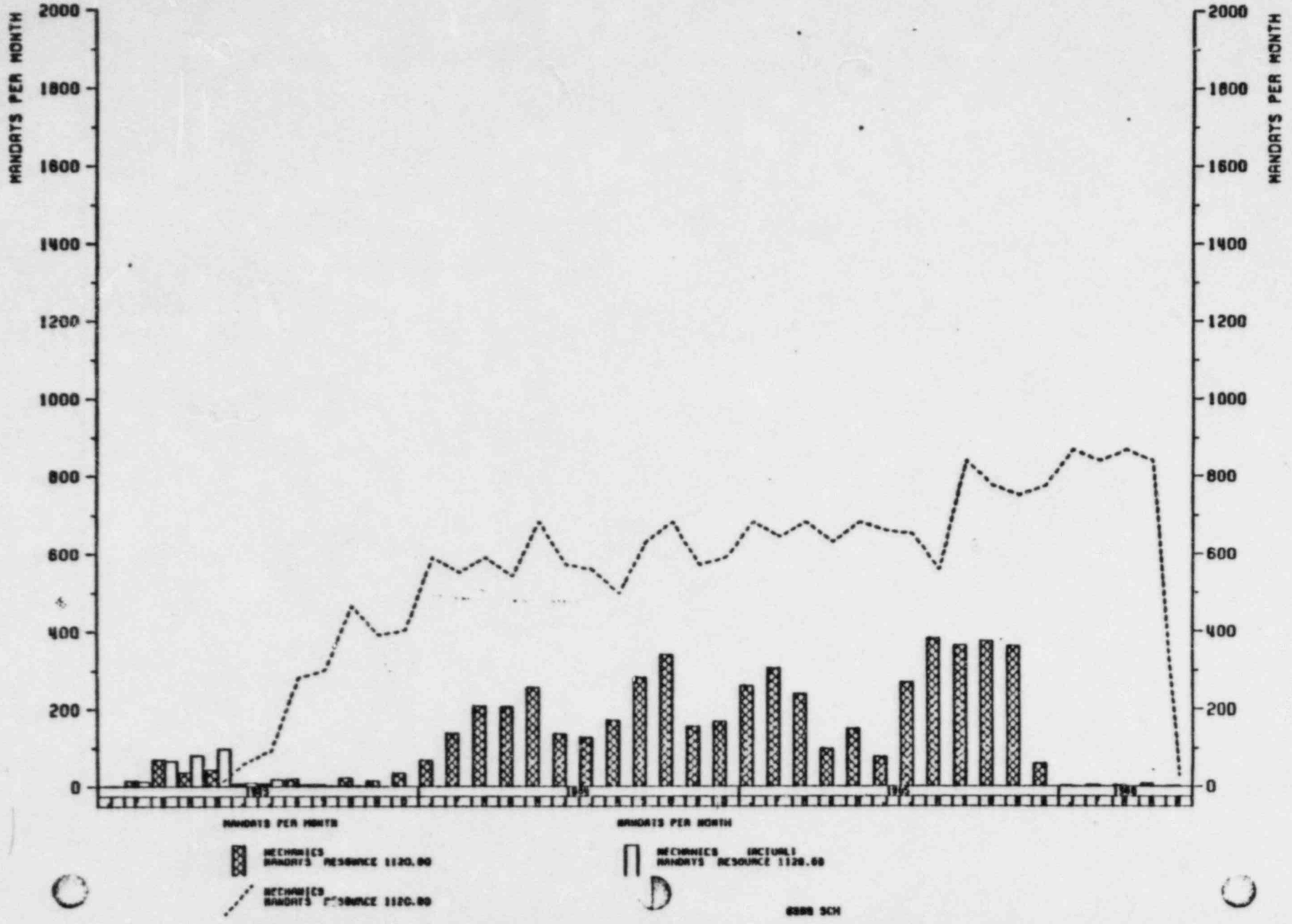


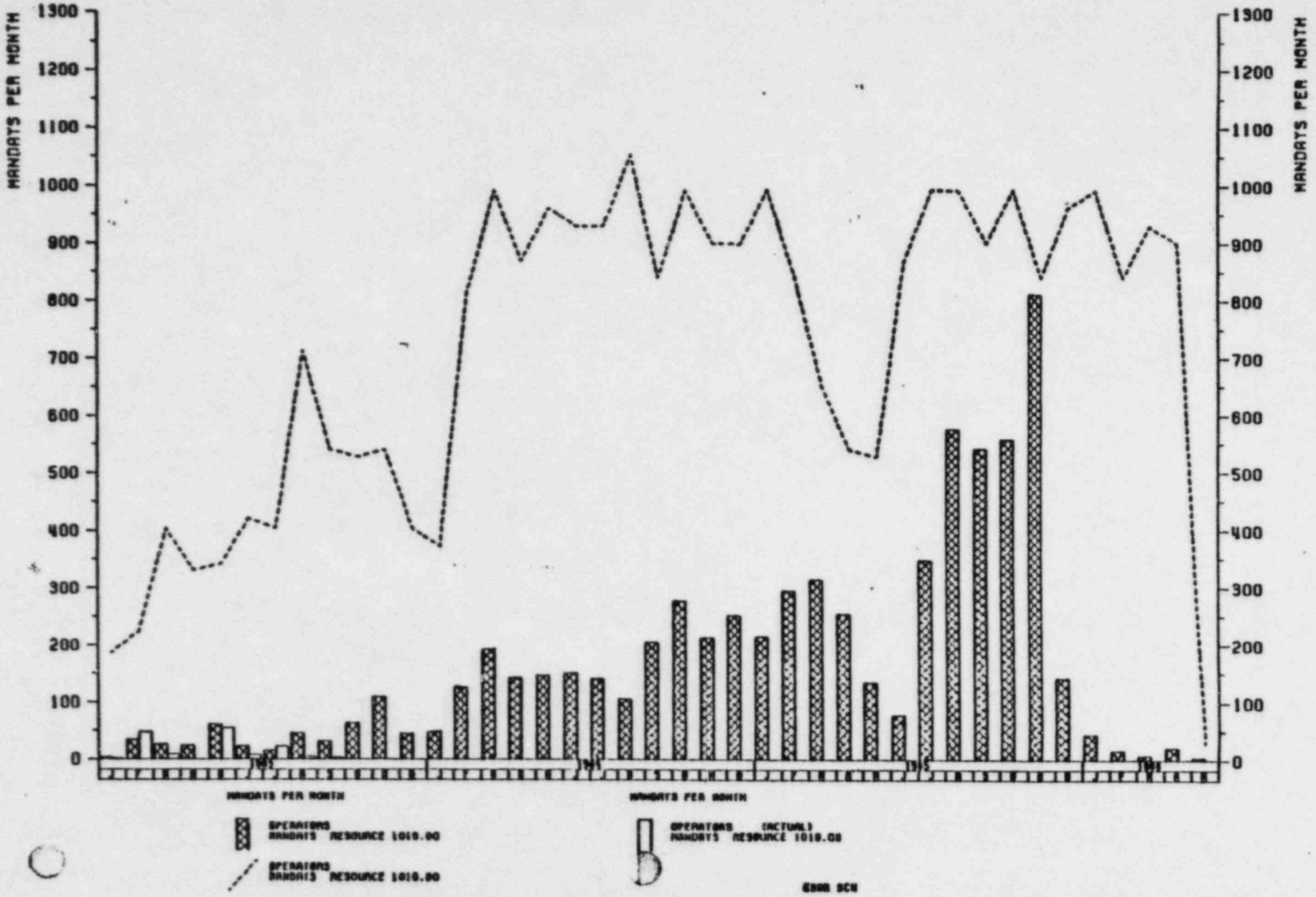
FIGURE 5

Integration of Preop and Acceptanc Test Activities with Construction Schedule

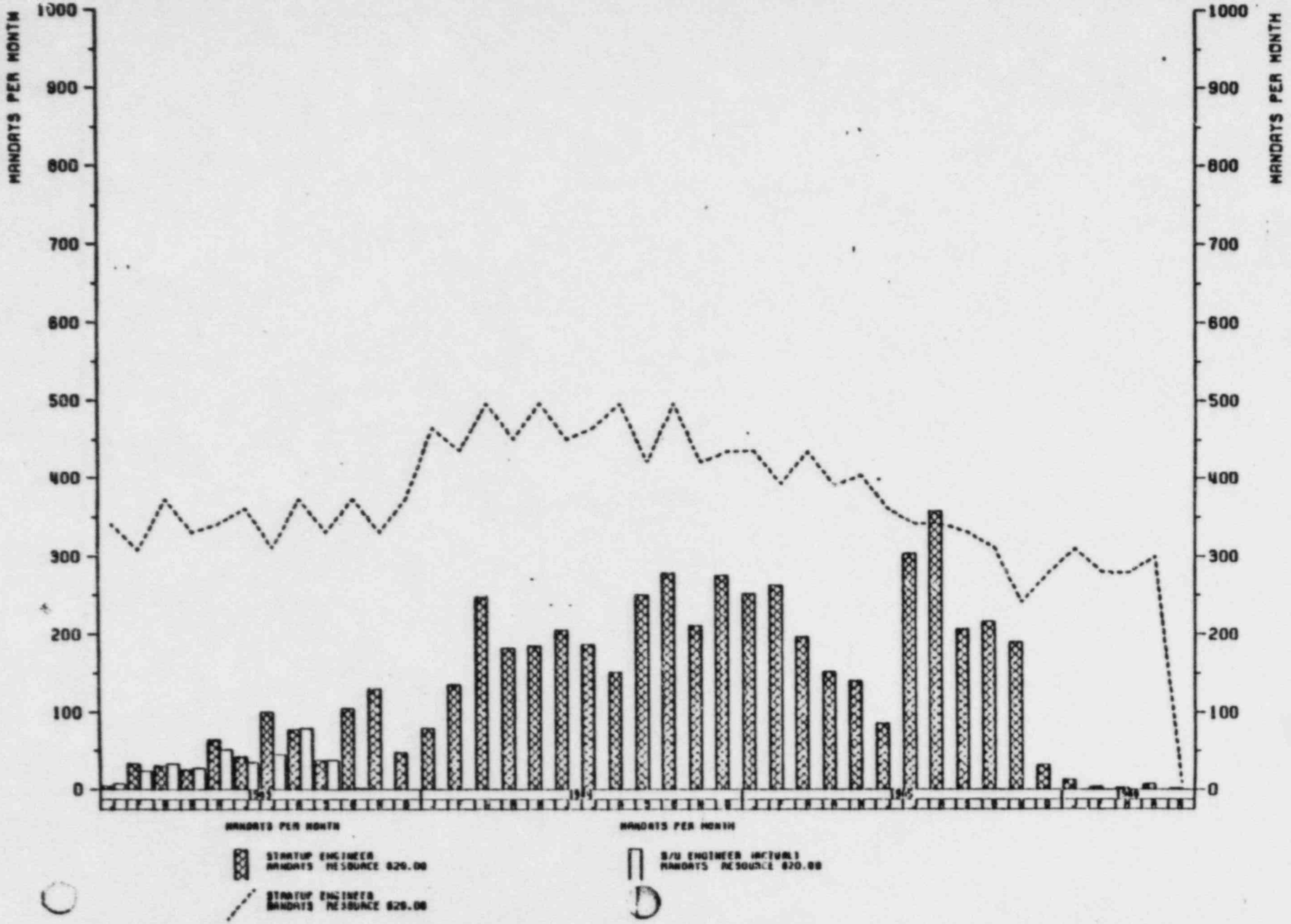
MANPOWER PL[illegible]NING REPORT
CURRENT VS. ACTUAL VS. AVAILABLE
AS OF 29 SEPTEMBER 83
MECHANICS



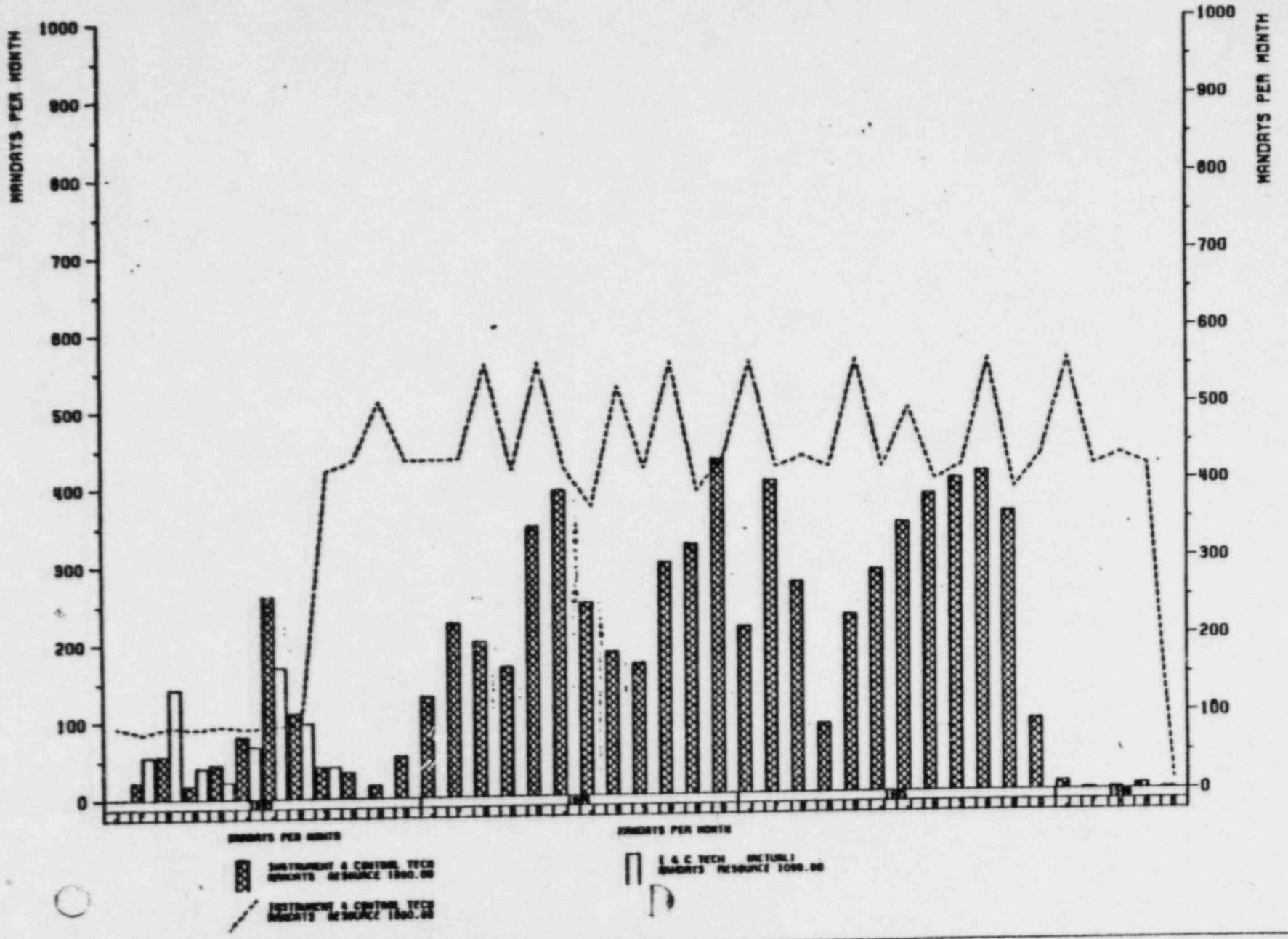
MANPOWER PLANNING REPORT
CURRENT VS. ACTUAL VS. AVAILABLE
AS OF 29 SEPTEMBER 83
OPERATORS



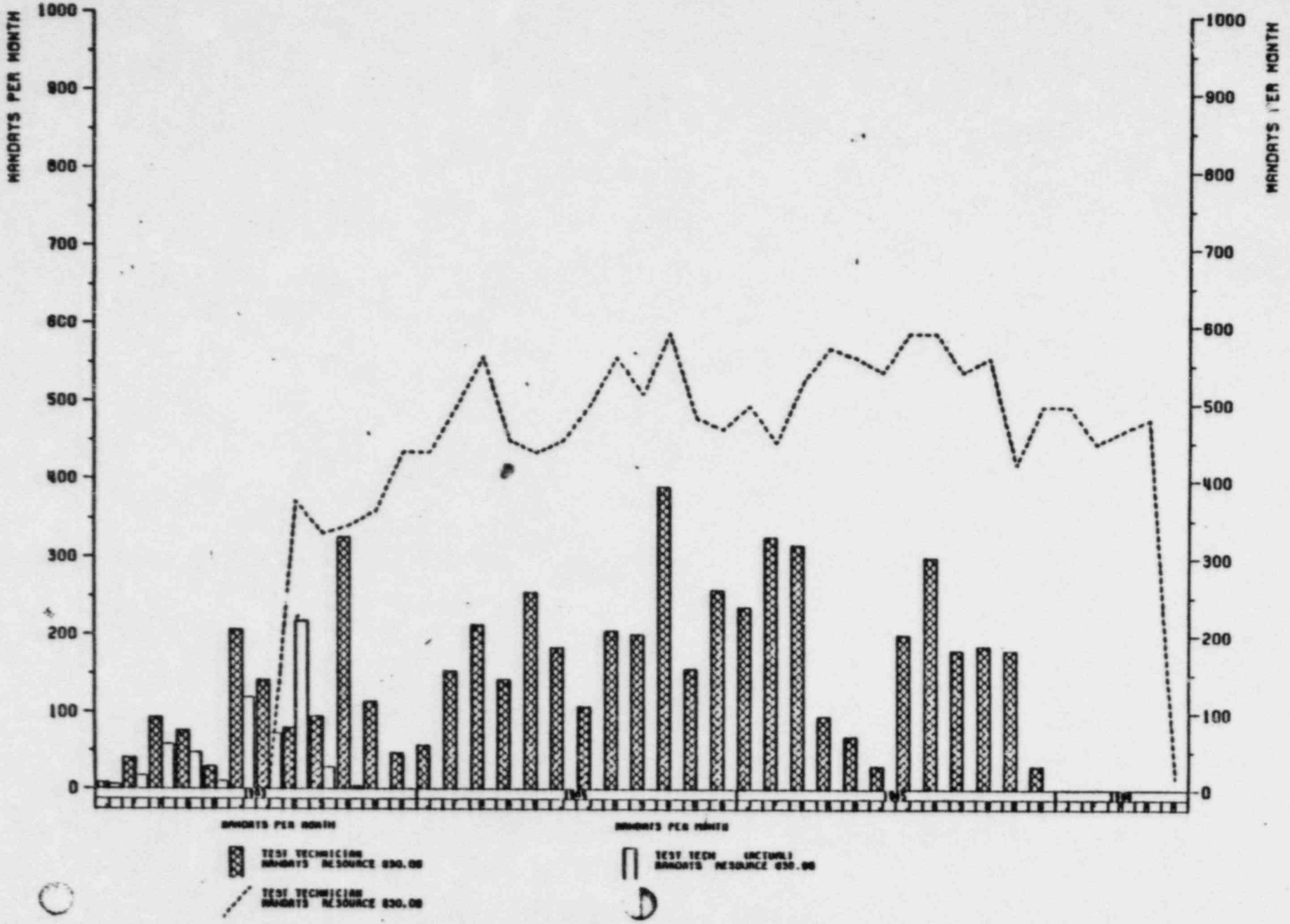
MANPOWER PLANNING REPORT
CURRENT VS. ACTUAL VS. AVAILABLE
AS OF 29 SEPTEMBER 83
START-UP ENGINEER



MANPOWER PLA[illegible]ING REPORT
CURRENT VS. ACTUAL VS. AVAILABLE
AS OF 29 SEPTEMBER 83
INSTRUMENT & CONTROL TECHNICIAN



MANPOWER PLANNING REPORT
CURRENT VS. ACTUAL VS. AVAILABLE
AS OF 29 SEPTEMBER 83
TEST TECHNICIAN



D. Manpower Requirements/Training/Licenses.

1. The current Millstone Station NNECO staff is approximately 670 people, with 165 people on Unit 3.

2. By 1986, our permanent Unit 3 staff will be 280 people.

3. All staffing is phased to support the startup schedule. The manpower levels required for direct startup test support are shown on Figure 6 - 10.

4. A very extensive technical and license training program is in progress. We currently are conducting:

   a. Technician specialized training.

   b. The third cold license school for operations and staff - 5 months. Two cold license schools have been completed to date. Operations on shift license training is in progress.

f. Future training includes.

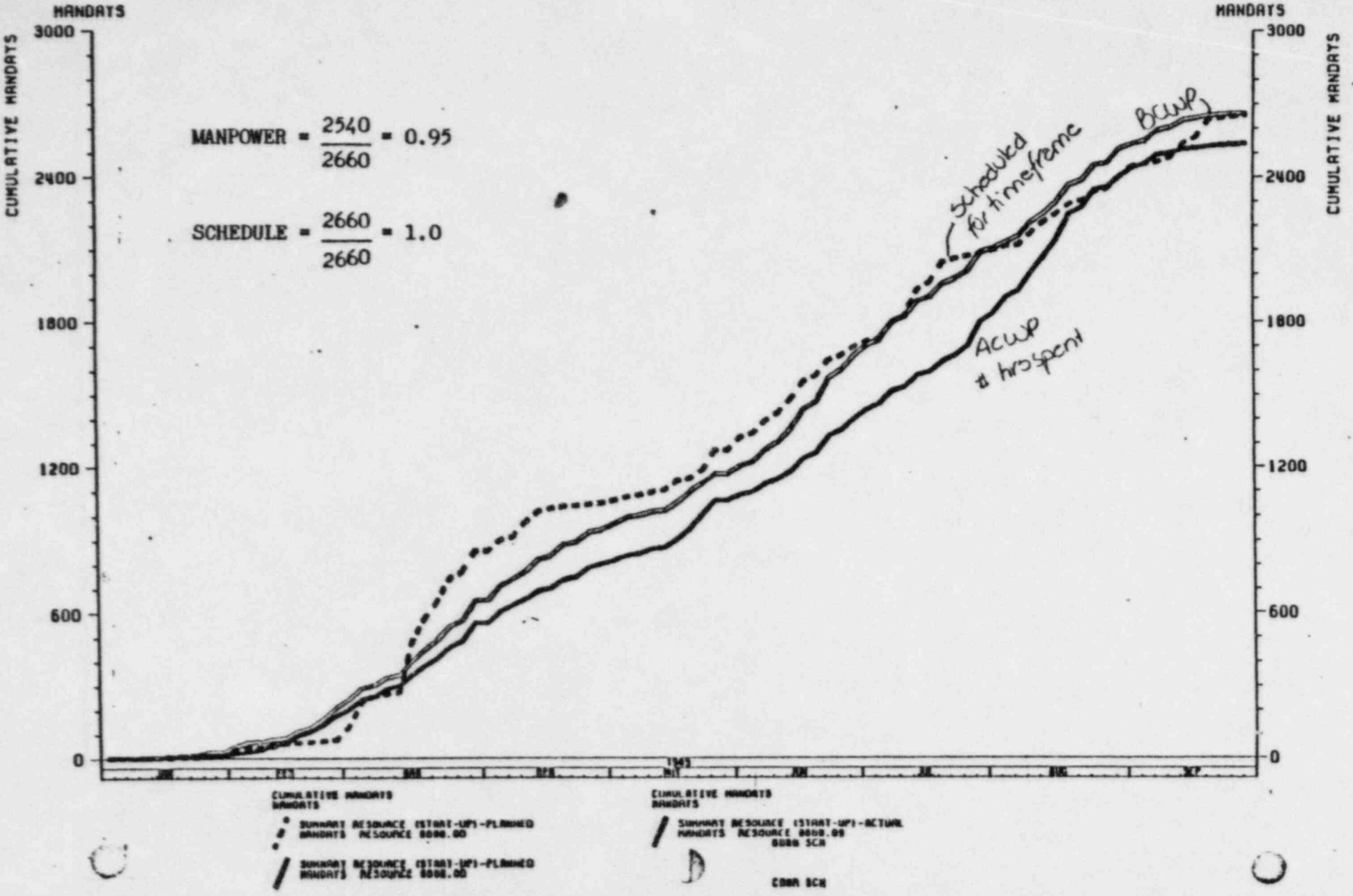
   a. Specialized technical training courses.

   b. Site specific simulator final training in 1985.

6. License qualifications and staffing on Unit 3 will assure six-shift rotation.

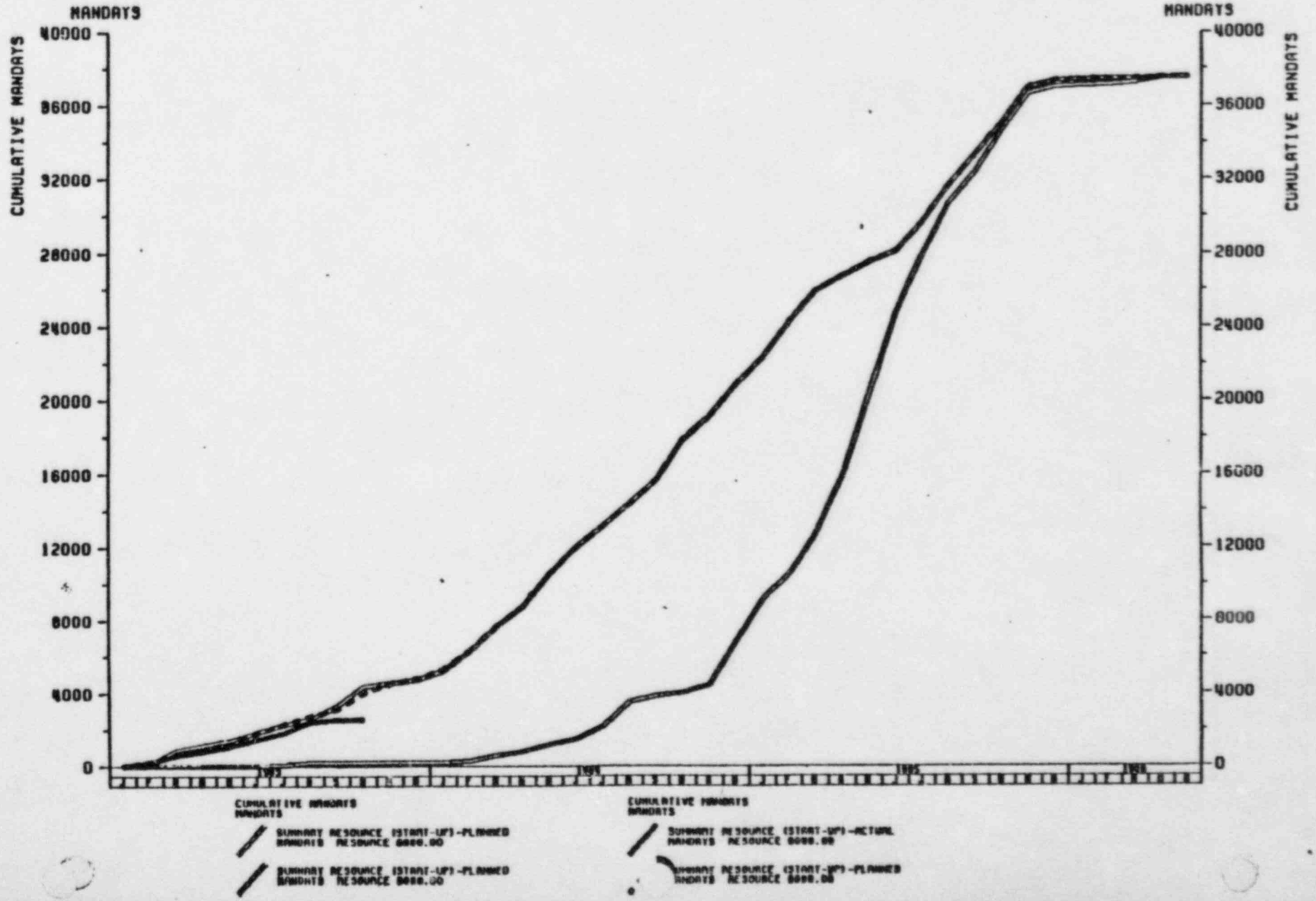
As of September 26, 1983

START-UP SCHEDULE
MANPOWER COMPARISON OF COMPLETED ACTIVITES
ORIGINAL VS. CURRENT VS. ACTUAL
YEAR TO DATE 1983
TOTAL MANPOWER



P2 GRAPHICS PROJECT TRY PLOT NO 0 PAGE 1 SHEET 1

START-UP SCHEDULE
EARLY START/LATE START COMPARISION
BASED ON MANPOWER
AS OF 29 SEPTEMBER 83
TOTAL MANPOWER



E. Test Program Status.

1. As of October 10, 1983, forty (40) of two-hundred and twenty-two (222) turnovers have been completed.

2. As of October 1, 1983, startup testing was 6.8% complete.

3. Startup manpower schedule curves are shown on Figures 11 and 12.

IX. SUMMARY

A. Scheduling Philosophy and the Meaning of Negative Slack.

1. Schedules are put together whenever possible to drive all activities within a given area or level of a building to completion in time for the first turnover of a system from that area. Examples of aggressive scheduling area:

   a. Conduit supports have been accelerated for turnover with the first raceway using that support as opposed to turnover with the building within which it rests.

   b. Numerous turnovers have been accelerated including the five fluid systems described earlier. Turnover packages have not and will not be broken down into partials.

B. A stringent Project Change Control System has been implemented to keep unnecessary changes from impacting our ability to complete Millstone Unit No. 3.

1. Experience shows a design "freeze" is not a realistic approach. A sound change control system is better and prevents suppressed changes.

2. To properly control change, an understanding of basic change agents is necessary. The change control board has considerable experience in evaluating the underlying need for changes.

As of September 26, 1983

C. The backlog of unfinished work which builds up when a project is understaffed has been recognized and controlled.

1. Engineering manpower is on top of the remaining work and moving well ahead of Construction's need for design information. The Site Engineering Office (SEO) is fully staffed and can provide a close level of support.

2. The construction site has been staffed aggressively to, in a similar manner, have sufficient manpower to accomplish scheduled work and unforeseen additions in time to complete Millstone Unit No. 3 on schedule.

D. Northeast Utilities has a corporate commitment to complete Millstone Unit No. 3 on schedule.

1. The Millstone Inspection Planning System in concert with an aggressive ASME N-5 sign-off program have been put in place to keep the documentation process so crucial to a nuclear plant on track with the construction effort.

As of September 26, 1983

Donaldson, Lufkin & Jenrette

Donaldson, Lufkin & Jenrette Securities Corporation • 140 Broadway, New York, NY 10005 • (212) 902-2000

Paul C. Parshley
Fixed Income Division
(212) 902-4138

April 6, 1984

FREEDOM OF INFORMATION ACT REQUEST
FOIA-84-270
Rec'd 4-12-84

Mr. Joseph M. Felton
Director
Division of Rules & Records
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

RE: FREEDOM OF INFORMATION ACT REQUEST

Dear Mr. Felton:

Pursuant to the Federal Freedom of Information Act, I request that you make available to me results of the deliberations of the NRC Caseload Forecast Panel for sites visited by the Panel between September 1, 1983 and April 5, 1984. By "results of deliberations," I mean trip reports, letters exchanged between NRC and the licensees, and notes and handouts from exit interviews. I appreciate your cooperation and prompt attention to this matter.

Sincerely,

Paul C Parshley

PCP:mm

8411290195