

# Radiation Survey of DU Sheet with Stainless Steel Attenuation Barriers 9/10/93

## 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

## 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  $\mu^{295}$ )

| 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 (closed - 2)

| 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             |



.125" 1/8" metal

3.2mm

only difference available  
Reference: Manufacturing process  
Kaplan

Do not return  
L. Vane

## Du with 0.102" thick stainless steel

| Location | Probe         | Reading<br>(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<br>(mr/hr) |
|----------|---------------|--------------------|
| contact  | $\beta\gamma$ | 3                  |
| 1 meter  | $\beta\gamma$ | 0.65               |
| contact  | $\gamma$      | 3                  |
| 1 meter  | $\gamma$      | 0.6                |

\*\*\*\*\*

**KapLine Enterprises, Inc.**

4121 Guinn Rd.  
 Knoxville, TN 37931  
 Tel: (615) 927-3784  
 Fax: (615) 927-1772

\*\*\*\*\*

Date:

Fax To:

Company:

Fax #:

Fax From:

There are a total of 11 pages in this transmission. The number of pages includes this cover page. If you should encounter any problems with this facsimile transmission, please call (615) 927-3784.

Additional Comments:

Thanks for your help. I hope  
 these are useful.

|                                    |                                     |                                      |                                     |
|------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|
| FOR <u>Pat</u>                     |                                     | DATE <u>7-11</u> TIME <u>8:29 PM</u> |                                     |
| FROM <u>Pat Susan Kaplan</u>       |                                     | FIRM                                 |                                     |
| PHONE                              | AREA CODE                           | NUMBER                               | EXTENSION                           |
| <input type="checkbox"/> FAX       |                                     | <u>220-9996</u>                      |                                     |
| <input type="checkbox"/> MOBILE    | AREA CODE                           | NUMBER                               | TIME TO CALL                        |
| TELEPHONED                         | <input checked="" type="checkbox"/> | PLEASE CALL                          | <input checked="" type="checkbox"/> |
| RETURNED YOUR CALL                 | <input type="checkbox"/>            | WILL CALL AGAIN                      | <input type="checkbox"/>            |
| CAME TO SEE YOU                    | <input type="checkbox"/>            | RUSH                                 | <input type="checkbox"/>            |
| WANTS TO SEE YOU                   | <input type="checkbox"/>            | SPECIAL ATTENTION                    | <input type="checkbox"/>            |
| WAITING TO SEE YOU                 | <input type="checkbox"/>            | HOLDING LINE                         | <input type="checkbox"/>            |
| MESSAGE <u>source of info. in</u>  |                                     |                                      |                                     |
| <u>Manufacturing Science Corp.</u> |                                     |                                      |                                     |
| SIGNED _____                       |                                     |                                      |                                     |
| FORM 4007 TOPS MADE IN U.S.A.      |                                     |                                      |                                     |
| <b>MESSAGE</b>                     |                                     |                                      |                                     |