



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV

611 GYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-8064

OCT 18 1996

William T. Cottle, Group Vice  
President, Nuclear  
Houston Lighting & Power Company  
P.O. Box 289  
Wadsworth, Texas 77483

SUBJECT: SUMMARY OF OCTOBER 15, 1996, MEETING

Dear Mr. Cottle:

This refers to the meeting conducted in the Region IV office on October 15, 1996. This meeting was conducted to inform the Region IV staff of the upcoming steam generator replacement project for Unit 1 in 2000. Your presentation included a depiction of the major evolutions of the project. The topics discussed were the project overview, the engineering activities that will be encountered, and licensing activities that will be addressed. The meeting was beneficial in providing Houston Lighting & Power the opportunity to describe the scope of activities planned for the steam generator replacement project and for the Region IV staff to better understand the preparations and controls of the project. It was our understanding that this was the same presentation that your staff provided to NRR on September 16, 1996.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter will be placed in the NRC's Public Document Room.

Should you have any questions concerning this matter, we will be pleased to discuss them with you.

Sincerely,

J. E. Dyer, Director  
Division of Reactor Projects

Docket Nos.: 50-498  
50-499  
License Nos.: NPF-76  
NPF-80

Enclosures:

1. Attendance List
2. Licensee Presentation

9610280181 961018  
PDR ADOCK 05000498  
PDR

cc w/enclosures:

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OCT 18 1996

bcc to DMB (IE45)

bcc distrib. by RIV:

L. J. Callan

DRP Director

Branch Chief (DRP/A)

Project Engineer (DRP/A)

Branch Chief (DRP/TSS)

Leah Tremper (OC/LFDCB, MS: TWFN 9E10) Director, WCFO

B. W. Henderson, PAO

Resident Inspector

DRS-PSB

MIS System

RIV File

R. Bachman, OGC (MS: 15-B-18)

Director, WCFO

C. A. Hackney, RSLO

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RAKopriva:df <i>RAK</i>	JITapia <i>RAK</i>	JEDyer <i>JW</i>					
10/17/96	10/17/96	10/18/96					

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OCT 18 1996

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ENCLOSURE 1

ATTENDANCE AT THE HL&P/NRC SG REPLACEMENT MEETING  
OF OCTOBER 15, 1996

HL&P

David Wohleber, Project Manager  
Ray Pate, STP Licensing Engineer  
Chet McIntyre, Director, Engineering Projects  
Mark McBurnett, Licensing Manager

NRC

Dwight Chamberlain, Acting Duputy Director, DRP  
Joseph Tapia, Chief, Project Branch A, DRP  
Ronald Kopriva, Project Engineer, Project Branch A, DRP  
Ken Brockman, Acting Director, DRS  
Ian Barnes, Acting Deputy Director, DRS  
Dale Powers, Chief, Maintenance Branch, DRS  
Bill McNeill, Reactor Inspector, Maintenance Branch, DRS  
Chuck Paulk, Reactor Inspector, Maintenance Branch, DRS

SOUTH TEXAS PROJECT  
ELECTRIC GENERATING STATION

UNIT 1 STEAM GENERATOR  
REPLACEMENT PROJECT

NRC REGION IV  
PRESENTATION

OCTOBER 15, 1996

**SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION  
UNIT 1 STEAM GENERATOR REPLACEMENT PROJECT**

**AGENDA**

**INTRODUCTION**

Dave Wohleber  
Manager Steam Generator Replacement Project

**PROJECT OVERVIEW**

Dave Wohleber  
Manager Steam Generator Replacement Project

**ENGINEERING ACTIVITIES**

Chet McIntyre  
Manager Steam Generator Replacement  
Engineering

**LICENSING ACTIVITIES**

Mark McBurnett  
Manager Nuclear Licensing

**CLOSING COMMENTS**

Dave Wohleber  
Manager Steam Generator Replacement Project



SGUTH TEXAS PROJECT ELECTRIC GENERATING STATION  
UNIT 1 STEAM GENERATOR REPLACEMENT PROJECT

## INTRODUCTION

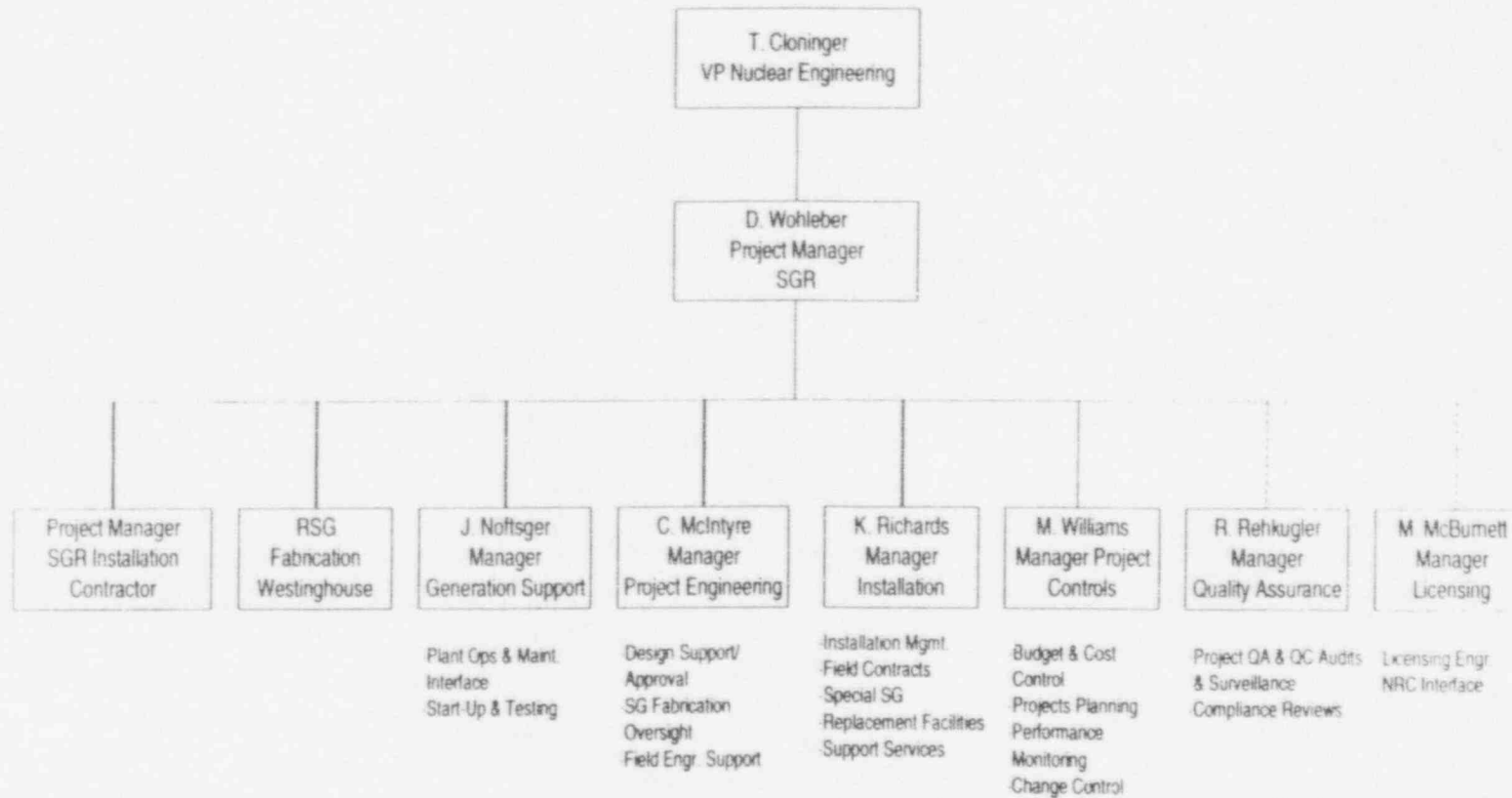
- PURPOSE OF THE MEETING
  - Provide the South Texas Project Plan for Replacing the Unit 1 Steam Generators in the Spring of 2000
- DESIRED OUTCOME
  - Knowledge of STP Plan and Schedules
  - Understanding of Licensing Methodology
    - 10 CFR 50.59
    - Amendments
  - Licensee Awareness for Inspection and Review Plans

## BACKGROUND

- Commercial Operation - August 1988
- 4 Loop Westinghouse PWR
- 3800 MWT Core Power
- Westinghouse **Model E** Steam Generator - Current
- Westinghouse **Model Delta 94** Steam Generators - Replacement
- S/G Replacement Outage - 9th Refueling - Spring 2000

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION  
UNIT 1 STEAM GENERATOR REPLACEMENT PROJECT

## PROJECT ORGANIZATION



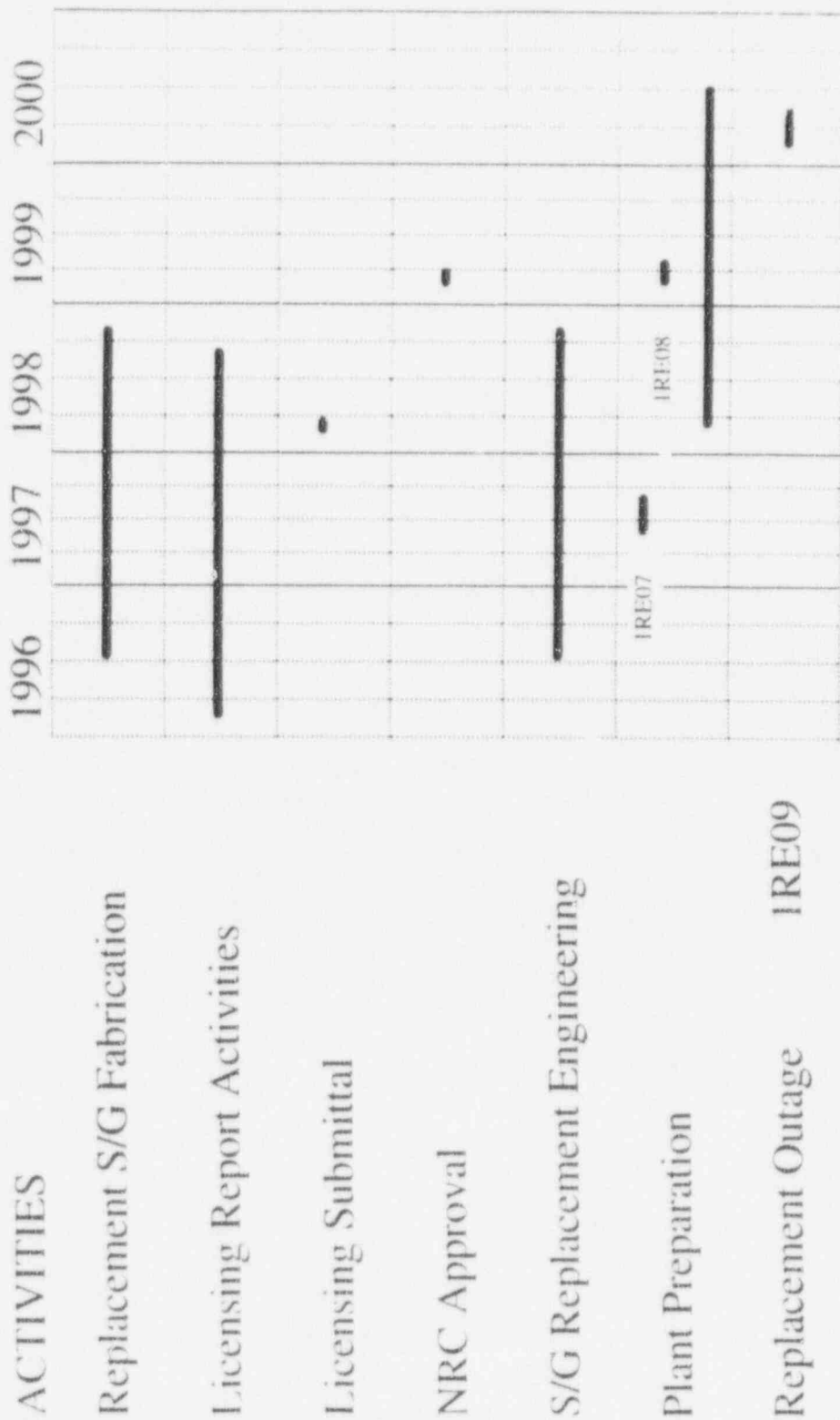


## INDUSTRY LESSONS LEARNED

- QUALITY and SAFETY-HIGHEST PRIORITY
- TOTAL STATION INVOLVEMENT
- TEAM BUILDING PROGRAM
- OPEN and FREQUENT COMMUNICATION WITH REGULATORS
- READINESS REVIEW MEETINGS
- CONTINGENCY PLANS

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UNIT 1 STEAM GENERATOR REPLACEMENT PROJECT

# OVERALL PROJECT MILESTONE



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UNIT 1 STEAM GENERATOR REPLACEMENT PROJECT

## ENGINEERING ACTIVITIES

- REPLACEMENT STEAM GENERATOR FEATURES
- ANALYSES AND EVALUATION

## **DELTA 94 REPLACEMENT STEAM GENERATOR**

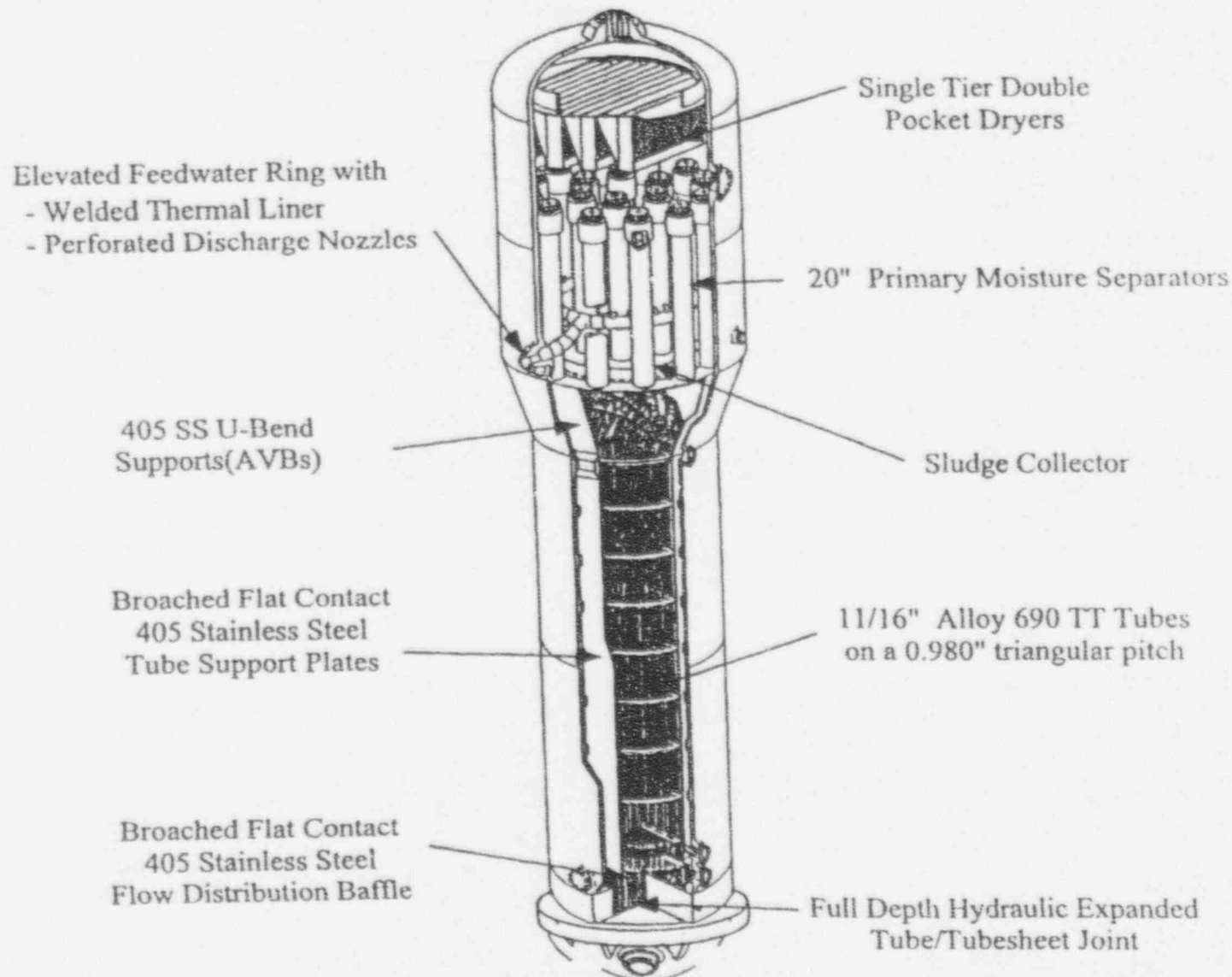
- THE DELTA 94 STEAM GENERATOR IS A LARGER VERSION OF THE WESTINGHOUSE DELTA 75 REPLACEMENT STEAM GENERATORS INSTALLED AT V.C. SUMMER.
- Key Design Features Based on Delta 75
- Key Materials Based on Delta 75
- Larger Heat Transfer Area to Meet South Texas Performance



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UNIT 1 STEAM GENERATOR REPLACEMENT PROJECT

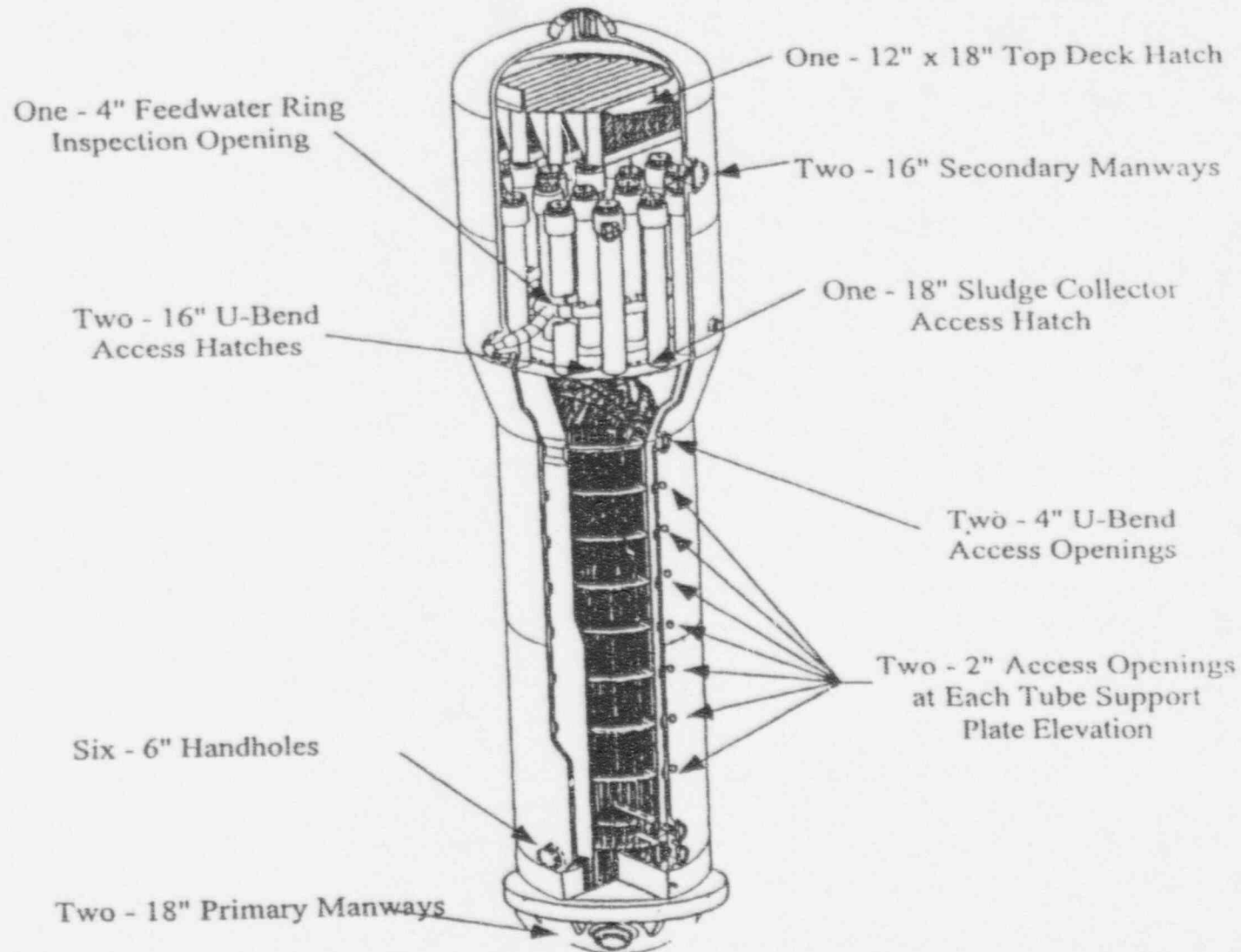
## DELTA 94 REPLACEMENT STEAM GENERATOR

### Key Delta 75/Delta 94 Design Features



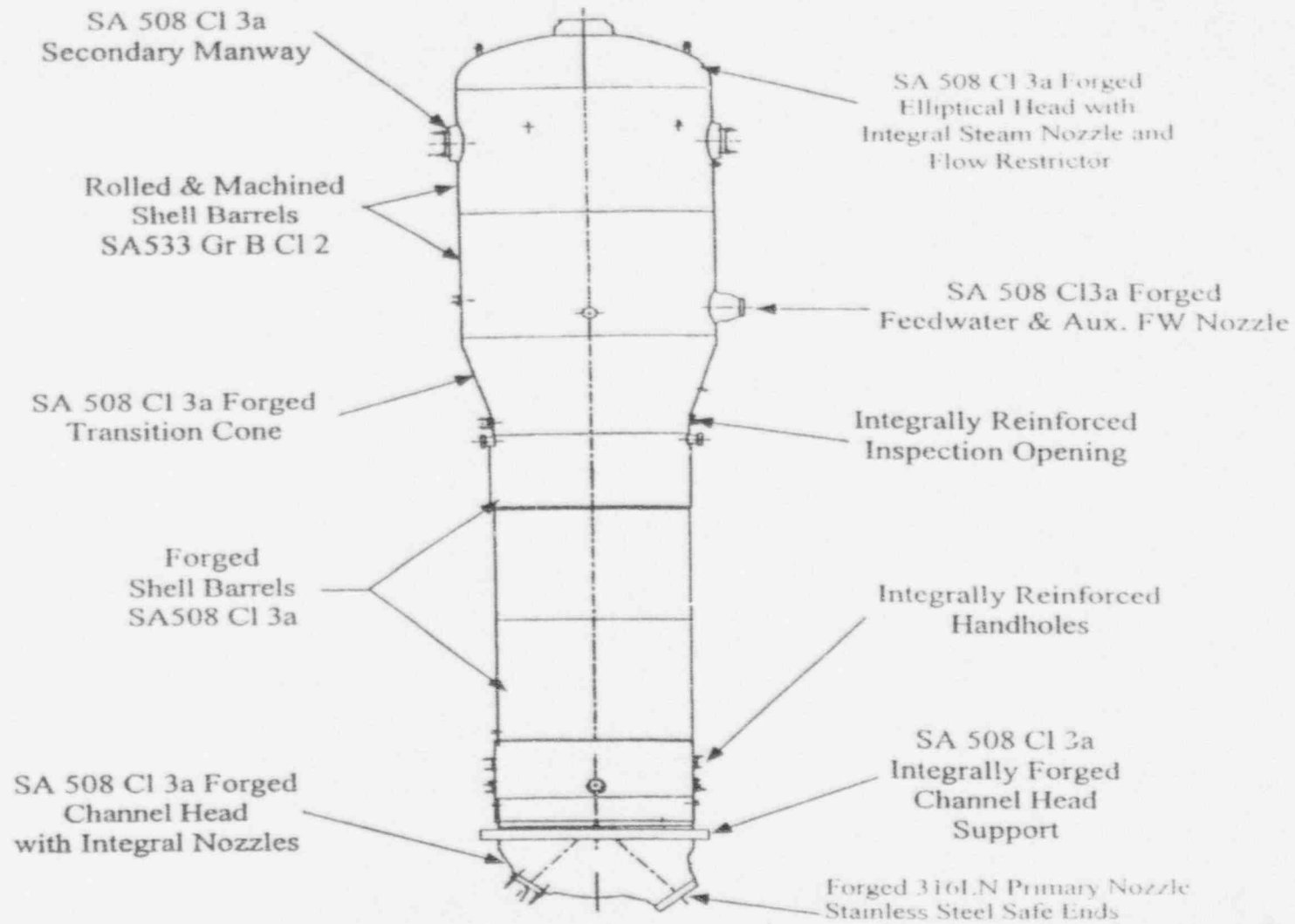
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## Delta 94 Maintenance/Access Openings



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## Delta 94 Pressure Boundary Materials



## ANALYSIS / EVALUATIONS

- LOSS-OF-COOLANT ACCIDENT ANALYSIS (LOCA)
  - Large Break LOCA
  - Small Break LOCA
  - POST-LOCA Long Term Core Cooling Subcriticality
  - Hot Leg Switchover Time to Prevent Boron Precipitation
  - LOCA Hydraulic Forces Analysis

## ANALYSIS / EVALUATIONS

- NON LOCA
  - Computer Codes RETRAN/VIPRE
- STEAM GENERATOR TUBE RUPTURE
- MAIN STEAM LINE BREAK CONTAINMENT ANALYSIS

## ANALYSIS / EVALUATIONS

- LARGE BREAK CONTAINMENT ANALYSIS
  - Computer Code - RELAP5
- RADIOLOGICAL CONSEQUENCES EVALUATION
- EQUIPMENT QUALIFICATION EVALUATION
- OPERATION ANALYSES FOR MARGIN TO TRIP OR ACTUATION SETPOINTS

## ANALYSIS / EVALUATIONS

- COLD OVERPRESSURE MITIGATION
- ANTICIPATED TRANSIENT WITHOUT SCRAM
  - Review Based on 1979 ATWS Submittal
- LEVEL TAP LOCATION
  - Optimum Lower Tap Location
  - Nominal, Low-Low, and High-High Setpoints

## ANALYSIS / EVALUATIONS

- Reactor Vessel Evaluation
- Reactor Coolant Pump and Motor Evaluation
- Control Rod Drive Mechanism Evaluation
- Primary Coolant Loop System Evaluation



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UNIT 1 STEAM GENERATOR REPLACEMENT PROJECT

## ANALYSIS / EVALUATIONS

- FLUID SYSTEMS
  - NSSS / BOP Systems Interface Requirements
  - RCS & NSSS Auxiliary
  - Main Steam
  - Condensate & Feed Water
  - Auxiliary Feed Water
  - S. G. Blowdown & Sampling
  - Chemical Volume Control

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UNIT 1 STEAM GENERATOR REPLACEMENT PROJECT

## LICENSING

- REPLACEMENT PHILOSOPHY
- SCHEDULES
- LICENSING / NRC INTERFACE

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION  
UNIT 1 STEAM GENERATOR REPLACEMENT PROJECT

## **REPLACEMENT PHILOSOPHY**

- UTILIZATION OF 10 CFR 50.59
- TECHNICAL SPECIFICATION CHANGES
- DEMONSTRATE NO SIGNIFICANT HAZARDS CONSIDERATION
- OPERATOR REQUALIFICATION

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UNIT 1 STEAM GENERATOR REPLACEMENT PROJECT

## POSSIBLE TECHNICAL SPECIFICATION CHANGES

- RCS FLOW RATE
- OP  $\Delta T$  / OT  $\Delta T$  SETPOINTS
- STEAM GENERATOR WATER LEVEL SETPOINTS
- STEAM GENERATOR SURVEILLANCE
- REACTOR COOLANT SYSTEM VOLUME
- CONTAINMENT PRESSURE

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UNIT 1 STEAM GENERATOR REPLACEMENT PROJECT

## SCHEDULE

- SUBMITTAL - LICENSING BASIS DOCUMENTS  
AND AMENDMENTS
  - MARCH 1998
- REQUEST NRC APPROVAL
  - MARCH 1999

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UNIT 1 STEAM GENERATOR REPLACEMENT PROJECT

## LICENSING NRC INTERFACE

- STATUS MEETINGS
- RESIDENT MEETINGS
- INSPECTIONS