

*File by*

**CLEVITE CORPORATION**

MECHANICAL RESEARCH DIVISION

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April 13, 1959

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METALLURGICAL PRODUCTS DEPARTMENT

U. S. Atomic Energy Commission  
Materials Sec., Licensing Branch,  
Div. of Licensing & Regulation  
Washington 25, D. C.

Attention: Mr. C. P. McCallum, Jr.

Reference: Docket No. 70-133 SNM-183

Subject: Shipment of fuel elements.

Gentlemen:



We wish to submit the following information in lieu of that furnished in our letter of March 17, 1959 to obtain authorization for the shipment of the WTR fuel elements being fabricated under our Procedure SP No. CR 17D for the Westinghouse Atomic Power Department. These fuel elements comprise an array of three concentric tubes with the overall dimensions of 2.5" O. D. by approximately 44" in length, and contain a total of 200 grams of U-235 per element. These elements will be packaged in the container shown in Westinghouse Print No. 517 F 015 (submitted with the March 17th letter). The container is secured with a padlock and the cover is anchored with two self tapping metal screws in addition to the closures shown on the print. The maximum number of elements per shipment will consist of two elements per container (400 grams of U-235 per container), and a maximum of eight containers per shipment. The shipment will be routed via Railway Express, Armed Surveillance. Each container has been assigned Bureau of Explosives No. 520 and will be labelled in accordance with applicable ICC regulations.

A shipment of 16 of these fuel elements made under the above conditions cannot go critical under ideal conditions of geometry and moderation. We refer to a report entitled "A Criticality Study of WTR Fuel Assemblies" transmitted to you by Mr. A. Parks Honeywell, Reactor Operating Supervisor of the Westinghouse Testing Reactor, under cover of a letter dated April 11, 1959. Since this report shows that the minimum number of fuel elements required to go critical is 17, under the most optimum conditions of geometry and moderation, the spacing of the fuel elements in the shipping containers and the steel used in the container construction plus the cadmium plating increase the safety factor substantially.

We trust that the above information will be sufficient for your evaluation and permit you to issue the authorization for shipments as described above.

Very truly yours,

*D. J. Berger*

D. J. Berger  
Executive Assistant

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DJB/sj

*NH 16/10*