

UNITED STATES GOVERNMENT

Memorandum

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TO : Donald A. Nussbaumer, Chief
Source & Special Nuclear Materials Branch, DLR

DATE: March 5, 1964

FROM : Charles D. Luke, Chief
Criticality Evaluation Branch, DLR

CDL

SUBJECT: UNITED NUCLEAR CORPORATION, WOOD RIVER JUNCTION, RHODE ISLAND -
APPLICATION FOR SPECIAL NUCLEAR MATERIAL LICENSE - DOCKET NO.
70-820, NOVEMBER 20, 1963

REFERENCE: (1) UNC ltr dtd 12/3/63
(2) Ltr, Nussbaumer to UNC dtd 1/22/64
(3) UNC ltr dtd 1/6/64
(4) UNC ltr dtd 1/9/64
(5) H. K. Ferguson Co ltr dtd 1/16/64
(6) UNC ltr dtd 1/31/64
(7) UNC ltr dtd 2/4/64
(8) Memo, Luke to Nussbaumer dtd 2/13/64
(9) UNC ltr dtd 2/21/64
(10) Memo, Luke to Nussbaumer dtd 2/26/64
(11) TWX, Nussbaumer to UNC dtd 2/27/64
(12) UNC ltr dtd 3/3/64

SYMBOL: DLR:RHO

United Nuclear Corporation proposes to operate a fully enriched uranium scrap recovery processing plant at Wood River Junction, Rhode Island. The facility is primarily designed around safe geometry equipment. There are certain head end treatment equipment where nuclear safety is based on safe batch size. Also, certain unsafe geometry vessels where concentration is administratively controlled to safe solution concentrations also have been poisoned with boron Raschig rings. This provides a secondary degree of nuclear safety in the event safe solution concentrations are accidentally exceeded.

We have independently made solid angle calculations on the major pieces of equipment and are in substantial agreement with the applicant's neutron interaction calculations. Also, we have checked over the applicant's flow diagrams and have ascertained safeguards have been incorporated to insure against special nuclear material flowing accidentally from safe geometry vessels to unsafe geometry vessels.

6-170

Donald A. Nussbaumer

- 2 -

March 5, 1964

We have determined from the information the applicant has submitted, that the facility can be operated in a safe manner. Therefore, we recommend approval of the license application and supporting documents listed in the above references, and subject to the license conditions on shipping you have incorporated in License No. SNM-777 issued to United Nuclear, March 5, 1964.