

- On 1/1/96, the fabric chair was removed from containment and placed in the Containment Access Guard Shack.
- On 1/1/96 the discrete particle fission fragment had an age of 3.3 years post irradiation and a total activity of 0.218 microcuries.
- The discrete particle was a point source shielded beneath 2.39 mm of material (i.e., chair covering materials and uniform of worker) at 0.450 g/cc.
- The particle dose rate was averaged over one square-centimeter (cm^2), at a tissue depth of 7 mg/ cm^2 .
- The particle activity remained constant during the entire year (i.e., the model conservatively assumed that there were no activity losses due to radioactive decay).
- The maximum dose rate to the skin was 0.109 rem/h.
- Each time an individual sat in the chair, they stayed perfectly still for one hour.
- Due to the steep dose rate gradient around discrete particles, and taking into consideration the way people sit in chairs, it was assumed that it was unlikely that the same square centimeter of tissue was irradiated more than once, even after repeated exposures.

Using this model, the maximum dose an individual would have received, even from repeated exposures, would have been 0.109 rem to the skin.

The licensee then submitted the dose model and calculations to independent industry experts for review and evaluation. Both Maine Yankee and their consultants concluded that the estimated activities of radionuclides in the particle and the calculated dose of 0.109 rem was a reasonable upper estimate of the dose received by workers from exposure to the subject particle, and since 0.109 rem was a small fraction of the 50 rem skin dose limit, further refinements in dose estimation were not warranted.

The licensee then used security logs to identify each individual that may have used the chair in 1996, and a skin dose of 0.109 rem was entered into each individual's personal exposure file.

Based on the NRC review of the dose model and calculations, inspectors made the following observations.

- The methods Maine Yankee used to estimate and assign radiation dose were reasonable, and followed accepted industry practices.

Distribution w/encl:

Region I Docket Room (with concurrences)

Nuclear Safety Information Center (NSIC)

PUBLIC

NRC Resident Inspector

D. Screnci, PAO

W. Axelson, DRA

R. Conte, DRP

H. Eichenholz, DRP

D. Beard, DRP

Distribution w/encl (VIA E-MAIL):

W. Dean, OEDO

S. Varga, NRR

D. Dorman, PM, NRR

M. Callahan, OCA

R. Correia, NRR

D. Taylor, NRR

D. Screnci, PAO

N. Sheehan, PAO

Inspection Program Branch, NRR (IPAS)

DOCUMENT NAME: G:\RSB\RAGLAND\MY9614.RV1

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	RI/DRS	<input checked="" type="checkbox"/>	RI/DRS	<input type="checkbox"/>	RI/DRP	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
NAME	RRagland	RCR	Jwhite		RConte					
DATE	04/08/97		04/ /97		04/ /97		04/ /97		04/ /97	

OFFICIAL RECORD COPY