

C F BRAUN & CO  
*Engineers*  
ALHAMBRA CALIFORNIA

August 3, 1979

Director of Nuclear Reactor Regulation  
Mr Walter P Haass, Chief Quality Assurance  
Branch  
Division of Project Management  
US Nuclear Regulatory Commission  
Washington, DC 20555

Dear Mr Haass

PROPOSED REVISIONS  
QUALITY ASSURANCE PROGRAM  
BRAUN TOPICAL REPORT - 21A

Enclosed are eight pages, forty copies each, of Braun TR-21A showing revisions proposed for Amendment 5 indicated by a bar and amendment number on the right margin of each page. When accepted by the NRC, these revisions will be incorporated and the Topical Report reissued.

Below is a brief description of the revisions and the reason for the change.

- Page i Changed signature of the company president
- Page ii Added N stamp to company code authorizations
- Page 1 Updated Regulatory Guide 1.28 issue date
- Page 4 Revised paragraph one on Company Organization. Added two paragraphs to Company Organization to describe construction subsidiaries
- Page 5 Updated company organization chart
- Page 6 Updated typical nuclear power plant project organization chart to indicate construction subsidiary
- Page 9 Added "construction subsidiaries"
- Page 10 Added "who is an employee of a construction subsidiary"

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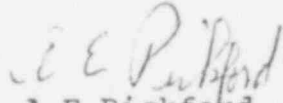
Mr Walter P Haass

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We will reissue TR-21A as Ammendment 5 immediately on receipt of your acceptance letter for these proposed revisions.

Sincerely yours



A E Pickford  
Manager of Quality Assurance

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STATEMENT OF POLICY AND AUTHORITY  
NUCLEAR QUALITY ASSURANCE PROGRAM

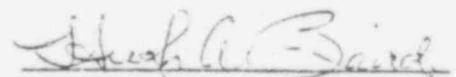
We, C F Braun & Co, engineer and construct nuclear power plants and nuclear fuel facilities. This Quality Assurance Manual is prepared to provide adequate controls and procedures to comply with the quality assurance requirements of Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants. ANSI Standard N45.2 and its derivatives have been considered in preparation of the manual with the intent of full compliance with these Standards.

Each Division Head controlling the design, procurement, construction, and examination of Nuclear Power Plants and Nuclear Fuel Facilities is directed to indoctrinate their personnel with the QA Manual procedures. Copies of the manual are issued to key organizational personnel. The copies are controlled to establish that all procedures in use are of the latest issue.

The authority and organizational freedom for establishing the quality assurance standards and procedures is delegated to the Quality Assurance Manager. He is responsible for approving quality assurance procedures and their revisions, identifying quality assurance problems, initiating action to solve these problems, and verifying that solutions initiated have resolved the problems. He is also responsible for auditing performance and reporting to management on the status of the Quality Assurance Program on a continuing basis. Management will actively review the program administration on a periodic basis at least annually.

The Quality Assurance Manager controls the issue of our Quality Assurance Manual and revisions to the manual. Revisions to the manual must be approved by Braun Management before issue.

The Quality Assurance Program defined in this manual has the unqualified support of Braun Management. It is mandatory that this Quality Assurance Program be used on safety-related items in nuclear facilities. We believe using these written procedures will provide confidence to Owners that quality, reliability, safety, and compliance with regulatory requirements are engineered and built into their Nuclear Power Plant or Nuclear Fuel Facility.

  
Hugh A Baird, President

(Taken from the C F Braun & Co Nuclear Quality Assurance Manual Vol II)

## FOREWORD

The total Braun QA program is made up of several elements, set down in writing, that are intended to provide compliance with Federal Regulation concerning nuclear power plants and other nuclear facilities. More important than just compliance with regulations, the program is intended to get projects built to high quality standards and built right the first time. This is where the program pays off.

**QA MANUALS** The key element in the QA program is our corporate Nuclear Quality Assurance Manual. Volume I of the Nuclear Quality Assurance Manual is C F Braun & Co's Quality Assurance Topical Report, Braun TR-21A, and is suitable for quick reference. Volume II is the corporate Nuclear Quality Assurance Manual and is made up of four parts - Part 1, Administrative, Part 2, Design, Part 3, Procurement, Part 4, Construction. Part 1 may be used with any other part, depending on the scope of contract. Thus, Parts 2, 3, and 4, each address all of the criteria of 10CFR50, Appendix B, not covered by Part 1, as the criteria applies to that phase of a project. Typical contract scopes are listed below with a corresponding list of QA Manual part application. The Topical Report on Quality Assurance covers the scope of all four parts of Volume I.

<u>CONTRACT</u>	<u>MANUAL PARTS</u>
Design	1 and 2
Design and Procurement	1, 2, and 3
Procurement and Construction	1, 3, and 4
Construction or Construction Manager	1 and 4
Turnkey	1, 2, 3, and 4

Control procedures for design, procurement, construction and inspection are defined in the manual. The manual also requires that, for each project, additional instructions, specifications, and procedures must be prepared. These are the Project Manual, the Project QA Instructions, the Design Instructions, the Design Basis Specifications, and all specific project specifications needed for procurement, construction, inspection, and testing. While the manual must be used for nuclear safety-related systems, it may also be applied to the total plant. The degree of application of the manual is defined for each project in the Project QA Instructions. The manual is issued by the QA Manager after approval by management. Revisions are controlled by the QA Manager.

In addition to the corporate Nuclear Quality Assurance Manual, we use another manual, QAM-80, when designing, purchasing, installing, or inspecting ASME Code, Section III, Division 1, components, parts, and appurtenances requiring the Code N, NA or NPT stamp. QAM-80 has been surveyed by the ASME and we are authorized for N, NNA and NPT stamped work for classes 1, 2, 3, and MC. QAM-80 is completely compatible with the corporate Nuclear Quality Assurance Manual.

1.0 PURPOSE

The Quality Assurance (QA) policies and procedures described in this topical report, which constitutes Volume I of our Nuclear QA Manual, have been developed specifically for use in commercial nuclear projects. These policies and procedures are intended to provide assurance to Braun Management and our client that the plant will be safe, reliable, and operable, plus meet the requirements of the Nuclear Regulatory Commission, NRC.

The Braun QA Manual provides QA procedures for (1) engineering and design, (2) procurement of materials, equipment, and services, and (3) construction and installation. The controls for safety-related systems established in the manual cover all phases of work from project inception to plant completion prior to operation by the owner.

The manual standardizes Braun QA control procedures. These procedures are supplemented by Project QA Instructions prepared for each project. Unless otherwise noted in the Project QA Instructions, the Braun QA Program will comply with the manual in its entirety.

Braun commits to comply with the following documents.

- 1 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants."
- 2 Regulatory Guide 1.28 March 1978, "Quality Assurance Program Requirements (Design and Construction)" (endorses N45.2).
- 3 Regulatory Guide 1.30, August 1972, "Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment" (endorses N45.2.4).
- 4 Regulatory Guide 1.37, March 1973, "Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants" (endorses N45.2.1).
- 5 Regulatory Guide 1.38, May 1977, Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants" (endorses N45.2.2).
- 6 Regulatory Guide 1.39, September 1977 "Housekeeping Requirements for Water-Cooled Nuclear Power Plants" (endorses N45.2.3).

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1.1 ORGANIZATION

1.1.1 COMPANY ORGANIZATION

Vice Presidents responsible for controlling Braun project operations report to the Executive Vice President who reports to the President. Each Vice President is responsible for specific segments of Braun operations through organization of divisions, departments and groups. A Senior Vice President, who is responsible for financial affairs, also reports to the President. The President reports to the Chairman. The Company Organization chart is shown on Page 5.

Please note that construction work at jobsites is performed by either of two wholly owned subsidiaries, San Jacinto Construction Co or C F Braun Constructors Inc. For purposes of quality assurance the presidents of the two subsidiaries report to the Vice President for Construction of C F Braun & Co.

The subsidiaries have been directed by the Corporate Vice President to apply C F Braun & Co's Quality Assurance Manual in performing their work on nuclear facilities. The parent company will also furnish these two subsidiaries all the necessary engineering, procurement, quality assurance, and quality control services under appropriate contractual agreements.

The responsibility for performing quality work is delegated to every level of the company. All Project Managers, Division Managers, and Department Heads are responsible to management for establishing and maintaining control procedures within their areas of work to ensure that our policies are carried out and that quality activities are documented.

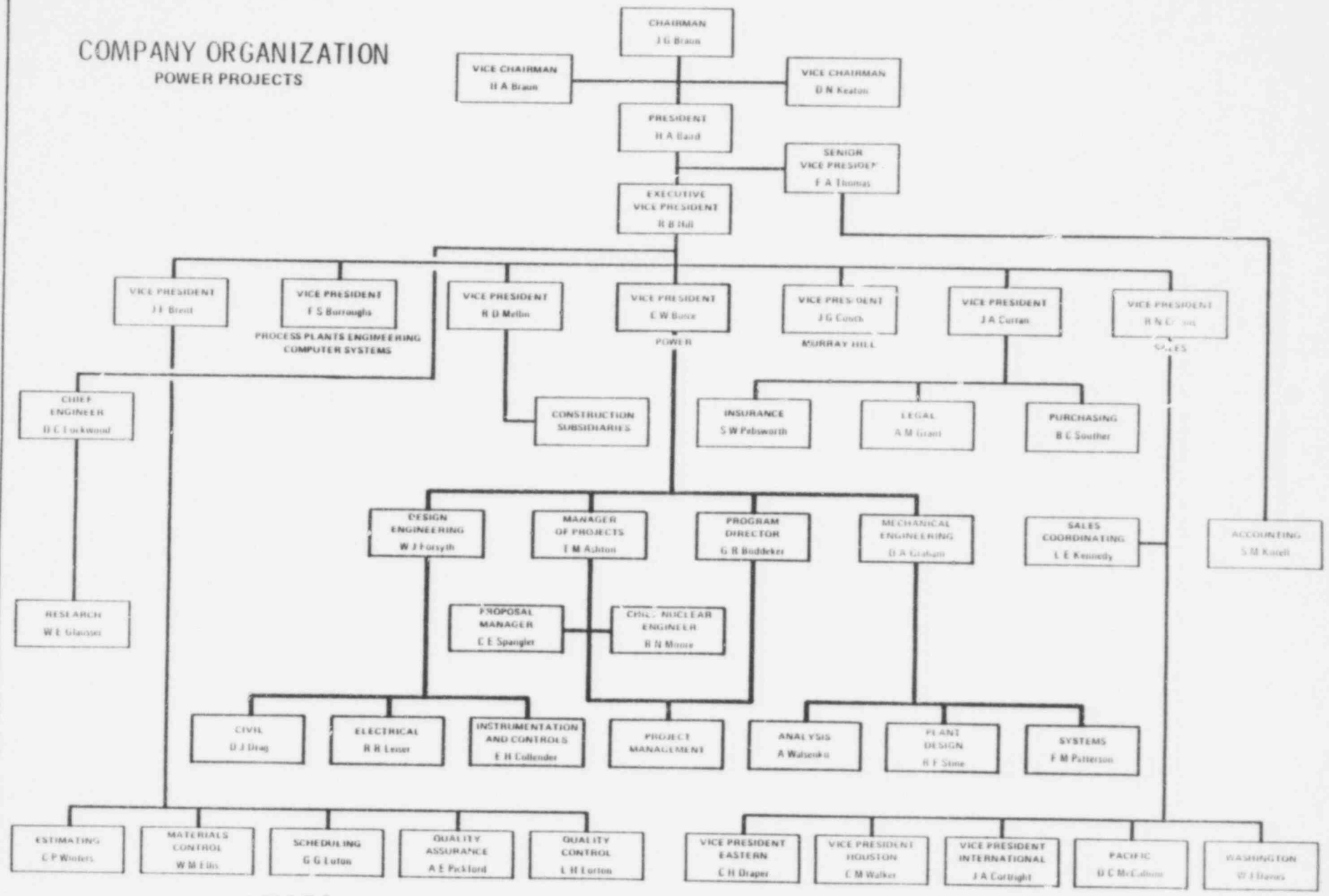
1.1.2 QA ORGANIZATION

The QA organization is directed by the Vice President in charge of QA who derives his authority from the President. He coordinates all Braun QA/QC activities and directs these with respect to engineering, procurement and construction.

The complete title of this officer's position is Vice President, Project Management, Project Controls and Quality Assurance. This officer is responsible for the management of all projects at Alhambra except Power projects as shown on the Company Organization Chart. This officer is also responsible for Project Controls. This includes QA, QC and also Estimating, Scheduling and Materials Control. The Project Controls organization serves all divisions of the company including the Power Division.

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# COMPANY ORGANIZATION POWER PROJECTS



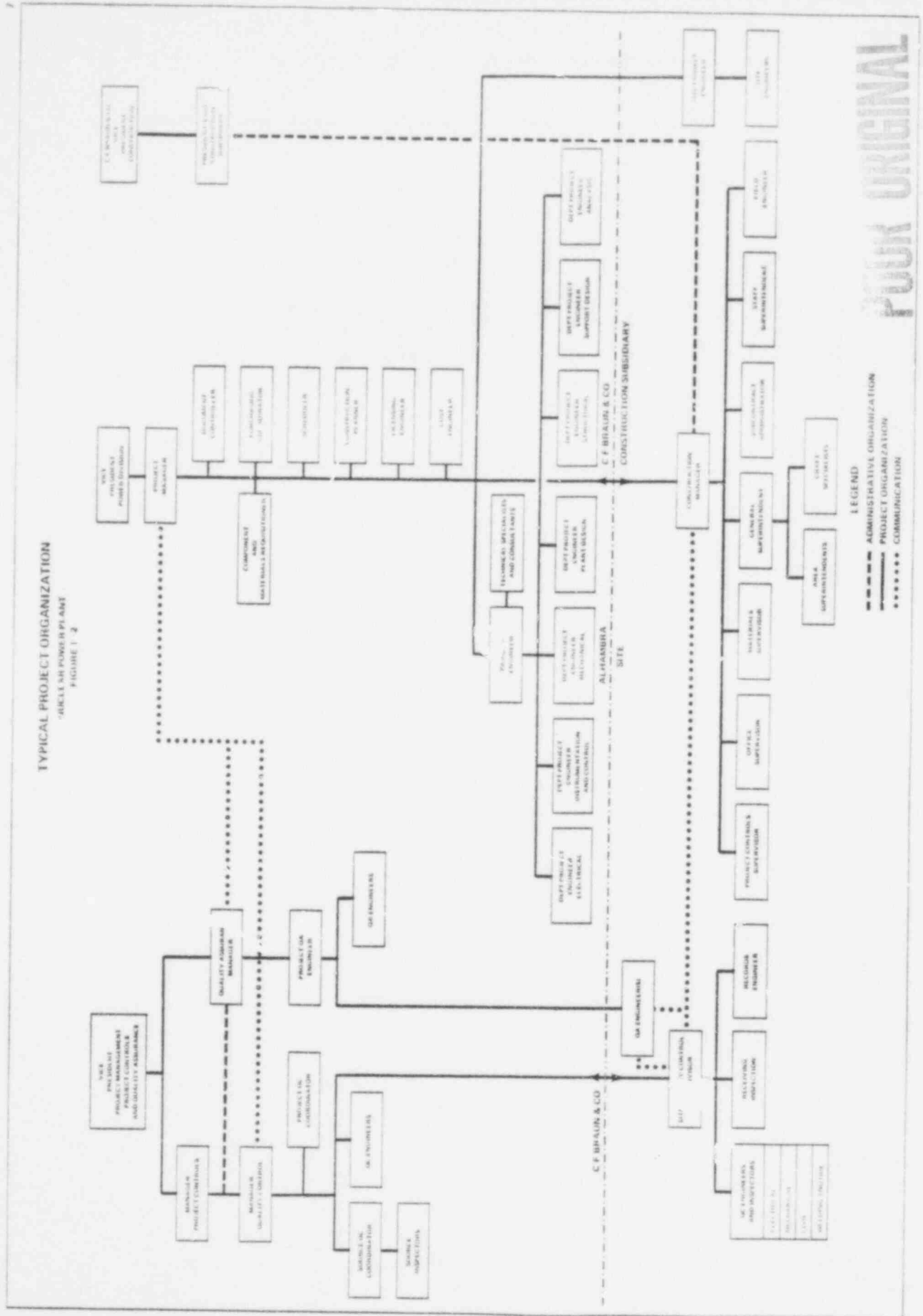
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POOR ORIGINAL



TYPICAL PROJECT ORGANIZATION  
SINGLE SH POWER PLANT  
FIGURE 1 - 2



POOK ORIGINAL

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1.1.3.3 DEPARTMENT PROJECT ENGINEERS The Department Project Engineer assigns work to technical personnel under his direction. He ensures that they are qualified to perform the work, and that the work is checked and given design reviews in accordance with documented procedures. In addition the Department Project Engineers have the assistance of technical specialists and consultants, as required. Department Project Engineers are responsible for the technical accuracy and completeness of all work in the particular discipline which they head for the project.

A Department Project Engineer is assigned by the Power Division Engineering Manager to head each of the engineering groups. A typical project may include the following groups.

- a Electrical Engineering
- b Instrumentation and Control
- c Mechanical Engineering
- d Plant Design Engineering
- e Structural Engineering
- f Support Design
- g Analysis

1.1.3.4 DOCUMENT CONTROLLER The Document Controller is responsible for establishing and maintaining a master project file. He receives and distributes project documentation, as required, to the project staff. He is responsible for maintaining the master indexes, and for updating and distributing them regularly. He is also responsible for distributing Braun drawings, NSSS contractor drawings, other contractor drawings, and specifications from these sources in accordance with the QA Manual. He supplies the Braun construction subsidiaries with the necessary drawings and specifications to construct the project.

1.1.3.5 PURCHASING COORDINATOR The Purchasing Coordinator is the Purchasing Department representative on the project staff. Using the information on or accompanying a Purchase Request, he prepares Requests for Quotations. He is responsible for getting bids from contractors on the recommended Contractor's List. Before placing orders, he is responsible for ensuring that the engineering staff and the QA staff review bids for technical compliance and quality assurance requirements. He is not authorized to place a purchase order until he has their concurrence. He distributes purchase orders and subcontracts in accordance with the Project Manual.

1.1.3.6 TECHNICAL SPECIALISTS AND CONSULTANTS The engineering staff is supported by technical specialists and consultants who are available as needed. A Department Project Engineer may call upon specialists and consultants to review a new or unique design and in the case of key documents such review is mandatory.

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1.1.3.7 CONSTRUCTION MANAGER The Construction Manager, who is an employee of a subsidiary, reports to the Project Manager and is responsible for all construction operations at the project jobsite, except the supervision of the QA and QC staff. The Construction Manager is supported by a field staff organized to manage the field office, field labor and contractors, and control the various construction activities.

1.1.3.8 QA MANAGER The QA Manager reports administratively to the Manager, Project Controls but reports directly to the Vice President in charge of Project Management, Project Controls and Quality Assurance on project QA operations. He has the authority and responsibility, for the Braun QA Program. He ensures that the Braun QA Program is established and that the QA Manual procedures are implemented, as follows.

- a Indoctrinates and directs the project staff and the QA/QC staff on QA requirements and policy for the project.
- b Directs the preparation of procedures and checklists for auditing the QA and QC activities of Braun and contractor organizational elements, assigns audit teams, and ensures that regular audits are made and reported to management and the client.
- c Initiates corrective action when conditions detrimental to quality are recognized, and audits the corrective action implementation to ensure problem solution.
- d Advise management and the Project Manager on the effectiveness of the Braun QA Program by distributing audit reports and reports of the corrective action completed.
- e Initiates and implements QA program corrective action resulting from audit recommendations.
- f Initiates stop work direction if necessary to force corrective action completion before work resumption.
- g Approves all Nuclear Field Inspection Manual procedures before use.
- h Approves all training programs for certification of QC personnel.

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