



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

September 23, 2005

Ms. Donna Jacobs
Vice President Nuclear Services
Pacific Gas and Electric Company
Diablo Canyon Power Plant
P.O. Box 3
Avila Beach, CA 93424

SUBJECT: SUMMARY OF THE CATEGORY 1 PUBLIC MEETING HELD ON SEPTEMBER 15, 2005, TO DISCUSS THE FINDINGS OF THE SPECIAL INSPECTION INTO THE LOSS OF SPECIAL NUCLEAR MATERIAL AT HUMBOLDT BAY POWER PLANT

Dear Ms. Jacobs:

This refers to the meeting conducted at the Wharfinger Building, Eureka, California, on September 15, 2005. The purpose of this meeting was to present the findings of the special team inspection of the loss of special nuclear material at the Humboldt Bay Power Plant. A list of the meeting participants, the NRC's presentation slides and the Pacific Gas and Electric Company's presentation slides are enclosed.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

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

Sincerely,

A handwritten signature in black ink, appearing to read "D. Blair Spitzberg".

D. Blair Spitzberg, Ph.D., Chief
Fuel Cycle and Decommissioning Branch

Docket: 050-00133
License: DPR-7

Enclosures:

1. Meeting Participants
2. NRC Presentation Slides
3. PG&E Presentation Slides

Pacific Gas & Electric Company

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cc w/attachment:

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bcc (via ADAMS e-mail distribution):

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 PNMS Mtg. Announcement Coordinator
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 MVF M. Federline, DD/NMSS
 EWB E. William Brach, D/SFPO
 JTG1 J. Greeves, D/DWM
 MXT3 M. Thaggard
 DMG2 D. Gillen
 BSM B. Mallett, RA
 TPG T. Gwynn, DRA
 WAM W. Maier, RSLO
 VLD V. Dricks, RIV PAO
 CLC C. Cain, SMA, DNMS
 DBS B. Spitzberg, C:FCDB
 VHC V. Campbell, AC:NMIB
 JEW J. Whitten, C:NMLB
 JAC1, CJG RA Secretaries
 DNMS Staff

ADAMS: X Yes No Initials: rlk
 X Publicly Available X Non-Sensitive

DOCUMENT NAME: s:\dnms\ltrs-memos\HB public meeting 2005.wpd

RIV:DNMS:FCDB	FCDB	C:FCDB
RLKellar *	EMGarcia <i>email</i>	DBSpitzberg <i>DBS</i>
/RA/		
09/20/05	09/21/05	09/23/05

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 *Previous Concurrence

ENCLOSURE 1

PARTICIPANTS: NRC

Leonard Wert, Director, Division of Nuclear Materials Safety
D. Blair Spitzberg, Ph.D., Chief, Fuel Cycle and Decommissioning Branch
Claudia Craig, Chief, Reactor Decommissioning Section
John Hickman, Project Manager, Division of Waste Management and
Environmental Protection (NMSS)
Victor L. Dricks, Public Affairs Officer
Ray L. Kellar, Health Physicist
Emilio M. Garcia, Health Physicist
Barry Westreich, Chief, Security Oversight Section

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AGENDA
6:30-9:00pm

- Opening remarks - Leonard Wert, NRC
- Presentations of the Special Inspection findings by NRC Staff
- PG&E comments - Donna Jacobs, PG&E
- Questions and comments from members of the public
- Closing remarks
- Meeting adjourn

September 15, 2005 Humboldt Bay Power Plant
NRC Special Inspection 1



Inspection Into the Loss of Special Nuclear Material at Humboldt Bay Power Plant

Public Meeting September 15, 2005 Eureka, CA

D. Blair Spitzberg, Ph.D., Chief, Fuel Cycle & Decommissioning Branch
US Nuclear Regulatory Commission - Region IV
(817) 860-8191 dbs@nrc.gov

What is Special Nuclear Material (SNM)?

- The fissionable material in the fuel rods at Humboldt Bay
- Small amounts in some incore detectors
- Missing SNM at Humboldt Bay had been used in the reactor and therefore contained the highly radioactive fission byproducts
- SNM must be tightly controlled and accounted for

September 15, 2005 Humboldt Bay Power Plant
NRC Special Inspection 3

Timeline

- Fall 2003 inventory of spent fuel pool – fuel fragments found in fuel pool raises questions of accuracy of SNM inventory
- Jan. 2004 - PG&E starts re-evaluation of SNM inventory
- June 2004 - PG&E finds conflicting records concerning three 18 inch fuel fragments – NRC informed
- July 2004 - initial search phase
- Sept. 2004 – NRC announces Special Inspection in a public meeting in Eureka, CA
- Feb. 2005 – as result of PG&Es SNM investigation, NRC notified of 1 missing intact incore detector and 3 partial incore detectors containing less than a gram of SNM

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NRC Special Inspection 4

Special Inspection Charter

- Assess adequacy of PG&E's investigation
- Assess PG&E's control of radiological materials
- Assess accuracy of the SNM inventory
- Verify records and conduct independent interviews
- Assess radiological consequences
- Complete Temporary Instruction on SNM Control and Accountability

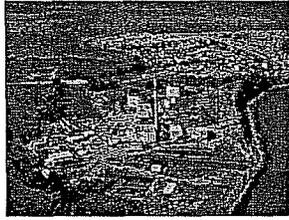
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Special Inspection Charter

- Determine compliance with regulations
- Assess the root causes
- Conduct regular briefings
- Identify generic issues
- Document the inspection findings
- Conduct a public meeting

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NRC Special Inspection 6

Loss of Special Nuclear Material at Humboldt Bay Power Plant



US Nuclear Regulatory Commission
Special Inspection
September 15, 2005 Public Meeting
Emilio M. Garcia
USNRC Region IV

Inspection Team

- Emilio Garcia (Team Leader)
- Martha Williams
- Glenn Tuttle
- Wayne Sifre
- Tom McLellan
- John Hickman
- Ray Kellar

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Humboldt Bay Power Plant
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Special Inspection Site Visits

- November 2-4, 2004
- December 7-10, 2004
- January 6-13, 2005
- June 20-24, 2005

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Humboldt Bay Power Plant
NRC Special Inspection

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PG&E SNM Control and Accountability Project Reports

- Interim Reports Feb 22, 2005 (ML050610477)
- Final Report May 17, 2005 (ML051530459)

NRC Inspection Reports

- Inspection Report 2003-004 (ML040400007)
- Inspection Report 2004-001 (ML043100525)
- Interim Inspection Report 50-133/2005-01 (ML050960069)
- Final Inspection Report 50-133/2005-02 (ML052310593)

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Material Control & Accountability (MC&A) Program

- PG&E's current MC&A program meets regulatory requirements
- PG&E's investigation into the missing material was complete and thorough

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Search

- PG&E's search was thorough
- Additional fuel fragments may be found in the future

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Radioactive Waste Shipments

- 258 low level radioactive waste shipments
- 249 screened out
- 9 possible
 - ◆ 4 to licensed burial site in South Carolina
 - ◆ 5 to licensed burial site in Washington State

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NRC Conclusions on Shipment Scenarios

- Pipe container never found
- Missing material likely shipped to a licensed radioactive waste burial site
- Not likely segments shipped to another location

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NRC Conclusions on Fuel Still in Pool

- PG&E's metallurgical consultants concluded the 18-inch segments were broken but still in pool
- NRC determined additional testing needed to reach same conclusion

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NRC Conclusions on Missing Incore Detectors

- Likely shipped with radioactive waste to a licensed burial site in South Carolina or Washington State

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NRC Special Inspection 16

Theft or Diversion

Theft or diversion of fuel was highly unlikely

- Radiological monitoring system and alarms
- Existence of material not well known
- Health hazard of handling material
- Technical Difficulties

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Risk

- Overall risk from the 18-inch fuel rods segments and incore detectors was minimal to the health and safety of the public, workers, or the environment.

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Cause and Corrective Actions

- PG&E cause analysis
 - ◆ Followed procedures
 - ◆ Was thorough
- Corrective actions
 - ◆ Comprehensive
 - ◆ Addressed the causes identified

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Missed Opportunities

- The NRC identified several missed opportunities by PG&E to identify and act on the missing special nuclear materials

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Apparent Violations

- 3 Apparent Violations identified:
 1. Failure to keep records of the inventory, transfer or disposal of three 18-inch segments
 2. Failure to establish, maintain, and follow written material control and accounting procedures
 3. Failure to conduct adequate physical inventories of all SNM in its possession
- These violations are being considered for escalated enforcement

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NRC Enforcement Process

- Inspection exit meeting on Aug 16, 2005
- Written response due Sep 19, 2005
- No enforcement decision has been made

- NRC's Enforcement Policy
www.nrc.gov select "What We Do",
"Enforcement", then "Enforcement Policy"

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NRC Enforcement Process

- Written response should include:
 - Reason for the apparent violation
 - Corrective steps that have been taken
 - Corrective steps that will be taken
 - Date when full compliance will be achieved

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NRC Enforcement Process

- Number and characterization of violations may change
- NRC's letter to PG&E will be publicly available from ADAMS
- NRC enforcement decision typically within 45 days of licensee's response

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SNM Control and Accountability Humboldt Bay Power Plant

September 15, 2005

Overview

- Identified in June 2004 documentation discrepancy with the inventory of Special Nuclear Material (SNM) from the late 1960's.
- Notified the Nuclear Regulatory Commission (NRC) of the discrepancy.
- Organized a team to investigate.
- Submitted the final report to the NRC in May 2005.

Causes

- Insufficient training and procedures for the control and accountability of SNM.
- Lack of industry guidance and standards for control and accountability of fuel fragments.

Corrective Actions

- **Established a formal qualification for plant personnel responsible for managing SNM at Humboldt Bay Power Plant.**
- **Improved programs and procedures for control and accountability of SNM.**
- **Completed a detailed inventory of all SNM stored at Humboldt Bay Power Plant.**

Conclusions

- There are no health and safety concerns.
- Program for control and accountability of SNM meets regulatory requirements.