



UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
F. EDWARD HEBERT SCHOOL OF MEDICINE
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4799
04 December 1992



TEACHING AND
RESEARCH SUPPORT
EHS-Radiation Safety Division

TEACHING HOSPITALS
WALTER REED ARMY MEDICAL CENTER
NAVAL HOSPITAL, BETHESDA
MALCOLM GROW AIR FORCE MEDICAL CENTER
WILFORD HALL AIR FORCE MEDICAL CENTER

U. S. Nuclear Regulatory Commission
Region I, Nuclear Material Section B
475 Allen Dale Road
King of Prussia, Pennsylvania 19406

SUBJECT: Report of Radiation Protection Survey, BML #19-23344-02

Dear Sir:

Enclosed are copies of the radiation protection surveys conducted on the self-contained dry source gamma irradiator, Model 109, ^{60}Co Irradiator, manufactured by J.L. Shepherd and Associates, San Fernando, CA. The unit is specified in USNRC Materials License No. 19-23344-02. The irradiator has been loaded with 7,600 Curies of ^{60}Co .

The unit was received on 10 November 1992; however, awaiting the parts for the repair of a minor oil leak delayed the survey by the Radiation Safety Officer until 03 December 1992. Training of the Radiation Safety Division staff was performed by Mr. Ralph Jacobs on 10 November 1992. Copies of Mr. Jacobs' initial survey, the training record, the USUHS initial survey, and a modified shielding check are attached. The purpose of the survey by the RSO was to check the radiation levels at the points of entry and the hallway with the source in the "on" position. This survey verified that levels within the room and in areas that can be occupied by the general public are less than 2 mR per hour. The actual readings were zero.

9301110119 921223
PDR ADOCK 03032810
C PDR

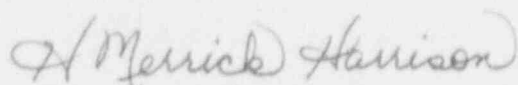
EHS-Radiation Safety Division

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If you have questions regarding this letter, you may contact either myself or CDR Laurence F. Parr at (301) 295-3305.

Sincerely,



H. MERRICK HARRISON
LTC, MS, USA
Radiation Safety Officer

Enclosures: 3

1. Health Physics & Radiological Report
2. Health Physics Laboratory Survey Form
3. Survey Data Form, RSO Survey

J.L. SHEPHERD & ASSOCIATES
1010 ARROYO AVENUE
SAN FERNANDO, CA 91340
(818) 898-2361

HEALTH PHYSICS & RADIOLOGICAL REPORT

DATE: 10/9/92

JLS&A REPRESENTATIVE Ralph Jacobs

CUSTOMER Henry M. Jackson Foundation/USUHS

DEVICE 109-85 Irradiator

DOSIMETER READING START 40

FINISH 40

SN 653

I.D. # 289843

SOURCE LOADING & S.N. 7,600Ci ^{60}Co , S.N.'s JLS-2483-1 through

JLS-2483-10

INSTRUMENT 2520

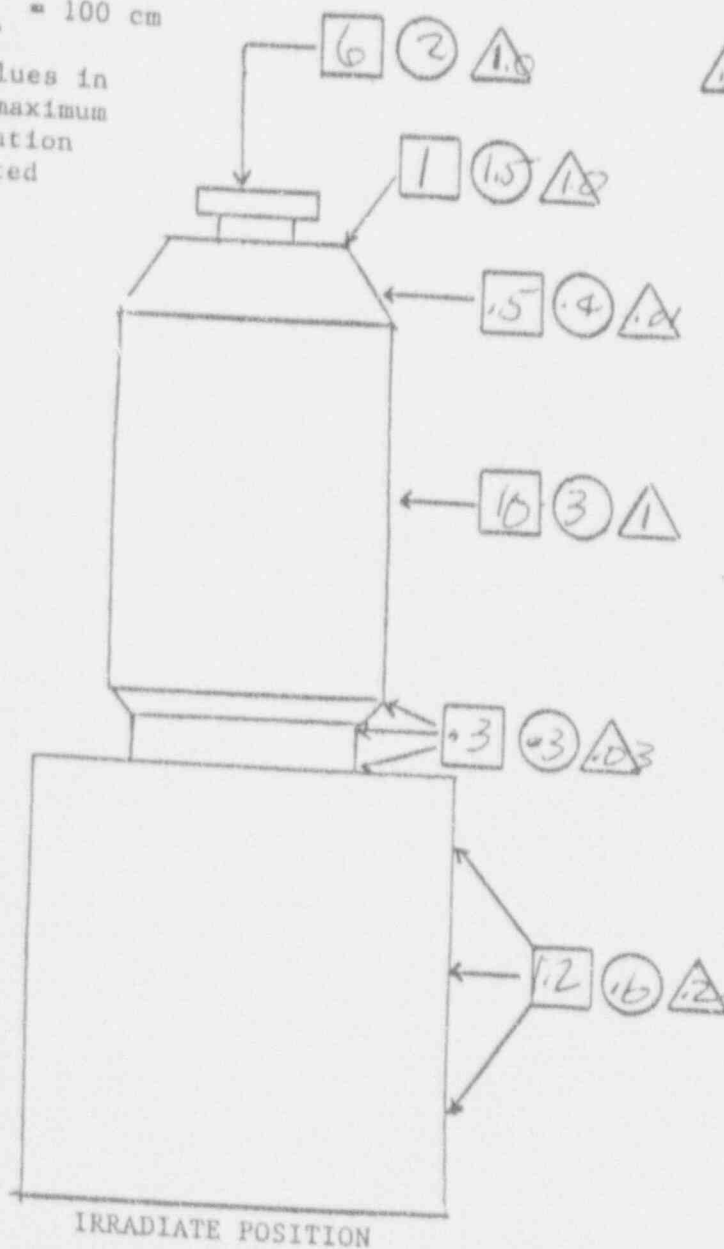
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□ = 5 cm

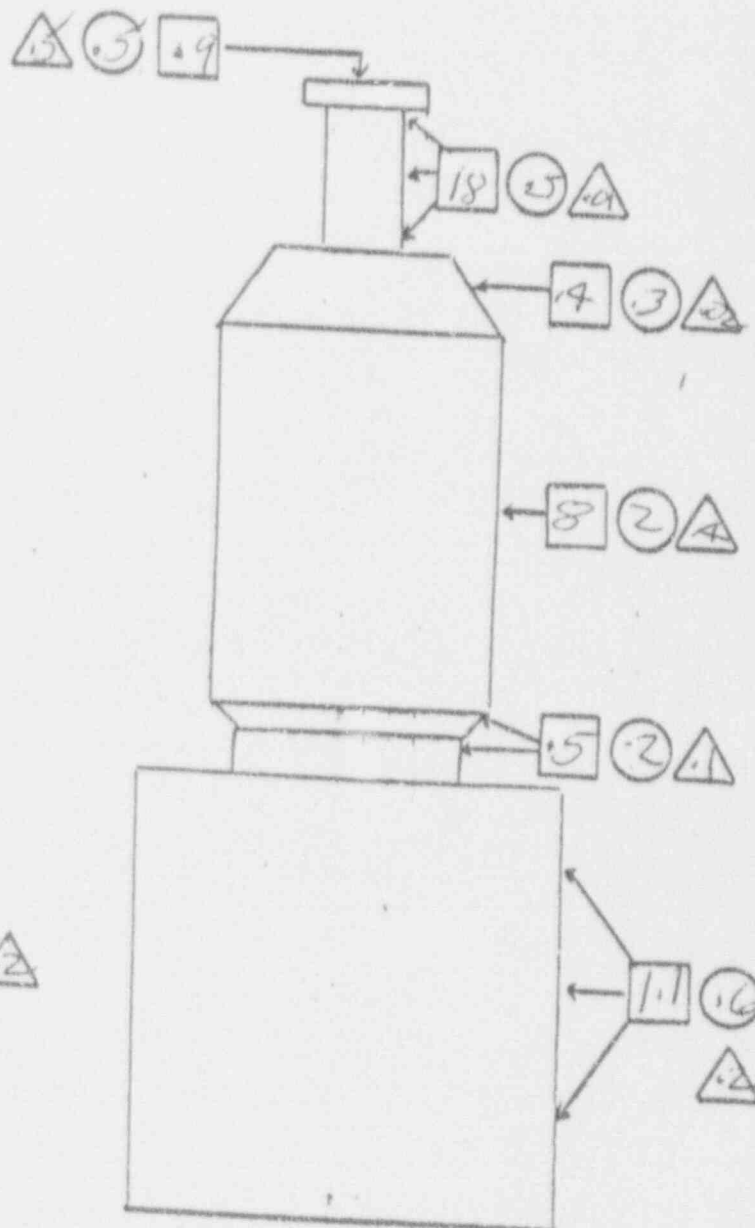
○ = 30 cm

△ = 100 cm

All values in
mR/hr maximum
at location
indicated



IRRADIATE POSITION



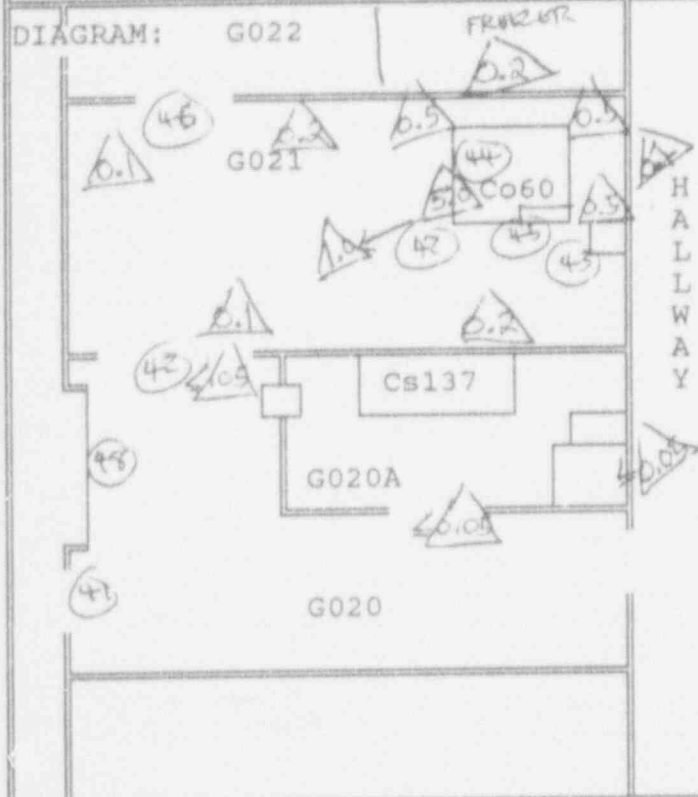
LOAD POSITION

JOB NO. 091809TR

End

HEALTH PHYSICS LABORATORY SURVEY

INVESTIGATOR: RADSAF REA	ISOTOPES: Co60	SURVEYOR: M.E. WOLBERT	DATE: 12 NOVEMBER 92
DEPARTMENT: EHS Irradiator Rm.	PURPOSE: Monthly	SURVEY METER: LUDLUM	METER MODEL: 14C
ROOM #: G021	PHONE #: N/A	AUTH #: U85-25-002	MTR. SN: 88137
		CAL DUE: 21 OCT 92	CAL CHECK: Good



LAB CHECKS:

- POSTED FOR RADIATION
 - ENTRANCES ☒
 - STORAGE AREAS ☒
 - EQUIPMENT & HOODS ☒
 - WASTE CONTAINERS ☒
- RADIATION SURVEY LOG
 - PRESENT ☒
 - CURRENT ☒
- RADIOACTIVE WASTE CONTAINERS
 - VOLUME ☒
 - EXPOSURE RATE ☒
 - EHS FORM 117 ☒
- INFRACTIONS
 - NO SMOKING, EATING OR DRINKING ☒
 - DOSIMETRY WORN PROPERLY ☒
 - SOURCES SECURED ☒
- VACUUM SYSTEM ☒

HIGHEST METER READING: 5.0 mR/hr

SURVEYOR COMMENTS: INITIAL SURVEY OF G021, RADIATION SURVEY LOG WILL BE STARTED WITH THIS SURVEY. USE 5.0 mR/hr AT CONTACT WITH IRRADIATOR, 1.0 mR/hr AT 3 METER FROM CONTACT POINT. N/A

ROOM LEGEND:

- .. where isotopes used (outlined)
 WA-waste area D-drain C-centrifuge
 RV-revco R-refrig. H-hood I-incuba.
 ^ exposure rates in mR/hr
 O swipe (smear) locations

TYPE (SYSTEM) OF ANALYSIS:

- ☒ AUTO-GAMMA
☒ LIQUID SCINTILLATION
☐ MULTI-CHANNEL ANALYZER

SWIPE ANALYSIS:

- ☒ all swipes <200 dpm/ 100cm²
☐ all swipes <200 dpm/ 100 cm² with the exception of the following:

Swipe #	dpm/ 100cm ²	Isotope(s)

DATE OF ANALYSIS: 13 Nov 92PERFORMED BY: PMKACTION REQUIRED: ☐ Yes ☒ No

ACTION TAKEN:

REVIEWED BY: J. Harrison DATE: NOV 13 1992
 COMMENTS: H. Merrick Harrison, Ph.D.,
 LTC, MS, USA, RADSAF OFFICER

C-12

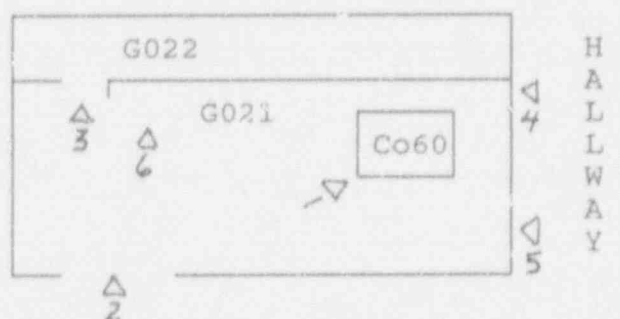
SURVEY DATA

UNIT SURVEYED: J.L. Shepherd Model 109, Cobalt-60 Irradiator, Serial No. 653.

DATE OF SURVEY: 03 December 1992

SURVEY INSTRUMENT: Keithley Model 36150, Integrating Survey Meter, Serial No. 20303, Calibrated 07 February 1992, Calibration due 02/93.

DIAGRAM OF AREA:



SURVEY DATA:

IDENTIFICATION	SOURCE POSN	READING (MR/HR)	COMMENTS
1	Off On	6.0 7.1	Contact Contact
2	On	0.1	Door Open
3	On	0.0	Door Closed
4	On	0.0	
5	On	0.0	
6	On	0.2	

H. Merrick Harrison
H. MERRICK HARRISON
LTC, MS, USA
Radiation Safety Officer