



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

May 6, 1997

DOCKET: 40-3392

LICENSEE: AlliedSignal, Inc.
Metropolis, Illinois

SUBJECT: SAFETY EVALUATION REPORT: AMENDMENT APPLICATION DATED MARCH 17, 1997, TO INCLUDE POSSESSION OF UNIRRADIATED URANIUM TETRAFLUORIDE CONTAMINATED WITH PLUTONIUM-239

BACKGROUND

The primary activity of AlliedSignal's (Allied) plant at Metropolis, Illinois, under Materials License SUB-526, is to convert uranium ore concentrates to uranium hexafluoride (UF_6). The UF_6 product is used as feed material for uranium enrichment plants. Initial operations at the site were authorized on December 17, 1958. Most recently, the license was renewed for a 10-year term, expiring June 30, 2005.

On March 17, 1997, Allied submitted an amendment application to allow the storage of unirradiated uranium tetrafluoride (UF_4) that had been contaminated with plutonium-239 (Pu-239).

DISCUSSION

Allied is currently authorized under License SUB-526 to receive, possess, manufacture and use natural uranium UF_4 , to be converted to UF_6 . Allied unintentionally received a shipment of UF_4 from FERMCO, a DOE contractor located in Fernald, Ohio, that was contaminated with plutonium-239 (15 pCi Pu-239/gm UF_4). Allied received the UF_4 on November 1995, but only recently noted that it was contaminated with Pu-239, when they were preparing to use the material. The contamination was the result of equipment cross-over contamination, i.e., contaminated equipment was used with irradiated material prior to processing the unirradiated UF_4 . Allied analyzed the UF_4 for U-235, U-236, Pu total and fission products in accordance with ASTM 787-90, which is standard plant procedure for incoming feed material. When Allied noticed the Pu-239 contamination, they reanalyzed the UF_4 and determined that Pu-239 was the only detectable contaminant. Since Allied is not authorized to receive plutonium-239, they require an amendment to store the material. The amendment application requested possession of unirradiated uranium UF_4 that had been contaminated with plutonium-239, for possession only. The licensee will not process the material at the Metropolis, Illinois, plant. Allied intends to transfer the contaminated UF_4 to an overseas corporation authorized to receive it. Allied estimates that it will require at least 18 months to transfer ownership and ship the UF_4 . If Allied is unable to transfer the material or if they choose to use the contaminated UF_4 in their process, they would need NRC approval and an amendment to their license. A possession limit of 4080 kg (9000 lbs) was requested. The possession of 4080 kg of UF_4 will not result in any significant change in the types or amounts of any effluents that may be

released offsite or any significant increase in individual or cumulative occupational radiation exposure. There is no criticality safety issue since the total Pu-239 is less than one milligram.

CATEGORICAL EXCLUSION

The staff has determined that the following conditions have been met:

1. There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite,
2. There is no significant increase in individual or cumulative occupational radiation exposure,
3. There is no significant construction impact, and
4. There is no significant increase in the significant increase in the potential for or consequences from radiological accidents.

Accordingly, pursuant to 10 CFR 51.22(c)(11), neither an environmental assessment nor an environmental impact statement is warranted for this action.

CONCLUSION/RECOMMENDATION

The NRC staff has reviewed the licensee's proposed amendment and has determined that the proposed changes will have no adverse effect on public health and safety or the environment. Therefore, approval of the amendment application is recommended.

The Region III inspection staff has no objection to this proposed amendment.

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