



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Swan

SEP 16 1982

SSINS 50-424
50-425

MEMORANDUM TO: File

FROM: W. B. Swan, Project Inspector, PRP

SUBJECT: TRIP REPORT TO BECHTEL POWER CORPORATION, NORWALK, CALIFORNIA
VOGTLE PLANT FCN CONTROL

Purpose of Trip Observe Region IV inspection on August 30-31, 1982 of Bechtel Power Corporation, Los Angeles Power Division at Norwalk and Downey, California concerning effectiveness of Georgia Power Company - Bechtel processing of Field Change Notices (FCNs) for the Vogtle Nuclear Plant construction.

The inspection was conducted by J. R. Costello, Principal Inspector, USNRC Region IV. An entrance meeting was held with R. L. Patterson, QA Manager at Bechtel's office in Norwalk, California on the afternoon of August 30, 1982. The inspectors were then accompanied by J. R. Caldwell of the QA Unit to Bechtel's design office for Vogtle on the third floor of Building #46 on Lakewood Blvd. in Downey. The afternoon and the following morning were filled with Mr. Costello's questioning of Mr. M. Malcolm, Project Engineering Manager for Vogtle, his subordinates and quality engineers, and review of documents.

The details of Mr. Costello's findings are given in Region IV report 9990052/82-04.

A listing of FCN's showed that 140 had been presented by Georgia Power to Bechtel for review between October 9, 1981 and August 31, 1982; 81 Civil, 51 Electrical (often pertaining to structural problems such as cable tray supports) and 8 Mechanical.

A total of 13 FCNs were rejected by Bechtel Design: 4 civil and 9 electrical, most often because of wrong drawing reference. In the same time frame GPC had presented 4840 FCRs; so FCNs were only 2.39% of FCR's.

Following a Bechtel audit of FCNs March 11, 1982 no electrical FCN and only 2 civil FCNs were disapproved. No mechanical FCN was issued after February 18, 1982.

Times between receipt of FCN by Bechtel and telecopy reply by Bechtel in calendar days:

8508150633 850610
PDR FOIA
LEIGHT084-293 PDR

FOIA-84-293
K/35

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<u>No. of FCNs</u>	<u>Days</u>
11	1
4	2
4	3
17	4
9	5
5	6
3	7
1	10
<u>54</u>	

Mean calendar days for initial telecopy reply was 4 days.

Bechtel stated that both Georgia Power and Bechtel are now using overnite mail in transmitting FCN's and official replies.

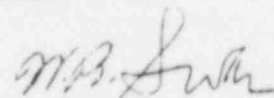
Bechtel Design personnel described the system whereby upon receipt of a FCN it takes precedence over all other work by the concerned design discipline specialists, evaluation is made and GPC notified of the decision. They stated that Bechtel has 27 representatives at the Vogtle site who can review, each in his discipline, FCN's and FCRs and discuss them with GPC site personnel. Approval of FCNs and FCRs is reserved to Bechtel Design at Downey, California.

This inspector asked about the disposition of the work under the 13 rejected FCN's. For 1 the work was cancelled, 2 were converted to FCR's and nonconforming condition reports (NCRs) were written for 10. By telephone on September 7, 1982 Mr. Constello transmitted the above Bechtel responses and stated that he would follow up through Bechtel to determine the details of the handling by Georgia Power of the other 10 NCR's.

Conclusions

From auditing the inspection of Bechtel on the Vogtle project FCN use the writer has concluded that:

1. The FCN system is working
2. The system is not being abused
3. The number of FCN's versus FCR's (2.4%) is reasonable.
4. Controls by GPC and Bechtel are adequate.
5. The record loop needs to be closed on disposition of rejected FCN's.
6. Bechtel has an adequate engineering force at the Vogtle site for consultation on design change proposals.
7. There is a general concern that the FCN system (found viable for GPC-Bechtel for Vogtle) might be adopted and misused or abused for another site not able to impose the same strict controls. This concern should not negate GPC's right to maintain a working FCN system.


W. B. Swan

Memo to File

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cc's:

W. P. Haass, Chief, Quality Assurance
Branch

R. C. Lewis, RII

H. C. Dance, RII

V. L. Brownlee, RII

J. C. Bryant, RII

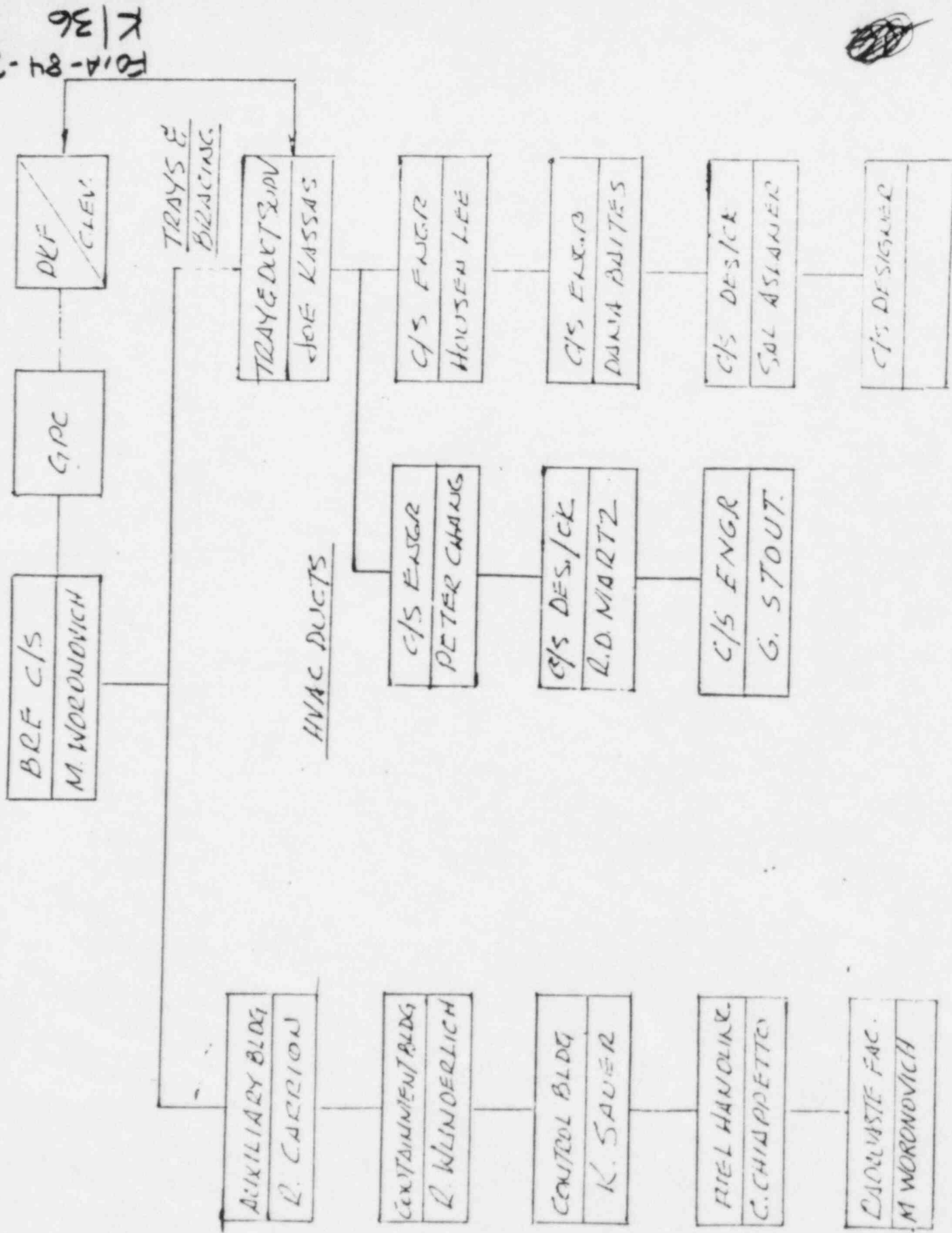
E. Gallagher, IE

C. Hale, RIV

J. Costello, RIV

T. Dorian, ELD

CIVIL-STRUCTURAL BRE ORGANIZATION CHART

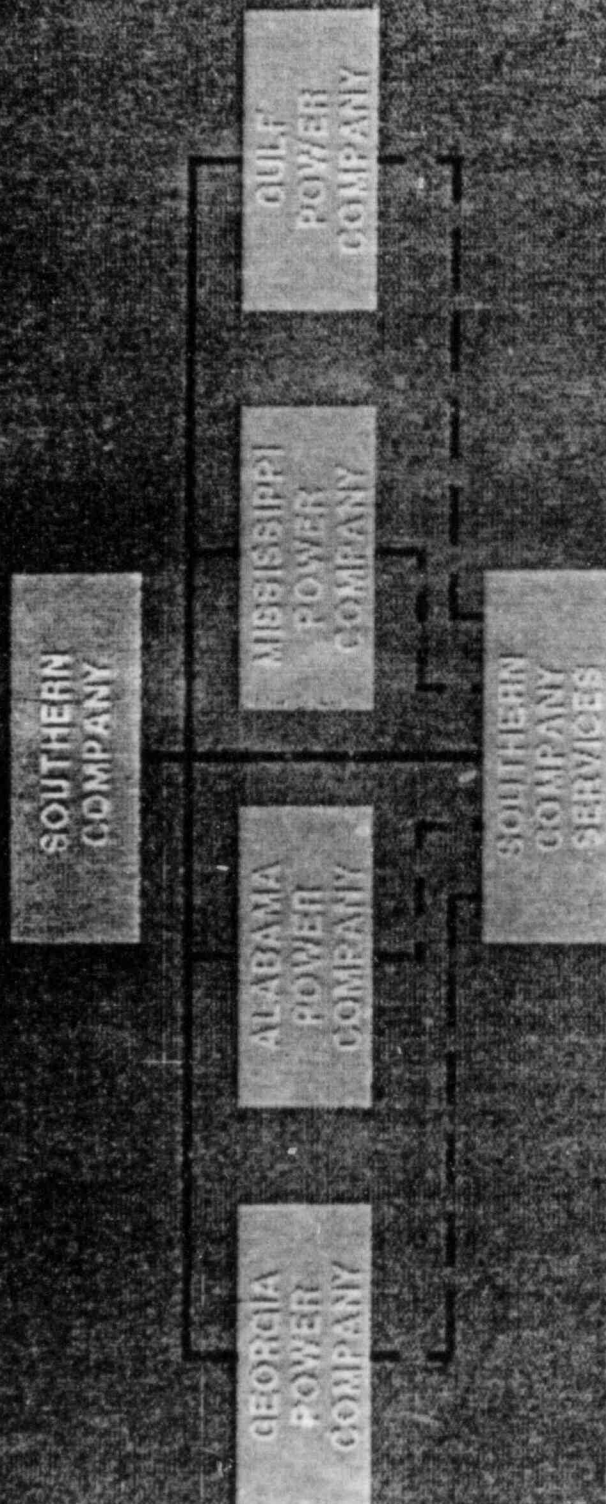


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THE SOUTHERN COMPANY GENERAL ORGANIZATION



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THE SOUTHERN ELECTRIC SYSTEM

Legend

- Hydroelectric Generating Plant
- Fossil-Fueled Steam-Electric Generating Plant
- Nuclear-Fueled Steam-Electric Generating Plant
- ▲ Construction under way on one or more units planned for the facility
- ▲ Interconnection



SOUTHERN COMPANY SERVICES

Summary of Capabilities

- Total Personnel: 3,100
- Engineering Support
 - Design Engineering Personnel: 850
 - Designed 117 Fossil & Hydro Units
 - Operating Plant Support - Reliability, Planning, etc.
 - Geotechnical & Environmental Support
- Licensing Support
- Quality Assurance
- Research & Development
- Cost/Schedule Support
- System Planning/Marketing Support
- Fuel Services
- Financial Management
- Regulatory/Governmental Affairs Support

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Current Joint Ownership of Plant Vogtle

GEORGIA POWER	OGLETHROPE POWER CORPORATION (OPC)	MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA (MEAG)	CITY OF DALTON	TOTAL
50.7%	30%	17.7%	1.6%	100%
1,176 MW	696 MW	411 MW	37 MW	2,320 MW

Off-System Sales

- Economy
- Long Term (Sch. E)
- Unit Power Sales

Vogtle Electric Generating Plant Significant Dates

- Start Engineering Dec. 1971
- Construction Permit June 1974
- Suspension Sept. 1974
- Reactivation July 1976
- First Concrete August 1978

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Vogtle Project SCHEDULED MILESTONES

Event

Date

Unit 1

Unit 2

Set Nuclear Steam Supply
System (NSSS)

(Lift and Place Components and
Containment Dome)

Set Turbine/Generators

Energize Switchgear

Cold Hydro Testing

Load Fuel

Commercial Operation

Feb. 83 Aug. '84

Apr. '83 Oct. '84

Mar. '85 Sept. '86

Mar. '86 Sept. '87

Sept. '86 Mar. '88

Mar. '87 Sept. '88

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Vogtle Project Construction Shifts

Shift	GPC	Contractor	Total
A Four 10-Hour Days Monday thru Thursday	861	3,544	4,405
B Four 10-Hour Nights Monday thru Thursday	137	1,042	1,179
C Three 12-Hour Days Friday thru Sunday	162	1,683	1,845
D Three 12-Hour Nights Friday thru Sunday	9	262	271
Totals	1,169	6,531	7,700

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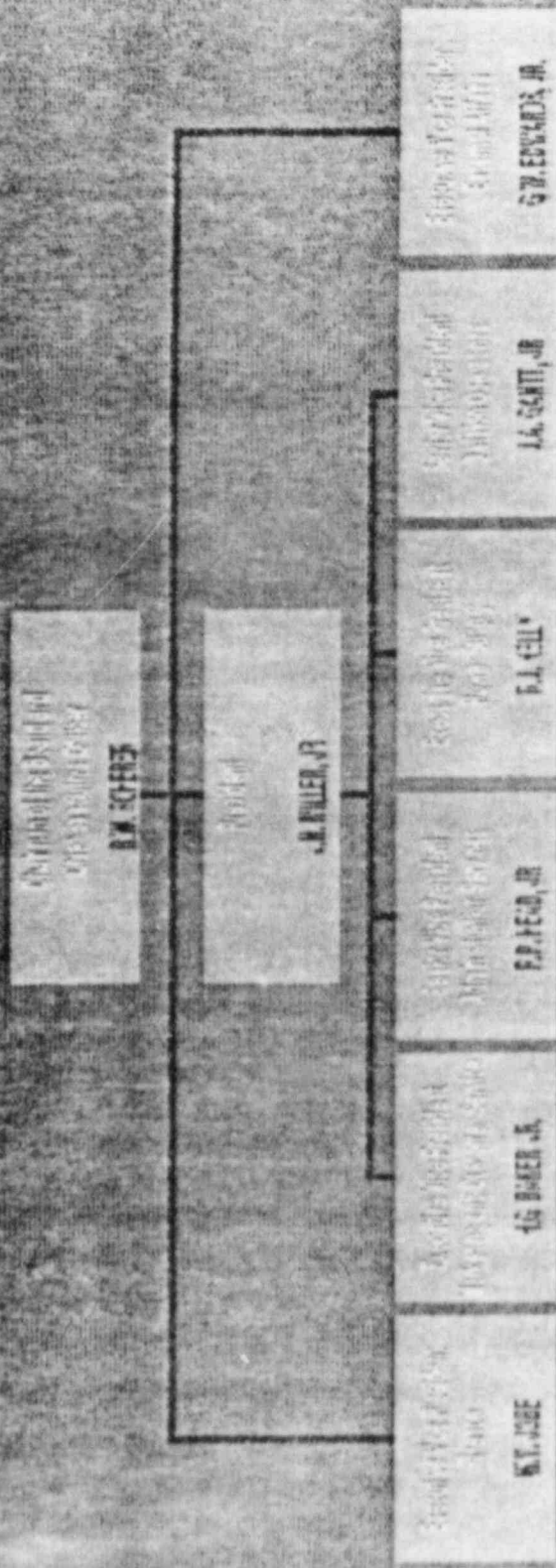
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Vogtle Electric Generating Plant Physical Completion Status

Unit 1 & Common	42.1%
Unit 2	13.8%
Total	35.9%

GEORGIA POWER COMPANY GENERAL ORGANIZATION



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GEORGIA POWER COMPANY POWER SUPPLY ORGANIZATION

President

J.H. MILLER JR.

Executive Vice President
Power Supply

R.J. KELLY

Vice President
Power Generation

G.F. HEAD

Vice President
Finance

J.W. BOWEN

Vice President
Power Distribution

Executive Vice President
Power Generation
and Projects

R.E. CONWAY

Vice President
Power Distribution

D.E. DUTTON

Vice President
General Administration

D.G. FOSTER

General Manager
Power Generation
and Projects

P.D. RICE

Vice President
Power Distribution

R.A. PAINSON

VOGTLE ELECTRIC GENERATING PLANT PROJECT ORGANIZATION

LEGEND

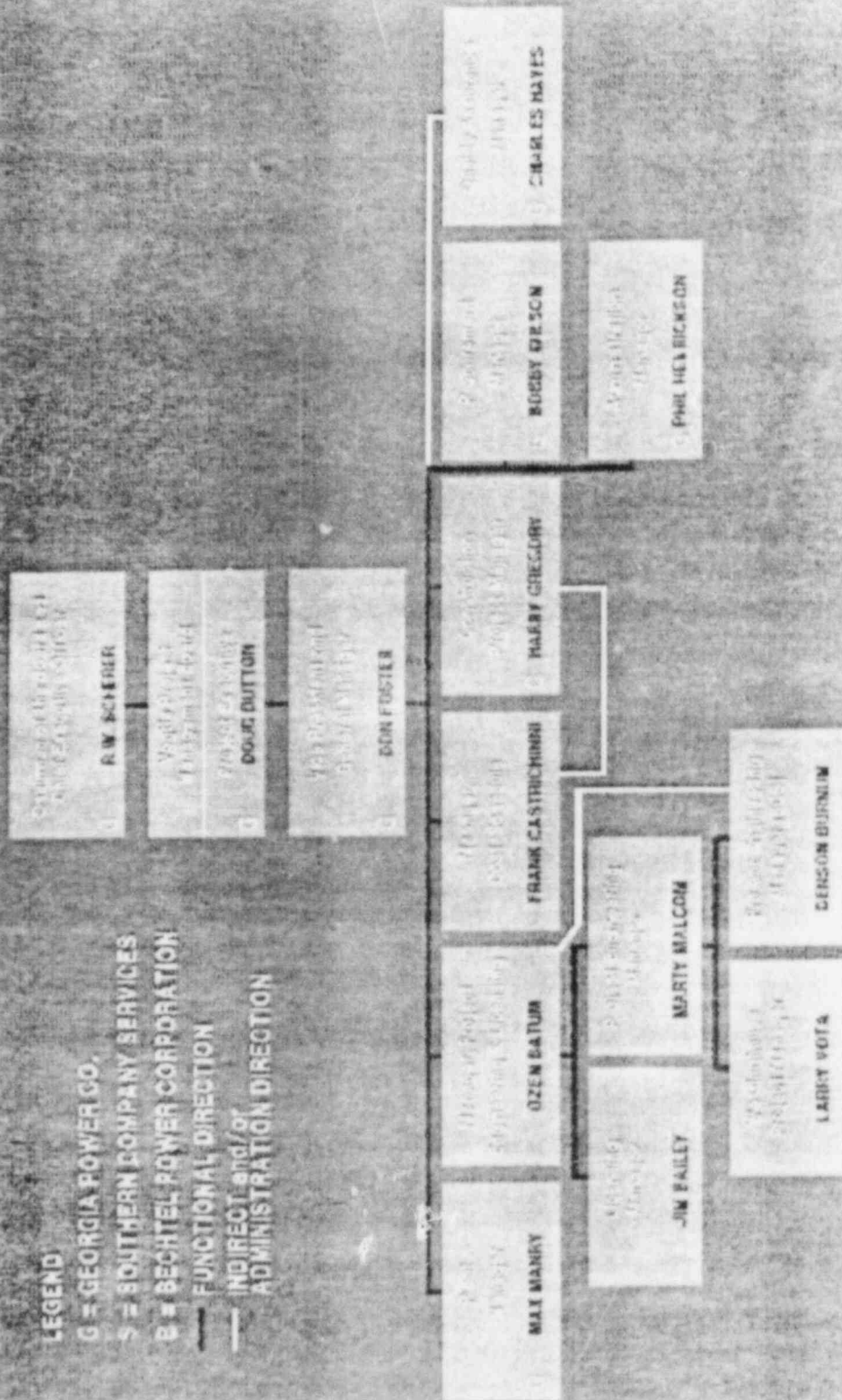
G = GEORGIA POWER CO.

SOUTHERN COMPANY SERVICES

B - BECHTEL POWER CORPORATION

FUNCTIONAL DIRECTION

— INDIRECT and/or
ADMINISTRATION DIRECTION



VOGTHE ELECTRIC GENERATING PLANT PROJECT MANAGEMENT BOARD

DR. GREGORY - Chairman of the Board and Chief Executive Officer,
Georgia Power Company

DR. MILLER, JR. - President, Georgia Power Company
Executive Vice President, Georgia Power Company

DR. KELLY - Executive Vice President-Power Supply, Georgia Power
Company

DR. COCHRAN - Sr. Vice President (Engineering), Construction and Project
Management, Georgia Power Company

DR. HEND - Sr. Vice President-Power Generation, Georgia Power
Company

DR. HEND - President, Southern Company Services

DR. McGRATH - Executive Vice President, Southern Company Services
Vice President (Project Management), Georgia Power
Company/Construction Company 33024, 33


DR. STACY - General Manager, Oglethorpe Power Corporation

DR. HARRIS - General Manager, Municipal Electric Authority of Georgia
Vice President - Los Angeles Power Division, Electric Power
Corporation

DR. HARRIS - Vice President - Western Research Division, Washington
Electric Corporation

DR. HARRIS, JR. - Sr. Vice President - Administration Services/Logistics
Support, Georgia Power Company

Benefits of the Project Management Board

- Promotes active involvement by Senior Management
 - Ensures timely resolution of problems
 - Integrates Senior Management experience and expertise into the Management Process
 - Provides clear direction to project groups
- 

Vogtle Project Management Controls

- Monthly Project Management Board Meetings
- Quarterly Engineering Reviews with Senior Management
- Regular Site visits by Senior VP-ECPM
- Regular "Project Review Meetings" with VP and Project General Manager and Top Project Management
- Control Documents
 - Project Policy Manual
 - PSAR/FSAR
 - QA Manual
 - Project Reference Manual
 - Field Construction Procedures
 - Project Procurement Procedures
 - Start-Up Manual
- Notification of Potential Problem Areas
- Project Evaluations

LEGEND

G = GEORGIA POWER COMPANY

S = SOUTHERN COMPANY SERVICES

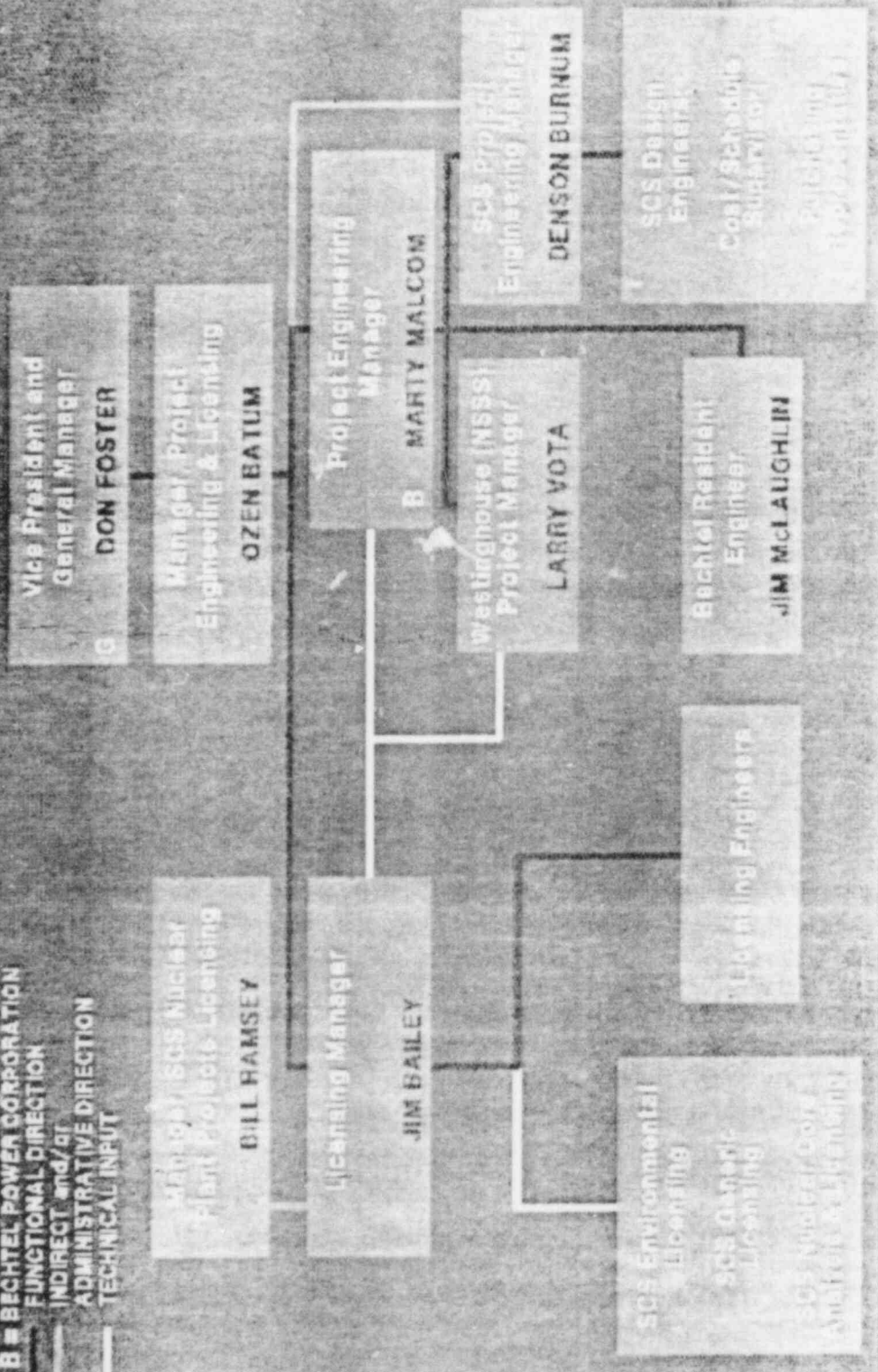
B = BECHTEL POWER CORPORATION

— FUNCTIONAL DIRECTION

— INDIRECT and/or

— ADMINISTRATIVE DIRECTION

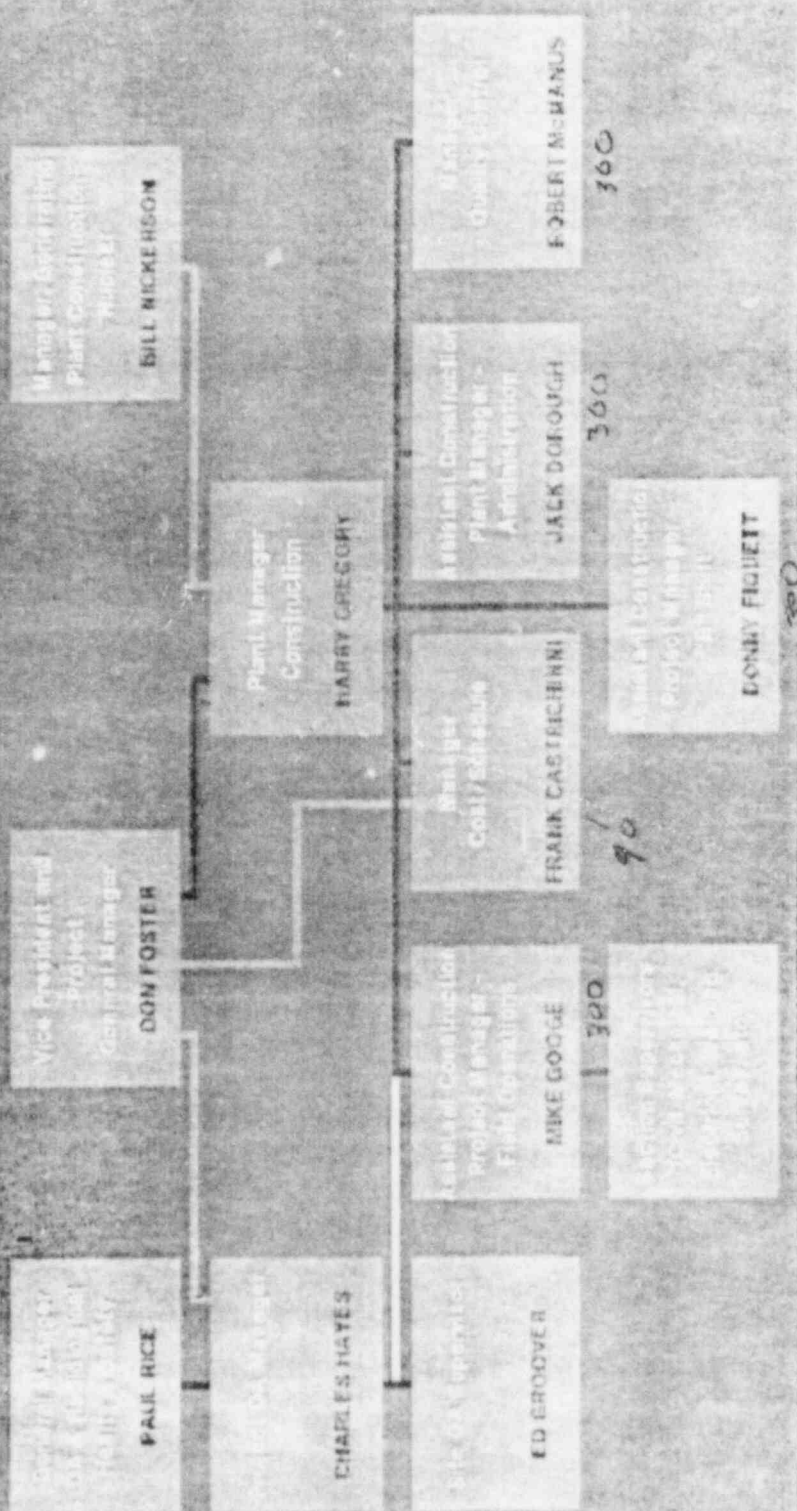
— TECHNICAL INPUT

VOGTLE/ELECTRIC GENERATING PLANT
ENGINEERING and LICENSING ORGANIZATION

VOGTLE ELECTRIC GENERATING PLANT CONSTRUCTION PROJECT ORGANIZATION

LEGEND

— FUNCTIONAL DIRECTION
— INDIRECT and/or
— ADMINISTRATIVE DIRECTION
— COORDINATION/INPUT



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Vogtle Electric Generating Plant Summary of Major Contractors

CONTRACTORS	RESPONSIBILITY	SITE "MANAGER"	QA CONTRACT
Cleveland Electrical Contractors	Electric	Jim Blount	GPC
Pullman Power Products	Mechanical (Piping)	Troy Griffin	Pete Runyan
Pullman Construction Industries/ Kenth Forison Co., Inc.	HVAC	Ray Kloss	Fred Thomas
Walsh Construction Company	Civil	Fred McCarty	GPC
Ingalls Iron Works	Steel	Nick Griffin (Non "Q")	GPC
Research Gottrell, Inc.	Natural Draft Cooling Towers	Bob Jones (Non "Q")	George Corvin
NISCO, Inc.	NSSS Installation	Harold Nixon	Jim Pruitt
Fundamental Materials, Inc.	Concrete	Joe Kelly	GPC
Chicago Bridge & Iron Co.	Steel	Fred Small	Leroy Fields
Williams Contracting	Coatings	Art Bell	Rick Williams

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Handwritten notes:
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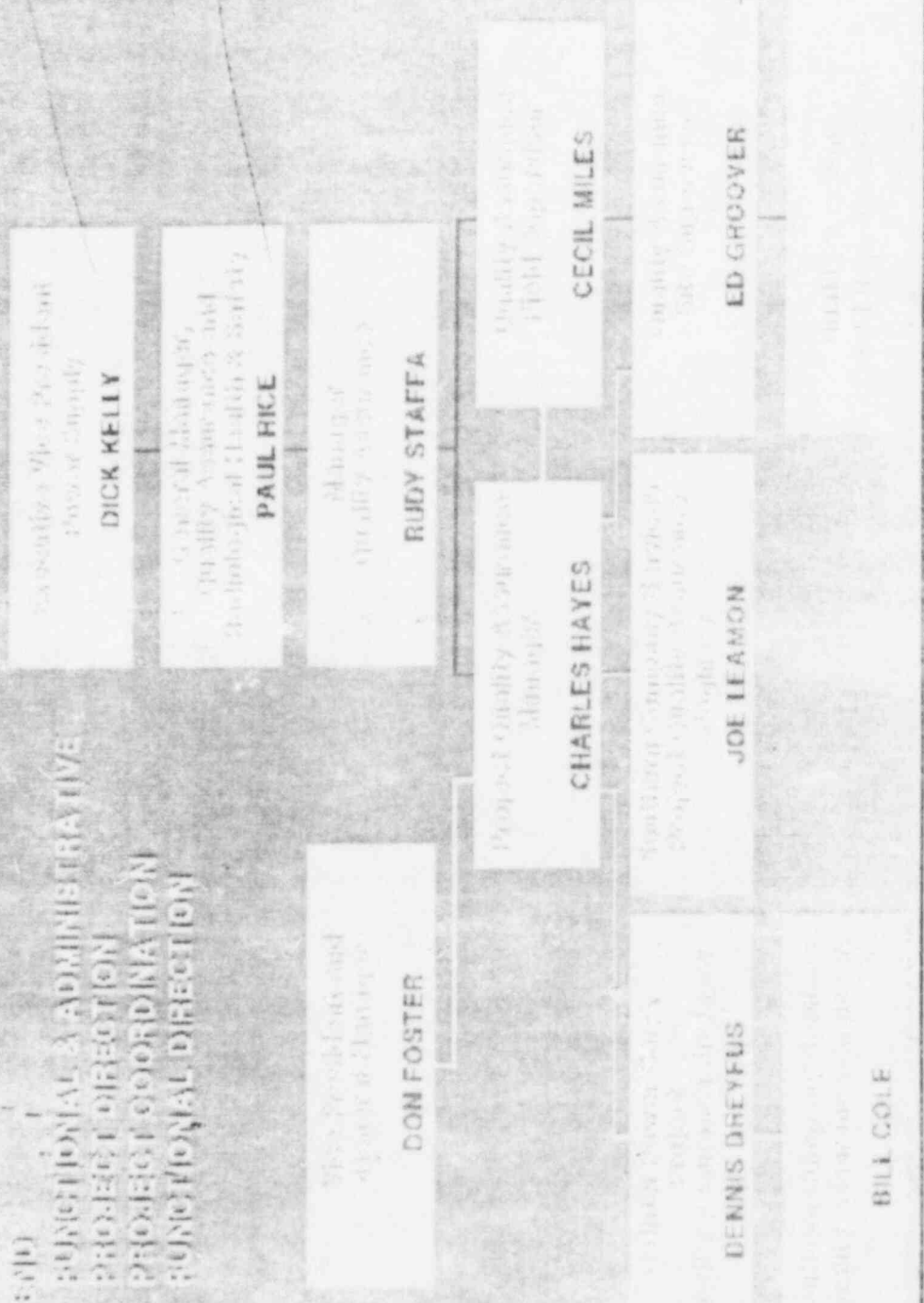
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VOOTLE ELECTRIC GENERATING PLANT PROJECT QUALITY ASSURANCE ORGANIZATION

LEGEND

- FUNCTIONAL & ADMINISTRATIVE
- PROJECT DIRECTION
- PROJECT COORDINATION
- FUNCTIONAL DIRECTION



in
at the
committee

20 yrs
in and
business
last 17 yrs
Richard

Miller
Groom
Hauger
Staffa
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uk
1/1/82

14 parts

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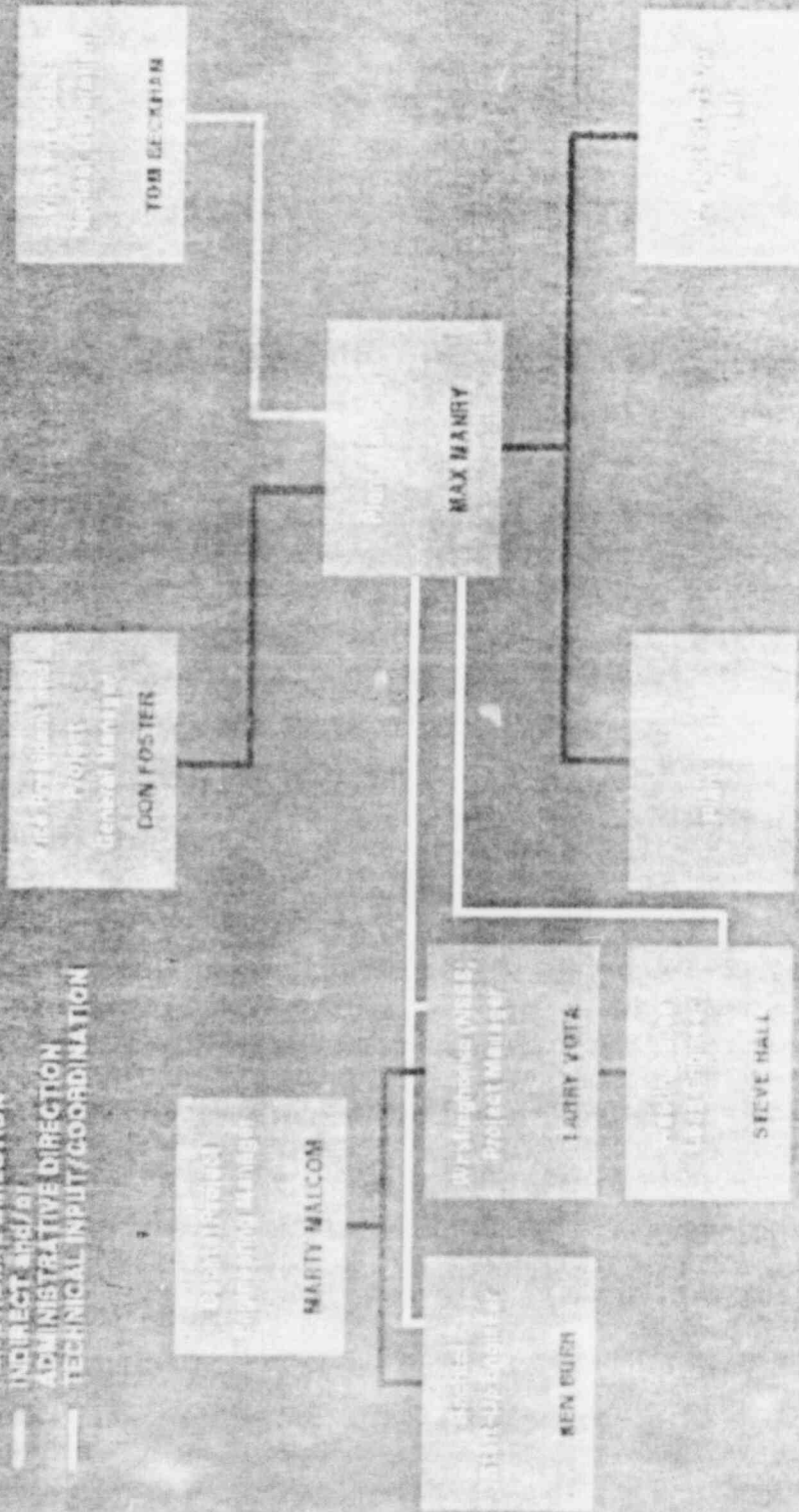
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VOGTLE ELECTRIC GENERATING PLANT POWER GENERATION ORGANIZATION

LEGEND

- FUNCTIONAL DIRECTION
INDIRECT and/or
- ADMINISTRATIVE DIRECTION
- TECHNICAL INPUT/COORDINATION



Asst. Plant Manager
(Start up help)
H. V. O. O. O. O.