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**TOTAL DOSE AND PEAK DOSE RATES
EXPERIENCED DURING THORIUM
REPACKAGING**

07/24/89

**DOE-1310-89
DOE-FMPC/USEPA
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LETTER
OU3**



Department of Energy

Oak Ridge Operations
P.O. Box 2001
Oak Ridge, Tennessee 37831-

546 4

July 24, 1989
DOE-1310-89

Mr. Basil Constantelos
U.S. Environmental Protection Agency
Region V - 5H-12
230 South Dearborn Street
Chicago, Illinois 60604

Dear Mr. Constantelos:

TOTAL DOSE AND PEAK DOSE RATES EXPERIENCED DURING THORIUM REPACKAGING

The attached information provides the total dose and peak dose rates experienced by IT Corporation during the Thorium Repackaging Effort as requested by your staff.

If you have any questions or require additional information, please contact Jack Craig, of my staff, at FTS 774-6159.

Sincerely,


James A. Reafsnnyder
FMPC Site Manager

DP-84:Craig

Attachment: as stated

cc w/attachment:

J. Benetti, USEPA-V
G. Mitchell, Ohio EPA

5464

bcc w/attachment:

W. Dillow, SE-312
F. Haywood, LWA

ATTACHMENT

TOTAL EXPOSURE AND PEAK DOSE RATES
EXPERIENCED DURING THORIUM REPACKAGING

BASIS:

- o 35 individuals involved in the Repackaging Effort.
- o Exposure levels based on the actual TLD readings, which were logged on a monthly basis.
- o Total Exposure levels per phase are prorated figures based on the amount of time spent on each phase of the project versus the amount of time spent on other, overall, exposure generating activities not assignable to a particular phase. Proration done based on actual self reading pocket dosimeter (SRPD) readings which were read and logged daily.
- o Peak dose rates are from the actual readings, of the repackaged thorium containers, taken with a Ludlum Model 3 portable count rate meter with a Ludlum Model 44-6 Geiger Muller detector.

TOTAL EXPOSURES: (in person-millirem)

<u>Repackaging Activity</u>	<u>Prorated Skin Dose</u>	<u>Prorated Whole Body Dose</u>
Phase I - Large Bin	2,941	2,593
Phase II - Small Bin	2,754	2,369
<u>Phase III - Silo</u>	<u>4,869</u>	<u>4,741</u>
Prorated Totals	10,564*	9,703*
TOTAL PROJECT ACTUAL TLD READINGS	16,379*	15,618*

* The differences between the "Prorated Totals" and the "TOTAL PROJECT ACTUAL TLD READINGS" represent the exposure experienced during the overall project, but non phase related activities such as set up, containment erection, etc.

PEAK DOSE RATES: (in millirem/hr)

Phase I - Large Bin	80
Phase II - Small Bin	90
Phase III - Silo	140



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**Westinghouse
Materials Company
of Ohio**

PO Box 398704
Cincinnati, Ohio 45239-8704

(513) 738 6200

WMCO:R:89-095

June 30, 1989

Mr. James A. Reafsnyder
Site Manager
U. S. Department of Energy
P. O. Box 398705
Cincinnati, Ohio 45239-8705

TOTAL EXPOSURE AND PEAK DOSE RATES EXPERIENCED DURING THORIUM REPACKAGING

Dear Mr. Reafsnyder:

Transmittal of the attached information, concerning total dose received and peak exposure rates experienced during the three phases of the Thorium Repackaging Effort, constitutes completion of Task 7 of the action items agreed upon with the EPA at the January 10th Technical Information Exchange Meeting.

The attached information was provided by R.A. Duff of International Technology Corporation. The detailed dose rates were measured through March 31, 1989. There will be additional exposures during decontamination, demolition, and building repair efforts, but those doses are expected to be quite small by comparison.

The total exposures per phase were derived by proration of the actual TLD readings, to account for the time spent on the individual phases of the project versus the time spent on overall project, but non phase related, activities such as set up, equipment installation, containment erection, etc. The proration was done based on IT's Self Reading Pocket Dosimeters, which were read and logged daily. The TLD readings were obtained and logged monthly. The differences between the total TLD readings and the sum of the prorated readings for each phase reflects exposure during the non phase related activities as described above.

The peak dose rates are actual readings, as measured at the drums as they were packaged. The measurements were taken with a Ludlum Model 3 with a 44-6 detector.

Date Rec'd JUN 30 1989
Log C-2112
File _____
Library _____



J. A. Reafsnyder

-2-

WMCO:R:89-095

Also attached is a draft letter for DOE transmittal of the information to the EPA. If you have any questions or require additional information, please contact C. R. Conner of my staff at extension 6017.

Very truly yours,

W. A. Weinreich
W. A. Weinreich
Vice President
FMPC Restoration

GJB:gjb

Attachments

- cc w/attach: C. R. Conner
- M. J. Galper
- R. L. Gardner
- S. W. Heisler
- W. G. Tope
- L. Elian
- Central Files

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EXPERIENCED DURING THORIUM REPACKAGING**

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- o Peak dose rates are from the actual readings, of the repackaged thorium containers, taken with a Ludlum Model 3 with a 44-6 detector.

TOTAL EXPOSURES: (in millirem)

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