Job No. 15454/15616

TEXAS UTILITIES GENERATING CO. (TUGCO)
COMANCHE PEAK STEAM ELECTRIC STATION

MANAGEMENT PLAN FOR PROJECT QUALITY

(PIPING SYSTEM QUALIFICATION/REQUALIFICATION)

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SCOPE

This document describes the Management Plan for Project Quality (Quality Plan) for activities performed by Stone & Webster Engineering Corporation (SWEC) for consulting services for the Comanche Peak Project. The services covered by this Quality Plan are:

1. Performance of pipe stress and pipe support requalification of existing unit 1 and 2 conditions. This requalification consists of many sub-tasks. Some of these sub-tasks are:

   - Verification that as-built documentation is adequate to initiate stress analyses without undue risk that the analyses will have to be redone.
   - Resolution of "special technical concerns" identified by various external organizations
   - Development of appropriate fluid forcing functions
   - Verification of system operating characteristics
   - Performance of a walkdown of a sampling of stress packages by engineering personnel to identify any technical concerns, not previously identified

2. Support (e.g. disposition of design change requests and nonconformances, approval of drawing revisions) for continuing piping and pipe support construction activities for Unit 1 and 2

3. Development of pipe stress and support analyses and design details required to complete Unit 2.

4. Administration, management and performance of activities associated with Hot Functional Testing of Unit 2 and review of changes to Unit 1 piping structural support system for assessment of the impact on the Hot Functional Test Program.

This Management Plan for Project Quality shall be updated as necessary to reflect changes in assignments and/or scope of work.

PROGRAM REQUIREMENTS AND ACTIVITIES

I. ORGANIZATION

The organization for these activities is presented in Attachment 1. Project personnel are drawn from the Engineering Divisions and other Departments, as necessary. Individual responsibilities for the quality of work performed and the quality assurance efforts for this project are defined in the implementing procedures referenced in this Quality Plan, and in project organization charts (CPPP-2).

The specific responsibilities of the Project Quality Assurance Manager (PQAM) are as follows:

- Coordinate the development and approval of the Quality Plan.
- Assist the project in implementing the Quality Plan.
- Interface with the Client and other organizations regarding project quality assurance activities.
- Coordinate SWEC audits of the project and any sub-contractors.
- Assure adequacy of corrective and preventive action taken for audit findings.
- Assure the project is adequately staffed to implement all quality assurance activities.
- Approve sampling plans used to determine adequacy of design.
- Prepare at least annually, a report to the Client on the status of the SWEC QA program. This report will be approved by the Quality Assurance Manager.

II. MANAGEMENT PLAN FOR PROJECT QUALITY (QUALITY PLAN)

The overall SWEC Quality Assurance Program is designed to provide assurance that all SWEC activities are accomplished in a controlled manner. The SWEC Corporate Quality Assurance Program complies with 10CFR50, Appendix B and NRC Regulatory Guides and is described in an NRC approved Topical Report, SWSQAP 1-74A, "Stone & Webster Standard Quality Assurance Program."

This Quality Plan identifies the procedures which implement the Quality Assurance Program as it applies to the specific SWEC scope of work to be performed.

Insofar as possible, applicable standard SWEC procedures are used to control the work. When situations arise where existing procedures do not completely address the requirements of the project activities, a Project Procedure will be written to:

1. Supplement a standard procedure
2. Modify a standard procedure (variances)
3. Replace a standard procedure, or
4. Provide guidance where a standard procedure does not exist

Variances from Engineering Department standard procedures are processed according to Engineering Assurance Procedure (EAP) 5.7 and Engineering Department Policy and Procedure (EDPP) 1.7. Variances from Quality Assurance Department procedures are referred to the Quality Assurance Department, Quality Systems Division.

The procedures listed in Attachment 2 describe how the corporate QA program and client requirements are met by the project.

Indoctrination and continuing education in the procedures which apply are provided to personnel involved in the project according to Quality Standard (QS) 2.12, and Engineering Assurance Procedure (EAP) 2.4.

The Engineering Assurance Division (EA) audits the effectiveness of and conformance to the SWEC QA Program according to Section XVIII of this Quality Plan.

III. DESIGN CONTROL

A review will be performed to determine if the "as-built" documents are adequate to serve as a basis for the initiation of pipe stress requalification. This review will be performed and documented in accordance with Project Procedure CPPP-5.

Project Procedures CPPP-6 and CPPP-9 describe the program for piping system (including supports) requalification for Units 1 and 2 respectively.

Project Procedure CPPP-7 is the design criteria document for all pipe stress and pipe support analyses. This procedure is prepared, reviewed and approved in accordance with Project Procedure CPPP-14. In addition, CPPP-7 will be approved by the Chief Engineer Engineering Mechanics Division. This approval documents completion of an independent objective review for technical adequacy.

All calculations will be prepared, reviewed, and controlled in accordance with EAP 5.3. Computer programs utilized by these calculations will be documented and qualified in accordance with EAP 5.25.

Changes to the FSAR may be recommended as a result of the re-analysis effort. These changes will be documented in accordance with EAP 2.10 and forwarded to the client.

Drawings prepared to describe necessary design modifications will be prepared, reviewed and approved in accordance with EAP 5.4.

Construction support activities (e.g., disposition of design change requests, drawing approvals, interface with site organizations) are controlled in accordance with EAP 3.3 and Project Procedure CPPP-13.

The engineering walkdown to identify any technical concerns, not previously identified, will be performed in accordance with Project Procedure CPPP-8.

The verification of system operating characteristics will be performed in accordance with Project Procedure CPPP-10.

SWEC will prepare, review, approve and perform the Owner's review of an ASME III stress report for each Class 1 support in accordance with Project Procedure CPPP-16.

A report describing SWEC's resolution of each identified technical issue will be developed and issued. A cover page will be included for each

issue. This cover page will be approved by the Project Engineer, Assistant Project Manager - Technical and the Project Manager.

Technical reports prepared to describe results of reviews or studies performed by SWEC (e.g. Building Seismic Analysis Verification Study) will be prepared, reviewed and approved in accordance with EDPP 8.8.10.

IV. PROCUREMENT DOCUMENT CONTROL

Procurement of subcontracted engineering services will be performed in accordance with EAPs 4.1 and 4.15.

V. INSTRUCTIONS, PROCEDURES AND DRAWINGS

Engineering Department Procedures are controlled in accordance with EDPPs 1.2 and 1.7 and EAPs 5.1 and 5.7. Quality Assurance Department Procedures are controlled in accordance with QS 5.1. Project Procedures are processed in accordance with Project Procedure CPPP-14.

VI. DOCUMENT CONTROL

Project Procedure CPPP-3 describes the filing and distribution control requirements for project generated documents (e.g., Correspondence) and client supplied documents (e.g., As-Built Drawings).

EAP 5.3, supplemented by Project Procedures CPPP-3 and CPPP-11 describe distribution and indexing/filing requirements for project generated calculations.

VII. CONTROL OF PURCHASED MATERIAL, EQUIPMENT, PARTS AND SERVICES

EAP 7.1 describes the method for the Engineering Assurance Division to evaluate suppliers of procured engineering services.

VIII. IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS

(Not within the scope of work)

IX. CONTROL OF SPECIAL PROCESSES

(Not within the scope of work)

X. INSPECTION

SWEC will perform activities associated with Hot Functional Testing in accordance with CPPP-17.

XI. TEST CONTROL

(Not within the scope of work)

XII. CONTROL OF MEASURING AND TEST EQUIPMENT

(Not within the cope of work)

XIII. HANDLING, STORAGE, AND SHIPPING

(Not within the scope of work)

XIV. INSPECTION, TEST, AND OPERATING STATUS

Not within SWEC's scope of work, except as described in Criteria XI, Test Control.

XV. NONCONFORMING MATERIALS, PARTS OR COMPONENTS

The scope of work does not include any activities that require the comparison of as-installed conditions to the engineering/construction requirements. If items are observed, which require client action (e.g., overstressed conditions), they will be documented and reported to the client in accordance with Project Procedure CPPP-3.

SWEC will provide engineering dispositions for TUGCO Nonconformance Reports (NCRs) in accordance with CPPP-13.

XVI. CORRECTIVE ACTION

QS 16.1 and EAP 16.1 describe SWEC methods for obtaining corporate resolution of potentially significant and generic concerns.

The criteria for the identification of conditions that require review to determine reportability under 10CFR50.55(e) and/or 10CFR21 are defined in QS/EAP 16.2 and QS/EAP 16.3, respectively. Identified conditions are processed for review/evaluation in accordance with Project Procedures CPPP-6 and CPPP-7. Items, that the Project Engineer determines may be reportable under 10CFR50.55(e) will be assiged an evaluation number. The Project Engineer will obtain this evaluation number from the Site Coordinator, responsible for documenting potentially significant items/ events (TUGCO).

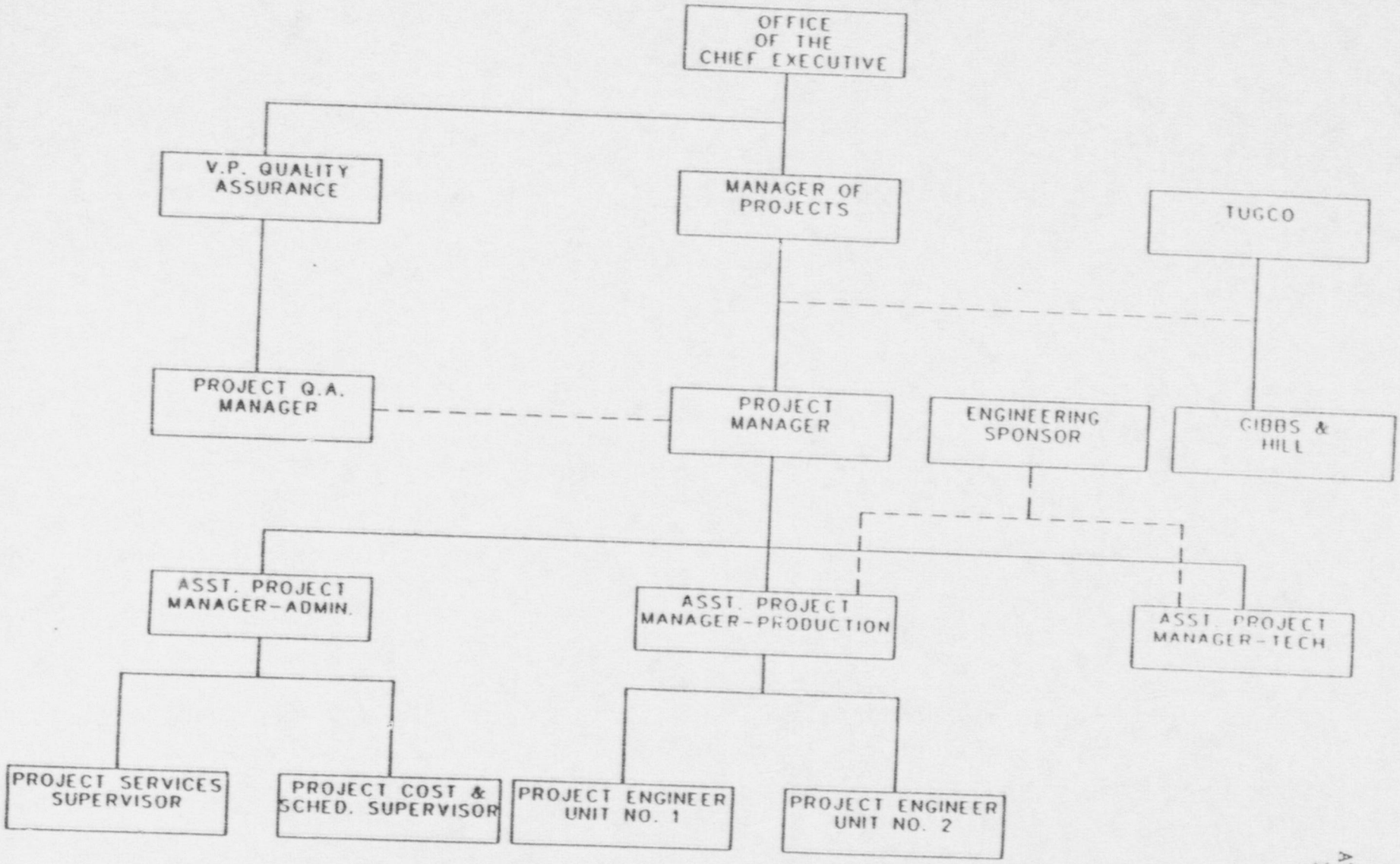
XVII. QUALITY ASSURANCE RECORDS

Project Procedure CPPP-4 implements QS 17.1 and EAP 17.2. This procedure identifies the records to be turned over to the client and the records to be retained by SWEC.

XVIII. AUDITS

Engineering Department activities are audited according to EAP 18.1.

PROJECT ORGANIZATION CHART
COMANCHE PEAK STEAM ELECTRIC STATION



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ATTACHMENT 1
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Engineering Assurance Procedures

EAP 2.4	Indoctrination, Continuing Education and Certification Requirements
EAP 2.10	Handling of Changes to Licensing Documents
EAP 3.3	Site Engineering
EAP 4.1	Procurement System
EAP 4.15	Preparation and Control of Engineering Service Scopes of Work
EAP 5.1	Preparation, Issue, and Control of Engineering Assurance Procedures
EAP 5.3	Preparation and Control of Manual and Computerized Calculations (Nuclear Projects)
EAP 5.4	Review and Approval of Project Production Drawings
EAP 5.7	The Preparation, Issue and Control of Project Manuals
EAP 5.25	Computer Program Documentation and Qualification
EAP 7.1	Engineering Assurance Evaluation of Engineering Service Suppliers
EAP 16.1	Problem Report System
EAP 16.2	Notifying Clients of Potentially Reportable Deficiencies under 10CFR50.55(e)
EAP 16.3	Identifying and Reporting Defects and Failues to Comply under 10CFR21
EAP 17.2	Quality Assurance Records
EAP 18.1	Audits

Engineering Department Policies and Procedures

EDPP 1.2	Preparation and Control of Engineering Department Policies and Procedures
EDPP 1.7	Preparation and Control of Division Technical Procedures, Standards, Guidelines, and Division Memorandums
EDPP 8.8.10	Preparation and Publication of Selected Technical Documents

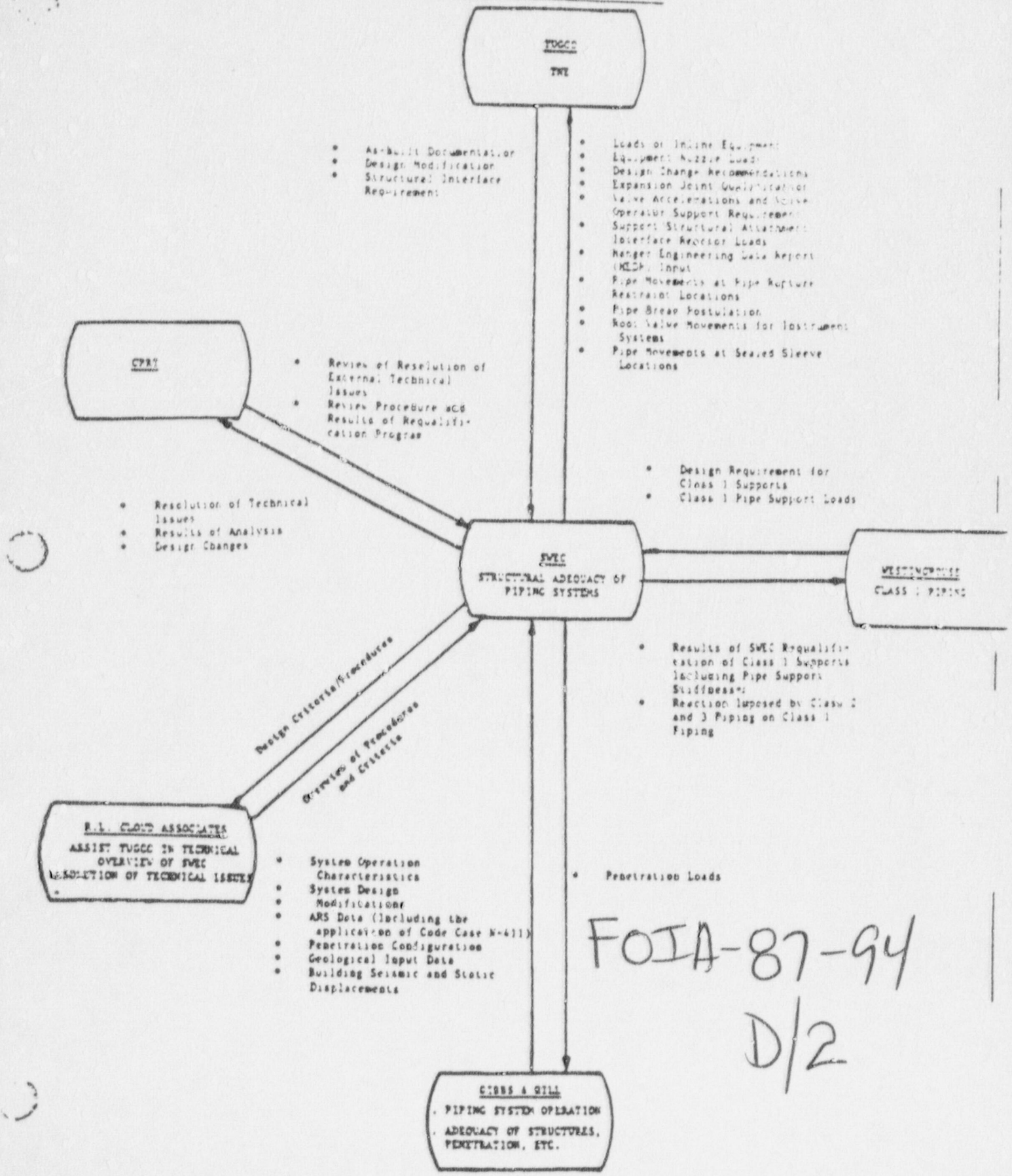
Quality Standards

QS 2.4	Management Plans for Project Quality
QS 2.12	Qualification, Certification, Indoctrination and Continuing Education of Personnel
QS 5.1	Quality Standard Procedural System
QS 16.1	SWEC Problem Report System
QS 16.2	Notifying Clients of Potentially Reportable Deficiencies under 10CFR50.55(e)
QS 16.3	Identifying and Reporting Defects and Failures to comply under 10CFR21
QS 17.1	Quality Assurance Records System

Project Procedures

CPPP-2	Project Organization Charts
CPPP-3	Document Control
CPPP-4	Records Management Plan
CPPP-5	Field Walkdown Procedure
CPPP-6	Pipe Stress Analysis Procedure for As-Built ASME III Class 2/3 Piping Systems
CPPP-7	Analysis and Design Criteria for Pipe Stress and Pipe Supports for ASME III Class 2/3 Piping Systems
CPPP-8	Support System Verification Walkdown
CPPP-9	Pipe Stress/Support Requalification Procedure - Unit 2
CPPP-10	Power Division Procedure for Documented Review of Plant Operating Mode Conditions
CPPP-11	Administrative Control of Calculations
CPPP-13	Site Construction Support Activities
CPPP-14	Preparation, Review and Approval of Project Procedure
CPPP-16	Stress Reports, Class 1 Pipe Supports
CPPP-17	Test Activities

PROJECT TECHNICAL INTERFACES



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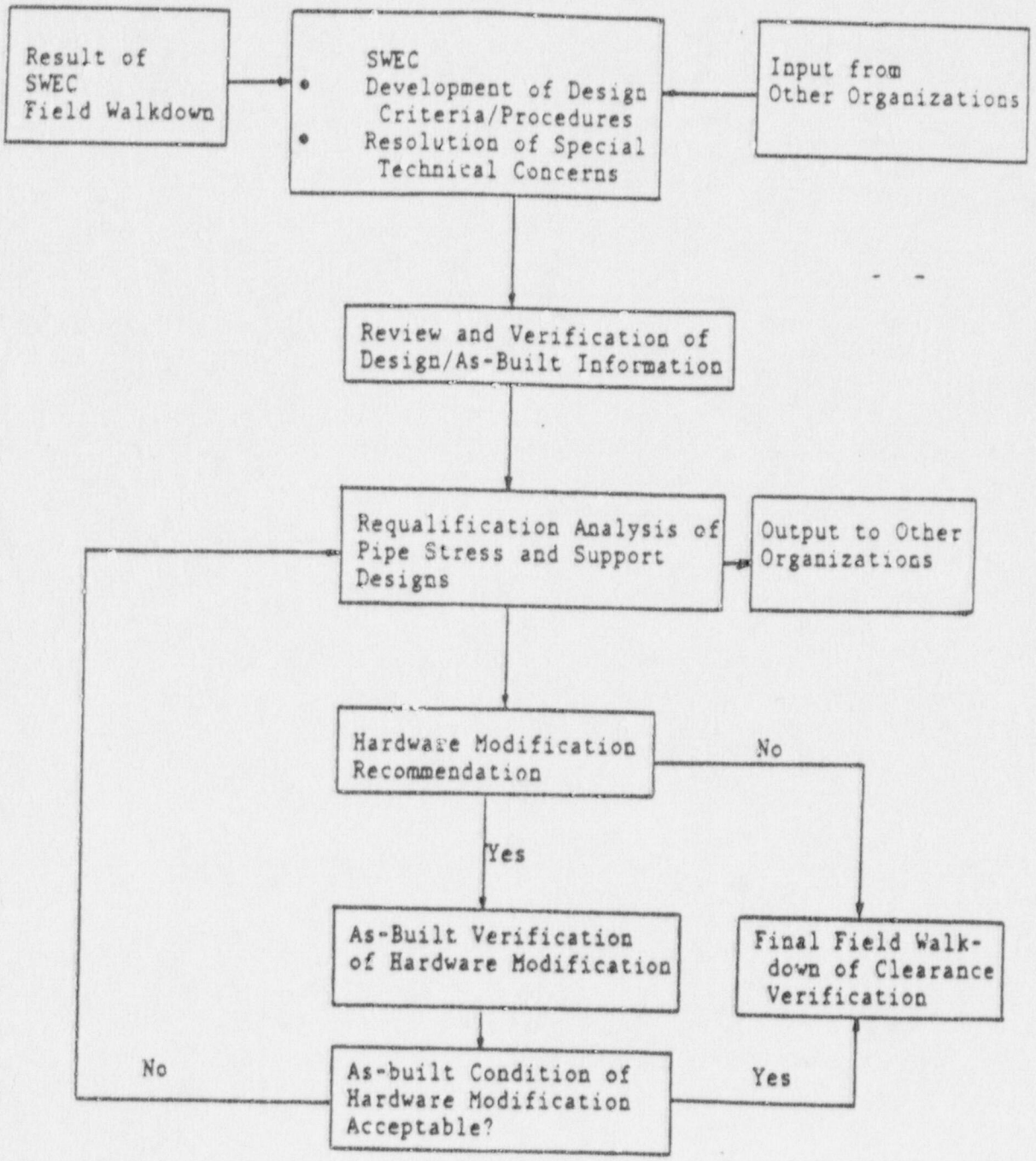
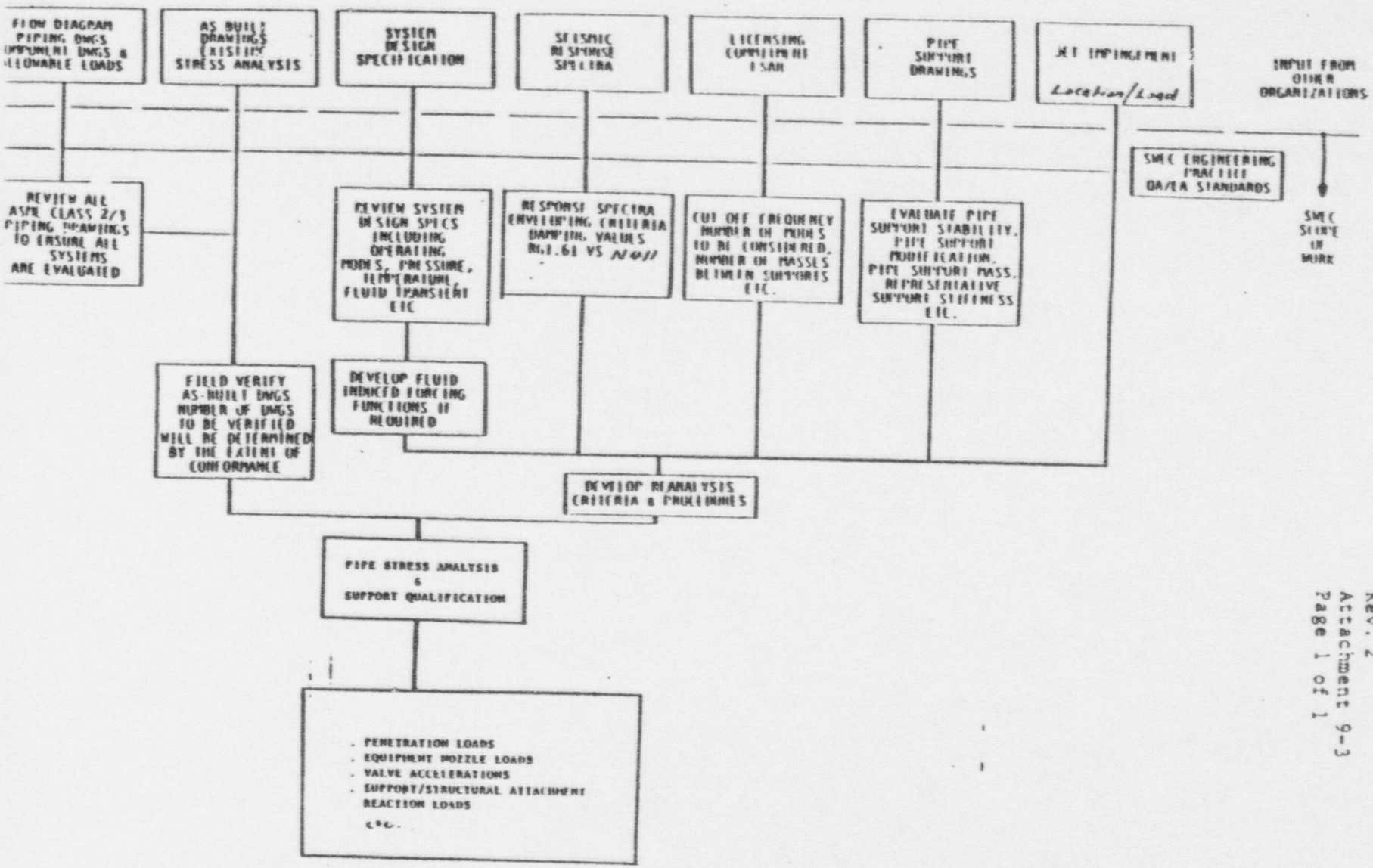
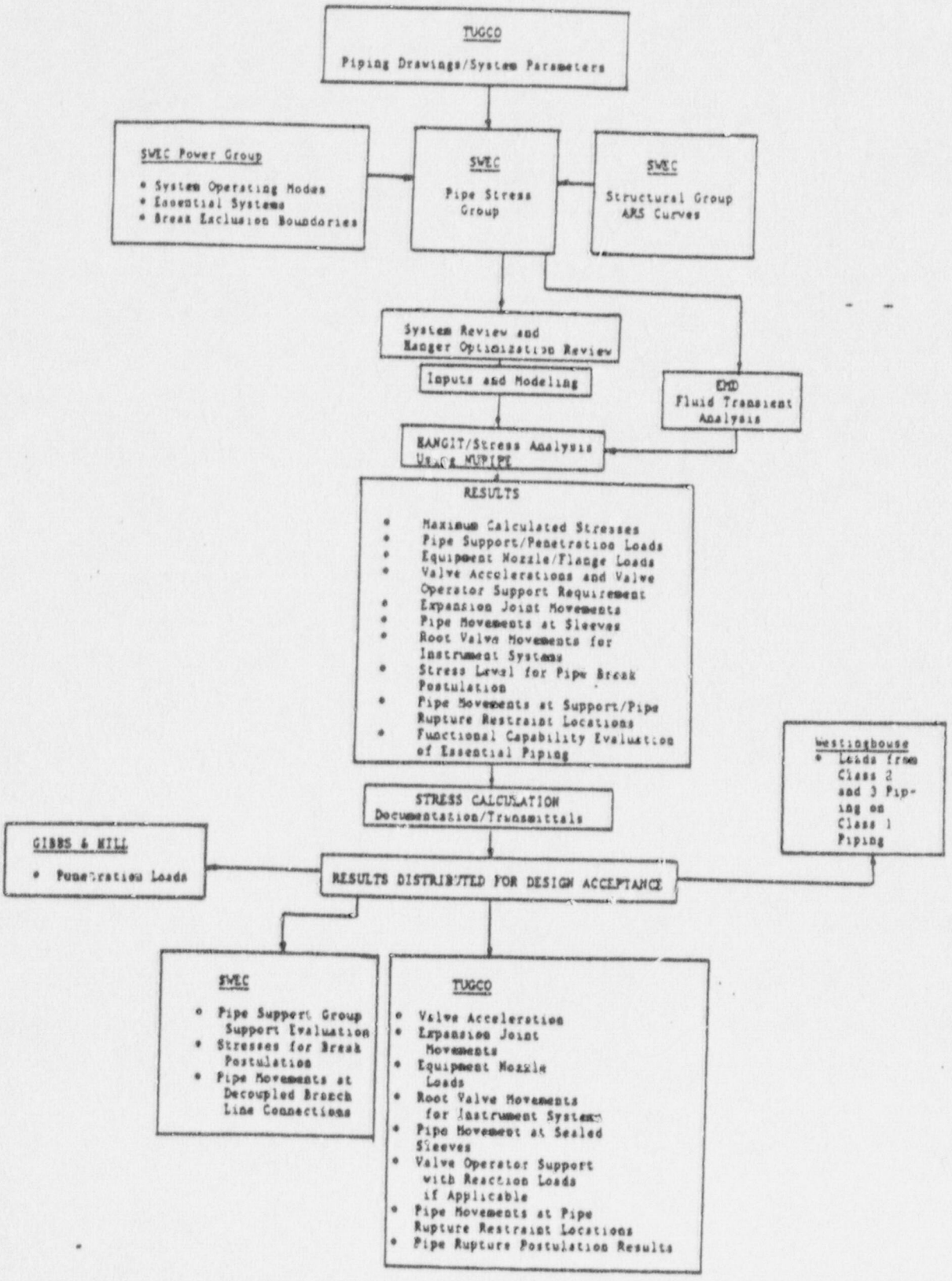
ACTIVITY OPERATION SEQUENCE



PIPE STRESS & PIPE SUPPORT QUALIFICATION WORK SCOPE CHART



PIPE STRESS REQUALIFICATION FLOW CHART



PIPE SUPPORT REQUALIFICATION FLOW CHART