UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

TESTIMONY OF ANTONIO VEGA
REGARDING COMANCHE PEAK QA PROGRAM
SATISFACTION OF 10 C.F.R. PART 50,
APPENDIX B

Q1. Please state your name, residence and educational and professional qualifications.

A1. My name is Antonio Vega. I reside in Garland, Texas. A statement of my educational and professional qualifications was received into evidence at Transcript p. 511.

Q2. What is your current position?

A2. I am the Supervisor of Quality Assurance Services for Texas Utilities Generating Company ("TUGCO"). As such, I am familiar with the Quality Assurance (QA) program for Comanche Peak Steam Electric Station, Units 1 and 2 and the manner in which it addresses the criteria of 10 C.F.R. Part 50, Appendix B.

Q3. For how long have you been involved in Quality Assurance ("QA") activities for Comanche Peak?

A3. I have been involved in QA activities for Comanche Peak since 1973 (even before the construction permits for Comanche Peak were issued). These activities included

developing the construction QA program, procedures and instructions.

Q4. What is the purpose of your testimony?

A4. The purpose of my testimony is to demonstrate that the Quality Assurance program at Comanche Peak addresses and satisfies each of the criteria set forth in 10 C.F.R. Part 50, Appendix B.

Q5. What is the purpose of the QA program for Comanche Peak?

A5. The QA program established for Comanche Peak provides assurance that construction will comply with regulatory requirements and applicable codes and standards, and that when construction is complete there will be a very high level of confidence that the units are a safe and dependable source of electricity. To accomplish this goal, the QA program has been structured to address each of the 18 criteria of 10 C.F.R. Part 50, Appendix B, as well as the commitments contained in the construction permits and the Preliminary (PSAR) and Final Safety Analysis Reports (FSAR). Measures taken to satisfy the requirements of each of these criteria are described in this testimony.

Q6. What measures have been taken with regard to Criterion I of 10 C.F.R. Part 50, Appendix B, concerning the QA Organization for Comanche Peak?

A6. As lead Applicant, TUGCO retains ultimate responsibility for the proper construction of the facility, including the

proper design, procurement, and installation of components. The overall QA program is a coordinated program involving principally Texas Utilities Services, Inc. ("TUSI"), the engineering service organization; Gibbs & Hill, the Architect-Engineer; Brown & Root, the Construction Manager/ Constructor; and Westinghouse Electric Corporation, the nuclear steam supply system ("NSSS") supplier.

Westinghouse provides the QA program for the NSSS structures, systems and components; Brown & Root manages the QA program for ASME Code Section III, Div. 1 (ASME Code) work and may perform other QA functions as requested by the TUGCO QA Manager; Gibbs & Hill provides the QA for engineering work and other activities within its scope; and TUGCO performs independent verification that TUSI, the other organizations described above, and other contractors and vendors conduct their activities in compliance with applicable commitments and regulations. Further discussion of the QA Organization for Comanche Peak is set forth in the testimony of David N. Chapman and FSAR § 17.1.1 (Applicants' Exhibit 3).

Q7. What measures have been taken in response to 10 C.F.R. Part 50, Appendix B, Criterion II, concerning the QA Program at Comanche Peak?

A7. The CPSES Quality Assurance Plan and the FSAR are the primary documents that define the measures which provide effective

control of all project quality-related activities. The CPSES QA Plan addresses the provisions of 10 C.F.R. Part 50, Appendix B and applicable ANSI N45.2 series standards. Attached hereto as Attachment 1 is a copy of the CPSES QA Plan and as Attachment 2 is a matrix which shows 10 C.F.R. Part 50, Appendix B criteria and corresponding sections of the QA Plan. The Plan also incorporates the objectives of the ANSI standards and draft standards as presented in the NRC text "Guidance on Quality Assurance Requirements During Design and Procurement Phase of Nuclear Plants," dated June 7, 1973 and subsequent comments by the NRC Staff.

Q8. How is the QA program implemented?

A8. To implement the QA program, procedures are established which define the organizations within which the programs are implemented and delineate the authority and responsibility of the persons and organizations performing design, engineering, procurement, and construction activities. These procedures provide a system within each discipline to assure that activities conform to the license commitments, meet stipulations of applicable codes and standards, fulfill applicable regulatory agency requirements, and implement the provisions of the CPSES QA program.

Further, an audit program assures that prime contractors, sub-contractors, and vendors who provide equipment, material, and services under the control of the QA program implement adequate QA programs. In addition, auditing is conducted within TUGCO/TUSI to verify the implementation of the CPSES

QA program. This auditing program evaluates the effectiveness of the program; determines whether the program requirements, methods, and procedures are fulfilled; and verifies implementation of corrective action. Further discussion of the QA program is set forth in FSAR § 17.1.2 (Applicants' Exhibit 3).

Q9. What measures have been taken in response to 10 C.F.R. Part 50, Appendix B, Criterion III concerning Design Control?

A9. The CPSES QA program provides for multi-level design control. Gibbs & Hill, Westinghouse, and TUSI each have levels of control within their respective organizations. The implementation of their engineering design control measures is performed by internal audits and by TUGCO through review or audit.

The CPSES QA program requires that the prime contractors meet applicable NRC Regulatory Guide requirements for all safety-related activities. These requirements are contained in the Regulatory Guides set forth in FSAR Appendices 1A(N) and 1A(B) (Applicants' Exhibit 3). The CPSES QA program requires verification by design review, audit and surveillance that design bases as specified in the PSAR and FSAR, and applicable NRC Regulatory Guide requirements have been met. The surveillance and audit functions are conducted in accordance with written procedures. Audits by TUGCO assure that prime contractors' design control measures include a clear definition of interfaces, review and approval of

initial design, and revisions, and that independent qualified personnel perform design reviews and internal audits. Further discussion of these measures is set forth in FSAR § 17.1.3 (Applicants' Exhibit 3).

Q10. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion IV concerning Procurement Document Control?

A10. The CPSES QA program requires the control of procurement documentation to assure compliance with applicable regulatory requirements, design bases, and other appropriate requirements, such as industry codes and standards. Safety-related procurement documents and specifications require that vendors submit written quality assurance programs consistent with the importance and complexity of the material, equipment, or service procured. Such quality assurance programs are evaluated and appropriate actions taken to assure that they meet the pertinent provisions of 10 C.F.R. Part 50, Appendix B. In addition, planned, periodic, and documented evaluations and audits are performed as required by TUGCO to provide assurance that the procurement activities are carried out in accordance with approved procedures. Further discussion of these measures is set forth in FSAR § 17.1.4 (Applicants' Exhibit 3).

Q11. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion V, concerning Instructions, Procedures, and Drawings?

A11. Appropriate requirements have been established by the CPSES QA program to assure that quality-related activities are prescribed by documented instructions, procedures, or drawings; accomplished in accordance with such documents; and that approved acceptance criteria are met. The various participating organizations are responsible for implementing these requirements. The CPSES QA program requires that easures be established by prime contractors to assure that approved changes are promptly reflected in instructions, procedures, and drawings. Implementation is verified by TUGCO QA audit.

Further, the CPSES QA program requires establishment of appropriate inspection, test, or hold points from raw material through fabrication, processing, and assembly of parts, components, and subsystems. In its review activities, TUGCO QA assures that instructions, procedures, and drawings contain appropriate quantitative (such as dimensions, tolerances, and operating limits) or qualitative (such as workmanship samples) acceptance criteria for determining that important activities have been satisfactorily accomplished. Further discussion of these measures is set forth in FSAR § 17.1.5 (Applicants' Exhibit 3).

Q12. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion VI concerning Document Control?

A12. The CPSES QA program assures that documents, including changes, are reviewed for adequacy and approved for release by authorized personnel. It requires a system to control the issuance of design and procurement documentation (i.e., specifications, drawings, instructions, procedures, reports and changes thereto) for all safety-related equipment. It further requires that manufacturing and construction documents and records required for traceability, evidence of quality, and substantiation of the "as built" configuration be controlled to assure adequate safeguards and retrievability. Procedures identify those individuals or groups responsible for reviewing, approving and issuing documents and revisions thereto.

The effectiveness of document control methods is evaluated by TUGCO QA through review and audit. Further discussion of these measures is set forth in FSAR § 17.1.6 (Applicants' Exhibit 3).

Q13. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion VII concerning Control of Purchased Material, Equipment, and Services?

A13. Control of purchased material, equipment, and services is required by the CPSES QA program. Potential vendors

are evaluated in accordance with established procedures prior to placing them on the approved vendors list. The evaluation involves the review of historical data on vendor performance and capability, the review of the vendor's quality assurance program, and/or the results of shop surveys, inspections, and audits. Vendors eligible to supply material, equipment, and services for Q-listed (quality controlled) items are selected from the approved vendors list. This list is maintained by TUGCO QA in accordance with established procedures.

The CPSES QA program requires that suppliers provide a quality verification package. Documented, objective evidence (i.e., certifications, chemical and physical analyses, inspection reports, test results, personnel and process qualification results, code stampings, and non-destructive test reports) is required for evaluation by TUGCO/TUSI or the prime contractors to assure conformance to design requirements, drawings, specifications, codes, standards, regulatory requirements, and other applicable criteria. Further discussion of these measures is set forth in FSAR § 17.1.7 (Applicants' Exhibit 3).

Q14. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion VIII concerning Identification and Control of Materials, Parts and Components?

A14. The CPSES QA program requires continuous and accurate identification and control of materials, parts, and components to prevent inadvertent use. Contractors and vendors are required to utilize procedures which establish and document a system for identifying Q-material and equipment. Upon receipt of such material and equipment on site, QC inspections are perfcrmed and documented. Site procedures and instructions fo: the storage and handling of Q-material and equipment require nonconforming items to be tagged with the appropriate status tag (i.e., "hold" or "reject") and controlled to prevent inadvertent use. Provisions are made for temporary waiver of the "hold" status under certain conditions. Procedures establish required identification, traceability, and controls, including QA approval for issuance of such a temporary waiver. Afte. such approval, any further processing is on a risk removal basis while the temporary waiver is in effect. This system provides assurance that only acceptable items are used for safety-related functions.

The CPSES QA program requires that prime contractors and subcontractors establish specific measures to assure compliance with approved procedures for identification and control of materials, parts, and components. TUGCO QA verifies conformance to those procedures by (1) review and approval of prime contractors' quality assurance programs, (2) surveillance of selected manufacturing, fabrication, construction, and installation activities by quality assurance personnel, (3) auditing of prime contractors and subcontractors on a selected basis for satisfactory performance of committed quality actions, and (4) review of documentary evidence of audits performed by prime contractors. Further discussion of these measures is set forth in FSAR § 17.1.8 (Applicants' Exhibit 3).

Q15. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion IX concerning Control of Special Processes?

A15. The CPSES QA program requires prime contractors to prepare written procedures and controls to assure that special processes, including welding, heat treating, casting, coating applications, and nondestructive testing and concrete batching are accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, and specifications. These procedures describe, as

appropriate, the operations to be performed and their sequence, the characteristics involved and their limits, process controls, measuring and testing equipment utilized, and documentation required.

Written procedures also are required to cover training, examination, qualification, and certification of personnel as well as the maintenance of required personnel records. Compliance with these procedures by prime contractors, subcontractors, and vendors is verified through review, audit and/or inspection by TUGCO QA. Further discussion of these measures is set forth in FSAR § 17.1.9 (Applicants' Exhibit 3).

Q16. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion X regarding Inspection?

A16. The CPSES QA program requires inspections of activities affecting quality. The organization having the responsibility for providing services, structures, systems, components, and materials has the primary authority for inspecting such items and activities. TUGCO/TUSI performs reviews, surveillances or audits of the inspection procedures utilized by these organizations.

Inspections are performed by independent, trained, and qualified individuals not responsible for the activity being inspected. TUGCO verifies by review, audit, or inspection that contractors' inspections are

being performed and documented in conformance with approved procedures. Further discussion of these measures is set forth in FSAR § 17.1.10 (Applicants' Exhibit 3).

Q17. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion XI concerning Test Control?

A17. The CPSES QA program requires that appropriate tests be performed and documented at specific stages of manufacturing, fabrication, and construction. Testing is conducted in accordance with written procedures with well-defined acceptance limits. The CPSES test program covers safety-related activities such as prototype, qualification, production, in process, performance, and hydrostatic testing. Test results are evaluated to assure test requirements have been satisfied. Compliance with the testing program is verified by TUGCO through review, inspection, and audit. Further discussion of these measures is set forth in FSAR § 17.1.11 (Applicants' Exhibit 3).

Q18. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion XII concerning Control of Measuring and Test Equipment?

A18. The CPSES QA program requires that organizations using measuring and test equipment have written

procedures to assure that only properly calibrated equipment is used. The program requires that the standards used for accuracy verification be traceable to the U.S. Bureau of Standars or other appropriate sources. A calibration system has been established, records of calibrations are maintained and equipment is properly marked with the date of calibration and the due date and of the next calibration. TUGCO QA performs reviews, audits, and inspections of the various participants to ensure that approved calibration control procedures are being implemented. Further discussion of these measures is set forth in FSAR § 17.1.12 (Applicants' Exhibit 3).

Q19. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion XIII concerning Handling, Storage, and Shipping?

A19. The CPSES QA program requires the establishment of procedures for cleaning, handling, storage, shipping and preservation of materials and equipment to prevent damage or deterioration. TUGCO QA verifies through review, inspections, and audit that these procedures are being properly implemented. When necessary, these procedures may require special

environmental facilities such as storage areas that are inerted, humidity controlled, or temperature controlled. Further discussion of these measures is set forth in FSAR § 17.1.13 (Applicants' Exhibit 3).

Q20. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion XIV concerning Inspection, Test, and Operating Status?

A20. The CPSES QA program requires procedures to identify the inspection, test, and operating status of safety-related structures, systems, and components. The inspection and test status of items are maintained through the use of status indicators such as physical location, tags, markings, shop travelers, stamps, or inspection records. This assures that only items that have received the required inspections and tests are used. The method for controlling status indicators, including the authority for application and removal of tags, markings, labels, or stamps, is established in approved procedures. TUGCO QA performs reviews, inspections and audits to assure implementatin of these procedures. Further discussion of these measures is set forth in FSAR § 17.1.14 (Applicants' Exhibit 3).

Q21. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion XV concerning Nonconforming Materials, Parts, or Components?

A21. The CPSES QA program requires the identification, documentation, segregation, and disposition of nonconforming material, parts, or components. Procedures require evaluation and documented disposition. Procedures also control further processing, fabrication, delivery, or installation of items for which disposition is pending. Reports documenting actions taken on nonconforming items are subject to TUGCO QA evaluation.

The CPSES QA program requires measures to assure that departures from design specifications and drawing requirements that are dispositioned "use as is" and "repair" be reported to affected organizations. TUGCO QA performs reviews, inspections, and audits to assure compliance with this requirement. Further discussion of these measures is set forth in FSAR § 17.1.15 (Applicants' Exhibit 3).

Q22. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion XVI concerning Corrective Action?

A22. The CPSES QA program requires that conditions adverse to quality are promptly identified, reported, and corrected. Contractors, subcontractors, and vendors are responsible for performing corrective actions within their own areas of activity. In the case of significant conditions adverse to quality, which are reportable to NRC under the provisions of 10 C.F.R. §50.55(e), the cause of the condition is determined and corrective action implemented to preclude repetition. Corrective action procedures require thorough investigation and documentation of significant conditions adverse to quality. The cause and corrective action is reported in writing to the appropriate levels of management. The prime contractor responsible for the original purchase specification reviews corrective actions which have been taken, and TUGCO QA reviews corrective actions for compliance with QA requirements. Further discussion of these measures is set forth in FSAR § 17.1.16 (Applicants' Exhibit 3).

Q23. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion XVII concerning Quality Assurance Records?

A23. The CPSES QA program requires a quality records system which provides documented evidence of the

performance of activities affecting quality. This record system includes:

1. Data documenting quality assurance programs and plans, design data and studies, design review reports, specifications, procurement documents, procedures, inspection and test reports, material certifications, personnel certification and test reports, audit reports, reports of nonconformances and corrective actions, as-built drawings, operating logs, calibration records, maintenance data, and failure and incident reports.

2. Inspection and test records that, as a minimum, identify the date of the inspection or test, the inspector or data recorder, the type of observation, the results, the acceptability, and the action taken in connection with any nonconformances noted.

3. Protection against deterioration and damage.

4. Criteria for determining the classification of the record as well as the length of the retention period.

5. A method of identification and indexing of records for ease of retrievability.

6. Definition of responsibilities for record keeping during design, fabrication, construction, pre-oerational testing and commercial operation.

7. A method of transfer of records between organizations.

TUGCO QA verifies conformance to the record system requirements by reviewing contractors' methods for record keeping, by auditing contractors' record systems, and by selective review of quality records for completeness and accuracy. Further discussion of these measures is set forth in FSAR § 17.1.17 (Applicants' Exhibit 3).

Q24. What measures have been taken regarding 10 C.F.R. Part 50, Appendix B, Criterion XVIII concerning Audits?

A24. The CPSES QA program requires that planned and periodic audits be performed to verify compliance with all aspects of the QA program and to determine its effectiveness. TUGCO QA performs such audits on Westinghouse, Gibbs & Hill, Brown & Root, TUSI, and others as necessary to provide an objective evaluation of the effectiveness of their QA programs; to determine that their QA programs are in compliance with established requirements, and to verify implementation of corrective actions. The TUGCO QA audits, both internal and external, are conducted primarily by members of the TUGCO QA staff. Consultants are utilized by TUGCO QA on audits as required.

Audits performed by TUGCO QA as part of the CPSES QA program are conducted in accordance with established practices and procedures. An audit planning document defines the organizations and activities to be audited and the frequency of the audits. The audit team has expertise in the area being audited but has no direct responsibilities in the area. Auditors use checklists identifying those activities which will be examined in each audit.

In performing an audit, characteristics of quality activities are examined. An audit report is prepared that notes the areas examined and any deficiencies found. That report is sent to management responsible for the area audited for review and corrective action of deficiencies. Such corrective action taken as a result of the audit must be described in a response. Finally, reauditing of deficient areas is performed as necessary to verify implementation of required corrective actions. Copies of audit reports, evaluation responses, and reports of follow-up and close-out actions are forwarded to the Vice President, Nuclear, by the Manager, Quality Assurance.

Q25. Does the CPES Quality Assurance Program fully implement the requirements of 10 C.F.R. Part 50, Appendix B?

A25. In my professional judgment, the CPSES QA Program fully implements the requirements in Appendix B. We have developed and implemented a QA program that results in a high level of confidence that Comanche Peak has been designed and constructed in accordance with the construction permits and applicable NRC Regulations.

ATTACHMENT 1.
Copy No. _____

COMANCHE PEAK
STEAM ELECTRIC STATION
QUALITY ASSURANCE
PLAN

TEXAS UTILITIES GENERATING COMPANY

TEXAS UTILITIES SERVICES INC.

TEXAS UTILITIES GENERATING COMPANY
2001 BRYAN TOWER - DALLAS, TEXAS 75201

May 21, 1981

Statement of Authority

This Quality Assurance Plan establishes the Comanche Peak Steam Electric Station (CPSES) quality assurance system to be used by Texas Utilities Generating Company in performing design, engineering, procurement, fabrication, and construction activites in conformance with the requirements of the United States Code of Federal Regulations, the ASME Boiler and Pressure Vessel Code, and other applicable industry codes and standards.

The authority to implement the requirements of this plan is delegated to the Manager, Quality Assurance, who has the complete support of the company's management and will, by organizational arrangement, be kept free from cost and scheduling influences. His authority, as defined in the program, extends to all quality assurance activities performed by and for TUGCO. Decisions on such activities are made in the name of this company, and may be overruled only by the Vice President, Nuclear or the undersigned.

All persons associated with safety-related activities at CPSES should familiarize themselves with the policies, procedures, and guidelines established by this manual, and will be responsible for executing those requirements that are pertinent to their respective assignments.

R. J. Gary

R. J. Gary
Executive Vice President and
General Manager, TUGCO

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

Certificate of Accreditation

Number **OWN -** 121

This is to accredit

TEXAS UTILITIES GENFRATING COMPANY
2001 BRYAN TOWER
DALLAS, TEXAS 75201

as authorized to complete FORM N-3 OWNERS DATA of The American Society of Mechanical Engineers for filing with the enforcement authority having jurisdiction at:

COMANCHE PEAK STEAM ELECTRIC STATION, UNIT #2
GLEN ROSE, TEXAS

in accordance with the applicable rules of the Boiler and Pressure Vessel Code of The American Society of Mechanical Engineers. The accreditation granted by this certificate is subject to the provisions of the agreement set forth in the application. The System for which Form N-3 was signed shall have been built strictly in accordance with the provisions of the Boiler and Pressure Vessel Code of The American Society of Mechanical Engineers.

THIS ACCREDITATION *expires on* MAY 26, 1985

Authorized on MAY 26, 1976 *for*
RENEWED: APRIL 9, 1979 & APRIL 9, 1982

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
by the BOILER AND PRESSURE VESSEL COMMITTEE

Chairman Walter L. Harding

Secretary G M Eisenberg

Director, Accreditation Arlene A. Spadafora

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

Certificate of Accreditation

Number **OWN -** 120

This is to accredit

TEXAS UTILITIES GENERATING COMPANY
2001 BRYAN TOWER
DALLAS, TEXAS 75201

as authorized to complete FORM N-3 OWNERS DATA of The American Society of Mechanical Engineers for filing with the enforcement authority having jurisdication at:

COMANCHE PEAK STEAM ELECTRIC STATION, UNIT #1
GLEN ROSE, TEXAS

in accordance with the applicable rules of the Boiler and Pressure Vessel Code of The American Society of Mechanical Engineers. The accreditation granted by this certificate is subject to the provisions of the agreement set forth in the application. The System for which Form N-3 was signed shall have been built strictly in accordance with the provisions of the Boiler and Pressure Vessel Code of The American Society of Mechanical Engineers.

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by the BOILER AND PRESSURE VESSEL COMMITTEE

Chairman [illegible]

Secretary [illegible]

Director, Accreditation Arlen A. Spadafora

TUGCO/TUSI
CPSES QUALITY ASSURANCE PLAN
APPROVAL AND INSTRUCTIONS

Approved D N Chapman
Manager, Quality Assurance

Date: May 6, 1982

REMOVE AND DESTROY	INSERT IN MANUAL
Certification of Authorization N-1395 (Expiring on May 26, 1982)	Certification of Authorization OWN-120 (Expiring on May 26, 1985)
Certification of Authorization N-1396 (Expiring on May 26, 1982)	Certification of Authorization OWN-121 (Expiring on May 26, 1985)
Approval and Instructions dated May 21, 1981	Approval and Instructions dated May 6, 1982
List of Effective Pages, R7	List of Effective Pages, R8
Section 1.1	Section 1.1
Figure 1.1, R6 Figure 1.2, R6	Figure 1.1, R7 Figure 1.2, R7

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7.0	1	2
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9.0	1	4
10.0	1	0
11.0	1	0
12.0	1	1
13.0	1	0
14.0	1	0
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Terms and Abbreviations

A description of the terms and abbreviations used in this manual is provided below to clarify the intended meaning.

bid evaluation - A formal evaluation of proposals received in response to an inquiry to determine the vendor to whom the purchase order will be awarded.

closed items - Refers to a completed action or activity which has been signed off (approved) and dated.

Code - The ASME Boiler and Pressure Vessel Code, Section III, XI.

corrective action - Any appropriate measure applied for the purpose of making unlikely the possibility of a recurrence of the initial discrepancy. Examples are:

a. Revision of procedures, practices, and/or design documents,

b. Increased surveillance of procedures and practices,

c. Work stoppage until problem situation is alleviated,

d. Special training of personnel,

e. Reassignment of personnel.

design review - Design review means the critical review of the design output such as a drawing, calculation, analysis or specification, in order to provide further assurance that the actions leading to the output have been satisfactorily performed and the information included in the design output is correct and complete.

inquiry - A transmittal to a proposed vendor of the procurement package for a component, system, or structure, including drawings, specifications, quality assurance provisions and other requirements seeking bids.

inspection - The act of verifying the conformance of a material, structure, component or system to its requirements. Inspection is inclusive of examination and test.

nonpermanent quality assurance records - Those records which do not meet any of the criteria for permanent records.

nonconformance - A discrepancy, shortcoming, insufficiency or defect in characteristic, documentation or procedure which renders the quality of an item unacceptable or indeterminate. Examples are:

a. Physical defects,

b. Failure to meet acceptance criteria,

c. Test failures,

d. Incorrect or inadequate documentation,

e. Deviations from prescribed processing, inspection or test procedures.

open items - Refers to an incomplete action.

overall responsibility for construction - The responsibility assumed by an organization for conformance to the project requirements when several organizations are involved. This includes the overall responsibility for structural integrity and design when a component is contracted to a qualified organization. Assumption of overall responsibility by TUGCO/TUSI does not negate the responsibility of a contractor performing design, procurement, or manufacturing functions for compliance with project requirements, nor does it relieve the Professional Engineer who certifies Design Specifications or Stress Reports of his responsibility. Assumption of overall responsibility by TUGCO/TUSI implies responsibility for code and regulatory compliance and is not to be construed as involving contractual or legal liabilities.

permanent quality assurance records - Permanent records are those which meet one or more of the following criteria:

a. Those which would be of significant value in demonstrating capability for proper functioning of safety related items.

b. Those which would be of significant value in maintaining, reworking, repairing, replacing, or modifying the item.

c. Those which would be of significant value in determining the cause of an accident or malfunction of an item.

d. Those which provide required baseline data for inservice inspection.

pre-award surveys - an evaluation performed to determine a vendor's capability to supply this equipment or service in compliance with necessary quality asurance requirements. This may involve evaluation of a vendor's history, experience or performance of actual inspection at the vendor's facility.

procedure - Refers to either an implementing procedure in the CPSES QA Plan, or a construction site implementing procedure which describes or specifies how an activity is to be performed.

procurement documents - Those documents, including bidders lists, specifications, inquiries, proposals, and purchase orders, associated with procurement activities.

proposal - An offering made by a prospective vendor in response to an inquiry. Proposals will include a description of the vendor's quality assurance program.

purchase order (or contract) - A contractually binding document that identifies and defines requirements which items or services must meet in order to be considered acceptable by the purchaser.

quality assurance records - Those records which furnish documentary evidence of the quality of items and of activities affecting quality.

reportable deficiencies - Nonconformance which constitute a deficiency as defined in 10CFR50, Part 50.55(e).

revision - (to the CPSES QA Plan) - Any significant change to the QA Plan manual.

specification - A concise statement of a set of requirements to be satisfied by a product, a material or process indicating wherever appropriate, the procedure by means of which it may be determined whether the requirements given are satisfied.

vendors list - A listing of approved vendors that are considered qualified and are eligible to supply safety related equipment.

1.0 Organization and Responsibilities

The general responsibilities of the primary organizations involved in the design and construction of CPSES are described below:

1. Texas Utilities Generating Co. (TUGCO) has overall responsibility for design, procurement, construction and overall quality assurance. Texas Utilities Services, Inc. (TUSI), as the Texas Utilities Company (TU) engineering service organization, has been designated by TUGCO to have responsibility for engineering & construction activities for CPSES. TUSI performs design and design verification activities on selected contracts. The design and design verification function on most contracts has been delegated to Gibbs & Hill, Westinghouse, and other contractors as required. TUSI performs a second level design review of these activities to monitor the performance of the contractors. TUGCO audits TUSI and contractors to verify compliance with the requirements of the TUGCO/TUSI Quality Assurance Plan and project requirements.

2. Westinghouse designs, engineers, manufactures, and delivers the NSSS and furnishes drawings and other related services. Westinghouse provides the QA program for the NSSS structures, systems, and components.

3. Gibbs & Hill provides engineering services and design and procurement support services for the balance of plant, as requested by TUSI. This includes providing conceptual design, design drawings and specifications, inquiry preparation, bid evaluation, and quality assurance services for design and procurement. Gibbs and Hill provides the QA program for QA activities within the Gibbs and Hill scope of work. The G&H QA program conforms with the overall TUGCO QA program.

4. Brown & Root provides construction services to construct CPSES from plans and specifications provided by Westinghouse and Gibbs & Hill. These services include receiving, handling, storage of material, erection, installation, procurement of materials as designated by TUSI, and administration of subcontracts to B&R. Brown & Root provides the QA program for ASME Code work and provides QA functions as requested by the TUGCO QA Manager. The B&R QA Program conforms with the overall TUGCO QA program.

Figure 1.2 defines the interfaces that exist within and between the organizations participating in the design, engineering, procurement, and construction activities at CPSES.

The TUGCO/TUSI organizations participating in the design and construction phase of nuclear power plants are shown in Figure 1.1. This chart illustrates the structure and lines of reporting for each organization. These are listed below and are described in the corresponding sections which follow:

1.1 Quality Assurance Division
1.2 Project Management

1.1 Quality Assurance Division

The Quality Assurance Division is responsible for the development, assurance of implementation, management, and surveillance of the Quality Assurance Plan for TUGCO/TUSI nuclear power plant projects. TUGCO retains responsibility for those portions of the QA Plan delegated to others. In these cases, the TUGCO QA Division shall perform initial evaluation and subsequent audits of the contractor's QA programs.

The QA Division is independent from those TUGCO/TUSI organizations responsible for design, procurement, engineering, construction, and operation (see Figure 1.1). With quality assurance as the sole function of this organization, the TUGCO Quality Assurance Manager and his staff are free from the responsibilities of cost and scheduling. The QA Division has the freedom and authority to: a) identify quality problems; b) initiate corrective action; c) verify implementation of corrective action; and, d) control further processing, delivery, or installation of a nonconforming item, deficiency, or unsatisfactory condition until proper disposition has been made.

The Quality Assurance Manager reports to the Vice President, Nuclear. This reporting arrangement assures that the QA Manager and his staff have direct access to the levels of management necessary to assure effective implementation of the QA Plan. The Quality Assurance Manager has ultimate responsibility for the effectiveness of all quality related activities on the CPSES project and has "stop work" authority in the engineering, procurement, and construction phases of the project. Reporting directly to the Quality Assurance Manager are the:

- Supervisor - Quality Assurance Services
- Supervisor - Vendor Compliance
- Engineer - Special Projects
- Site QA Supervisor

The duties, responsibilities, and authorities of each Supervisor and Engineer are described below.

a. Supervisor - Quality Assurance Services

- Performs audits of TUGCO/TUSI, prime contractors, and vendors to assure that safety related work is performed in compliance with requirements.
- Performs quality assurance surveillance on design, procurement and construction activities at CPSES.
- Evaluates quality assurance programs, identifies weaknesses, and determines the adequacy of corrective action submitted by prime contractors and vendors.

- Develops and maintains the CPSES QA Plan and the quality assurance portion of the safety analysis report.
- Verifies and documents training of TUGCO quality assurance personnel.
- Assists others in the development of programs and procedures.
- Reviews technical codes and standards for impact on the Quality Assurance Plans and recommends appropriate changes.
- Prepares formal responses to NRC Inspection Reports and items reported under 10 CFR 50.55(e).

b. Supervisor - Vendor Compliance

- Performs surveillance of hardware during manufacture.
- Performs final release inspections of hardware before final shipment is made.

c. Special Projects Engineer

- Performs special projects as assigned by Manager, Quality Assurance.
- Develops Fossil QA Program.

d. Site QA Supervisor

- Supervises, coordinates and assures implementation of the Quality Assurance and Quality Control Functions at the CPSES site.
- Assists the Manager, Quality Assurance in the development and implementation of the Comanche Peak Quality Assurance Plan as it relates to site construction and site engineering activities.
- Develops procedures and instructions necessary to assure implementation of QA and QC functions at the CPSES site.
- Is delegated the authority to stop work on site if required for resolution of quality related problems.
- Indoctrinates and trains site QA and QC personnel in accordance with applicable codes and standards.
- Assists the Manager, Quality Assurance in evaluating the overall effectiveness of the site Quality Assurance and Quality Control functions.
- Coordinates Quality Assurance and Quality Control functions with responsible management at the CPSES site.

1.2 Project Management

The Vice President and Project General Manager is responsible for the coordination and control of the engineering, procurement, and construction activities of the Comanche Peak Steam Electric Station Project. The Vice President and Project General Manager retains responsibility for cost and schedule and is charged with insuring that TUSI, prime contractors, subcontractors, and vendors meet quality requirements during design and construction. The Vice President and Project General Manager reports to the TUSI Executive Vice-President.

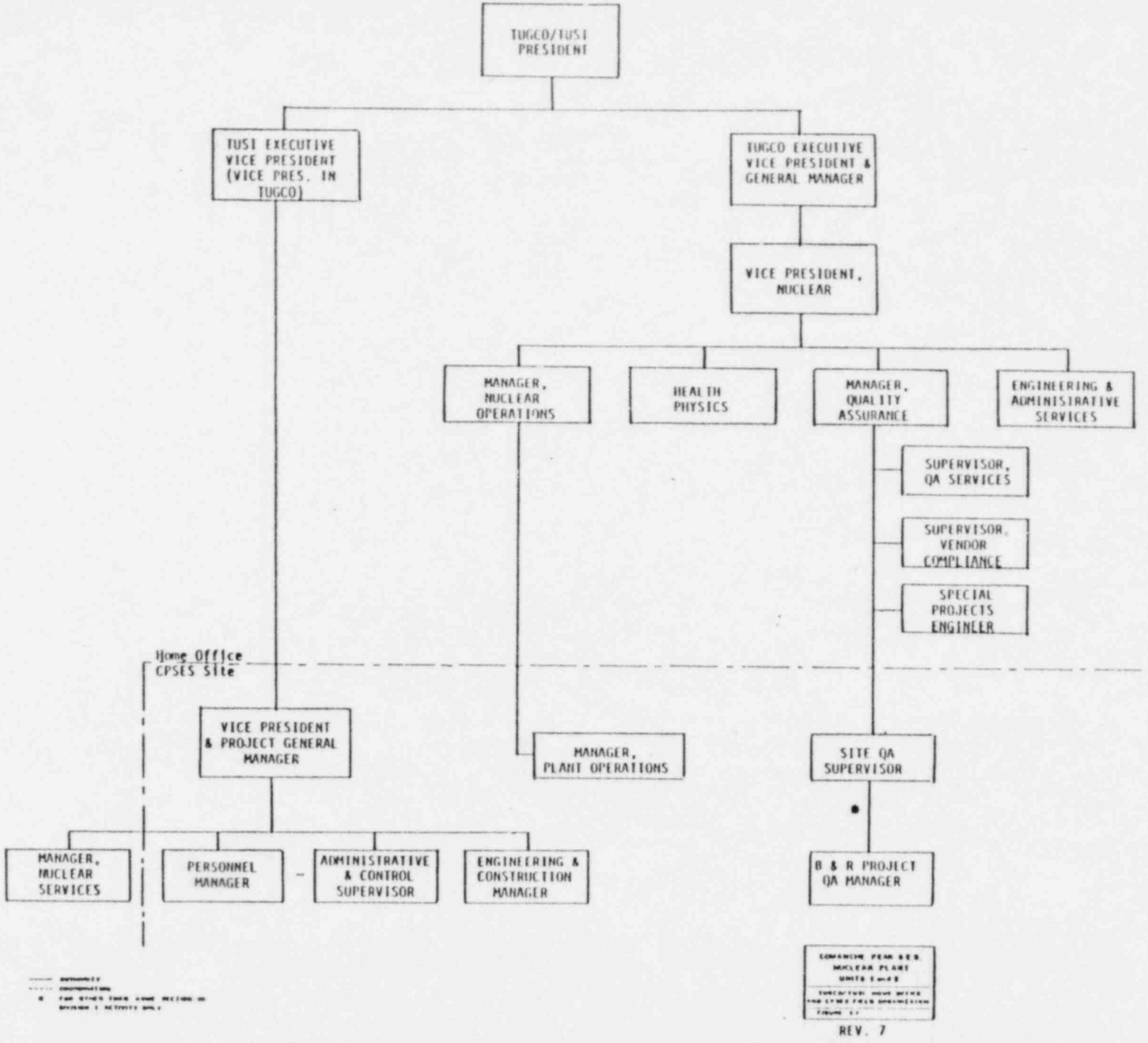
The Vice President and Project General Manager has the authority to "stop work" in the engineering, procurement, and construction phases of the project.

The Vice President and Project General Manager reviews the status of the project with the TUSI Executive Vice-President, on a regular basis.

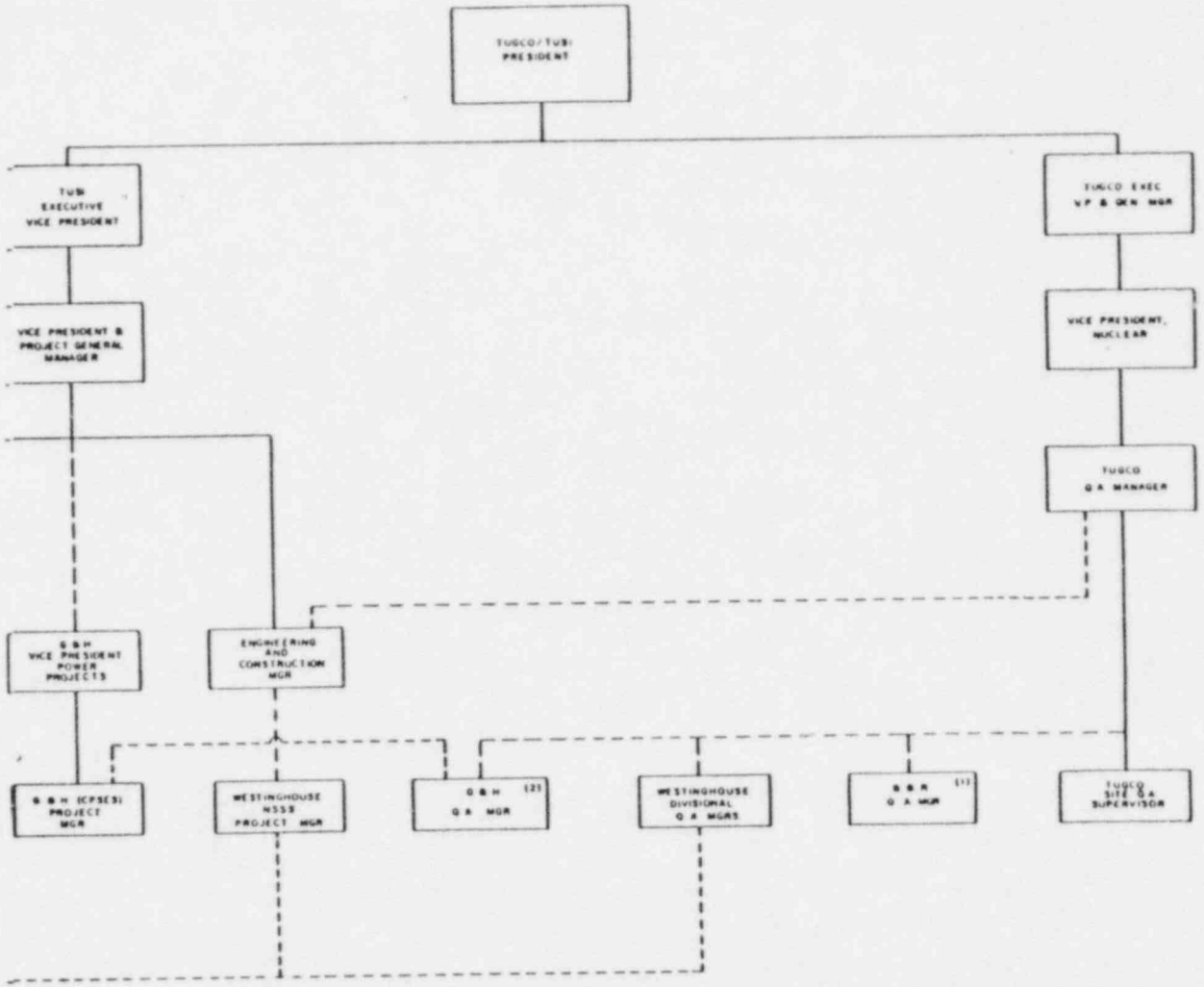
1.2.1 Engineering and Construction Manager (TUSI)

The Engineering and Construction Manager is responsible for the Comanche Peak Steam Electric Station 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. The Comanche Peak Engineering and Construction Manager reports to the Vice President and Project General Manager. His specific duties and responsibilities are as follows:

- Provides technical direction and administrative guidance to Comanche Peak Project representatives assigned to his group.
- Provides the interface between engineering, procurement and construction.
- Monitors the performance of the design, procurement and construction organizations as to functional and contractural intent.
- Reviews and approves appropriate procurement documents that provide necessary services, equipment and material.
- Has authority to "stop work" in the engineering, procurement and construction phases of the Comanche Peak Project.
- Is designated to act for the Comanche Peak Steam Electric Station Vice President and PGM in his absence.


TUGCO/TUSI PRESIDENT
TUSI EXECUTIVE VICE PRESIDENT (VICE PRES. IN TUGCO)
TUGCO EXECUTIVE VICE PRESIDENT & GENERAL MANAGER
VICE PRESIDENT, NUCLEAR
MANAGER, NUCLEAR OPERATIONS
HEALTH PHYSICS
MANAGER, QUALITY ASSURANCE
ENGINEERING & ADMINISTRATIVE SERVICES
SUPERVISOR, QA SERVICES
SUPERVISOR, VENDOR COMPLIANCE
SPECIAL PROJECTS ENGINEER
Home Office
CPSES Site
VICE PRESIDENT & PROJECT GENERAL MANAGER
MANAGER, PLANT OPERATIONS
SITE QA SUPERVISOR
MANAGER, NUCLEAR SERVICES
PERSONNEL MANAGER
ADMINISTRATIVE & CONTROL SUPERVISOR
ENGINEERING & CONSTRUCTION MANAGER
B & R PROJECT QA MANAGER

REV. 7



COMANCHE PEAK S E S
FINAL SAFETY ANALYSIS REPORT
UNITS 1 AND 2

PROJECT Q A ORGANIZATION

FIG 1 2

REV 7

	QUALITY ASSURANCE PLAN	SECTION: 2.0
	Quality Assurance Plan	DATE: 7/1/78
		REVISION: 0
		PAGE 1 OF 1

2.0 Quality Assurance Plan

This manual describes the quality assurance system applicable to safety related design, procurement, and construction activities at the Comanche Peak Steam Electric Station. The Quality Assurance Plan documented by this manual and implementing procedures encompasses the activities performed by TUGCO/TUSI, and those activities performed by prime contractors, subcontractors, and vendors. The Plan provides for accomplishing activities under suitably controlled conditions such as appropriate equipment, suitable environmental conditions, and assurance that prerequisites for an activity have been satisfied. The activities shall be documented by and accomplished in accordance with approved procedures, instructions, or drawings. A program has been established for quality assurance indoctrination and training which assures that the required level of personnel competence is achieved and skill is maintained in the performance of quality related activities. Managers and supervisors are responsible for training to assure that personnel achieve and maintain the proficiency and qualifications required for the quality-related activities performed.

2.1 Control of the Quality Assurance Plan

The Manager, Quality Assurance shall be responsible for the preparation, revision, review, approval, and distribution of this Quality Assurance Plan. Requests for revisions to this manual shall be directed to the Manager, Quality Assurance. To assure the timely incorporation of proposed revisions, the cognizant managers and supervisors are responsible for requesting necessary revisions to the manual as the need is identified.

Control of issue and subsequent revisions shall be in accordance with approved procedures.

Should a holder's requirement for a manual cease due to transfer, retirement, termination, etc., he shall return his copy promptly to the Manager, Quality Assurance.

3.0 Design Control

The design control process for CPSES begins with Gibbs & Hill, as Architect - Engineer, Westinghouse, as NSSS supplier and TUSI as Texas Utilities Company's engineering service organization. Overall responsibility for construction however, remains with TUGCO/TUSI. The design control process is an ongoing function which includes design criteria, design review, and design change. This process is carried out in accordance with established procedures.

3.0.1 Design Criteria

The preparation, review, approval, and certification of design specifications are normally contracted to Gibbs & Hill and Westinghouse. TUSI performs design and design verification activities on selected contracts. To the extent applicable, the design criteria will be consistent with that specified in the license application and will utilize the requirements of recognized codes, standards, and practices. The responsible design organization translates these design specifications into appropriate instructions, procedures, drawings, or specifications. This function includes design interface control as well as the generation, review, checking, approval and revision of design and construction specifications, and design drawings.

3.0.2 Design Review

The responsible design organization reviews respective designs for conformance to design concepts, licensing design criteria, and regulatory criteria. The design reviews are performed by individuals or groups other than those who performed the original design. Changes to design specifications or documents are reviewed and approved by the same individual or group responsible for original review and approval.

3.0.3 Design Change

Changes to the design are documented, reviewed, and approved by the original designers commensurate with the controls applied to the original design. These controls extend to the disposition of field changes and nonconformances. Approved changes are incorporated into or identified on the original design document.

The TUGCO QA Division assures that the design process including design changes is performed in accordance with approved procedures. Gibbs & Hill and Westinghouse quality assurance organizations audit their respective design organizations to ensure compliance to approved procedures and instructions.

4.0 Procurement Document Control

Four principal organizations will be involved with the procurement of items and services related to nuclear safety during design and construction. These organizations are:

- TUGCO/TUSI
- Gibbs & Hill (Architect-Engineer)
- Westinghouse (Nuclear Steam Supply System Vendor)
- Brown & Root (Constructor)

TUGCO/TUSI retains overall responsiblity for assuring the adequacy of the procurement program.

Procedures shall identify the responsibilities and actions required of the organizations originating, reviewing, approving, and controlling procurement documents. These procedures shall require the procurement documents to specify as appropriate:

- The scope of work to be performed.
- Use of approved vendors.
- Technical requirements (by specifying or referencing) which shall include the revision numbers of applicable drawings, specifications, procedures, instructions, codes, or regulations, and provide for identification of applicable test, inspection and acceptance requirements, or other special instructions.
- QA Program requirements to be imposed on contractors which shall include the applicable portions of 10 CFR 50, Appendix B, and NA 4000 or NA 3700.
- Right of access which provides, as appropriate, for access to contractor facilities and records for inspection or audit by TUGCO or its designated representative, and to access for events such as witness and hold points.
- The documentation required to be prepared, maintained, and submitted to TUGCO/TUSI or its representative for review, approval, or historical record. The time of submittal of this documentation and the retention and disposition of quality assurance records which will not be delivered to TUGCO/TUSI shall be included.

- Provision for extending applicable requirements of the procurement documents to lower tier subcontractors and suppliers, including purchaser's access to facilities and records.

Procurement documents shall be reviewed to assure that the appropriate provisions mentioned above are included.

Changes to procurement documents, whether initiated by TUGCO/TUSI or their representative, shall be subjected to the same degree of control as that utilized in the preparation of the original document.

The procurement organization shall verify that the procurement document has been reviewed and approved, and that Quality Assurance has approved the purchase order for safety related material, equipment or services prior to issuing.

4.0.1 Inquiry Preparation

The originating organization shall prepare an inquiry package for items to be procured using approved specifications and/or drawings. The inquiry package shall contain applicable drawings and/or specifications. The specific issue dates and applicable addenda shall be either attached or referenced.

The inquiry shall contain the minimum information specified by procedures and shall include or reference applicable quality requirements.

4.0.2 Bidder Selection

Upon receipt of a properly authorized inquiry, the purchasing organization transmits the inquiry to bidders.

4.0.3 Supplier Selection

The purchasing organization is responsible for the evaluation of proposals on bids originated. Proposals requiring engineering review shall be transmitted for evaluation as defined by applicable procedures. When a vendor proposal includes exceptions to quality requirements, it shall be submitted for review and evaluation.

4.0.4 Purchase Order

The purchasing organization prepares and issues a purchase order after evaluation of commercial terms and considerations, and obtaining technical evaluation when required. A purchase order for safety related items shall not be issued to a vendor unless Quality Assurance has evaluated and accepted the purchase order. The QA reviewer will determine whether QA provisions are adequate and will determine any necessary pre-award evaluations consistent with the vendors activities in supplying equipment, materials or services.

5.0 Instructions, Procedures, and Drawings

The quality assurance actions accomplished under the CPSES QA Plan as described throughout this manual shall be delineated in documented instructions, procedures, drawings, specifications, checklists or manuals, as appropriate. Changes shall be reviewed for their effect on present instructions, procedures, and/or drawings. The Architect-Engineer, other contractors, or a TUGCO/TUSI organization may prepare, revise, review and internally approve documents associated with the quality related activities they will perform. These activities shall also be conducted in accordance with approved procedures.

QUALITY ASSURANCE PLAN	SECTION: 6.0
Document Control	DATE: 5/21/81
	REVISION: 1
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6.0 Document Control

The distribution and control of documents shall be accomplished as described in the applicable procedures. Controlled documents shall be reviewed for adequacy and approved for release by authorized personnel. These documents shall be distributed to and used at the location where the prescribed activity is performed.

Procedures require that each controlled document be identified on a distribution list showing all pertinent information regarding the document such as the title, revision number, and the individual or organization to which the document has been distributed. A document receipt or manual insertion system shall be used to assure that initial issue and subsequent revisions are received by the controlled document holder.

Changes to documents shall be reviewed and approved by the same organization responsible for the original document or by the owner's designee. Distribution and control of revised documents shall be in the same manner as the original document except that superseded documents shall either be destroyed or clearly marked to avoid inadvertent use.

Gibbs & Hill, Westinghouse, and Brown & Root are responsible for implementing quality assurance programs off-site that ensure appropriate documents are controlled and that changes required as a result of comments, nonconformances, or engineering work are incorporated into revised documents. The off-site quality assurance programs will be audited by TUGCO QA to ensure conformance to these requirements.

7.0 Control of Purchased Items and Services

Procurement activities associated with items procured off-site for installation are performed by TUGCO/TUSI or are contracted to Gibbs & Hill, Westinghouse, or Brown & Root who are surveyed and qualified by TUGCO. Procurement documents are reviewed, approved, and controlled as described in Section 4.0. Receipt inspection of safety related items on site is performed in accordance with written procedures and checklists.

Procurement source evaluation and selection measures include the selection of the Nuclear Steam Supply System Supplier, the Architest-Engineer, and the Constructor. Requirements for source evaluation and approval of vendors are specified in TUGCO procedures.

Periodic evaluations are conducted to assure that the vendor's quality performance continues to warrant retention of his approved status.

This evaluation program includes provisions for audit, surveillance, source inspection, and receipt inspection as necessary.

	QUALITY ASSURANCE PLAN	SECTION: 8.0
TEXAS UTILITIES GENERATING COMPANY	Identification & Control of Items	DATE: 7/1/78
		REVISION: 0
		PAGE 1 OF 1

8.0 Identification & Control of Items

Appropriate requirements have been established to assure continuous and accurate identification and control of safety-related items and that the use of incorrect or defective items is prevented.

Procedures establish responsibilities and requirements for the identification and control of items. These procedures provide that:

- Requirements for traceability to appropriate documentation such as: procurement documents, manufacturing documents, drawings, specifications, inspection and test records, and nonconformance reports.
- Controls to assure that the correct identification of an item is verified and documented prior to release for fabrication, assembly, shipping or installation.
- Requirements which assure that the method or location of markings do not affect the function or quality of an item.
- Establishment of identification requirements by specifications, drawings, procurement documents, instructions, or procedures during initial planning.
- Transfer of identification prior to division of an item to maintain identity.

Suppliers are required to establish and implement a documented program for inspecting, marking, identifying, and documenting items prior to use or storage.

Verification that items received on site meet the applicable identification requirements is accomplished during release or receipt inspection.

9.0 Control of Construction Processes

Written procedures shall be prepared to assure that construction processes including welding, heat treating, coating applications, nondestructive examination, and concrete batching are accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, and other special requirements. These procedures describe the operations performed, the sequence of operations, the characteristics involved, the limits of these characteristics, process controls, measuring and test equipment utilized, and documentation requirements.

Written procedures are also required to cover training, examination, qualification, certification, and verification of personnel as well as the maintenance of all required personnel records.

Procedures for control of construction processes are subject to review by TUGCO QA on a case basis.

10.0 Examinations, Tests, and Inspections

Examinations, tests, and inspections are performed at specific stages in the manufacturing, fabrication and installation activities to ensure that items meet the applicable specification, code, and regulatory requirements.

Planned, written procedures for in-process and final inspection are utilized by the prime contractors. TUGCO/TUSI reserves the right to review, disapprove, and perform surveillance or audits of the implementing procedures used by these organizations. TUGCO uses the following criteria in evaluating the proposed inspection methods:

- Duties and responsibilities of personnel performing inspection are clearly established.
- Qualifications of personnel performing inspections are commensurate with their duties and responsibilities.
- Documentation methods for inspection activities of each group are established (e.g., inspection forms, reports).
- Documentation control systems for identifying and distributing inspection documents are defined.
- Planning of inspection sequence activities include the type of characteristics to be measured, the methods of examination, and the criteria.

Sufficient inspections are conducted to verify conformance in areas rendered inaccessable by further processing. Process monitoring is utilized in lieu of inspection in those cases where inspection is impossible, disadvantageous, or destructive. Where required for adequate control, a combination of inspection and process monitoring is employed. Hold points are established and enforced as required. TUGCO and/or its representatives verifies by review of inspection reports, visits to vendor's shops, and onsite surveillance that inspections are being performed and documented by personnel in accordance with approved procedures.

11.0 Test Control

Test requirements and acceptance criteria are provided by the organization responsible for the specification of the item under test, unless otherwise designated. Such testing is performed in accordance with test procedures which incorporate or reference the test requirements and acceptance limits contained in the applicable design documents.

Test procedures include, as a minimum, the following:

- Test prerequisites such as:
  a. calibrated instrumentation
  b. trained, qualified, and licensed or certified personnel
  c. preparation, condition, or completeness of item to be tested
  d. suitable and controlled environmental conditions
  e. safety considerations
- Instructions for the testing method used;
- Required test equipment and instrumentation;
- Test requirements and acceptance criteria;
- Hold, witness, inspection and data collection points;
- Methods for documenting or recording test data and results;
- Provisions for data collection.

The documented test results are evaluated against the predetermined acceptance criteria by authorized personnel. The acceptance status of the test is documented in accordance with Section 14.0. Discrepancies noted during the evaluation shall be documented and dispositioned in accordance with Section 15.0.

12.0 Control of Measuring & Test Equipment

Organizations performing quality activities involving measuring and test equipment shall have written procedures to assure proper equipment calibration, maintenance, and control. The procedures include a determination of which equipment is to be controlled, identification and calibration necessary for the specific equipment, and assurance of documentation of tests and measurements.

Measuring and test equipment is marked or traceable to records so that calibration status can be determined. A schedule of calibration is maintained showing the calibration frequency of the equipment. When calibration checking is necessary, the equipment is returned and not reissued until after satisfactory calibration checking.

Measuring and test equipment is calibrated using reference standards whose calibration has a known valid relationship to nationally recognized standards or accepted values of natural physical constants. If no national standards exist, the basis for calibration shall be documented.

Measuring & test equipment found to be out of calibration shall have its calibration sticker removed, and shall be segregated and handled as a nonconforming item. Work performed with the discrepant equipment since the last calibration check shall be considered unacceptable until it can be determined that applicable requirements have been met.

	QUALITY ASSURANCE PLAN	SECTION: 13.0
	Handling, Storage, and Preservation	DATE: 7/1/78
		REVISION: 0
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13.0 Handling, Storage, and Preservation

The function of delineating special handling, preservation, storage, cleaning, packaging, and shipping requirements, as appropriate, in the design documents or purchase orders is performed by TUGCO/TUSI or is delegated to Gibbs & Hill, Westinghouse, or Brown & Root as described in Section 4.0.

Both TUGCO/TUSI and contractors shall establish and implement written procedures addressing the scope of their functions for cleaning, shipping, storage, packaging, preservation, and handling of safety-related items in accordance with design or procurement documents as appropriate. These procedures shall delineate measures which prevent degrading of an item through damage or deterioration. When necessary for particular items, special protective environments such as inert gas atmosphere, specific moisture content levels, and temperature levels shall be specified and provided.

	QUALITY ASSURANCE PLAN	SECTION: 14.0
	Examination or Test Status	DATE: 7/1/78
		REVISION: 0
		PAGE 1 OF 1

14.0 Examination or Test Status

Procedures have been established to identify the examination or test status of safety-related structures, systems, and components. Elements of the status system include a controlled manufacturing and test operation in order to preclude the inadvertent bypassing of processing, inspections or tests, and to provide a positive identification of component status throughout manufacturing, testing, and inspecting by means of tagging, routing cards, stamping, manufacturing or test reports, labeling or other appropriate methods.

Implementation of the status system extends through the preoperational test program.

Performance of this function is delegated as applicable to subcontractors and vendors and is audited by the respective prime contractor to assure that effective measures are being taken.

TUGCO QA personnel monitor these activities, as applicable, to assure proper and effective implementation.

15.0 Nonconforming Items

The identification, documentation, segregation, and disposition of nonconforming materials, parts, or components, is outlined in written procedures. The measures utilized by contractors, subcontractors, and vendors are subject to review by TUGCO. The procedures, as a minimum:

- prevent inadvertent use or installation.
- require investigation of the nonconforming item, decisions on their disposition, and preparation of adequate reports.
- control further processing, fabrication, delivery, or installation of items for which disposition is pending.
- assure that departures from design specifications and drawing requirements that are dispositioned "use as is" and "repair" are formally reported to affected organizations and TUGCO/TUSI management.

Reports documenting actions taken on nonconforming items are made available to TUGCO for evaluation.

TUGCO audits prime contractors to assure compliance. In addition, TUGCO QA assures that periodic evaluation of these reports are forwarded to TUGCO management to show quality trends.

Nonconforming items identified by inspection are classified and documented by deficiency reports or nonconformance reports. Disposition is then carried out by the respective procedures.

A deficiency report will be issued for the identification, documentation resolution, and reevaluation of procedural violations/programmatic deficiencies which are not directly related to an item.

A nonconformance report will be issued for those nonconforming items which require an engineering evaluation.

In addition to being documented on a nonconformance report or a deficiency report, items found during design and construction which are reportable under the provisions of 10 CFR 50.55(e) are reported to the Manager, Quality Assurance or his designee for reporting to the NRC. A reportable significant deficiency is a deficiency which, were it to have remained uncorrected, could have affected adversely the safety of operation of CPSES, and represents:

a. A significant breakdown in any portion of the quality assurance program; or,

b. A significant deficiency in final design; or,

c. A significant deficiency in construction of or significant damage to a structure, system or component; or,

d. A significant deviation from performance specifications.

16.0 Corrective Action

Documented measures are used to assure that conditions adverse to quality such as failures, malfunctions, deficiencies, and nonconformances, are promptly identified and corrected as soon as practicable, and that appropriate action be taken to correct the cause of the condition. The identification of significant conditions adverse to quality, the cause of the condition, and the corrective action taken is documented and reported as required by procedures. Responsibility for performing corrective action is assigned to contractors, applicable subcontractors, and vendors so that each is alert to those conditions adverse to quality within his own area of activity. In the case of significant conditions adverse to quality, which are reportable to NRC under the provisions of 10 CFR Part 50.55 (e), measures are taken to assure that the cause of the condition is determined and corrective action is implemented to preclude repetition.

Corrective action procedures require thorough investigation and documentation of significant conditions adverse to quality. The cause and corrective action is reported in writing to the appropriate levels of management and to the purchaser. The corrective action applied is subject to review by TUGCO and the prime contractor responsible for the original purchase specification. The acceptability of rework or repairs is verified by reinspecting the item as originally inspected and that the reinspection is documented.

The occurrence and magnitude of deficiencies and nonconformances requiring corrective action are evaluated during surveillance and at hold point inspection and witnessing. Additionally, these areas are identified for audit purposes.

17.0 Quality Assurance Records

TUGCO/TUSI, Gibbs & Hill, Westinghouse, Brown & Root, and other contractors shall prepare, maintain, (and where required, retain) quality assurance records as required. TUGCO/TUSI, Gibbs & Hill, Westinghouse and Brown & Root shall specify permanent and nonpermanent records requirements in procurement documents as required by the Code and by the design specifications.

Upon completion of an installation activity, the construction organization shall transfer construction records to TUGCO. These records will be categorized per a preplanned index and retained at the plant site.

The Authorized Inspector shall have access to all QA records and documents on file that are required by the Code.

17.1 Site Construction Quality Control Records

Quality Control shall initiate, collect, and temporarily maintain required QC documents. These documents shall be filed and controlled. The Site QA Supervisor is responsible for the implementation of the on-site records control and filing system in accordance with a procedure. Procedures/instructions define the records required to be retained, and define the provisions required for suitable protection of records. Upon completion of an activity, the documents initiated are reviewed and the completed QA records are then transferred for retention at the plant site.

17.2 Record Retention and Storage

Quality Assurance records shall be stored under the conditions and for the period specified by the Code and by procedures. Records received or generated at the plant site shall be transferred to and stored in a records vault. The Site QA Supervisor is responsible for the storage and control of QA records and documents received at the records storage vault.

18.0 Audits

TUGCO and its prime contractors perform planned and periodic audits, to verify compliance with all aspects of their quality assurance program and to determine the effectiveness of the program. TUGCO audits the prime contractors, TUGCO/TUSI internal activities, suppliers and vendors as necessary to provide an objective evaluation of the effectiveness of their programs, to determine that their programs are in compliance with established requirements, methods and procedures, to determine quality progress, and to verify implementation of corrective action commitments.

The auditing system used by TUGCO:

- Requires audit planning documents be utilized to identify organizations to be audited. Frequency of audits will be determined in accordance with provisions contained in TUGCO Quality Procedures.
- Requires auditors to be familiar with the type of activities to be audited and have no direct responsibilities in the area being audited.
- Provides auditing checklists or other objective guidelines to identify those activities which will be examined.
- Requires examination of the essential characteristics of the quality activity examined.
- Requires an audit report be prepared that notes deficiencies found.
- Requires the audit report be sent to management responsible for the area audited for review and corrective action for deficiencies.
- Requires a response that documents corrective action taken as result of the audit.
- Requires reauditing of deficient areas when it is considered necessary to verify implementation of required corrective actions.

TUGCO maintains audit documentation on file.

	QUALITY ASSURANCE PLAN	SECTION: 19.0
	Authorized Nuclear Inspector	DATE: 4/16/79
		REVISION: 2
		PAGE 1 OF 1

19.0 Authorized Nuclear Inspector

The Authorized Inspector shall have free access to all records and work being performed where such reports or work fall within the scope of his duties and responsibilities. Such records and work shall include, but not be limited to: drawings, Certified Design Specifications, Data Reports, audit reports and Stress Reports, as well as their preparation or review as applicable. The duties of the Authorized Inspector shall be:

- Verifying that the scope of work stated in the Owners Certificate includes the work performed and that required documents are properly filed.

- Monitoring the CPSES QA Plan.

- Certification of the N-3 Data Reports.

Stress Reports shall be reviewed in accordance with the Code and shall meet the requirements of the Design Specifications.

The N-3 Form shall be prepared and certified by the Engineering and Construction Manager or his designee prior to the Authorized Inspector's review and acceptance. Certification shall include verfication that each Manufacturer or Installer was a holder of the appropriate Certificate of Authorization by the ASME and that all components, appurtenances and interconnecting installation welds comply with the ASME Code, as applicable. A copy of the form, after being signed by the Authorized Inspector, shall be filed with the Enforcement Authority having jurisdiction at the plant site, along with all Data Reports from the Manufacturers and Installers.

20.0 Preservice Inspection Program

TUGCO has overall responsibility for the performance and evaluation of the Preservice and Inservice Inspection requirements of Section XI of the ASME Code (1974 Edition through the Summer 1975, Addenda). TUGCO has delegated authority for implementation of the Preservice Inspection Program as follows:

1. Texas Utilities Services, Inc. (TUSI) has been delegated the authority to:

   - Determine the appropriate Code Class(es) for each component of the Comanche Peak Steam Electric Station; the identification of the system boundaries for each class of components subject to inspection; and the identification of components exempt from inspection requirements as permitted by the Code.

   - The design and arrangement of the system components to include allowance for adequate clearances for the conduct of the examinations.

   - The development of plans and schedules for accomplishing the Preservice Inspection Program and the formal submission of the plans and schedules to TUGCO for filing with the enforcement and regulatory authorities having jurisdiction at the CPSES site.

   - Assure the development and preparation of written examination procedures and/or instructions, including diagrams or system drawings delineating the identification and extent of areas of components subject to examination.

   - Provide for evaluation of each preservice examination and test.

   - Assure that adequate records of inspection, examinations and tests performed, such as radiographs, diagrams, drawings, inspection data, and personnel qualifications are developed and maintained prior to formal submittal to the CPSES Records Vault.

   - Assure the preparation of all basic calibration blocks used for ultrasonic examination of components and the maintenance of the blocks prior to formal submittal to TUGCO.

   - Provide access for the Inspector (ANI) or examination personnel and equipment necessary to conduct the required examinations.

   - Assure the performance of necessary operations associated with repair or replacement of system components in the event structural defects or indications are revealed that may require such repairs or replacements.

- Develop and maintain procedures and/or instructions that are required to implement the applicable Quality Assurance Program requirements of Sub-Section NA-4000 of the ASME Code.

2. Westinghouse, has been delegated the authority to:

   - Perform the required Preservice examinations and tests.
   - Record the results of all examinations and tests.
   - Evaluate the results of all examinations and tests on components and systems within their scope of supply (eg. Nuclear Steam Supply System) and perform or recommend required corrective actions.
   - Develop all basic calibration blocks used for ultrasonic examination of the components.
   - Assure that the qualifications of personnel performing examinations and tests comply with the applicable provisions of Section XI.
   - Develop and maintain a Quality Assurance Program conforming to the applicable portions of Sub-Section NA-4000 of the ASME Code for that portion of the Preservice Inspection Program under their scope of work.

3. Texas Utilities Generating Company (TUGCO) retains responsibility and authority for:

   - Filing of required plans and schedules with enforcement and regulatory authorities having jurisdiction at the plant site.
   - Verification (through QA Division audit or surveillance) of compliance of the above delegated functions to the applicable provisions of Section XI.
   - Developing and maintaining an arrangement with an Authorized Inspection Agency to provide inspection services required by Section XI.
   - Assuring that the recording of all inspection and examination and test results provides a basis for evaluation and facilitates comparison with the results from subsequent examinations.
   - Retention of all inspection and examination and test records, calibration blocks, etc. as required for the service lifetime of the component(s) under examination.

CPSES QA PLAN COMPLIANCE MATRIX

COMANCHE PEAK QUALITY ASSURANCE PLAN	APPENDIX B QUALITY ASSURANCE CRITERIA	I. Organization	II. QA Program	III. Design Control	IV. Procurement Document Control	V. Instructions, Procedures, and Drawings	VI. Document Control	VII. Control of Purchased Material, Equipment, and Services	VIII. Ident. & Control of Materials, Parts, & Components	IX. Control of Special Processes	X. Inspection	XI. Test Control	XII. Control of Measuring & Test Equipment	XIII. Handling, Storage & Shipping	XIV. Inspection, Test & Operating Status	XV. Nonconforming Items	XVI. Corrective Action
1.0	Organization	X															
1.1	Quality Assurance Division	X															
1.2	Project Management	X															
2.0	Quality Assurance Plan		X														
2.1	Control of the QA Plan		X														
3.0	Design Control			X													
4.0	Procurement Document Control				X												
5.0	Instructions, Procedures and Drawings					X											
6.0	Document Control						X										
7.0	Control of Purchased Items and Services							X									
8.0	Identification and Control of Items								X								
9.0	Control of Construction Processes									X							
10.0	Examinations, Tests, and Inspections										X						
11.0	Test Control											X					
12.0	Control of Measuring and Test Equipment												X				
13.0	Handling, Storage, and Preservation													X			
14.0	Examination or Test Status														X		
15.0	Nonconforming Items															X	
16.0	Corrective Action																X
17.0	Quality Assurance Records																
17.1	Site Construction Quality Control Records																
17.2	Record Retention and Storage																
18.0	Audits																
19.0	Authorized Nuclear Inspector																
20.0	Preservice Inspection Program										X						