

# Radiation Survey of DU Sheet with Stainless Steel Attenuation Barriers

9/10/93

*S.S. @ Containment*

### Instruments:

- Bicron Surveyor 2000 Instrument #A555M
- For  $\alpha\beta\gamma$  readings PGM probe, serial # A138L
- For  $\beta$  and  $\beta\gamma$  readings SWGM probe, serial # A008N

*Do not return  
to URM*

### Procedure:

A depleted uranium sheet 28" x 83" x 0.236" was placed away from other radioactive contributors and monitored. Contact and one meter away readings were taken on the bare sheet with an  $\alpha\beta\gamma$  probe, and a  $\beta\gamma$  probe. A 0.056" thick piece of 304 stainless steel was then placed over the DU and the readings were repeated. The 0.056" thick piece was removed and replaced with a 0.120" thick piece. Again the readings were repeated. Finally the two sheets of 0.056" and 0.102" were stacked for a total combined shielding thickness of 0.158" and the readings repeated. After the 0.056" thickness readings with the  $\alpha\beta\gamma$  probe it was deemed that the readings were not as accurate as with just the  $\beta\gamma$  probe and further readings were eliminated.

### Summary

Bare DU (0.2  $\mu\text{-}^{235}$ )

Location	Probe	Reading (mr/hr)
contact	$\alpha\beta\gamma$	140
1 meter	$\alpha\beta\gamma$	30
contact	$\beta\gamma$	40
1 meter	$\beta\gamma$	20
contact	$\gamma$	6
1 meter	$\gamma$	1

Du with 0.056" thick stainless steel (cladding)

Location	Probe	Reading (mr/hr)
contact	$\alpha\beta\gamma$	9
1 meter	$\alpha\beta\gamma$	2
contact	$\beta\gamma$	5
1 meter	$\beta\gamma$	1
contact	$\gamma$	4.5
1 meter	$\gamma$	0.8

*Reference: Manufacturing License  
Kempner*

*DUY DISTRICTS AVAILABLE*

*.125" 1/8" metal  
3.2mm*

Du with 0.102" thick stainless steel

Location	Probe	Reading (mr/hr)
contact	$\beta\gamma$	4
1 meter	$\beta\gamma$	0.8
contact	$\gamma$	4
1 meter	$\gamma$	0.6

Du with 0.158" thick stainless steel

Location	Probe	Reading (mr/hr)
contact	$\beta\gamma$	3
1 meter	$\beta\gamma$	0.65
contact	$\gamma$	3
1 meter	$\gamma$	0.6



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Date: \_\_\_\_\_  
Fax To: Pat Scofield  
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Fax #: 574-4084  
Fax From: Susan Kaplan

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**Additional Comments:**

*Thanks for your help. I hope these are useful.*

FOR	<u>Pat</u>
DATE	<u>7-11</u> TIME <u>8:29</u> <u>PM</u>
FROM	<u>Susan Kaplan</u>
FIRM	
PHONE	
□ FAX	AREA CODE <u>220</u> NUMBER <u>9996</u> EXTENSION
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TELEPHONED	<input checked="" type="checkbox"/> PLEASE CALL
RETURNED YOUR CALL	<input type="checkbox"/> WILL CALL AGAIN
CAME TO SEE YOU	<input type="checkbox"/> RUSH
WANTS TO SEE YOU	<input type="checkbox"/> SPECIAL ATTENTION
WAITING TO SEE YOU	<input type="checkbox"/> HOLDING LINE
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