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*Smith*  
#160

March 12, 1974

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John G. Davis, Deputy Director for Field Operations  
Directorate of Regulatory Operations, Headquarters

**KERR-McGEE PLUTONIUM FACILITY - FEBRUARY 1974 MATERIAL UNACCOUNTED FOR (MUF) QUANTITY**

Kerr-McGee's requirements for the control, accounting, and physical security of special nuclear material are presently detailed in an amendment to their license No. SNM-1174.

By License Condition 6.1 of the amendment, the licensee shall close a material balance around the facility by material balance areas at intervals not to exceed thirty (30) days.

On February 28, 1974, RO:III was notified by Kerr-McGee by telephone that the February monthly plutonium inventory indicates a positive MUF loss quantity of 11.474 Kgs Pu with associated limits of error of 8.4 Kgs Pu. By License Condition 3.6, if the quantity of Pu MUF exceeds its associated limits of error or the limits of error associated with the MUF (LEMUF) exceeds 1.5 Kgs Pu, Kerr-McGee is to immediately notify RO:III and take immediate action to investigate the cause for the excessive values. Within thirty days after the initial notice, Kerr-McGee is to notify RO:III in writing of the probable reasons for the excessive values and the corrective action taken or planned.

Immediate investigation by the licensee had failed to reveal exact causes of the February MUF quantity. In a telephone conversation and confirmed in writing by RO:III, the licensee immediately stopped fuel fabrication and started conducting a new inventory on March 1, 1974. An RO:III inspector was immediately sent to the site (arrived March 1) to observe the preparations for the inventory and the actual taking of the inventory.

From March 1 through March 11, Kerr-McGee prepared for and completed this inventory. Efforts were directed toward rechecking suspect material (reweighing, resampling, and reanalyzing) and investigating areas of possible material containment that was previously missed.

*Submitted by facsimile at 2:47 pm.*

OFFICE	RO:III	RO:III	RO:III		
SURNAME	Hind:hp	Alkan	Reppner		
DATE	3-12-74				

Form AEC-318 (Rev. 9-53) AECM 0240

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Some of the specific inventory actions taken by the licensee were:

1. All discrete items in vault storage were reweighed.
2. Reweighed all stored pellets in cans.
3. Additional sweeping and cleaning of dry glove boxes.
4. Acid cleaning of wet glove boxes.
5. Acid cleaning of some tanks and pipelines that were supposedly empty. This solution was then filtered and the resulting solids and filtrates were sampled.
6. Removal of some equipment (calciner end plates) for cleanup.
7. Reanalyze scrap solution samples for verification of original values.

The inspector onsite was in daily contact with RO:III outlining the progress of the inventory and commenting on the adequacy of the Kerr-McGee procedures during this period. Four (4) scrap solution samples were taken by the inspector for eventual independent analysis by the Los Alamos Scientific Laboratory.

Discussions with Kerr-McGee and the site inspector over the weekend of March 9-10, indicated a possible MUF gain of 7-10 Kgs Pu. Subsequent discussions indicate that no large amount of material missed in February was found during this inventory, and that because the increased throughputs in the last two months, they think material has been deposited in certain equipment at a faster rate than expected. This means a possible revision of present inventory procedures to indicate more extensive cleanups prior to listing of the inventory. Kerr-McGee is still reviewing the inventory data and more details of this will be in their investigation report.

On March 10, 1974, a RO:III physical security inspector was sent to the site to perform a security inspection. At this time he has not encountered any significant deviations from the physical security requirements in the amendment to their license.

On March 11, 1974, Mr. Parker Dunn, Vice President, Nuclear Manufacturing, Kerr-McGee, called to report the inventory material balance of a MUF gain of 10.037 Kgs Pu. Mr. Dunn said he thinks this number satisfactorily compensates for and explains the February MUF loss, and the plutonium plant would like to resume operations.

After consultation with the site inspector and RO:HQ, RO:III informed Mr. Dunn that RO:III had no problems with Kerr-McGee resuming production. A confirmation telegram was requested from Kerr-McGee.

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The LEMUF for this inventory and the February inventory continues to exceed the license condition specification of 1.5 Kgs Pu. As a result of a special inspection of Kerr-McGee conducted in December 1973, the licensee was cited for this violation. The violation letter was transmitted to Kerr-McGee on February 19, 1974. A reply has not been received. If the reply is not responsive, we expect to involve Licensing in resolution of the problem.

RO:III will continue to monitor all required inventory data from future inventories.

James G. Keppler  
Regional Director

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