

*RT*  
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**To:** Cliff Anderson; David Pelton; Todd Jackson  
**Date:** 7/16/04 4:58PM  
**Subject:** Fwd: Humboldt Bay - Talking Points and Qs & As

FYI.

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**Date:** 7/16/04 4:34PM  
**Subject:** Humboldt Bay - Talking Points and Qs & As

Per Bill Outlaw's request, attached is a draft set of talking points and Qs & As (based on the RIV/NMSS draft comm plan and the PG&E's 50.72 report) for your review and comment. Bill wanted to expedite getting out a set of talking points for everyone's use since PG&E has made the formal notification and press release this afternoon.

**CC:** Dennis Rathbun; Doug Weaver; Eliot Brenner; Ellis Merschoff; Jack Strosnider; Jennifer Dixon-Herrity; Margaret Federline; Mark Satorius; Paul Lohaus; William Dean; William Outlaw

### **Talking Points for Humboldt Bay Spent Fuel Segments Records Discrepancy**

#### **Key Messages:**

1. NRC is closely monitoring Pacific Gas & Electric's (PG&E's) efforts to locate the fuel pin segments. NRC inspectors have been onsite during the week of July 12 and following the PG&E activities.
2. Due to the extensive radiological controls and security measures, it's highly unlikely that the material is in an uncontrolled location, or that it poses any public risk.
3. PG&E's plan will need to be exhaustive and may take some time.
4. It's plausible that the material is still in the fuel pool at Humboldt Bay.

#### **BACKGROUND:**

On July 16, 2004, PG&E formally notified NRC of a nuclear material accountability discrepancy involving a portion of a spent fuel rod used at the Humboldt Bay Power Plant, Unit 3. The plant has been shut down since 1976 and in SAFSTOR since 1988.

In the process of reviewing records and verifying the contents of the spent fuel pool (SFP) in preparation for loading materials into dry cask storage, PG&E has identified a discrepancy in plant records that calls into question the location of three segments of a portion of a single spent fuel rod removed from a spent fuel assembly in 1968.

A plant record produced in 1968 indicate that the segments have been stored in the SFP since 1968. However, 1969 plant shipping records indicate that the entire assembly was included as part of a larger shipment of several spent fuel assemblies sent for offsite reprocessing in 1969. The 1969 shipping records make no mention that one rod had been removed from the fuel assembly that was shipped.

A more detailed review of records and a complete search of the SFP is underway to establish and verify the location of the three fuel rod segments. PG& E is continuing its review of plant records as well as interviewing plant personnel who were onsite during the 1968-1969 period to find further evidence that may expedite location of the three fuel rod segments.

## **QUESTIONS AND ANSWERS REGARDING THE HUMBOLDT BAY FUEL ROD SEGMENTS RECORDS DISCREPANCY**

### **Questions about the potential records discrepancy of spent fuel rod segments**

**1. When was the potential record discrepancy of spent fuel rod segments identified?**

The potential record discrepancy of the spent fuel rod segments was identified on June 29, 2004.

**2. Who discovered the discrepancy, PG&E or the NRC?**

PG&E discovered the potential discrepancy between the records and the spent fuel inventory. The potential discrepancy was reviewed by the PG&E Technical Review Group on June 30, 2004 and a decision was made to document the potential record discrepancy on a non-conformance report. The potential record discrepancy and the non-conformance report were verbally communicated to the NRC on July 1, 2004.

**3. What were the segments part of?**

The recently discovered record indicated that a fuel rod from fuel assembly A49 had been cut into three 18 inch long segments in preparation for transport to Battelle for experiments. The record also indicated that prior to shipment of the fuel segments, the experiment had been canceled and the fuel segments were placed in a 1 ½ inch diameter pipe for storage in the spent fuel pool. Personnel at Humboldt Bay believe the pipe may be located in one of five storage cans located in the spent fuel pool.

**4. Why was the fuel rod being segmented for experiments?**

The Humboldt Bay Power Plant started operation in the early 1960's. The initial fuel assemblies utilized at Humboldt Bay were clad with stainless steel. During early operations at Humboldt Bay fuel several cladding failures were observed. It is believed that the Battelle experiments were scheduled to determine the cause of the cladding failures experienced at Humboldt Bay.

**5. In light of the current terrorist threat, what licensee/NRC plans were in place to prevent loss of the nuclear material?**

NRC regulations require accurate accounting and complete control of all nuclear material. The regulations that apply to accounting and control of nuclear material at power reactors are 10 CFR 74.13, 74.15 and 74.19.

Because of the current threat and because of the lessons learned from the Millstone 1 event, NRC put in place a temporary instruction directing NRC inspectors to review the material accounting and control programs at reactors. This review (TI 2515/154) was completed at Humboldt Bay during March 2004. The results of this inspection are still under NRC review. In addition, the NRC issued an Information Notice (2004-12)

- 3 -

6. **discussing generic concerns about accountability of spent fuel stored in spent fuel pools. If the fuel rod segments are not located, is there material in the segments that terrorists could use, say, to make a dirty bomb or other dangerous weapon?**

The material is radioactive. Because it is radioactive, any attempt to remove it from the spent fuel pool and to move it off-site without the proper shielding would cause the radiation monitors to alarm.

7. **Is this the first incident of its kind since September 11, 2001?**

No. Personnel at Vermont Yankee are continuing to search for two fuel rods that were not in the prescribed storage location. The situation at PG&E is slightly different, as the records did not specify where the fuel segments were stored, only the container that they were stored in.

8. **Has this happened at Humboldt Bay before?**

No.

9. **Doesn't PG&E have procedures/safeguards to ensure this cannot occur?**

PG&E has procedures to control and document the movement, storage and removal of material in the spent fuel pool. In addition, PG&E has procedures to perform an annual physical inventory of material in the spent fuel pool. In this case PG&E recently found a record indicating that the fuel rod segments, which had been prepared to be shipped to Battelle, Illinois were not shipped after the project to study the fuel was canceled. Records indicated the fuel would be returned to the spent fuel pool at Humboldt Bay, however, no records of their exact location have been found. Other records show that the fuel assembly from which the fuel rod segments originated, was shipped to the former West Valley reprocessing facility in New York. Because PG&E cannot specifically identify the location of the fuel rod segments, the licensee may not have accurately documented or adequately controlled the movement or removal of the fuel rod segments in the spent fuel pool.

10. **Is this a generic problem? Can we assume this is a problem at other nuclear power plants?**

NRC is currently evaluating the information gathered during the ongoing inspections at all nuclear plants and plans to conduct additional inspections at some plants. The inspection procedure calls for the inspections to be completed by November 2005. In addition, an Information Notice was issued to all applicable licensees on June 25, 2004.

Besides Millstone 1, Vermont Yankee, and Humboldt Bay, there is no evidence of this problem existing at other plants to date.

11. **Does the licensee have responsibility for everything sent off-site?**

Attachment 2

- 4 -

The licensee is responsible to assure that a shipment of radioactive material off-site complies with the appropriate NRC and DOT requirements. The actual material shipped off-site must agree with the documented list describing the contents of the shipment. In addition, special shipping containers must be used depending on the amount and type of radiation within the shipment.

**12. How does this incident differ from similar events at Millstone and Vermont Yankee?**

The incident at Millstone involved two full fuel rods each about 12 feet long for a total of 24 feet of fuel rod. The incident at Vermont Yankee involved two short fuel rod segments totaling about 2 feet of fuel rod. In both of these cases, the fuel rods were not in the location specified for storage in the spent fuel pool.

The incident at Humboldt Bay involved finding an old record identifying fuel rod segments for which the licensee cannot currently identify their specific location. The licensee is actively searching potential storage locations in the spent fuel pool to determine if the fuel segments are located in the spent fuel pool. The segments at Humboldt Bay total about 5 feet.

**13. Why did it take 4 years after Millstone to discover the missing fuel rod segments at Vermont Yankee and record discrepancy at Humboldt Bay?**

Development of the inspection instruction that was used by inspectors to question Vermont Yankee and Humboldt Bay accounting practices was initiated shortly after the Millstone event. However, it was postponed following 9/11 due to competing priorities and resources in the security area.

**14. What is the risk to the public?**

Given the extensive array of radiation detectors at the site, it is highly unlikely to think that the potentially missing fuel segments are in the public domain. It is very probable that the potentially missing segments are in one of the storage cans that the utility is currently investigating. If they were removed from the site, this could only have occurred in heavily shielded, sealed containers directed to other controlled safe locations.

**15. Is there the potential for other record discrepancies or missing fuel segments at Humboldt Bay?**

Personnel at Humboldt Bay are evaluating the contents of the storage cans. Due to the history of failed fuel during the early operating life of the reactor, additional fuel segments may be discovered. However, it is unlikely that additional record discrepancies describing stored fuel fragments will be discovered. PG&E is reviewing their records to ensure that additional discrepancies do not exist.

Attachment 2

- 5 -

- 16. Since this is the third nuclear plant that potentially is missing fuel rod segments, what is the agency doing about the remaining nuclear plants?**

The temporary instruction is being performed to give the NRC information about the material accountability programs at all power reactors. As a result of the events at Millstone and Vermont Yankee and after examination of the results of the TI at other reactors, the NRC will reexamine its routine inspection priorities and will also consider issuing additional generic communications. On June 25, 2004, NRC issued Information Notice 2004-12, "Spent Fuel Rod Accountability," to alert the nuclear plants of the events at both Millstone and Vermont Yankee.

- 17. Is there an NRC person overseeing actions at the site?**

As part of a regularly scheduled inspection, the NRC is providing focused inspection oversight of the licensee search for the potentially missing fuel segments. Depending on the outcome of the licensee search, the agency is evaluating the necessity for a special inspection .

- 18. How long does the NRC require the plants to maintain their shipping records? The requirement says only 3 years?**

10 CFR 74.19 says that records must be retained for as long as the licensee possesses the material plus three years.

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