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NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

July 20, 1984

OFFICE OF THE
COMMISSIONER

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OFFICE OF SECRETARY
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MEMORANDUM TO: THE FILES
FROM: James K. Asselstine
SUBJECT: SEABROOK TRIP REPORT

On July 12, 1984, I received a briefing on the status of the Seabrook Nuclear Power Station, Unit 1, as well as toured the Unit 1 facility and the Seabrook Training Center.

The briefing was given by Mr. William Derrickson, Senior Vice President of Public Service of New Hampshire (PSNH). Following a brief introduction of the senior staff and a short description of their duties, Mr. Derrickson gave a status report of Unit 1 using the attached viewgraphs. Major points covered by Mr. Derrickson which may not be reflected in the viewgraphs were:

- Unit 1 is approximately 80% complete;
- 41% of the plant has been turned over to start-up;
- Remaining licensing items include:
 - Emergency Planning Hearing;
 - NRC Open Items, including the qualifications of the Shift Technical Advisor;
 - NRC Field Confirmation;
 - EPA NPDES Administrative Hearing;
- PSNH claims no major quality assurance problems have been identified;
- Diesel generators manufactured by Colt Industries have been tested and have performed well;
- PSNH plans to open a project office in Bethesda;
- Technical Specifications have been submitted to the NRC staff for review;
- Present schedule calls for fuel load in January-April 1986 and

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commercial operation for the Summer of 1986 (assuming resolution of funding issues);

- When construction resumes at Seabrook, PSNH anticipates having 3000 construction workers on site until the end of this year and 4,700 workers at full strength (assuming resolution of funding issues).

Mr. Derrickson indicated that the present estimate of the total completed cost for Unit 1 is between \$4.2 to 4.4 billion. Further cost figures are included in the viewgraphs. These cost figures could vary, depending on when construction work is resumed.

I inquired about the status of compliance with Appendix R (fire protection) and environmental qualification of electrical equipment, and was informed by the utility personnel that they thought they were in "good shape" in both areas. They did inform me that some exemption requests were pending in the fire protection area.

After the briefing, we began the tour by visiting the training center. We were shown a short slide presentation on the Seabrook training program. Training for operators began in January of 1980. The first round of 40 candidates for operator licenses is scheduled to take the NRC exam in the Fall of 1984. Seabrook has had a plant-specific simulator since 1980. Seabrook also has a maintenance training program. We toured the plant simulator while at the training center.

On the plant tour, the following areas were visited:

- Unit 1 Reactor Containment
- Unit 1 Primary Auxiliary Building
- Control Room
- Diesel Generator Building
- Turbine Building

While touring the plant, we observed the remote shutdown panel. I was informed that the licensee intended to locate an emergency operations facility (EOF) following the Commission's guidance of between 10 and 20 miles from the plant, although a location had not yet been selected.

Upon completion of the tour, I returned to the Seabrook Education Center for a wrap-up session. At the wrap-up, I was asked by Mr. Robert Backus of the Seacoast Anti-Pollution League about the status of the financial qualification rule. I informed him that I expected the Commission to decide whether to issue a final rule later this month or in early August. Upon returning to Washington, I have learned that the Commission has scheduled a meeting on the final rulemaking for August 16, 1984.

I requested any comments on the subjects covered during my visit from Mr. Backus and Mr. Ray Shadis of the New England Coalition on Nuclear

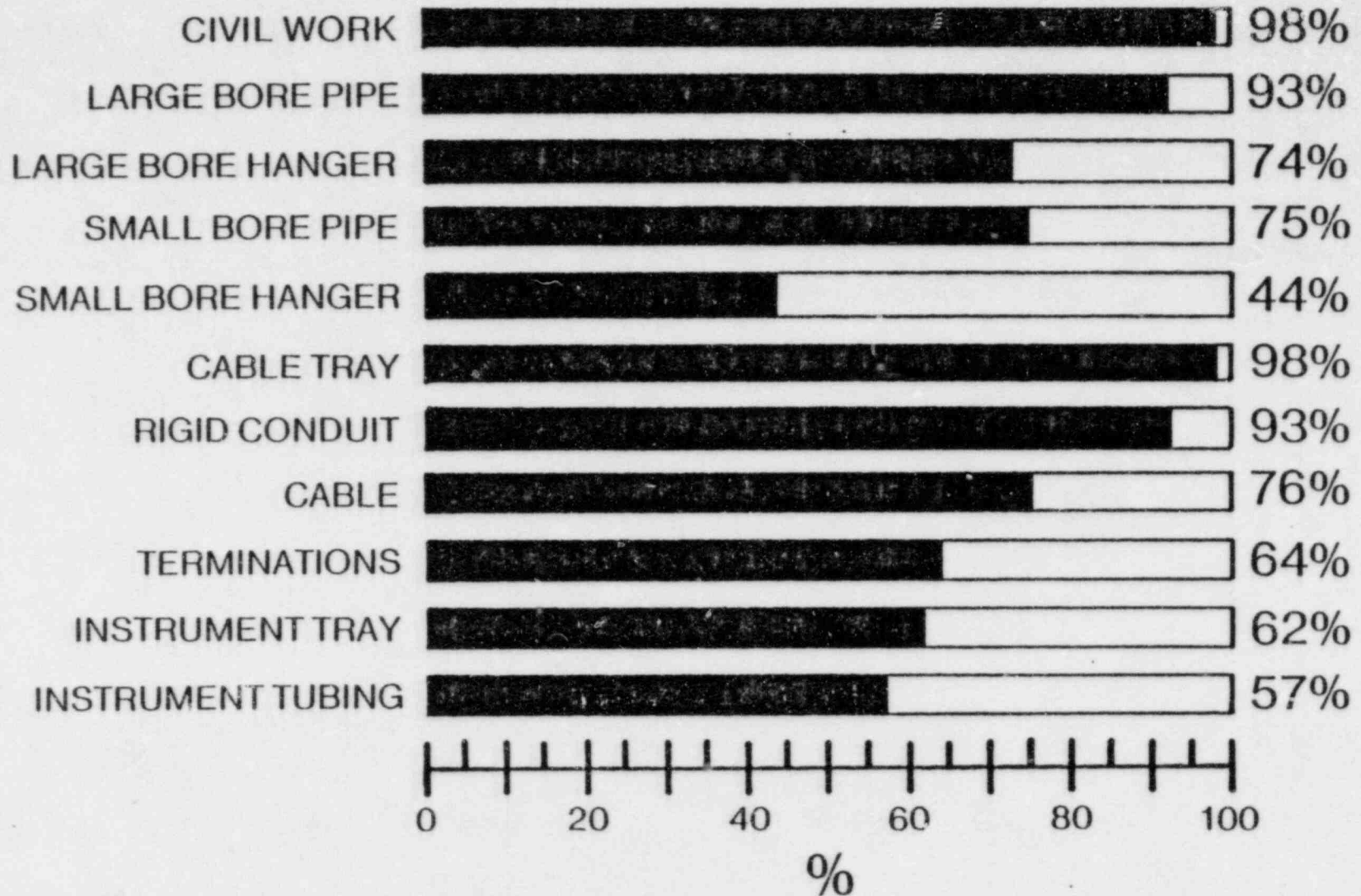
Pollution. I am also requesting comments from the other parties and interested towns who were not on the tour.

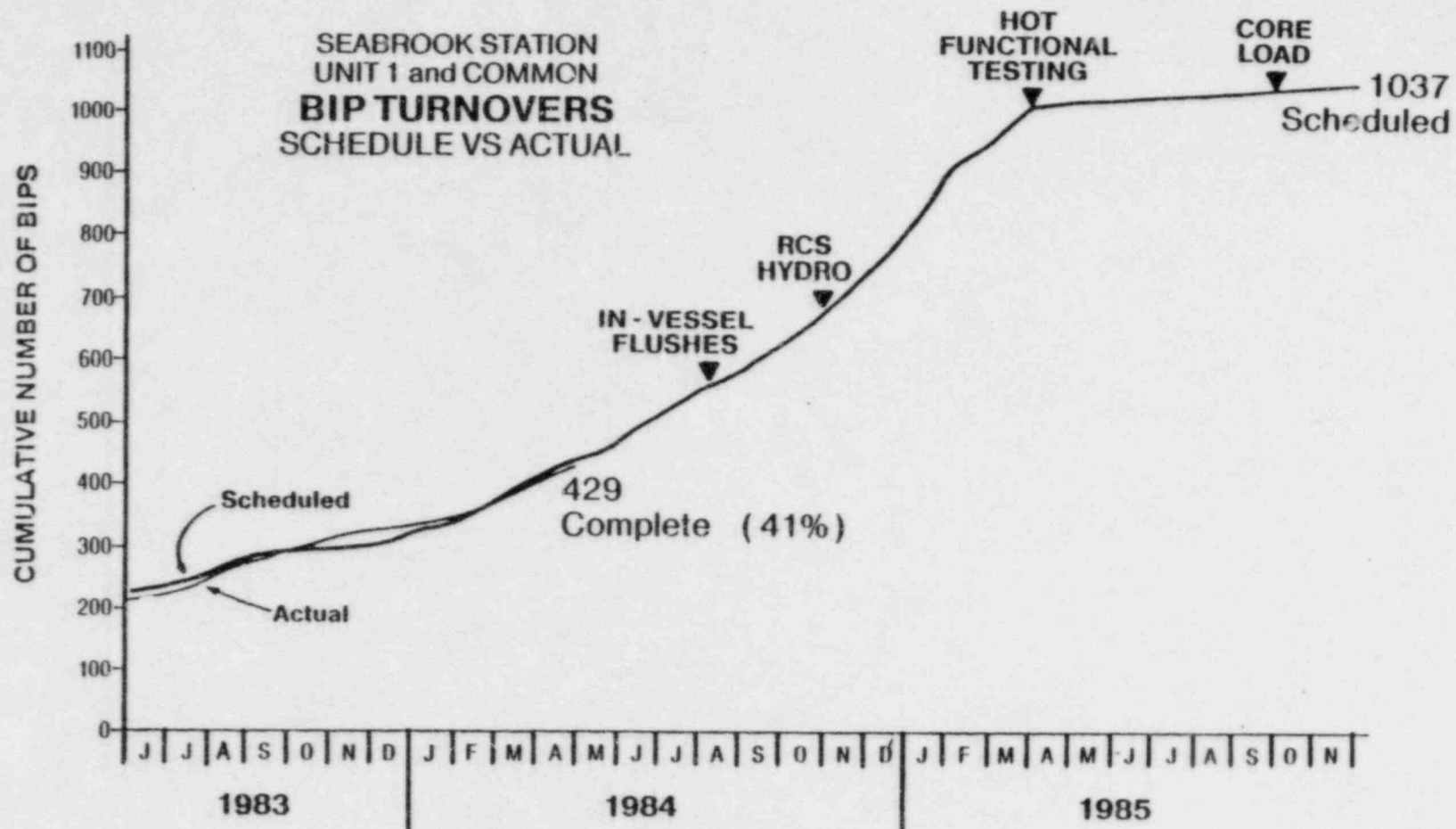
Enclosure: As Stated

**SEABROOK STATION
PROJECT UPDATE**

MAY 7, 1984

SEABROOK STATION UNIT 1 and COMMON
CONSTRUCTION COMMODITIES
% INSTALLED





LICENSING

COMPLETE

- NRC Safety Evaluation Report Favorable
- ACRS Letter Received Recommending 5 % Power License
- ASLB Operating License Hearings Complete Except For State And Local Emergency Planning Issues
- Final Environmental Statement Favorable
- Proposed Technical Specifications Submitted
- EPA NPDES Permit Drafted

REMAINING

- Emergency Planning Hearings
- NRC Open Items
- NRC Field Confirmation
- EPA NPDES Administrative Hearing

ENGINEERING STATUS

98% RELEASED FOR CONSTRUCTION

	TOTAL	RELEASED	PERCENT
Drawings	7530	7364	98
Specifications	523	515	98

REMAINING ACTIVITIES

- Construction Support
- Regulatory Requirements
- Startup Support

QUALITY ASSURANCE

- Strong Management Support
- Favorable NRC Assessments
- Favorable Third Party Assessments
- Effective Program
 - No NRC Stop-Work Orders
 - No Civil Penalties
 - Excellent Performance Of Systems In Service

SEABROOK STATION
QUALITY ASSURANCE FINDINGS

Management support of Quality Assurance continues to be a strong point in the construction of Seabrook Station. The hardware deficiencies that have been identified relate more to process control and design interpretation problems than they do to programmatic failures on the part of the installation contractors.

NRC Systematic Assessment of
Licensee Performance 8/17/83

Audit and surveillance personnel are well qualified. Management is supportive of Q/A activities.

NRC Construction Assessment Team
Inspection Report Dated, 1982

There are good working relationships between QA/QC personnel and their counterparts in other organizations, including the Nuclear Regulatory Commission resident inspector and authorized nuclear inspector, who speak very favorably of QA/QC and the overall program effectiveness.

Management Analysis Company Report
Dated, 1983

During this assessment, it was apparent that the overall QA/QC functions were performed in a manner that was conducive to controlling and improving the quality of the project. There is adequate freedom from cost and schedule pressures. QA/QC personnel received a cooperative attitude from project personnel.

Institute of Nuclear Power Operations
Seabrook Self-Initiated Construction
Project Evaluation Report, Nov., 1983

- Management is supportive of Quality Assurance.
- Strong site QA implementation is evident at the surveillance and audit levels.
- Licensee responsiveness to NRC initiatives/concerns is good.
- Operator training reflects an advanced state of the art and utilizes a site-specific simulator.
- The Operations Staff is being integrated early into the Pre-Operational Test Program.

Trip Report, Commissioner Victor
Gilinsky, August 19, 1983

PIPING AND HANGERS

PIPE

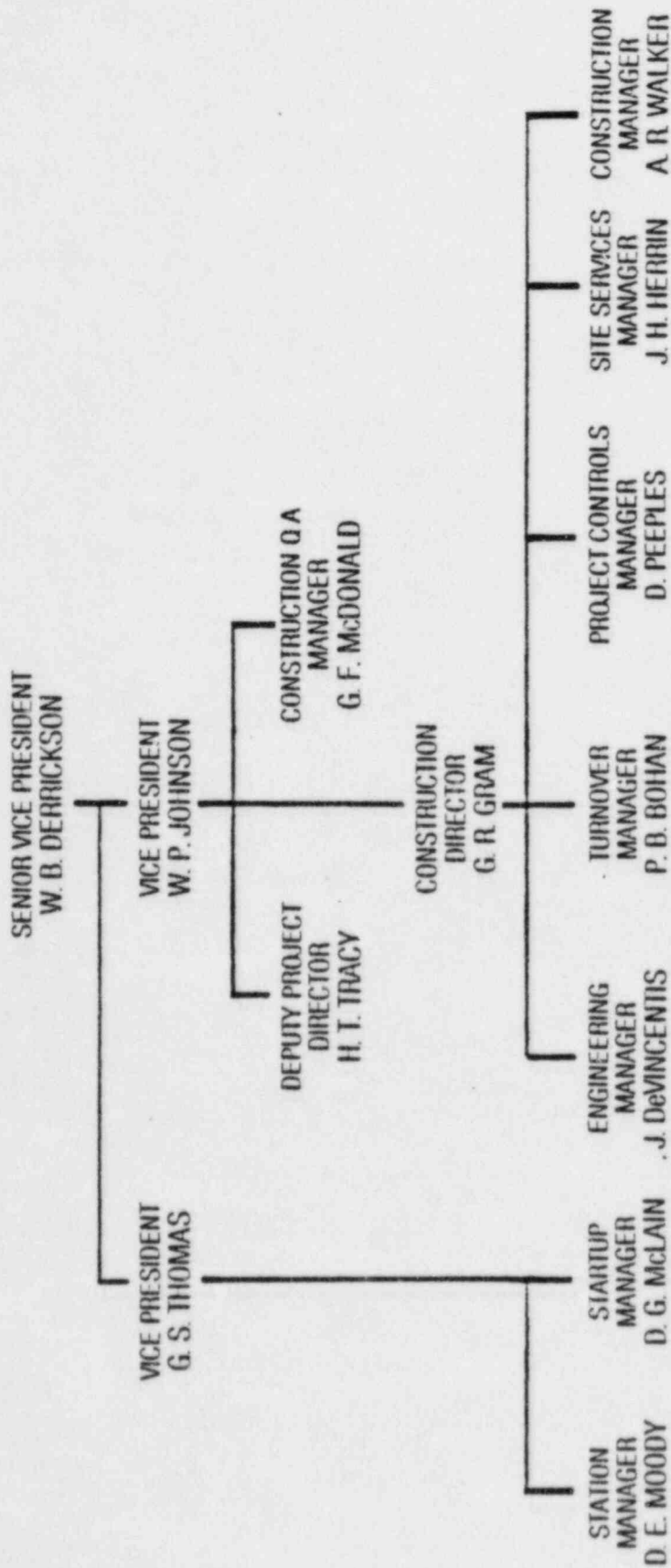
Large Bore	Good Shape	93%
Small Bore	OK	75%

HANGERS

Areas Of Concern

- Engineering
- Quantity
- Status
- Documentation

SEABROOK STATION INTEGRATED PROJECT ORGANIZATION

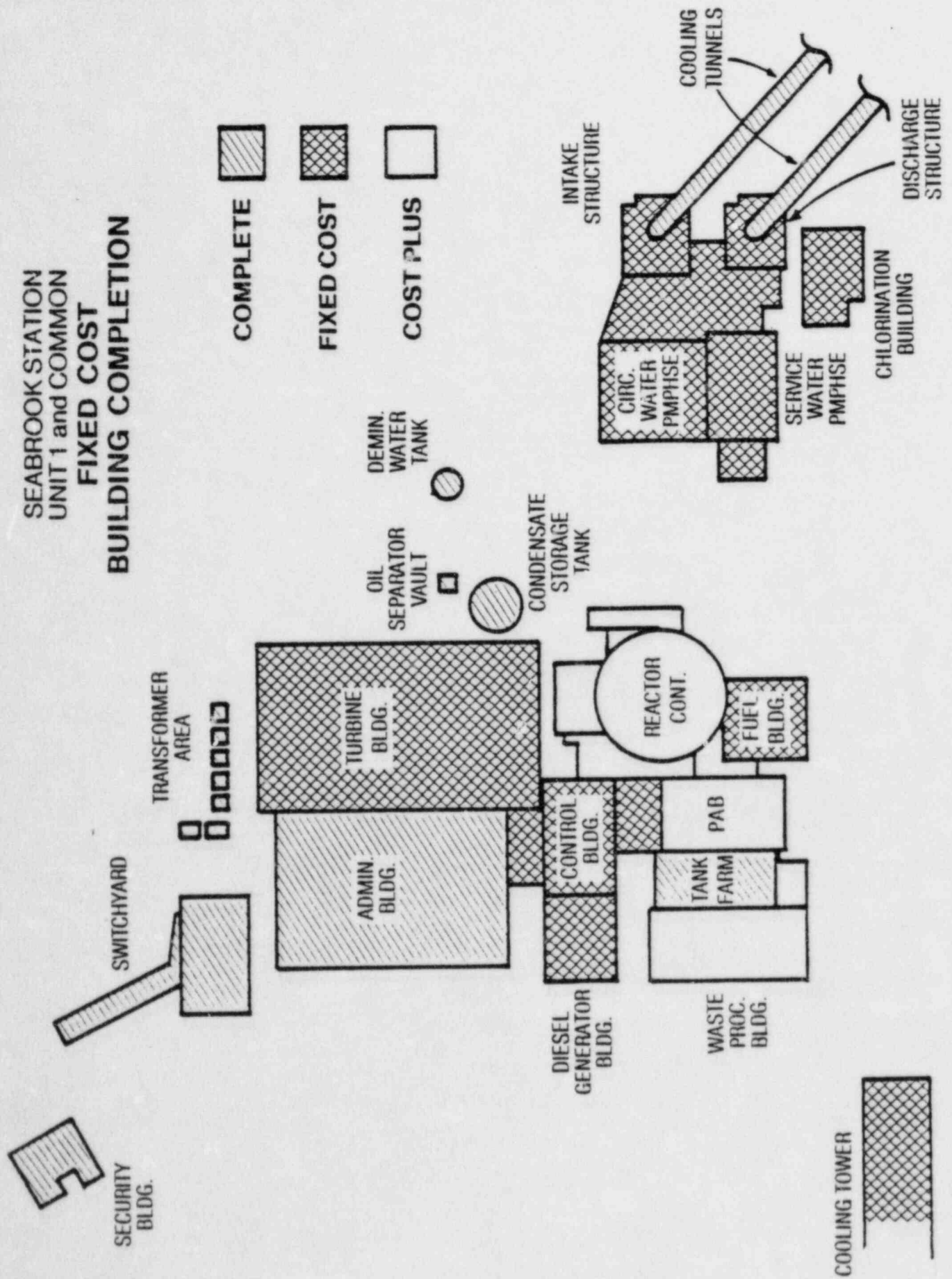


DIRECT EMPLOYMENT

- 10% Reduction In Construction Non-Manual Force
- Improved Communication
- Improved Craft Utilization
- Fewer Interfaces
- Better Logistics
- Saves 10 Million Dollars

SEABROOK STATION
UNIT 1 and COMMON

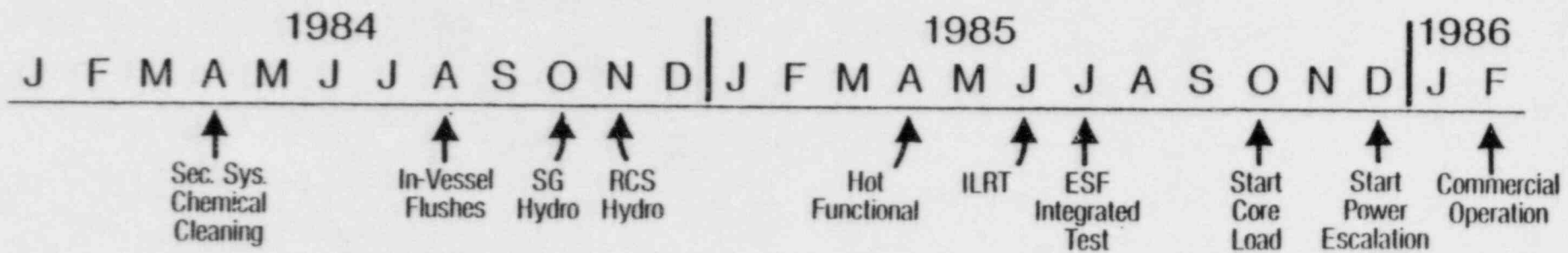
**FIXED COST
BUILDING COMPLETION**



OTHER MANAGEMENT ACTIONS

- Nuclear Stabilization Agreement
- Rework Minimization
- Project Office — Bethesda

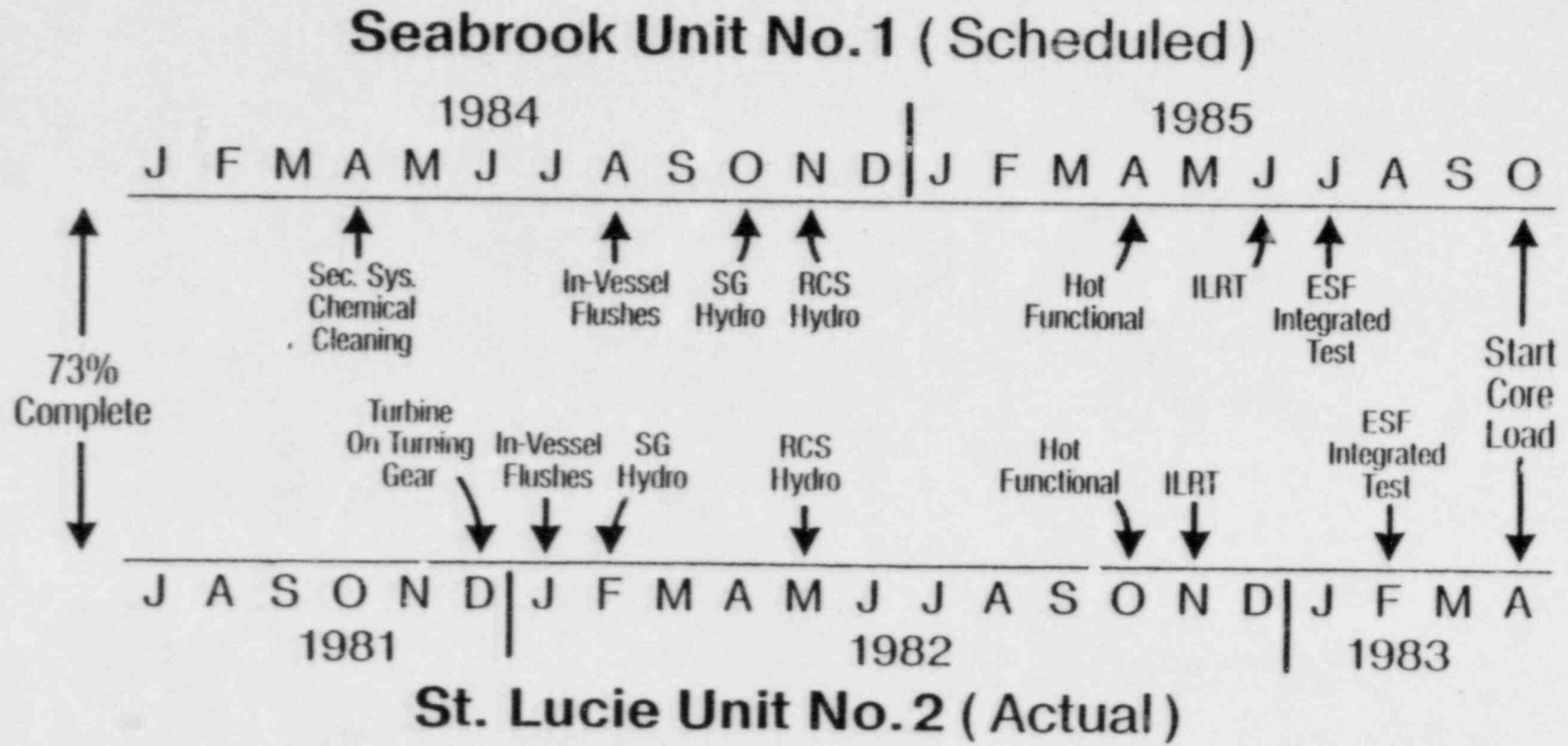
Seabrook Unit No.1 (Scheduled)



PROJECTED PEAK MANPOWER

●	Manual	3000
●	Non-Manual	
	- Site	1200
	- Philadelphia	500
●	Total	4700

Seabrook Unit No.1 vs. St. Lucie Unit No.2



UNIT 1 - WHY IT CAN BE DONE

- Advanced Project Status
- Streamlined Project Organization
- Experienced Project Management
- Dedicated Workforce
- Qualified Operations Staff
- Solid Licensing Progress

ADVANCED PROJECT STATUS

- Advanced State Of Construction
 - Over Forty Percent Of Station Equipment Turned Over To Startup
- Excellent Construction Quality
 - No Startup Delays Due To Quality Problems
- Many Test Milestones Completed
 - Auxiliary Boiler In Operation February, 1982
 - Control Room Manned By Operators April, 1983
 - Main Turbine On Turning Gear July, 1983
 - Circ Water Tunnels - Flood Start November, 1983
 - Initial Reactor Vessel Fill March, 1984
 - "A" Diesel Generator Test Run March, 1984
 - "B" Diesel Generator Test Run April, 1984
 - Sec. Systems Chemical Cleaning Complete April, 1984
- Remaining Work Scope Was Accomplished In An Equivalent Time Frame At St. Lucie Unit 2

STREAMLINED PROJECT ORGANIZATION

- Direct Ownership Management Accountability
- Integrated Organization Eliminates Redundancy And Improves Communications And Accountability
- Significant Staff Adjustments Commensurate With Job Requirements
- Milestone Mother Program Defines Short-Term Management Objectives And Concentrates Project Resources On Common Schedule Goals
- Management Support For Aggressive Cost And Schedule Performance Targets Encourages Innovation And Action
- The Comprehensive Project Controls Organization Provides Timely And Accurate Analysis Of Projected Performance

EXPERIENCED PROJECT MANAGEMENT

- W.B. Derrickson Has Proven Performance Record
- Key Functional Managers Are Among The Leaders In Their Respective Field Of Expertise:

W.P. Johnson (VP)

- 36 Years Experience, Worked On Five Nuclear Units

G.R. Gram (Construction Director)

- 14 Years Experience, Worked On Four Nuclear Stations

P.B. Bohan (Turnover Manager)

- 12 Years Experience, Worked On Three Power Stations

J. DeVincentis (Engineering Manager)

- 29 Years Experience, Worked On Four Nuclear Units

J.H. Herrin (Site Services Manager)

- 12 Years Experience, Worked On Three Power Stations

D.G. McLain (Startup Manager)

- 14 Years Experience, Worked On Eight Nuclear Units

D.J. Peebles (Project Controls Manager)

- 15 Years Experience, Worked On Seven Nuclear Units

A.R. Walker (UE & C Construction Manager)

- 32 Years Experience, Worked On Five Nuclear Units

DEDICATED WORKFORCE

- Positive Management-Labor Working Relationship
- No Major Work Disruption In Over Three Years
- Strong Labor Resources In Skilled Craft Areas
- Craft Leadership (Foremen and General Foremen) Participate In Problem Resolution With Senior Construction Management
- Positive Working Relationship Provides Opportunities For Flexibility In Workforce Utilization

TARGET BUDGET
Unit 1 & Common

To-Date Cost \$2.7 (billion)
To-Go Cost \$1.4 (billion)

Construction,
Engineering,&
Materials Cost 0.4

Owner 0.2

Contingency 0.2

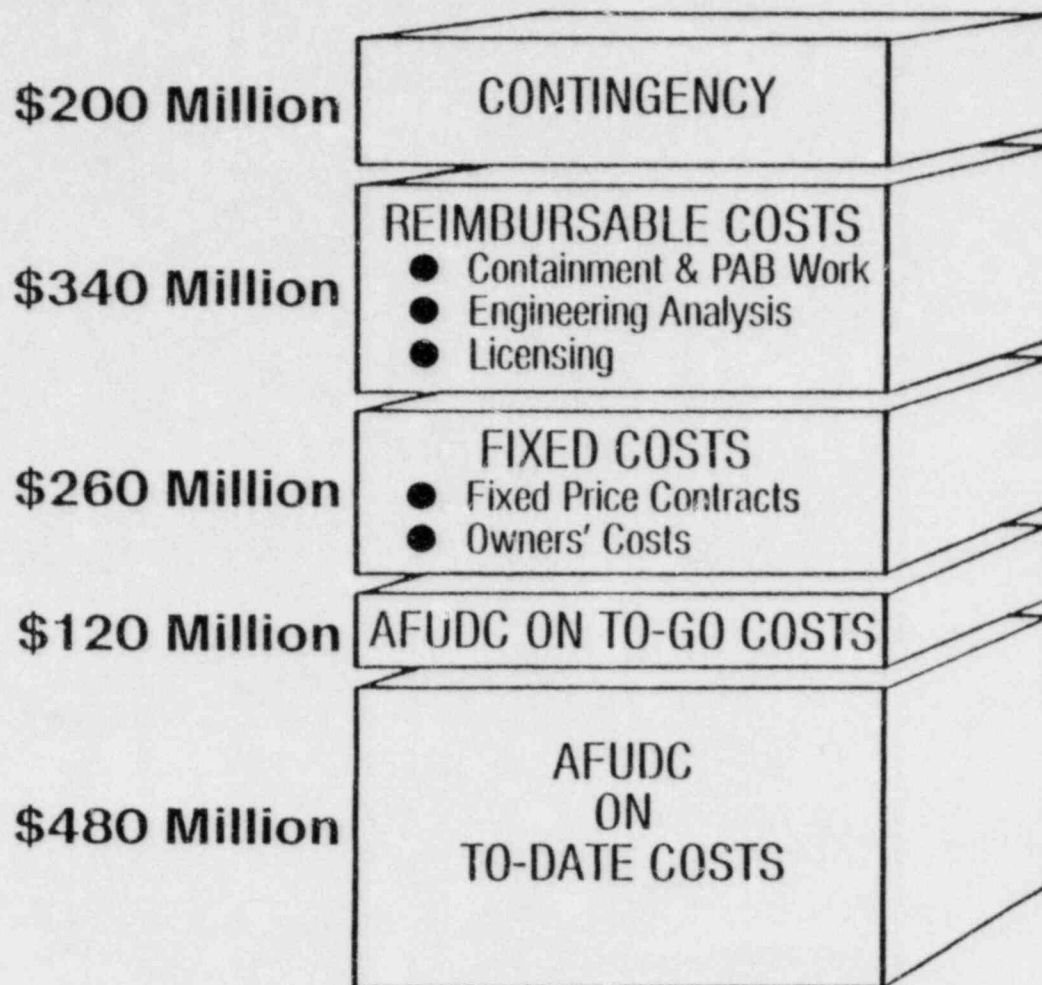
AFUDC 0.6

TOTAL \$4.1 (billion)

ANALYSIS OF TO-GO COSTS

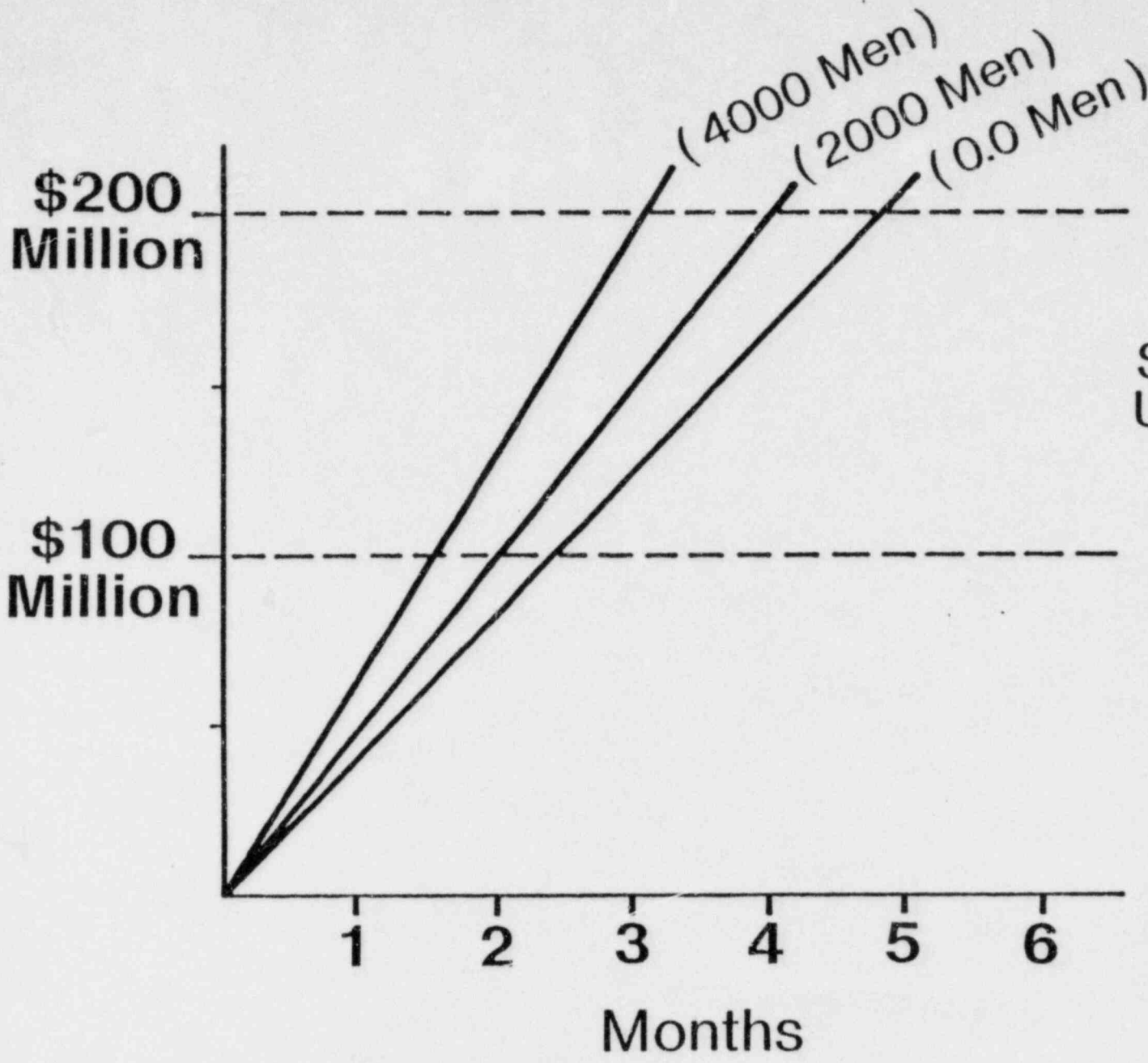
Owners 200 MM

NSSS	10 MM
Personnel	140 MM
Spare Parts	30 MM
Taxes & Ins	40 MM
Power	10 MM
Power Credit	(30 MM)



SEABROOK STATION
UNIT 1 and COMMON

**Cost/Risk
Assessment
To Complete**



SEABROOK STATION
UNIT 1 and COMMON

Schedule Extension Costs