UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Northwest Fisheries Center
Environmental Conservation Division
2725 Montlake Boulevard East
Seattle, Washington 98112

March 8, 1989

David Skov
Nuclear Regulatory Commission
Region V
1450 Maria Lane, Suite 210
Walnut Creek, CA 94596-5368

Dear Mr. Skov:

With regard to our recent phone conversation, we request the release of Rm. 445E (now listed on our NRC license [No. 46-06377-04, as amended]) from further activities dealing with radioisotopes.

Room History. Intermittently, for a number of years chemicals containing ^{3}H and ^{14}C were used in this laboratory. To the best of our knowledge (as judged by the personal experience of two long-time employees, Paul Robisch and myself [with over 30-years of service at this location]), these are the only two radioactive materials used in this space.

Pursuant to NRC 10 CFR 30-36, Ch. 1, par. ii, the room was carefully cleaned and all equipment and supplies were transferred to room space presently authorized by our license.

In compliance with Par. V, a Ludlum Model 16 hand-held survey meter (calibration data enclosed) was used to check for any hard radiation. In the open hallways of our building, the meter registered approximately 250 CPM (our normal background level), and we found nothing higher than this when checking the floor, hood (inside and out) walls, counter top, door and fixtures in Room 445E.

With regard to Par. V (A), wipe tests were performed on 10 cm x 10 cm areas (see enclosed room layout showing numbered areas checked) using alcohol-soaked cellulose wipes, and counted with a Packard Tri-Carb Model 300C scintillation counter. The data of Table I report our initial findings. Note that these data are not corrected for background (~ 36 DPM and 12 DPM for ^{3}H and ^{14}C, respectively). Location nos. 5, 6 and 10 were suspect

and the sink area was resoaked and rechecked, and the data of Table II report our findings, this time using blank-subtract as the means of data presentation. We felt that the non-operator contact area (location 10) at the back baffle of the hood presented no problem and attempts to reduce DPM's were not done.

The data indicate that no hard irradiation was present, and that the areas checked are essentially devoid of ^{14}C residue. Moreover, the somewhat higher than background levels attributed to ^{3}H are well below your guidelines for elimination or contamination for this beta emitter.

Sincerely,

William T. (Ted) Roubal, Ph.D.

William T. Roubal, Ph.D., RSO
Research Chemist

Enclosure

Room 445 E

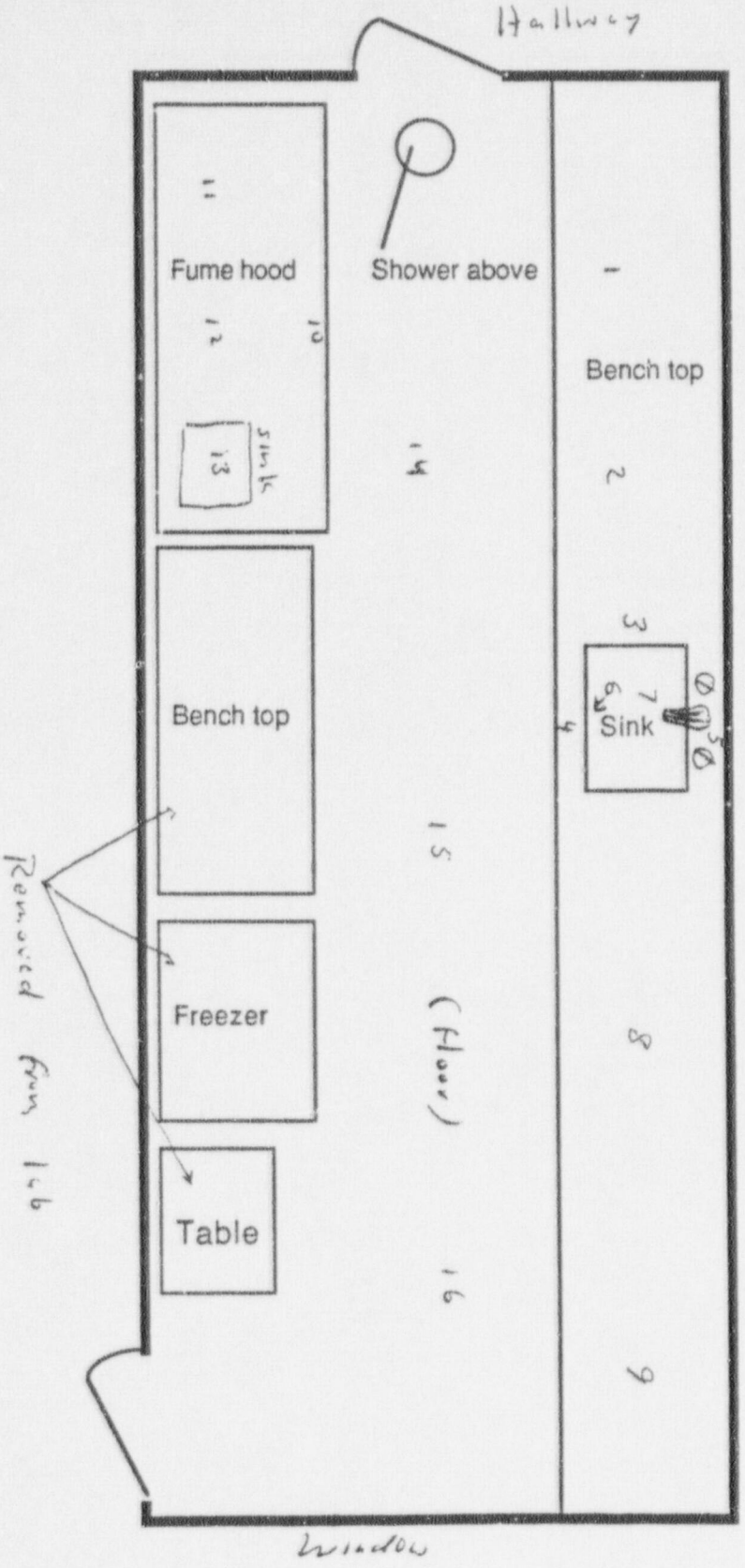

Hallway
Fume hood
Shower above
Bench top
Bench top
Sink
Freezer
Table
Removed from 146
(Floor)
Window

Table I

PROGRAM #: 3
REGION A: LL-UL= 0- 12 LCR= 0 BKG= 0 % 2 SIGMA= .2
REGION B: LL-UL= 12- 156 LCR= 0 BKG= 0 % 2 SIGMA= .2
NUCLIDE 1 = 182298 NUCLIDE 2 = 105000
TIME= 2.00 0IP= SIE/AEC SCR= B/A K= 1.000

P#	S#	TIME	CPMA/K DPM1/K	%DEV	CPMB/K DPM2/K	%DEV	0IP	FLAGS	SCR	MIN
			3H		14C					
3	1	2.00	14.50	37.1	10.50	43.6	605.		.724	2
	DJC		35.99		12.02	DJC			.334	
3	2	2.00	18.00	33.3	16.50	34.8	571.		.917	6
	1		45.89		19.51				.425	
3	3	2.00	18.00	33.3	15.00	36.5	572.		.833	9
	2		46.59		17.58				.377	
3	4	2.00	22.00	30.1	13.00	39.2	588.		.591	11
	3		57.99		14.56				.251	
3	5	2.00	19.50	32.0	10.50	43.6	581.		.538	14
	4		52.67		11.61				.221	
3	6	2.00	57.50	18.6	14.50	37.1	591.		.252	17
	5		160.64		13.09				.081	
3	7	2.00	48.00	20.4	12.00	40.8	585.		.250	20
	6		135.67		10.80				.080	
3	8	2.00	24.00	28.8	14.00	37.8	575.		.583	23
	7		64.99		15.70				.242	
3	9	2.00	20.50	31.2	12.50	40.0	579.		.610	26
	8		54.80		14.09				.257	
3	10	2.00	17.00	34.3	12.00	40.8	576.		.706	28
	9		44.85		13.80				.308	
3	11	2.00	52.00	19.6	14.50	37.1	495.		.279	31
	10		177.93		13.85				.078	
3	12	2.00	19.00	32.4	9.50	45.8	589.		.500	34
	11		50.89		10.36				.204	
3	13	2.00	16.50	34.8	16.50	34.8	578.		1.000	37
	12		40.74		19.62				.481	
3	14	2.00	17.00	34.3	18.00	33.3	545.		1.059	40
	13		44.25		21.71				.491	
3	15	2.00	12.50	40.0	10.00	44.7	594.		.800	43
	14		31.25		11.60				.371	
3	16	2.00	16.00	35.3	13.50	38.4	578.		.844	45
	15		40.90		15.81				.387	
3	17	2.00	21.00	30.8	7.00	53.4	578.		.333	48
	16		59.25		6.98				.118	

Table II

PROGRAM #: 3
REGION A: LL-UL= 0- 12 LCR= 0 BKG= 0 % 2 SIGMA= .2
REGION B: LL-UL= 12- 156 LCR= 0 BKG= 0 % 2 SIGMA= .2
NUCLIDE 1 = 182298 NUCLIDE 2 = 105000
TIME= 10.00 QIP= SIE/AEC SCR= B/A K= 1.000

P#	S#	TIME	CPMA/K DPM1/K ³H	%DEV	CPMB/K DPM2/K ¹⁴C	%DEV	QIP	FLAGS	SCR	MIN	
3	1	10.00	17.30	15.2	14.50	16.6	613.	B	.838	11	BLK SUBTRACT
3	2	10.00	12.40	11.6	.00	16.6	567.		.000	22	
		#6	38.02		0.00				.000		
3	3	10.00	2.70	14.1	.00	17.0	604.		.000	33	
		#5	7.67		0.00				.000		

NORTHWEST RADIATION INSTRUMENT CALIBRATION FACILITY

NRICF FORM 00-04-00(6/86)

REPORT OF CALIBRATION

Count Rate Survey Meter

Please complete one form for each probe calibrated

Calibration Report Number: 89-1404

Calibration performed for: Walt Dickhoff

Client Reference Number:

Detector Information

Manufacturer: Ludlum
Model: 16
Serial Number: 38965

Probe Information

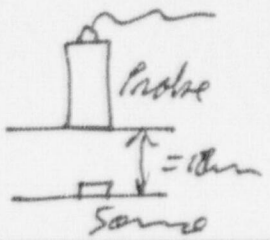
Manufacturer: Ludlum
Model: 44-3 NaI
Serial Number: PR025342

Calibration Results

Battery OK on Delivery? (Y) N
Meter Response Linear (within ± 10%)? (Y) N
High voltage (bias) on chamber (volts): 552

Radiation Source	Radiation Emitted	Energy MeV	Activity (uCi)	Meter Reading cpm	Efficiency (CPM/DPM)	Efficiency (CPM/Nanocurie)
background	—	—	—	175	—	—
C^{14}	β^-	.156	.01557	175	0	0
Cl^{36}	β^-	.71	.0187	5000	0.116	258.0
Tl^{204}	β	.040	.101	15000	.066	146.8

Setup:



Comments

"This calibration was performed using a procedure which is ☐ is not ☑ included in the Scope of Accreditation issued by the Conference of Radiation Control Program Directors, Inc."

(Please see back of report)

Calibration Performed By: [signature] Date: 1/31/89
Calibration Report Checked By: [signature] Date: 1/31/89

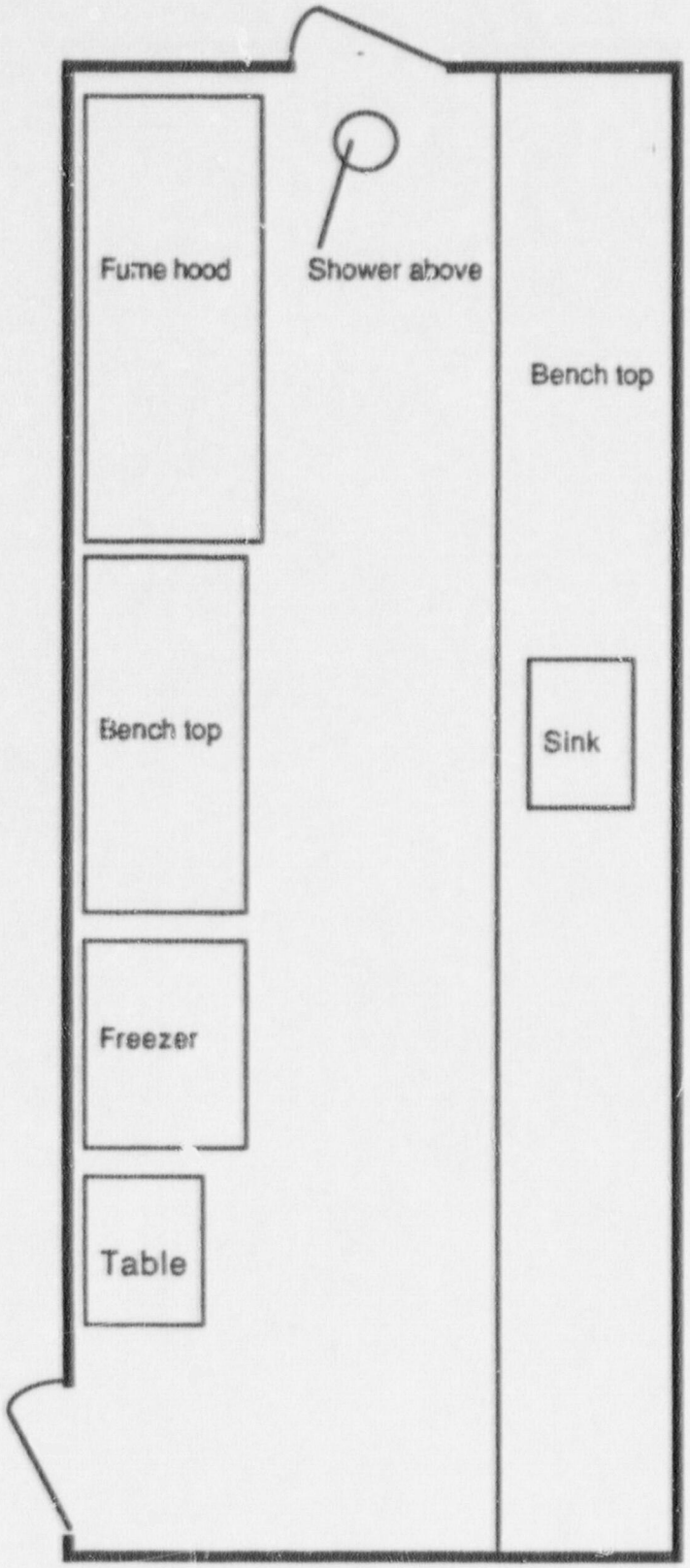
The efficiency values reported are based on measurements from a disk source at a source-detector distance of one (1) centimeter. No evaluation of dead time or resolving time of the detector-probe combination is made.

Information on technical aspects of this report may be obtained from:

SCOTT MANTYLA
Northwest Radiation Instrument Calibration Facility
Department of Environmental Health and Safety GS-05
University of Washington
Seattle, Washington 98195
(206) 543-0463
(206) 543-2545

From applic
dated 3/26/87

Room 445 E



EC

MATERIALS LICENSE

Amendment No. 18

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	
1. Department of Commerce NOAA, NMFS, EC Division Northwest & Alaska Fisheries Center 2. 2725 Montlake Boulevard, East Seattle, Washington 98112	In accordance with letters dated March 8, 1989 and March 29, 1989 3. License number 46-06377-04 is amended in its entirety to read as follows: 4. Expiration date February 28, 1993 5. Docket or Reference No. 030-08203

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Nickel 63	A. Foils or plated sources in detector cells	A. Not to exceed 15 millicuries per foil
B. Carbon 14	B. Any	B. 100 millicuries
C. Hydrogen 3	C. Any	C. 200 millicuries
D. Vanadium 48	D. Any	D. 1 millicurie
E. Cadmium 109	E. Any	E. 1 millicurie
F. Cadmium 115	F. Any	F. 1 millicurie
G. Mercury 203	G. Any	G. 2 millicuries
H. Iodine 125	H. Any	H. 10 millicuries
I. Calcium 45	I. Any	I. 10 millicuries
J. Iodine 131	J. Any	J. 1 millicurie
K. Phosphorus 32	K. Any	K. 5 millicuries
L. Sulfur 35	K. Any	K. 2 millicuries

9. Authorized use

A. For use in gas chromatographs for sample analysis

B. through L. For use in research and development as defined in 10 CFR 30.4(q).

CONDITIONS

10. Licensed material shall be used only at 2725 Mountlake Boulevard, East, Seattle, Washington except that carbon 14, hydrogen 3, and sulfur 35 may also be used at the licensee's Mukilteo Field Station, Park and Front Street, Mukilteo, Washington.

11. A. Licensed material shall be used by, or under the supervision of, William T. Roubal, William L. Reichert, Donald W. Brown, Paul A. Robisch, or Walton W. Dickhoff.

    B. The Radiation Safety Officer for activities conducted under this license is William T. Roubal, Ph.D.

12. In lieu of using the conventional radiation caution colors (magenta or purple on yellow background) as provided in 10 CFR 20.203(a)(1), the licensee is hereby authorized to label detector cells and cell baths, containing licensed material and used in gas chromatography devices, with conspicuously etched or stamped radiation caution symbols without a color requirement.

13. Detector cells containing licensed material shall not be opened or the sources removed from the detector cell by the licensee.

14. A. The source(s) specified in Item(s) 7.A. shall be tested for leakage and/or contamination at intervals not to exceed 6 months. Any source received from another person which is not accompanied by a certificate indicating that a test was performed within 6 months before the transfer shall not be put into use until tested.

    B. Any source in storage and not being used need not be tested. When the source is removed from storage for use or transfer to another person, it shall be tested before use or transfer.

    C. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the source shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the date the leak test result is known with the U. S. Nuclear Regulatory Commission, Region V; Nuclear Materials Safety and Safeguards Branch; 1450 Maria Lane, Suite 210; Walnut Creek, California 94596. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.

    D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number
46-06377-04
Docket or Reference number
030-08203

Amendment No. 18

CONDITIONS

(continued)

15. The licensee shall not use licensed material in or on human beings or in field applications where activity is released except as provided otherwise by specific condition of this license.

16. The licensee is authorized to hold radioactive material with a physical half-life of less than 65 days for decay-in-storage before disposal in ordinary trash provided:

    A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of ten (10) half-lives.

    B. Prior to disposal as normal waste, radioactive waste shall be surveyed to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.

17. The licensee may transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material".

18. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

    A. Letter dated March 26, 1987
    B. Letter dated November 5, 1987
    C. Letter dated December 29, 1987
    D. Letter dated March 8, 1989
    E. Letter dated March 29, 1989

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date MAY 24 1989

By Beth A. Riedlinger
Beth A. Riedlinger
Health Physicist (Licensing)
Nuclear Materials Safety Section
Region V