

DOCKET NO

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**MARTIN MARIETTA CORPORATION**

AEROSPACE CHEMICALS CONSTRUCTION MATERIALS

NUCLEAR  
DIVISION  
Baltimore 3,  
Maryland

May 21, 1962  
Mail No. 839  
Refer to: LSA-19

Division of Licensing & Regulations  
U. S. Atomic Energy Commission  
Washington 25, D. C.

Attention: Mr. Donald A. Nussbaumer  
Chief Material Licensing Branch

Subject: Supplement to License Report MND-2789

Gentlemen:

Reference is made to our Special Nuclear Material License SN-53 as amended. We submitted a request to further amend this license on May 8, 1962 in our letter LSN-17. We wish to supplement this application by transmitting copies of the container design, drawing number 1883-342 dated April 4th and fuel element shipping container stress analysis as referenced in our application.

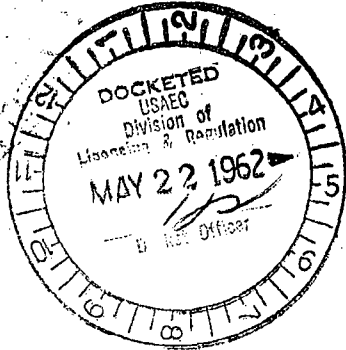
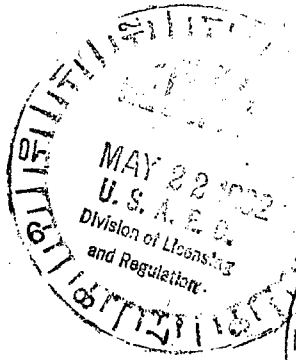
As indicated in our application for amendment we had submitted an application for a Bureau of Explosives Permit on the proposed shipping containers and have received this permit, number BE-1411.

Very truly yours,

*A. W. Wachtl*

A. W. Wachtl  
Contracts Manager

WAW/plm  
Enclosures

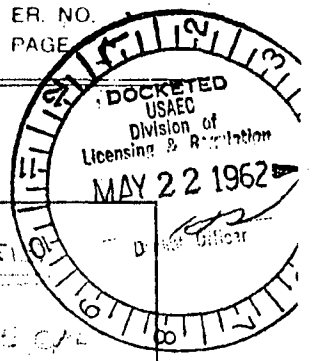


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ANALYSIS OF

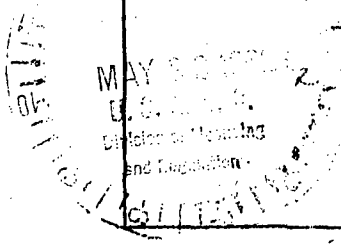


FUEL ELEMENT SHIPPING CONTAINER ANALYSIS

THE FOLLOWING ANALYSIS IS MADE FOR A 55 GAL DRUM SHIPPING CONTAINER TO BE USED IN TRANSPORTING FUEL ELEMENTS. THE OIL DRUM ITSELF IS USED AS A SHIELD TO INSURE THAT SUFFICIENT SPACING OF RADIOACTIVE MATERIAL IS MAINTAINED DURING SHIPMENT. THE DRUM IS REINFORCED ON TOP AND BOTTOM WITH 1/8" STEEL PLATE WELDED AROUND THE PERIPHERY OF THE DRUM. THE FUEL ELEMENTS ARE CONTAINED WITHIN A SHEATH OF FUEL WHICH IS SECURELY WELDED TO THE 1/8" PLATE AT BOTH THE TOP AND BOTTOM OF THE DRUM AND SUFFICIENTLY LOCATED AROUND THE AXIS OF THE DRUM. THE LOAD TO BE ANALYZED IS A FULL LOAD OF THE DRUM ON A FLAT SURFACE. DUE TO THE COMPLEXITY INVOLVED IN DETERMINING IMPACT STRESSES AND SHEAR STRESSES, THE CALCULATIONS UTILIZE STATIC LOADS TO DETERMINE ALLOWABLE DEVIATIONS.

ASSUMPTIONS

- 1- THAT THE LOAD IS TAKEN IN A THIN PLATE TYPE COLUMN 1/8" THICK X 4" WIDE X 15" LONG WHICH HAS SOME EDGE CONSTRAINT DUE TO THE FACT THAT THE PLATE IS WELDED TO THE DRUM.
- 2- THAT THE WEIGHT OF THE COMPLETE ASSEMBLY IS APPROXIMATELY 200 POUNDS.



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