



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

November 30, 2000

MEMORANDUM TO: Susan F. Shankman, Deputy Director  
Licensing and Inspection Directorate  
Spent Fuel Project Office, NMSS

FROM: Timothy Kobetz, Project Manager  
Licensing Section  
Spent Fuel Project Office, NMSS

SUBJECT: SUMMARY OF THE NOVEMBER 17, 2000, MEETING BETWEEN THE  
NUCLEAR REGULATORY COMMISSION STAFF AND PACIFIC GAS  
AND ELECTRIC COMPANY (TAC NO. L23221)

On November 17, 2000, a meeting was held between the Nuclear Regulatory Commission (NRC) staff and representatives of Pacific Gas and Electric Company (PG&E) to discuss PG&E's plans for licensing independent spent fuel storage installations (ISFSIs) at Diablo Canyon and Humboldt Bay. At this meeting, PG&E provided a status update and specific information regarding the proposed ISFSIs. Members of the public also attended the meeting. Attachment 1 is an attendance list. Attachment 2 contains the slides used in PG&E's presentation. This meeting was noticed on October 31, 2000.

PG&E stated that the schedules for the submittal of the site-specific ISFSI license applications for both facilities had slipped from the previous goal of October 2000. The Diablo Canyon application is now scheduled to be submitted in April 2001 and Humboldt Bay in the fourth quarter of 2001. In addition, PG&E presented the following regarding the Diablo Canyon ISFSI:

- PG&E has initiated discussions with local and state officials and other special interest groups for siting an ISFSI at Diablo Canyon.
- PG&E plans to begin construction of the ISFSI in 2004. Full core off-load capability will be lost in 2006.
- PG&E requested that NRC review the Diablo Canyon ISFSI application concurrently with the Holtec Hi-Storm amendment that was submitted in August 2000. PG&E proposed this type of review to eliminate duplication of effort between applications. NRC staff stated they would consider the request but did not commit to granting the request.
- PG&E briefly discussed ongoing engineering work for the cask transfer station and the high seismic requirement of the site.
- PG&E presented an overview of its existing Quality Assurance Program and described its implementation for oversight of the ISFSI design.

PG&E and NRC staff agreed to hold future meetings to address specific technical issues resulting from vendor selections and associated design details and project status updates.

No proprietary information was disseminated or presented at this meeting. No regulatory decisions were requested or made.

Docket Nos. 72-26 (50-275, -323)  
72-27 (50-133)

Attachments: 1. Attendance List  
2. PG&E Slides

cc: Service Lists

DISTRIBUTION: (Closes TAC L23221/Review 040S)

Dockets	NRC File Center	PUBLIC	NMSS R/F	SFPO R/F
SGagner, OPA	BSpitzburg, RIV	VEverett, RIV	NJensen, OGC	FLyon, NRR
NRC attendees	Anorris	DWheeler, NRR	GShukla, NRR	

G:\PG&E\11-17-00, Meeting Summary.wpd

ADAMS:

OFC:	SFPO	E	SFPO	2E	SFPO	C
NAME:	<i>AK</i> TKobetz		<i>WJ</i> Harpe		SBagge <sup>SP</sup>	
DATE:	11/29/00		11/29/00		11/30/00	

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# **Attachment 1**

**November 17, 2000 Meeting  
between the Nuclear Regulatory Commission and  
Pacific Gas and Electric**

**ATTENDANCE LIST**

<u>Name</u>	<u>Affiliation</u>
David Taggart	PG&E
Terry Grebel	PG&E
Chris Hartz	PG&E
Jearl Strickland	PG&E
Wayne Hodges	NRC/NMSS/SFPO
Tim Kobetz	NRC/NMSS/SFPO
Chet Poslusny	NRC/NMSS/SFPO
K.C. Leu	NRC/NMSS/SFPO
David Tang	NRC/NMSS/SFPO
Steven Baggett	NRC/NMSS/SFPO
Thomas Matula	NRC/NMSS/SFPO
Duke Wheeler	NRC/NRR
Girja Shukla	NRC/NRR
Brian Gutherman	Hotec
Jack Bashoven	TN-West

## **Attachment 2**

# ***Diablo Canyon Power Plant Spent Fuel Storage Project***

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## **Presentation to the NRC**

### **November 17, 2000**



# **AGENDA**

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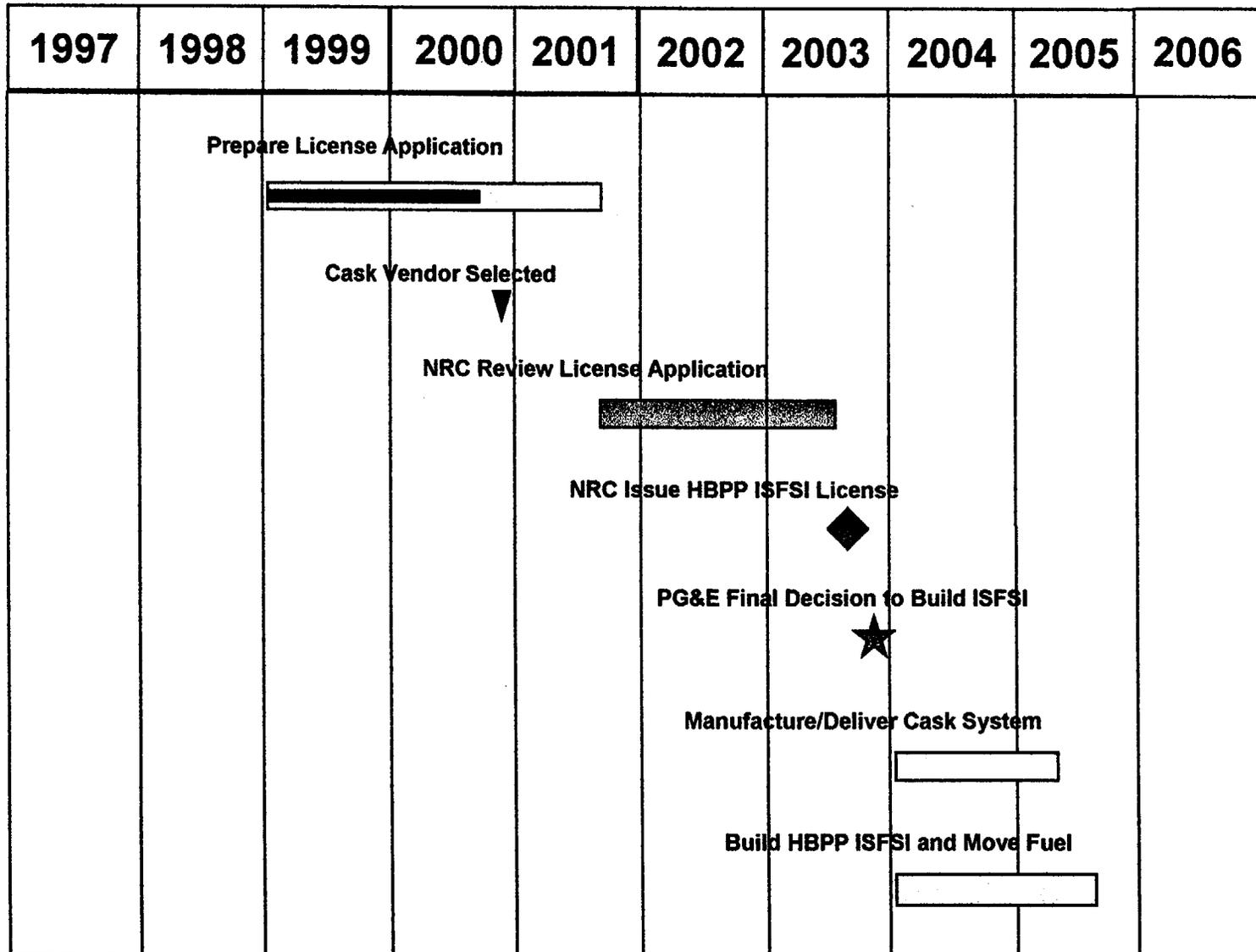
- **Introduction**
- **Projects Update**
- **DC ISFSI Project Organization**
- **DC Project Overview**
- **Holtec Licensing Actions**
- **Holtec Work Scope**
- **ISFSI QA Oversight**
- **Future Meetings**

# ***HB ISFSI PROJECTS UPDATE***

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- Summary Status
  - Cask vendors bids review complete
  - Final scope development for cask specification in Process
  - Preparation for contract negotiations underway
  - Planning in process for Coastal Commission and other required permitting
- Scheduling and Planning Issues
  - Series licensing effort with DC
  - Potential of the same cask vendor as DC

# Preliminary Schedule for HB ISFSI



# ***DC ISFSI PROJECTS UPDATE***

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- DC project office established
  - Engineering, licensing, quality assurance, legal, government and community affairs
- Site specific design for DC is in progress
- Initiated permitting discussions with local and state agencies
- Briefings for local officials and special interest groups



# USED FUEL STORAGE

Lawrence F. Womack  
Executive Sponsor

Ops - C. Harvey  
Ops - S. Westcott  
Mtce - Mike Oien

Jearl Strickland  
Program Director

Kath Kunz  
Admin Assistant

Licensing  
Terry Grebel

Roger Johnson  
Bob Dietrich \*  
Jay Young\*  
Bob Webb\*

Responsibilities

Secure NRC Part 50,  
72 licenses  
NRC Environmental  
Review Process  
Support potential  
hearings

HBPP Used Fuel Program  
Project Manager  
Roy Willis

Responsibilities

Ensure DCPP & HBPP  
Used Fuel Storage  
Project is aligned with  
DCPP project

Land Use Permits  
Pat Kelly

Bob Schiebelhut \*  
LSA Associates \*

Responsibilities

Secure coastal permits  
Interface with county  
planning, building &  
engineering depts.  
CEQA Process (Env.  
Impact Report)

Gov't and Public  
Relations  
Missie Hobson

Pat Mullen  
Mark Timmerman  
Ed Bedwell  
Phil Isenberg \*  
Jeff Lewis

Speakers Bureau

Mark Somerville  
Steve Chesnut  
Jim Tomkins  
Rudy Ortega  
Mike Meko  
Jacquie Hinds

Responsibilities

Local political  
coordination /  
community public  
affairs / statewide  
political gov't  
coordination

Project Manager  
Bruce Patton

Richard Klimczak  
Rich Hagler  
Al Tafoya\*  
Edwin Olweny\*  
Tien Lee\*  
Sohrab Esfandiari\*  
Patrick Huang  
John Wathen

Responsibilities

Manage Vendors  
Set engineering  
requirements  
Manage construction  
Perform engineering  
Contract engineering  
services

Contract Services  
Rick Phillips

Responsibilities

Oversight of contracts  
process  
Contract Administrator  
Process invoices

Environmental Issues  
Drew Squyres

Responsibilities

Ensure compliance with  
Air pollution permits  
NPDES permit  
Obtain NPDES  
Construction Stormwater  
permit  
Meet APCD Permit  
conditions  
Obtain additional APCD  
permits  
Wells/borings permits

Project Quality  
Assurance Eng.  
Chris Hartz

Phil Lang  
M. Sullivan  
Rick Bell

Responsibilities

Vendor qualifications  
Oversee fabrication &  
construction quality  
Project QA & Oversight

Legal  
Richard Locke

Leigh Cassidy \*  
Dave Repka \*  
Bob Schiebelhut\*

Responsibilities

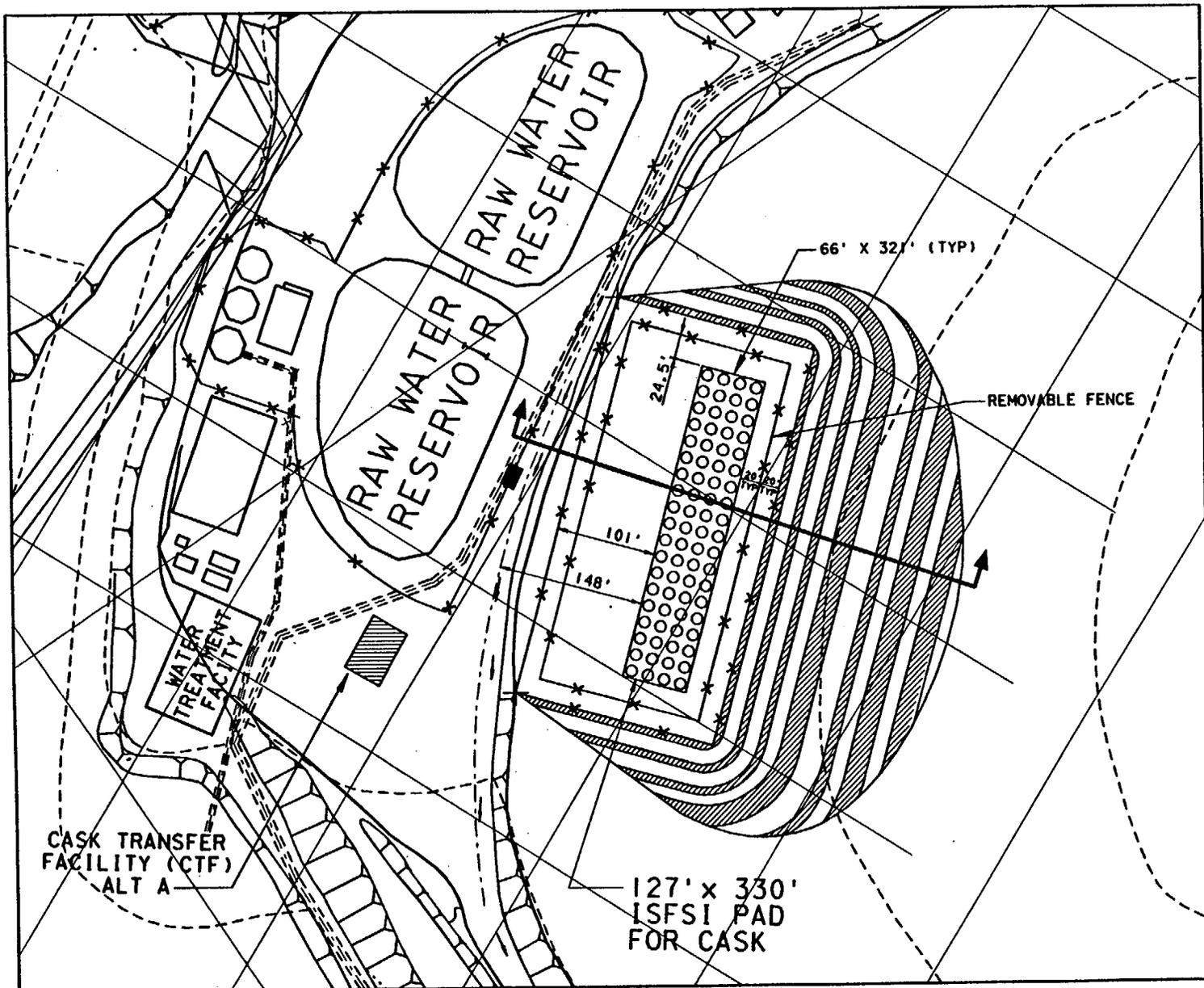
Provide legal advice and  
strategy for all regulatory  
matters and contracts  
Conduct potential hearings

\* Consultant

# ***DC PROJECT OVERVIEW***

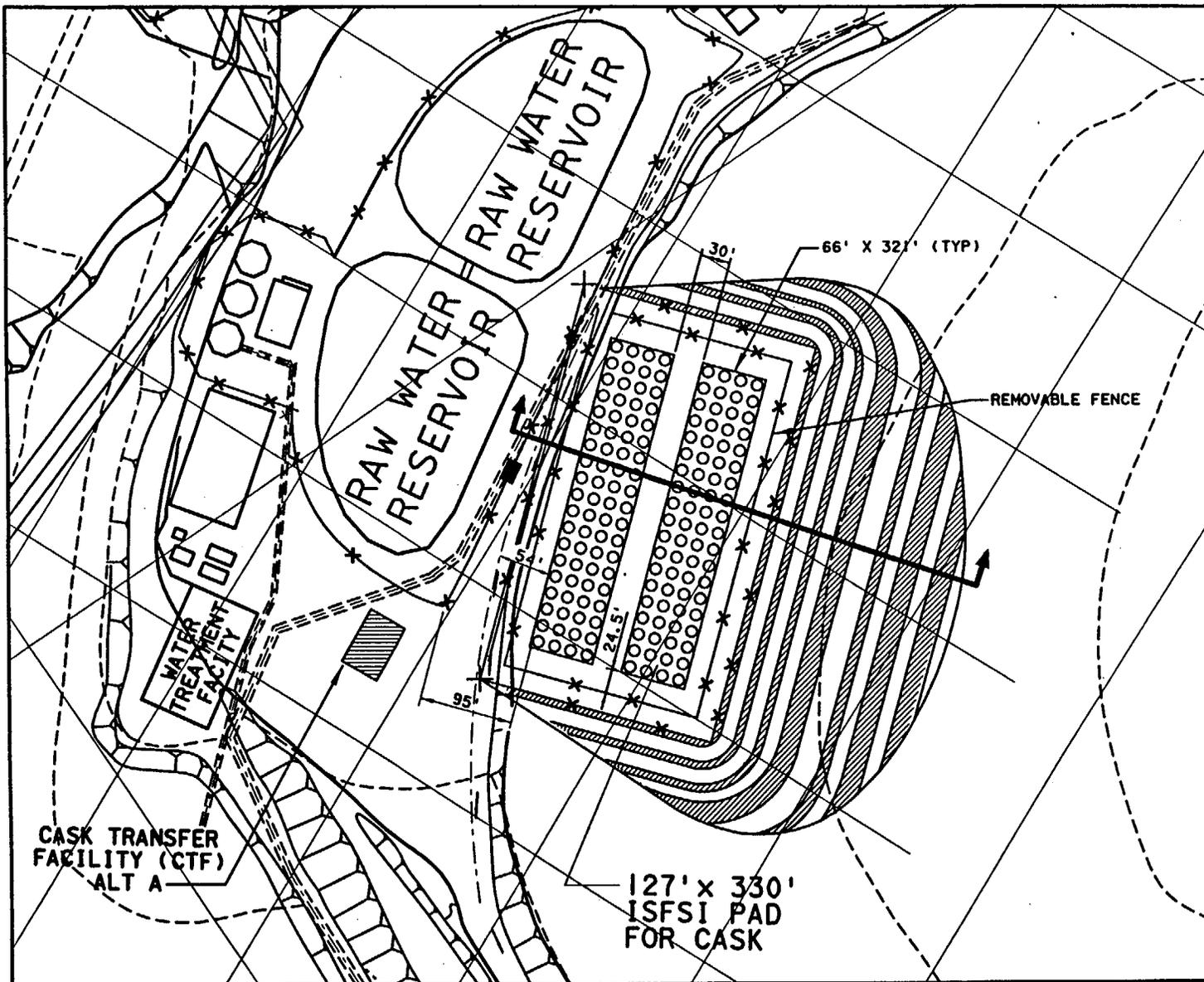
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- Facility will be licensed for two phased usage
  - Operational
  - Decommissioning
- DC will license for the Holtec 32 and 24 assembly storage canisters
- Cask Transfer Facility to be located adjacent to the storage site



CASK LAYOUT PHASE I - OPERATIONAL

N. T. S.



**CASK LAYOUT PHASE II - DECOMMISSIONING**

N. T. S.

# ***HOLTEC LICENSING ACTIONS***

Item	Submittal Date	SER Date
MPC-32/5% Enrich.	8/31/00	9/01
High Burnup	8/31/00	9/01
Increased Decay Heat	8/31/00	9/01
High Seismic	8/31/00	9/01
PWR Damaged Fuel/Debris (4% Enrich.)	8/31/00	9/01
Non-Fuel Hardware	8/31/00	9/01

# ***HOLTEC LICENSING ACTIONS – Cont.***

Item	Submittal Date	SER Date
MPC-32/5% HI-STAR Part 71	12/01	8/02
MPC-32/5% HI-STAR Part 72	10/01	10/02
High Seismic – HI-STAR	10/01	10/02
Damaged Fuel/Debris – 5%	TBD	TBD

# ***HOLTEC/PG&E DOCKET INTERFACE***

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- DC ISFSI License refers to Holtec FSAR and LAR 1014-1
- DC SAR demonstrates how HI-STORM 100 System design envelopes site-specific criteria
- Where HI-STORM 100 System does not envelope DC Criteria, site-specific analyses are performed
- DC SAR will be updated periodically to reflect the HI-STORM 100 System licensing actions
- Will reflect applicable HI-STORM 100 System 72.48 evaluations in DC SAR
- Holtec CoC anticipated to be amended before DC license is issued
- DC SAR will ultimately refer to Rev. 1 (or later) of HI-STORM FSAR at time of license

# ***HOLTEC MAJOR WORK ITEMS***

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- Analysis Work
  - Drop and seismic events in Part 50 facility
  - Site-specific dose evaluations
  - Site-specific fire and explosion evaluation
  - Methods and codes used
    - MCNP
    - LS DYNA
    - ANSYS V 5.6
    - Working Model 3D

# ***HOLTEC MAJOR WORK ITEMS – Cont.***

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- Engineering Work
  - CTF design
    - Design criteria per HI-STORM CoC/FSAR
  - Pad design criteria
    - Embedment per high seismic requirements
  - Cask Transporter
  - FHB seismic restraint systems
  - Drop and seismic loads to building structure

# ***HOLTEC MAJOR WORK ITEMS – Cont.***

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- Miscellaneous Ancillaries
  - Lift Yoke
  - MPC lid restraint system
  - Transport Frame
  - HI-TRAC Bottom Shield
  - Impact Limiters
  - Lift Rigging and Slings
  - Cask Mating Device

# ***HOLTEC MAJOR WORK ITEMS – Cont.***

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- Licensing Work
  - Prepare Cask-Specific SAR sections
  - Review PG&E Part 72 LA sections
    - ER Plan, Training Plan, Decommissioning Plan, Technical Specifications
  - Review PG&E Part 72 SAR sections
  - Review PG&E Part 50 License Amendment

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***DIABLO CANYON  
ISFSI PROJECT***

***QUALITY ASSURANCE***

# ***DISCUSSION TOPICS***

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- ISFSI Oversight Philosophy
- Nuclear Quality Services
- Design Specification
- ISFSI Projects Oversight
- Geo-Technical Oversight
- 10CFR50 Activities Oversight
- Holtec Oversight
- Fabrication Oversight

# ***PURPOSE OF DISCUSSION***

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To facilitate a proactive information exchange between the NRC and PG&E with relation to Quality Assurance for the ISFSI Projects

# ***HISTORICAL OVERSIGHT PHILOSOPHY***

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- Audits/assessments based on commitments and safety significance
- Performance based “vertical slice” audits
  - 1987
  - SSOMIs
  - SSFIs
  - Other topical areas (PRA, MOVs, EQ, etc.)

# ***CURRENT ISFSI OVERSIGHT PHILOSOPHY***

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- To be proactively involved by providing input to project personnel
- To perform daily monitoring
- To conduct “performance based” intrusive audits and assessments of key project activities

# ***NUCLEAR QUALITY SERVICES***

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- Diversified Expertise
  - Mechanical Engineering
  - Civil Engineering
  - Nuclear Engineering
  - ASME Codes & Standards
  - Safety Analysis
  - Welding
  - Quality Assurance
- Current Organization

# ISFSI Project Quality & Oversight Functions

## Diablo Canyon & Humboldt Bay

### Nuclear Quality Services

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**Dave Taggart**  
 Director, Nuclear Quality Services - Engineering, Procurement & Maintenance

**Supervisor - Engineering & Projects Assessment**

- ISFSI PG&E Engineering & Licensing Oversight
- ISFSI Project Oversight
- HOLTEC Engineering & Licensing Oversight
- "Vertical Slice" ISFSI Engineering Audits
- ISFSI Fabrication Oversight
- ISFSI Project Quality Assurance Support

**Supervisor - Procurement Assessment**

- ISFSI Supplier Audit/Evaluation Support
- ISFSI Procurement Assessment & Audit
- ISFSI Receipt Inspection

**Supervisor - Maintenance Assessment**

- DC ISFSI Installation/Construction Assessment & Audit
- DC ISFSI Installation/Construction Inspection
- HB/DC Welding Inspection Support
- HB ISFSI Inspection Support

**Supervisor - Nuclear Quality Services  
Humboldt Bay**

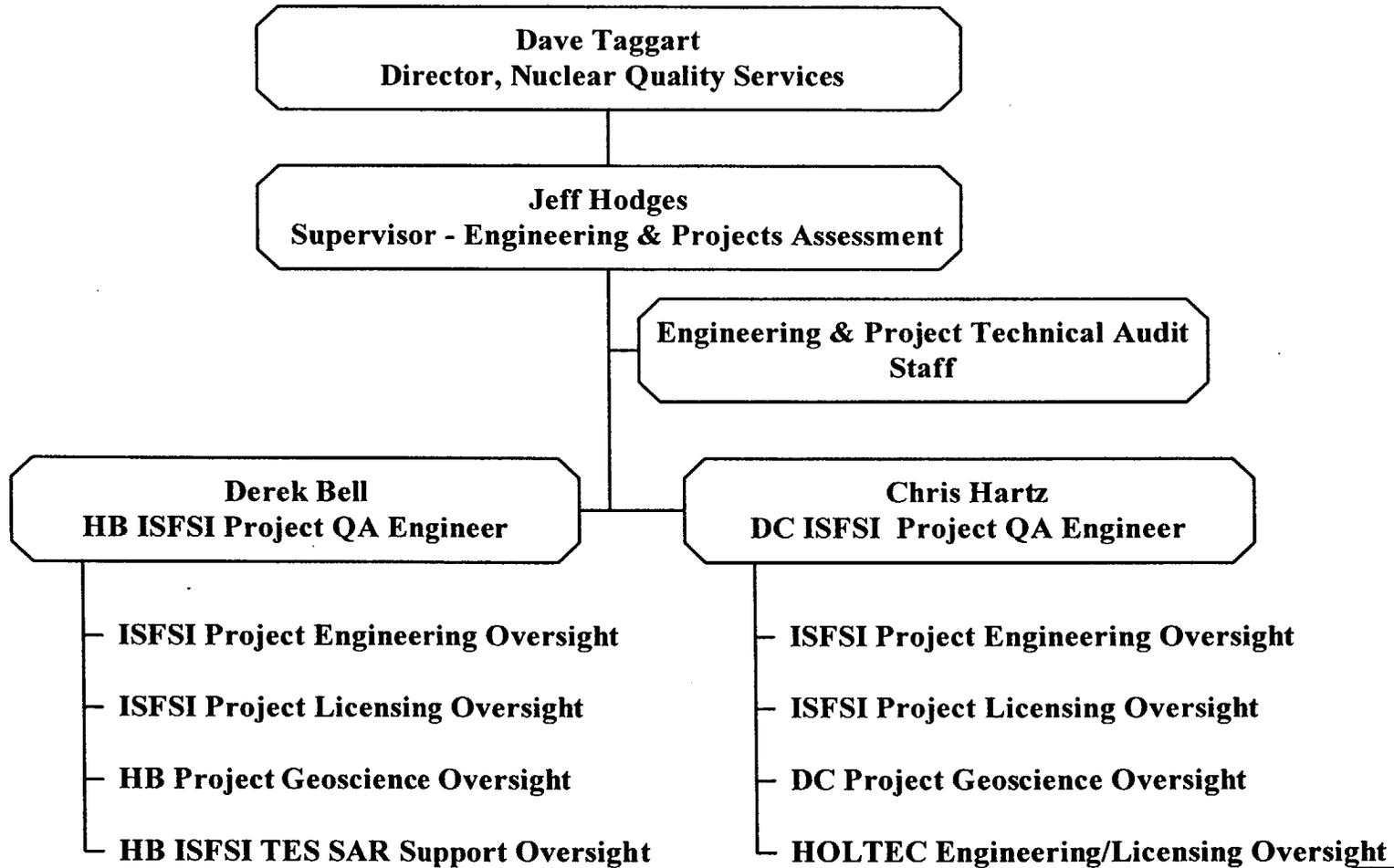
- HB Onsite NQS ISFSI Interface
- HB Onsite Installation Monitoring/Assessment
- HB Onsite Monitoring/Assessment Support
- HB Quality Verification Plan Development
- HB QA Program Interface



# ISFSI Projects

## Quality & Oversight Functions

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# **DESIGN SPECIFICATION QA REQUIREMENTS**

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- 10CFR71 Subpart H
- 10CFR72 Subpart G
- 10CFR50 Appendix B
- NQA-1
- MPC/HI-TRAC
  - ASME Section III
  - ANI
  - NPT Stamp

# ***DESIGN SPECIFICATION QA REQUIREMENTS – Cont.***

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- Welding inspectors
  - AWS CWI's only
- Special controls on ASME materials
  - Small Products
  - Material Organizations
- Special controls on commercial grade items

# ***DIABLO CANYON ISFSI PROJECT OVERSIGHT***

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- Early involvement
- Intrusive - *performance based assessments* of all phases of the project
- Pre-award surveys (multi-disciplined team)
  - 5 Designers
  - 5 Canister Fabricators

# ***DIABLO CANYON ISFSI PROJECT OVERSIGHT – Cont.***

- Industry involvement
  - ASME
  - EPRI
  - DSQG
  - NEI
  - Yucca Mountain Project
- QA kickoff meeting at Holtec
- Engineering oversight at Holtec
- Technical experts
  - Specification review
  - Review of Holtec calculations/analysis

# ***OVERSIGHT ATTRIBUTES***

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- Clear responsibilities
- Establishes the role of the PQAE
- Oversight activities
  - Geo-Technical
  - Part 50 License Amendment Request
  - Part 72 License Application
  - PG&E Project Engineering
  - Holtec
  - ENERCON
  - Fabrication

# ***OVERSIGHT ATTRIBUTES – Cont.***

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- Oversight Activities (Cont.)
  - Site preparation/pad construction
  - Cask loading
  - Cask transportation
  - ISFSI operation

# ***GEO-TECHNICAL OVERSIGHT***

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- Active involvement in earliest stages
- Expert opinion/peer review
  - Seismic Hazard Analysis
    - LTSP
    - Road Stability
  - Geological oversight
  - Geophysics oversight
  - Slope stability
- On-going

# ***10CFR50 OVERSIGHT***

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- Fuel movement
- Building loads
  - Walls
  - Floor
- Movement of heavy loads
  - Crane
  - Load drop analysis
- Fuel pool issues
  - Criticality
  - Chemistry
- Safety evaluations

# ***HOLTEC OVERSIGHT***

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- On-going engineering oversight
  - Design control
  - Design interfaces
  - Corrective action program
  - Licensing activities
- PQAE review of various Holtec products (analyses, evaluations, etc.)
  - Technical experts
- Vertical slice audit planned - 1<sup>st</sup> quarter 2001
  - Extensive use of technical experts

# ***OTHER OVERSIGHT ACTIVITIES***

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- Participation as observers on Holtec's internal audit
- Welding program review planned 2<sup>nd</sup> quarter 2001
  - ASME code compliance
  - Welding/welder qualification
  - Filler material procurement and control
  - Control of in-process welding
  - PG&E senior welding engineer participation
- Monitoring industry experience (e.g., Hatch, Information Notice 2000-11)

# ***FABRICATION OVERSIGHT***

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- Full time source surveillance
  - Category A items
  - MPC/Hi-TRAC Fabricators
  - Various locations
- Intermittent source surveillance
  - Category B & C items

# ***FUTURE MEETINGS***

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- HB Issues
- DC Security