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OFFICE OF SECRETARY
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
TEXAS UTILITIES GENERATING)	Docket Nos. 50-445 and
COMPANY, <u>et al.</u>)	50-446
)	
(Comanche Peak Steam Electric)	(Application for
Station, Units 1 and 2))	Operating Licenses)

AFFIDAVIT OF DAVID N. CHAPMAN
REGARDING THE QA/QC ORGANIZATION
AT COMANCHE PEAK

I, David N. Chapman, being first duly sworn, do depose and state: I am employed by Texas Utilities Generating Company in the position of Manager, Quality Assurance. As such, I am familiar with the Quality Assurance/Quality Control Organization (QA/QC) for the construction of the Comanche Peak Steam Electric Station. The purpose of this affidavit is to demonstrate that an effective QA/QC Organization has been maintained at Comanche Peak during the construction phase. Further, this affidavit will demonstrate that Texas Utilities Generating Company has taken all measures necessary during construction to assure that the QA/QC Organization remains effective and meets the applicable NRC Regulations. A statement of my educational and professional qualifications was received into evidence at the hearings in December 1981 (Tr. at 509) and is attached hereto as Attachment 1 for the convenience of the Board.

I. HISTORY OF QA/QC AT COMANCHE PEAK

From the beginning of the Comanche Peak project, Texas Utilities Generating Company ("TUGCO"), as the lead Applicant, has maintained ultimate responsibility for the construction QA program at Comanche Peak. In this position, TUGCO carefully monitors and/or conducts all aspects of the QA program to assure that construction of the facility is performed in conjunction with an effective QA/QC program.

Initially, Brown & Root, Inc., the Construction Manager/Constructor, managed the QA/QC program applicable to work performed by them and their contractors for the early stages of the project. Brown & Root met its responsibilities in this role. As the project progressed and became more complex, TUGCO determined that a more aggressive program was essential to meet TUGCO's QA/QC goals for the project. One area where more aggressive action was needed was Brown & Root's implementation of its QA program with respect to its suppliers. In July 1977, TUGCO initiated action requiring TUGCO involvement in all Brown & Root vendor release inspections. Subsequently, upon assessing the success of such direct involvement by TUGCO, it was determined that TUGCO would provide overall technical management of QA/QC functions for CPSES except for those activities under the jurisdiction of the ASME Boiler and Pressure Vessel Code, Section III, Division 1 (ASME Code). Although Brown & Root retained functional management of ASME Code work under their

QA program, TUGCO continued to have the ultimate responsibility for all such work.

The measures taken to restructure the QA organization at Comanche Peak brought about significant improvement in the quality function for the project. A positive relationship has developed among QA, QC, and construction personnel resulting in a teamwork approach that focuses attention on identifying and solving problems. In sum, the measures have resulted in a QA/QC Organization tailored specifically for and responsive to the needs of the Comanche Peak project.

In addition to TUGCO and Brown & Root, Gibbs & Hill, as Architect-Engineer, and Westinghouse Electric Corporation ("Westinghouse"), as nuclear steam supply system ("NSSS") supplier, provide QA programs for activities within the scope of their responsibilities. Their basic roles have remained constant throughout the life of the plant and are described more fully below.

II. CURRENT QA/QC ORGANIZATION AT COMANCHE PEAK

A. Principal Organizations

As discussed above, TUGCO, as the lead Applicant, has ultimate responsibility for the engineering, design, procurement, construction, and quality assurance activities for Comanche Peak. TUSI 1/ is designated by TUGCO to have the

1/ Texas Utilities Services, Inc. ("TUSI") is the engineering service organization for Texas Utilities Company.

authority to conduct the required engineering, design, procurement, and construction technical support activities for CPSES, including implementation of the QA program at the site.

Gibbs & Hill provides TUSI with certain engineering, design, and procurement services as requested. Gibbs & Hill provides the QA program for QA activities within its scope of work. Westinghouse provides the QA program governing work done on the NSSS structures, systems and components. As discussed above, Brown & Root manages the QA program for ASME Code work and may perform other QA functions as requested by the TUGCO Quality Assurance Manager. An organization chart for the project QA organization is presented as Attachment 2.

B. Responsibilities of QA Organization

1. TUGCO/TUSI

The TUGCO QA organization was established to provide effective control of safety-related activities at Comanche Peak. This control extends to all organizations performing services affecting nuclear safety during the engineering, design, procurement, and construction phases. The TUGCO/TUSI QA organizations participating in the design and construction phase of nuclear power plants are shown in Attachment 3. This chart illustrates the organizational structure and lines

of reporting for each organization. These are described in the corresponding sections.

a. TUGCO Quality Assurance Division

The TUGCO QA Division is responsible for developing and assuring the implementation of the CPSES QA program for design and construction. The QA Division is headed by the Manager, Quality Assurance. He reports directly to the Vice President, Nuclear. This independent reporting arrangement assures that safety considerations are not influenced by cost and scheduling. He reviews the performance of the QA program on a regular basis with the Vice President, Nuclear, reporting on quality status and the overall effectiveness of the QA program.

In addition, the Manager, Quality Assurance has the duty and authority to identify quality-related problems; to initiate, recommend or provide solutions; and to verify the implementation and effectiveness of solutions. He has authority to "stop work" in the engineering, design, procurement, and construction phases. He also supervises the Site QA Supervisor at Comanche Peak who is responsible for assuring the implementation of the QA program on a daily basis at the site. The QA Manager has the following qualifications:

- (1) Minimum of 10 years experience in design, construction, or operations of power plants.

- (2) College degree in an engineering discipline (BS minimum).
- (3) Demonstrated ability to manage people and projects.
- (4) Knowledge of quality assurance requirements for nuclear plants including a minimum of one year experience in the implementation of a nuclear quality assurance program.
- (5) Registered Professional Engineer.

b. TUSI Project Management

For the Comanche Peak project, the Vice President and Project General Manager (TUSI) coordinates and controls engineering, procurement, and construction activities. He is responsible for cost and schedule and for implementing design and construction quality requirements. The Vice President and Project General Manager reports to the Executive Vice President of TUSI.

Reporting to the Vice President and Project General Manager is the Engineering and Construction Manager who is responsible for project design, engineering and procurement. These activities are normally delegated to Gibbs & Hill, Inc., Westinghouse and other contractors/vendors. TUSI, however, retains overall responsibility for these activities and performs design functions as necessary.

2. Gibbs & Hill

TUGCO has retained Gibbs & Hill to provide experienced personnel as needed to assist TUGCO QA with the overall QA program. The Gibbs & Hill Project Manager

directs the engineering, design, and procurement functions and establishes and maintains project relations with TUSI. The Project Manager is responsible for assuring that established procedures are implemented. The Project Manager has the authority to "stop work" on engineering and design activities performed by Gibbs & Hill.

The Gibbs & Hill QA Department, headed by the QA Manager, assures the implementation of the Gibbs & Hill QA program through engineering and design audits. Further, the QA Manager is responsible for development of detailed QA procedures. He can require the Project Manager to exercise his "stop work" authority. Further, the QA Manager audits the activities of independent Design Review engineers who determine compliance with safety-related design concepts. The QA Department is completely separate and functions independently from those persons or groups having specific project design, scheduling, or budgetary responsibilities. Independence is maintained further by having the QA Manager report to the Vice President. Attachment 4 is a chart of the Gibbs & Hill QA Organization.

3. Brown & Root

Brown & Root provides the QA program for ASME Code construction and other QA functions as may be requested by the TUGCO QA Manager. Brown & Root's QA personnel have the freedom to identify quality problems, to recommend solutions, and to verify that solutions have been implemented. This organization has sufficient independence and authority to carry out the program in an orderly, effective manner. It employs a documentation system which provides necessary record retention and access capability. The Brown & Root QA organization for its Houston office and for site activities is shown in Attachment 5.


The Brown & Root Project QA Manager is responsible for implementation of the B&R QA Manual requirements in the fabrication and installation of ASME Code, Section III, Division 1 systems and components. Direction of all site QA and QC activities other than ASME Code work is provided by the TUGCO Site QA Supervisor. For technical and administrative supervision of ASME Code work and for administrative supervision in all other areas, the Brown & Root Project QA Manager reports to the Brown & Root QA Manager in Houston.

C. Organizational Interfaces

For Comanche Peak, TUGCO/TUSI has established the interfaces of the participating organizations in the QA program which are summarized as follows:

1. Brown & Root Project QA Manager reports to the Brown & Root QA Manager for technical and administrative supervision of ASME Code work, and for administrative supervision in all other areas. Direction of the Brown & Root Project QA Manager in areas other than ASME Code work is provided by the TUGCO Site QA Supervisor.
2. Construction site inspections are performed under the direction of TUGCO and Brown & Root (ASME Code work only) or by contractor or subcontractor.
3. Periodic audits and surveillances of site QC and construction activities are performed by TUGCO to verify conformance.
4. Vendors are required to provide internal, independent QA programs unless working under the TUGCO QA program.
5. TUGCO QA and/or its consultants or agents conduct vendor audits, surveillance and inspections to verify performance.
6. Westinghouse provides the QA program for NSSS components.
7. Gibbs & Hill provides the QA program for design and engineering.
8. TUGCO QA periodically audits Westinghouse, Gibbs & Hill, Brown & Root and internal TUGCO/TUSI safety-related activities.
9. Brown & Root periodically audits their ASME QA program onsite, as required.

In summary, the QA/QC organization established for the construction of the Comanche Peak facility has been carefully structured and functions to provide assurance that applicable codes, standards, and regulatory requirements are met and to assure the safe operation of the facility.


David N. Chapman
David N. Chapman

Subscribed to and sworn before me this 7th day of May 1982.

Glenda Benson
Notary Public
GLEND BENSON, Notary Public
in and for Dallas County, Texas
My Commission Expires 2-17-85

DAVID N. CHAPMANSTATEMENT OF EDUCATIONAL
AND PROFESSIONAL QUALIFICATIONS

POSITION: Manager, Quality Assurance

FORMAL EDUCATION: 1959-1964, B.S.M.E. Mechanical Engineering,
Texas A&M University

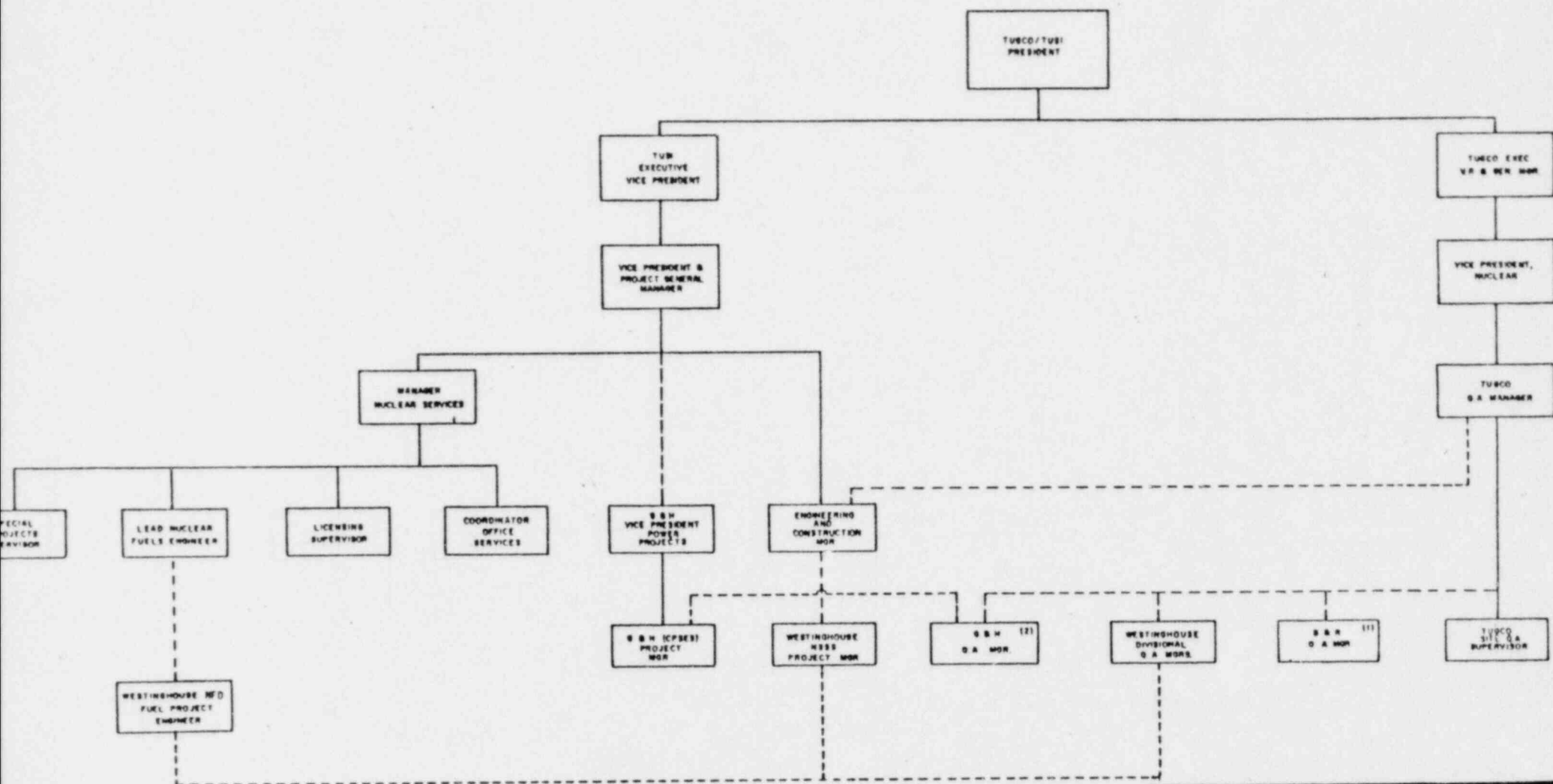
EXPERIENCE:

1976 - Present Texas Utilities Generating Company, Dallas, Texas, Manager, Quality Assurance. Responsible for assuring effective implementation of the CPSES Quality Assurance Program in nuclear safety-related activities including design, procurement, construction and operations.

1972 - 1976 Texas Utilities Service Incorporated, Dallas, Texas, Project Engineer. Duties included reviewing selected CPSES design documents, PSAR drafts and environmental report drafts. Additional duties included such special projects as site evaluation studies for future generating plants.

1967 - 1972 Texas Electric Service Company, Forth Worth, Texas, Senior Engineer, General Office Engineering Department. Activities included review of design and construction specifications, drawings, and purchase documents for four gas/oil fired generating units.

1966 - 1967 Texas Electric Service Company, Forth Worth, Texas, Associate Engineer, Handey Steam Electric Station. Involved primarily in training through "hands-on" operation, maintenance, and plant chemistry duties.



————— AUTHORITY
 - - - - - COORDINATION
 (1) IN HOUSTON
 (2) IN NEW YORK

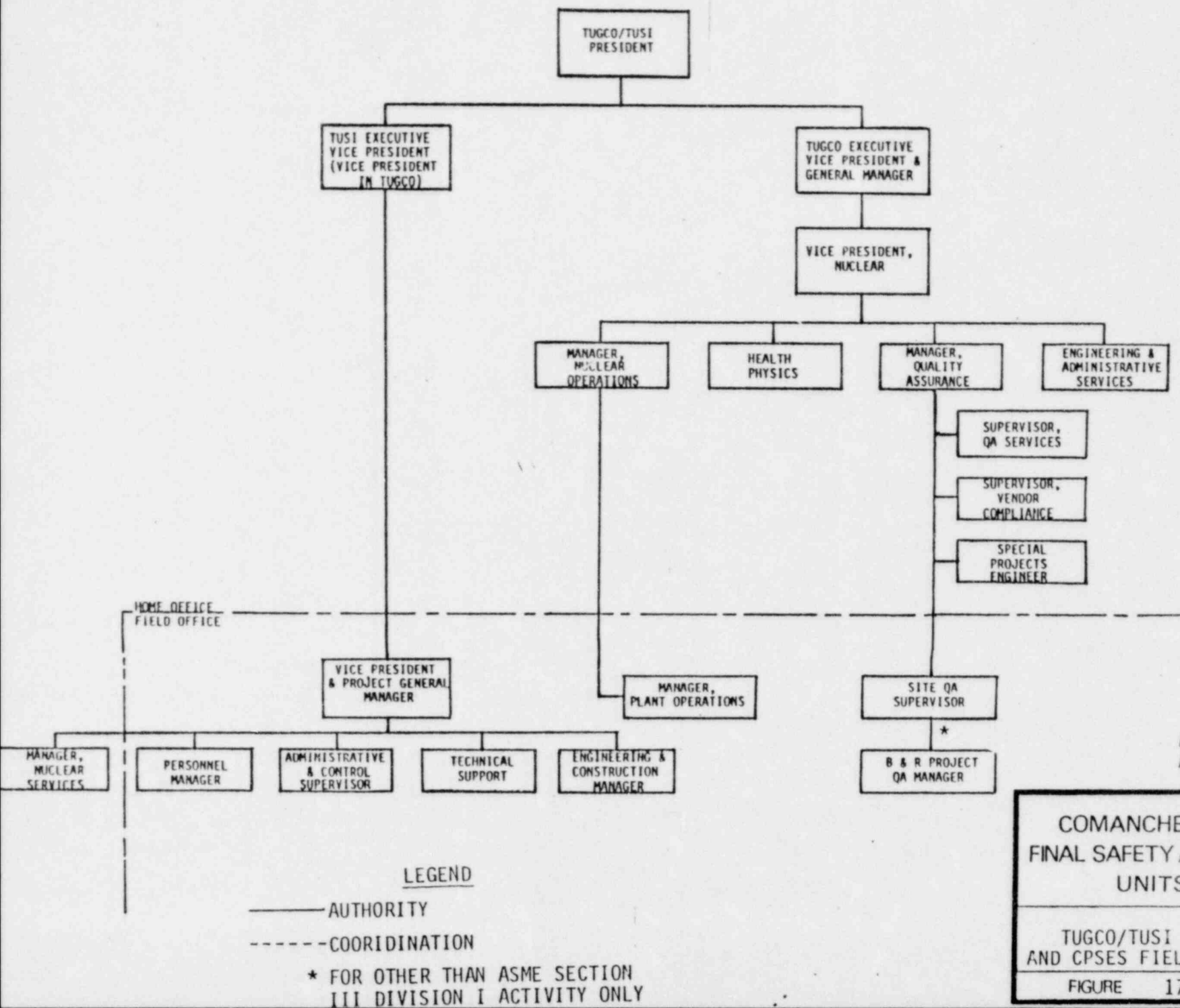
AMENDMENT 31
 APRIL 23, 1982

COMANCHE PEAK S.E.S.
 FINAL SAFETY ANALYSIS REPORT
 UNITS 1 and 2

PROJECT Q A ORGANIZATION

FIGURE 17.1-2

ATTACHMENT 2

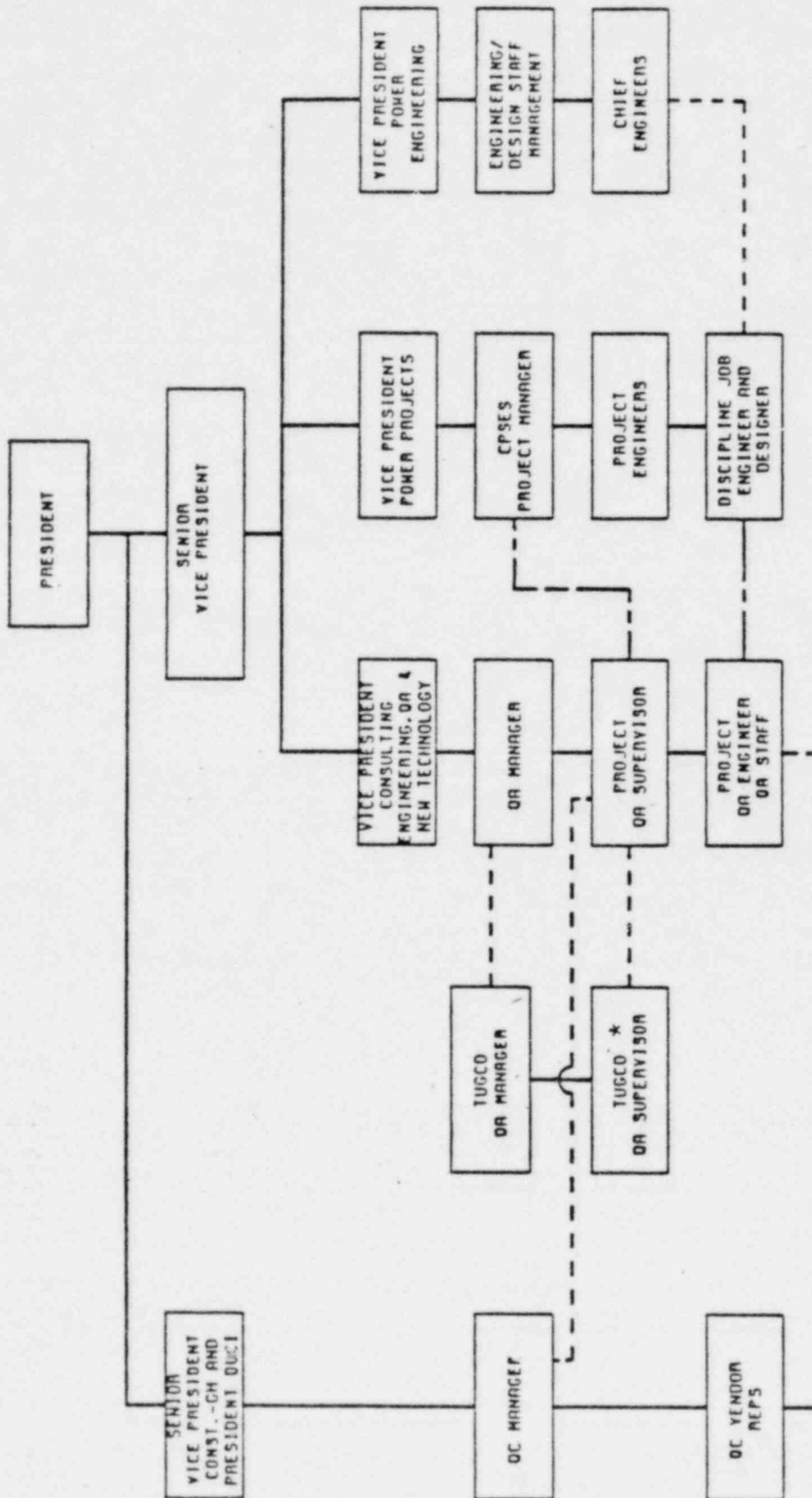


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UNITS 1 and 2

TUGCO/TUSI HOME OFFICE
AND CPSES FIELD ORGANIZATION

FIGURE 17.1-6



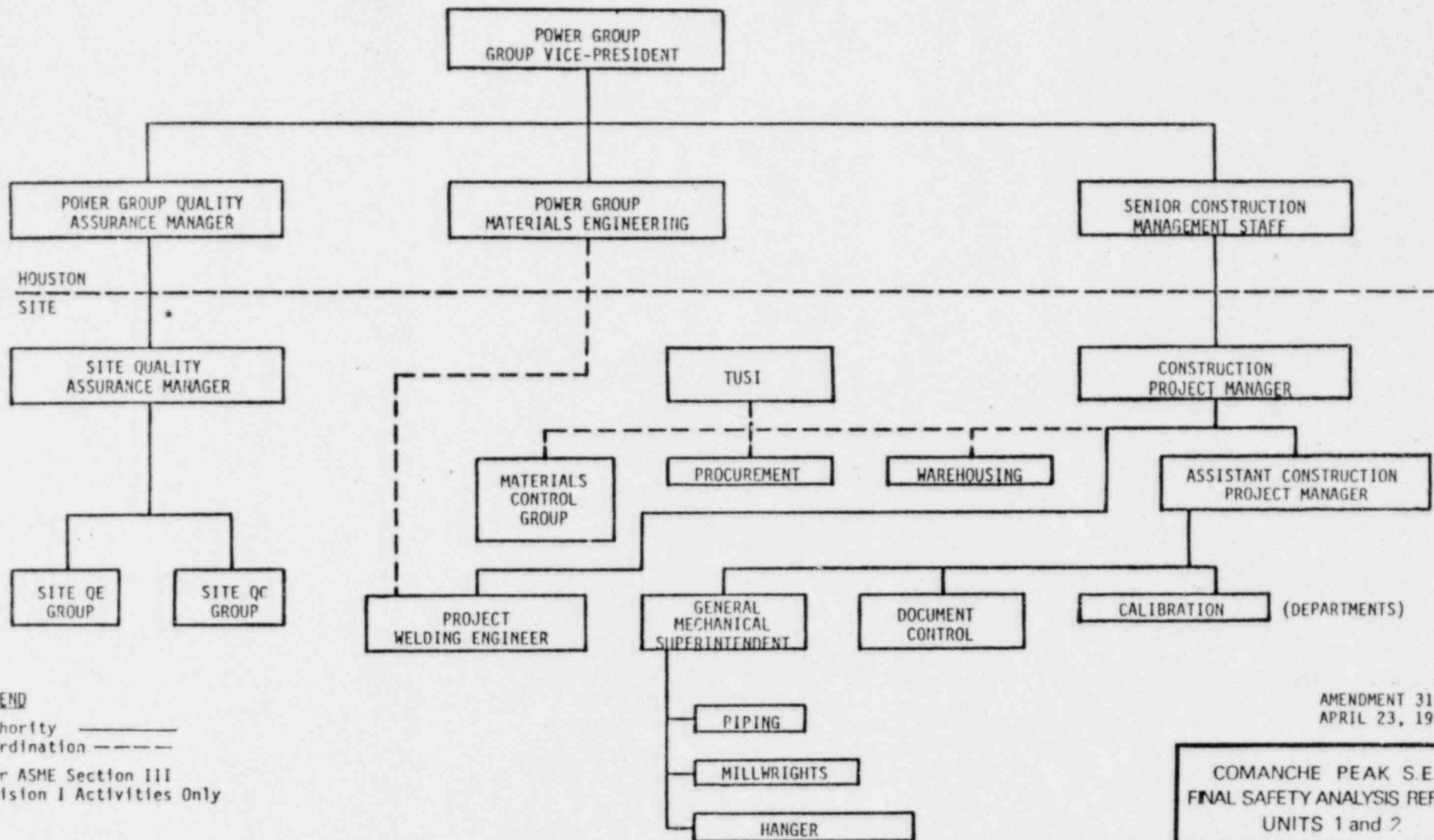
APRIL 23, 1982

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ANALYSIS REPORT
UNITS 1 & 2

GIBBS & HILL, INC.
OR ORGANIZATION

FIGURE 17.1-3

_____ AUTHORITY
 - - - - - COORDINATING
 - - - - - OR AUDITING
 * LOCATED AT CPSES



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UNITS 1 and 2
B & R QUALITY ASSURANCE
ORGANIZATION CHART
FIGURE 17.1-5