AlliedSignal
CHEMICALS

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May 8, 1998

Certified Mail:
P-218-965-262

Director,
Office of Nuclear Material and Safeguards,
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk,
Washington, D.C. 20555

Re: Request for License Amendment
Source Material License SUB-526
Docket 40-3392

Dear Sir:

AlliedSignal is requesting a license amendment to include receiving, possessing, processing and converting the following materials contaminated with plutonium-239 (Pu-239), to uranium hexafluoride (UF_6): unirradiated uranium tetrafluoride (UF_4), unirradiated tri-uranium octa-oxide (U_3O_8), and unirradiated uranium tri-oxide (UO_3). The corresponding chemical form and possession limits are listed in the attachment.

Additionally, under this amendment application we are also requesting authorization to process and convert 4,080 kilograms of plutonium contaminated-unirradiated UF_4 which was approved for possession only under License Condition 8E, Amendment 2, dated May 6, 1997. The Safety Evaluation Report that supports Amendment 2, states in part: "If they choose to use the contaminated UF_4 in their process, they would need NRC approval and an amendment to their license."

Analytical results obtained from samples of unirradiated UF_4, material not identified under Amendment 2, disclosed the highest plutonium-239 levels at 34 picocuries (pCi) Pu-239/gram UF_4, (with 97% of the UF_4 falling below 1 pCi Pu-239/gramUF4), 31 pCi Pu-239/gram UO_3 and 270 pCi Pu-239/gram U3O8. According to the sellers quality assurance records about 96% of all unirradiated uranium (listed in the attachment) is contaminated with less than 1 pCi Pu-239/gram. Furthermore, uranium-236 was not detected and other than Pu-239, the unirradiated material in each stated chemical form meets the commercial natural UF_6 requirement, as described in standard procedure ASTM 787-90.

No change to our process is required, in order to convert unirradiated material. Unirradiated UF_4 will be dumped into green salt feed hoppers and down-blended with UF_4 converted from natural uranium. Both unirradiated UO_3 and U_3O_8 will be down-blended with natural uranium ore concentrate, during the calcination stage of the conversion process.

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NFO1

Possession and conversion of plutonium contaminated-unirradiated uranium will not result in any significant change in the types or amounts of any effluents that may be released off-site or any significant increase in individual or cumulative occupational radiation exposure. Cross-over contamination levels caused by the presence of Plutonium-239 does not present a criticality safety issue.

We will appreciate your prompt review of this submittal. If you have any questions or need more information, please call Mr. M. L. Shepherd at 618-524-6238 or call Mr. R. C. Allshouse at 618-524-6360, in order that we may expedite our reply, as early as possible.

Sincerely,

P. G. Gasperini
Interim Plant Manager

PGG/sm

cc: W. Murrell
M. L. Shepherd
R. C. Allshouse
H. C. Roberts
M. Lamastra-NMSS, USNRC
P. Hiland-Region III, USNRC

AlliedSignal Inc.
Metropolis, IL

ATTACHMENT
License Amendment Application, SUB-526

Re: CONVERSION OF UNIRRADIATED URANIUM CONTAMINATED WITH PLUTONIUM-239

SOURCE	CHEMICAL FORM	QUANTITY (KILOGRAMS)
Unirradiated Uranium, Contaminated with Plutonium-239	*UF4	4,080
"	UF4	300,000
"	UO3	11,000
"	U3O8	20,000

*Authorized by Amendment 2, dated May 7, 1997.