



TORREY PINES TECHNOLOGY

P.O. Box 85608
San Diego, California 92130
Telephone: (619) 455-2654

A Division of GA Technologies Inc.

PRINCIPAL STAFF		
RA	MAZ	ENF
D/RA		ECS
A/RA		PAO
OPRP		NLO
DEMA		RC
DRMSP		
DE		
ML		
OL		FILE

orig-13

September 22, 1983

U.S. Nuclear Regulatory Commission
Attn: Mr. Thomas A. Reahm
Assistant for Operations
Office of Executive Director for Operations
Room 6709
7735 Old Georgetown Road
Bethesda, MD 20814

Subject: Presentation to the NRC Commissioners on the
Independent Review of Zimmer Project Management,
September 28, 1983

Dear Mr. Reahm:

Enclosed is a copy of the material prepared by Torrey Pines Technology for
the presentation to the NRC Commissioners on September 28, 1983.

Very truly yours,

Patricia M. Johnson

Patricia M. Johnson
Secretary to
George L. Wessman
Director

Enclosure

cc: Mr. J. G. Keppler ✓
NRC-Glen Ellyn, Illinois

Mr. W. H. Dickhoner
Cincinnati Gas & Electric Company

8502080166 840619
PDR FOIA
CARPENT84-151 PDR

SEP 23 1983

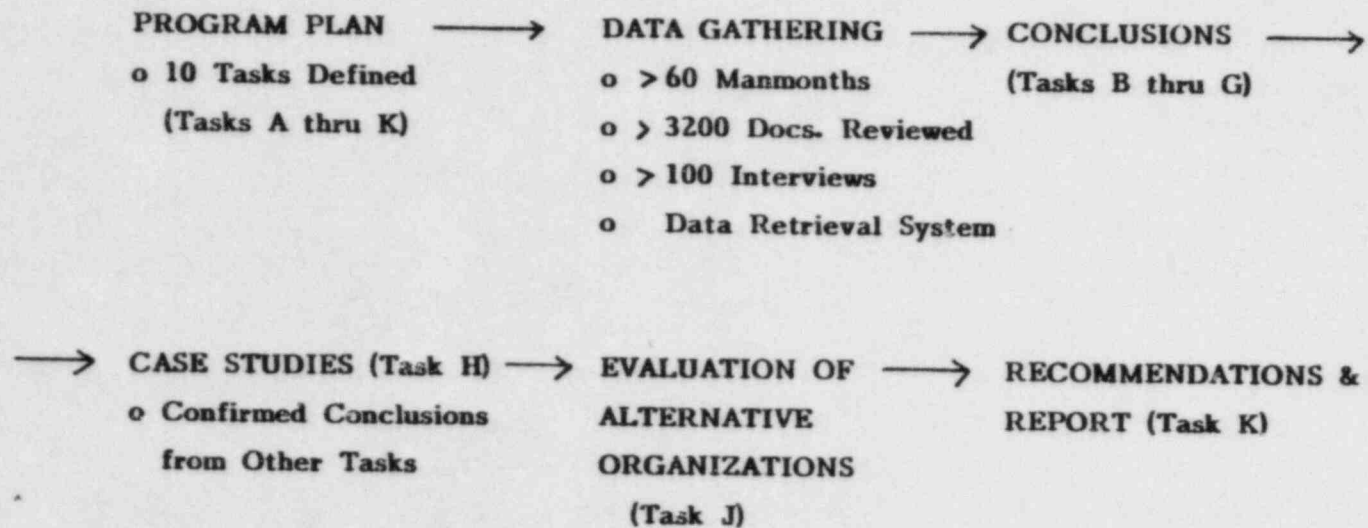
PRESENTATION
TO THE
NRC COMMISSIONERS
ON THE
INDEPENDENT REVIEW
OF
ZIMMER PROJECT MANAGEMENT

September 28, 1983

INDEPENDENT REVIEW OF
ZIMMER PROJECT MANAGEMENT

PROGRAM APPROACH

OVERVIEW



INDEPENDENT REVIEW OF
ZIMMER PROJECT MANAGEMENT

Program Approach Task Descriptions

ADMINISTRATIVE

- o Task A - Manage and Direct Project

DATA GATHERING

- o Task B - Evaluate Project Structure, Staffing, Policies and/or Procedures
- o Task C - Evaluate Management Policies, Involvement and Commitment Toward Quality Assurance
- o Task D - Evaluate Quality Assurance Program Management
- o Task E - Evaluate Quality Confirmation Program Management
- o Task F - Evaluate Management Methods for Control of Work of Major Sub-contractors and Suppliers
- o Task G - Evaluate Procedures and Methods for the Transition from Construction to Operations

CONFIRMING DATA

- o Task H - Evaluate Management Actions in Selected Case Studies

INDEPENDENT REVIEW OF
ZIMMER PROJECT MANAGEMENT

PROGRAM APPROACH
TASK DESCRIPTION (Continued)

EVALUATION OF ALTERNATIVES

o TASK J

- Contemporary Nuclear
Project Analysis
- Review of Task B
thru H Results
- Evaluation of 16 Alter-
native Organizational
Arrangements

RECOMMENDATIONS AND REPORT

o TASK K

**INDEPENDENT REVIEW OF
ZIMMER PROJECT MANAGEMENT**

REVIEW PROCESS

o SCOPE DEFINED

- Review Management
- Determine Organizational Changes Required
- No Technical Review of Adequacy
- No Physical Inspection of the Plant

o PROGRAM PLAN

- Scope Reviewed and Agreed with NRC at Public Meetings
- TPT Independence Established
- Individual Investigators Filed Independence Statements
- Communications in Accordance with NRC Protocol

**INDEPENDENT REVIEW OF
ZIMMER PROJECT MANAGEMENT**

REVIEW PROCESS (Continued)

- o **FOR EACH TASK**
 - Task Leader Plus Two-Three Researchers
 - Procedures Written
 - Interview Checklists as Needed
 - Interviews
 - Documents Reviewed
 - Summary Report

- o **DOCUMENTATION**
 - Interviews Documented
 - Related Documentation Obtained
 - Data Cross Checked by Comparison of Different Interviews with Available Documentation
 - Interviews and Documents Filed in TPT Offices

**INDEPENDENT REVIEW OF
ZIMMER PROJECT MANAGEMENT**

EVALUATION/REPORT PROCESS

- o **No Predetermined Conclusions or Recommendations**
- o **Each Reviewer Performed Task in Accordance with Program Plan and Procedures**
- o **Reliance on Individual Reviewer's Judgment Based on Education, Training, and Experience**
- o **TPT Team Members Met Daily to Exchange Information and Evaluate Data**
- o **initial Conclusions Reviewed with Task Leader and Program Manager**
- o **Summary Evaluations for Each Task Prepared by Task Leader and Team Members**
- o **Case Studies Used to Cross Check Broad Project Management Characteristics Observed in Other Tasks**
- o **Alternative Organizational Structures Evaluated by Task Leaders and Program Manager**
- o **Final Report Drafts Reviewed by Task Leaders**
- o **Each Observation/Conclusion in Final Report Trackable to Data in TPT Files**
- o **Final Report Reviewed by Program Manager/TPT Management**

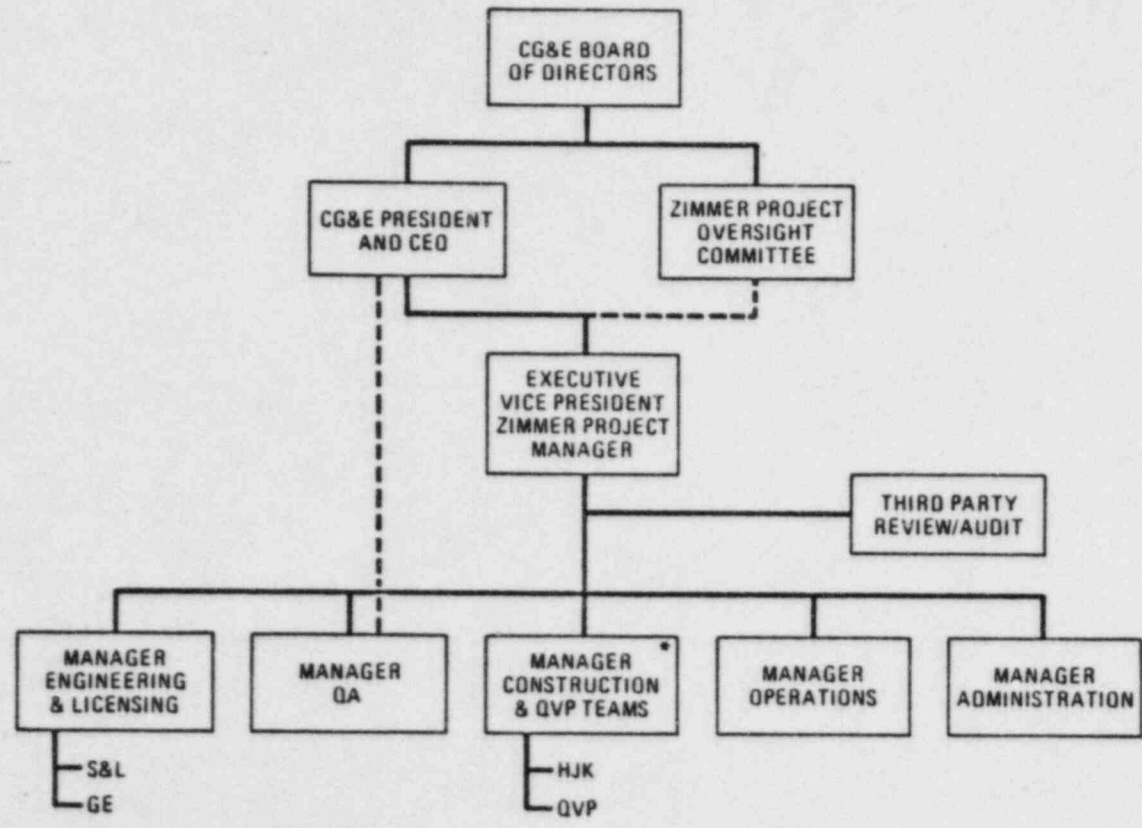
**INDEPENDENT REVIEW OF
ZIMMER PROJECT MANAGEMENT**

RECOMMENDATIONS

- o **MAJOR**
 - Top Level CG&E Organization for the Zimmer Project
 - Key Recommendations on Top Management
 - Key Recommendations on Project Management
 - Key Programmatic Recommendations

- o **DETAILED**
 - Suggested Organization and Responsibility of Each of the Major Project Subgroups
 - Approximately 100 Recommendations from All Areas Examined
 - Typical are Organization of Overall Procedures, Details of QVP, Integrated System for Scheduling and Cost Control and Training

INDEPENDENT REVIEW OF ZIMMER PROJECT MANAGEMENT
Proposed Zimmer Project Organization



ZIMMER EXECUTIVE REPORTING TO CEO OF CG&E
 WITH COMMUNICATION LINE TO THE OVERSIGHT COMMITTEE



*EXPERIENCED EXTERNAL ORGANIZATION.

**INDEPENDENT REVIEW OF
ZIMMER PROJECT MANAGEMENT**

KEY RECOMMENDATIONS ON TOP MANAGEMENT

- o **CG&E BOARD OF DIRECTORS**
 - Retain Full Responsibility
 - Become More Involved and Knowledgeable
 - Elect Director Experienced in the Nuclear Industry
 - Evaluate Officers with Zimmer Responsibility
 - Appoint a Zimmer Project Oversight Committee

- o **ZIMMER PROJECT OVERSIGHT COMMITTEE**
 - An Advisory Committee of the Board Without Line Management Responsibility
 - Supplemented by a Staff of Advisors
 - Provide an Overview and Source of Information and Analysis of Zimmer Operations

- o **CHIEF EXECUTIVE OFFICER**
 - Retain CEO Responsibility for CG&E Including Zimmer
 - Involved in Policy Decisions and Their Results
 - Clear Demonstration of the Importance of Quality and Quality Assurance

**INDEPENDENT REVIEW OF
ZIMMER PROJECT MANAGEMENT**

KEY RECOMMENDATIONS ON PROJECT MANAGEMENT

- o **SENIOR EXECUTIVE**
 - Responsible for Only Zimmer Activities
 - Responsible for All Zimmer Activities
 - Proven Track Record of Management of Major Nuclear Projects

- o **CONSTRUCTION**
 - Hire an Experienced, External Architect-Engineer-Construction Company
 - Manage Construction and Quality Verification Program
 - Preserve Architect-Engineer-Constructor Corporate Identity

- o **QUALITY ASSURANCE**
 - Organizational Status the Same as Other Functions Reporting to the Zimmer Senior Executive
 - Increased Staff of Experienced, Permanent Employees

**INDEPENDENT REVIEW OF
ZIMMER PROJECT MANAGEMENT**

KEY PROGRAMMATIC RECOMMENDATIONS

- o **QUALITY VERIFICATION PROGRAM**
 - **Broader than Existing Quality Confirmation Program**
 - **Complete, on a Segment-by-Segment Basis, Prior to Hardware Changes**
 - **Multi-discipline Teams Lead by the Architect-Engineer-Constructor**

- o **TOP LEVEL DEMONSTRATION OF COMMITMENT TO QUALITY AND QUALITY ASSURANCE**

- o **THIRD PARTY REVIEWS**
 - **Design Review**
 - **Audit of the Implementation of the QVP**
 - **Records Management Review**