

70-1257



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 16, 1996

Mr. L. J. Maas
Manager, Regulatory Compliance
Siemens Power Corporation
2101 Horn Rapids Road
Richland, Washington 99352-0130

SUBJECT: POSSESSION OF URANIUM ENRICHED TO GREATER THAN 5 WEIGHT PERCENT IN
U-235 (TAC NO. L21656)

Dear Mr. Maas:

This letter is in response to your letters dated April 5, and May 17, 1996, concerning possession of uranium enriched to greater than 5 weight percent in the isotope U-235 and the analytical bases for control of such material. The issues in your letters were further discussed in a conference call on May 17, 1996.

NRC staff have determined that the information in your letters and the commitments proposed in your amended renewal application are insufficient to demonstrate that material at the higher enrichment can be handled and processed safely at SPC's Richland Engineering and Manufacturing Facility. To make such a determination, it would be necessary to perform criticality safety analyses based upon adequate benchmarked data. The staff is concerned that the neutronics behavior is not necessarily thermal for undermoderated systems, such as those with dry oxide powders, with U-235 enrichments above 5% and below 20%. Without adequate benchmarked data, the nuclear criticality safety for systems using uranium enriched to greater than 5 weight percent could be questionable. The staff recognizes that enrichments greater than 5% may be acceptable for overmoderated solutions, where there is no likelihood of neutrons with energies in the epithermal region contributing to criticality uncertainty.

As a result of this determination, NRC plans to proceed with the renewal of SNM-1227 to authorize the possession and use of 350 grams of uranium of any enrichment or form for analytical purposes and in sources, 25,000 kilograms of uranium compounds in any form enriched to a maximum of 5 weight percent in the U-235 isotope, and plutonium in sealed sources and standards and as stored waste.

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NRC FILE CENTER COPY

L. Maas

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If you have further questions regarding this matter, please call Mary Adams at (301) 415-8111.

Sincerely,

Original signed by:

Robert C. Pierson, Chief
Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

Docket 70-1257
License SNM-1227

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OFC	FCLB							
NAME	RPierson							
DATE	9/16/96							

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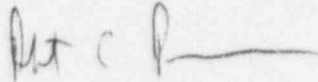
N = NO COPY

L. Maas

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If you have further questions regarding this matter, please call Mary Adams at (301) 415-8111.

Sincerely,

A handwritten signature in dark ink, appearing to read "Robert C. Pierson", followed by a horizontal line.

Robert C. Pierson, Chief
Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

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