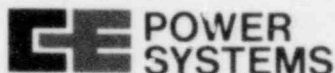
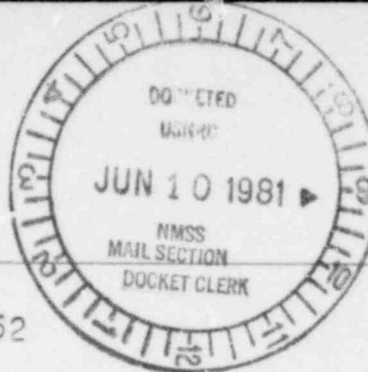


C-E Power Systems  
Combustion Engineering, Inc.  
1000 Prospect Hill Road  
Windsor, Connecticut 06095

Tel. 203/688-1911  
Telex: 9-9297

RECEIVED



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May 11, 1981

License SNM-1067  
Docket 70-1100

U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Attention: Mr. W. T. Crow, Section Leader  
Uranium Process Licensing Section  
Uranium Fuel Licensing Branch  
Division of Fuel Cycle & Material Safety

Applicant.....
Check No. 069741.....
Amount/Fee Category \$1500-16.....
Type of Fee. minor, regular.....
Date Check Rec'd 6/2/81.....
Received By. [Signature].....

Dear Mr. Crow:

It is requested that License SNM-1067 be amended to allow storage of sealed fuel rods in a 3.7 inch slab arrangement in the Development Department's Building #2 vault at our Windsor site. Non-coplanar storage will not be permitted and no other SNM will be stored in this vault.

The criticality alarm system has been extended to this vault and includes dual detectors and a remote indicator in the central guard house. Building #2 is secured and included in the Windsor Site Plan which has been reviewed and approved by the Commission in the same manner as all other secured laboratory areas.

Before fuel is first introduced to this vault, the area will be posted in accordance with 10 CFR 20. As all fuel rods will be sealed and decontaminated to our unrestricted release limits, no further health physics consideration will be addressed. Accordingly, it is requested that the following page changes to License SNM-1067 be made effective:

Delete Pages

VIII-3, Rev. 3, dated 2/22/74  
XIII-1, Rev. 4, dated 3/15 4  
XIX-1, Rev. 0, dated 3/22/79

Add Pages

VIII-3, Rev. 4, dated 5/11/81  
XIII-1, Rev. 5, dated 5/11/81  
XIX-1, Rev. 1, dated 5/11/81

This amendment request is considered a minor health and safety amendment and the fee of \$1400 required by 10 CFR 170.31 is being forwarded directly to the License Fee Management Branch under separate cover.

If you have any questions regarding this amendment application, please contact Mr. G. A. Johnstone of my staff, or Mr. P. R. Rosenthal.

Very truly yours,

*H. V. Lichtenberger*  
H. V. Lichtenberger  
Vice President-Nuclear Fuel  
Nuclear Power Systems-Manufacturing

19102

HVL/GJB/ssb  
8107280003 810511  
PDR ADCK 07001100  
C PDR

Written health and safety restrictions for all operations on radioactive materials are provided by the Radiological Safety Officer, and appropriate operational limits are posted near the appropriate work station. Each operation on fissile material is limited to 350 gm  $U^{235}$  for uranium enriched to more than 5%  $U^{235}$ , and to 740 gms  $U^{235}$  for uranium enriched to 5% or less  $U^{235}$ , and must be separated from any other

\* fissile material. Rods containing sintered  $UO_2$  pellets enriched to a maximum of 4.1%  $U^{235}$  are stored in the Building #2 vault. Storage of material in this vault is limited to a single slab less than 3.7 inches thick. No other fissile materials are to be used or stored in this area. A continuous log is maintained for each work station to assure that the limit is maintained and that the enrichment of all material is recorded. No other criticality controls are required for the laboratories. No material of enrichment exceeding 4.1% may be transferred from the laboratories to NFM-W.

In addition to providing the above safety restrictions, the Radiological Safety Officer is responsible for the surveillance of all Nuclear Laboratory activities in which radioactivity is involved to ensure that the health and safety standards set forth in the license application are met. He has the necessary authority to halt any operation which falls outside those limits, and he is responsible for indicating what remedial action is necessary to bring the operation within acceptable limits. As shown in Figure 8.1, he reports directly to the Director of the Nuclear Laboratories.

### 13.0 NUCLEAR LABORATORIES

This license is intended to authorize the Nuclear Power Systems Division to receive, store, use and transfer in all laboratory facilities for research and development and manufacturing, source material in any chemical or physical form, and special nuclear material enriched to more than 5% in the isotope  $U^{235}$  is limited to 350 gms  $U^{235}$ . For uranium enriched to 5% or less  $U^{235}$ , a limit of 740 gms  $U^{235}$  applies. All mass limits will be separated by at least 12 ft.   
\* Rods containing sintered  $UO_2$  pellets enriched to a maximum of 4.1%  $U^{235}$  are stored in the Building #2 vault. Storage of material in the vault is limited to a single slab less than 3.7 inches thick. No other fissile materials are to be used or stored in this area. Total quantities of source and SNM will be described in Section 4 of this license.

The Nuclear Laboratories are therefore authorized to receive, store, use and return special nuclear and source material from the manufacturing facility in accordance with the provisions therein. It should be noted that work under these transfers will be of an analytical nature and that the material will ultimately be returned to the Nuclear Manufacturing Facility - Building #17.

These transfers will not require the issuance of the applicable transfer documents to the NRC since the material must be transferred in accordance with the provisions of the license, and will be handled as a departmental transfer and controlled by the Nuclear Material Management Procedures described elsewhere in this license.

## 19.0 NUCLEAR CRITICALITY SAFETY LIMITS

This section provides the limits which may be applied to the Nuclear Laboratories, and to the  $\text{UO}_2$  operations carried out by Nuclear Fuel Manufacturing-Windsor.

All laboratory operations are limited to 350 gm  $\text{U}^{235}$  for uranium enriched to more than 5%  $\text{U}^{235}$ , and to 740 gm  $\text{U}^{235}$  for uranium enriched to 5%  $\text{U}^{235}$  or less. Each such limited operation must be separated from any other limit by at least 12 feet. Rods containing sintered  $\text{UO}_2$  pellets enriched to a maximum of 4.1%  $\text{U}^{235}$  are stored in the Building #2 vault. Storage of material in the vault is limited to a single slab less than 3.7 inches thick. No other fissile materials are to be used or stored in this area.

Criticality safety of the less complex manufacturing operations is based on the use of limiting parameters which are applied to simple geometries. Safe Individual Units (SIU) are selected on the basis of optimum moderation, and full reflection using published nuclear criticality safety data. These are spaced using the surface density method.

The remaining manufacturing operations are evaluated using two dimensional transport and/or three dimensional Monte Carlo Codes. The sixteen group Hansen-Roach cross section library is used for homogeneous systems, while the CEPAC Code is used to generate four group cross sections for heterogeneous systems. A detailed validation of these calculational codes and cross sections is provided in Exhibit D.

Docket No. 70-1100

① WTC  
② TYSM 5/21/81  
"LICENSE AMENDMENTS"  
to ③ DW 5/22/81

William O. Miller, License Fee Management Branch, ADM

MATERIALS LICENSE AMENDMENT CLASSIFICATION

Applicant: CE Power Systems  
License No: SNM-1067 Fee Category: B  
Application Dated: 5/11/81 Received: 5/21/81  
Applicant's Classification: minor safety

The above application for amendment has been reviewed by NMSS in accordance with §170.31 of Part 170, and is classified as follows:

1. Safety and Environmental Amendments to Licenses in Fee Categories 1A through 1H, 2A, 2B, 2C, and 4A
  - (a) ☐ Major safety and environmental
  - (b) ☒ Minor safety and environmental
  - (c) ☐ Safety and environmental (Categories 1D through 1G only)
  - (d) ☐ Administrative
2. Justification for reclassification: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. The application was filed (a) ☐ pursuant to written NRC request and the amendment is being issued for the convenience of the Commission, or (b) ☐ Other (State reason): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signature W. J. (Paw)  
Division of Fuel Cycle & Material  
Safety

Date 5/21/81

19102