

Gamma Industries

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September 14, 1979

Mr. Charles E. MacDonald, Chief
Transportation Certification Branch
Division of Fuel Cycle and Material
Safety, NMSS
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. MacDonald:

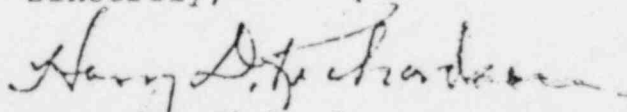
Please refer to your letter dated September 11, 1979, reference
FCTC:JEJ, 71-9133.

Enclosed are items to be inserted into the Application for NRC
Certificate of Compliance on "CENTURY" model devices manufactured
by Gamma Industries.

1. Page 7.7A which provides information related to
item 1 on Enclosure to letter dated September 11,
1979.
2. Bills of material which provide information related
to item 2 on Enclosure to letter dated September 11,
1979.

I hope this will satisfy your requirement of advising you within
thirty (30) days from the date of your letter dated September 11,
1979.

Sincerely,



Harry D. Richardson
President
GAMMA INDUSTRIES

HDR:jb
Enclosures

Additional information requested by Mr. Charles E. MacDonald
on September 11, 1979 -

1. Provide justification that the hypothetical accident 30-foot drop and puncture tests were performed such that maximum damage to the lock-box assembly was sustained.

INTRODUCTION

Large numbers of these devices have been used for many years. In accident conditions on highways and construction projects these "Century" models have been run over by trucks and tractors, dropped onto concrete slabs from heights approaching 100 feet, dropped into ocean depths from pipeline barges, et al with no breaches of shielding integrity being reported to Gamma Industries. Devices with similar construction are being used at ocean depths exceeding 1,000 feet. It is believed that the stresses imposed in these situations is greater than those stresses imposed by the drop test and puncture test.

The rationale for selecting impact conditions for imposing maximum damage to shielding integrity follows:

- a. Drop Test from 30 feet

The device was suspended and dropped with an attitude that the lockbox safety cap would be the initial impact point with the device center of gravity vertically above the impact point. It is believed this would cause maximum stress upon the lockbox and the bolts which secure the lockbox to the steel housing. Any other attitude would result in generating a moment causing rotation about the impact point, thereby decreasing the stresses upon the lockbox, bolts, and the housing.

- b. Puncture

First, it is inconceivable that the drop from 40 inches upon a 6 inch diameter steel bar could cause any damage to a device like the "Century".

Second, in attempting to determine which impact point would be likely to inflict the most damage, it was believed appropriate to select a drop from 40 inches

with a direction and attitude which would cause maximum stress on the lockbox "flanges" and the bolts. The drop was made in such a manner that the initial impact point upon the steel bar was near the outer end of the lockbox. This would provide the maximum bending moment upon the lockbox and also provide shear stresses upon the bolts.

No adverse results to shielding integrity were observed after these tests were completed.