

MATERIALS LICENSE

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. Hawaiian Agricultural Research Center

2. 99-193 Aiea Heights Drive, Suite 300
Aiea, Hawaii 96701-3911In accordance with letter dated
December 6, 19953. License number 53-00515-01 is amended
in its entirety to read as follows:

4. Expiration date April 30, 2005

5. Docket or
Reference No. 030-068396. Byproduct, source, and/or
special nuclear material7. Chemical and/or physical
form8. Maximum amount that licensee
may possess at any one time
under this license

A. Phosphorus 32

B. Phosphorus 33

C. Carbon 14

D. Hydrogen 3

E. Sulfur 35

F. Nickel 63

A. Any

B. Any

C. Any

D. Any

E. Any

F. Foil in Tracor
Model 111019-0001
detector cells

A. 50 millicuries

B. 30 millicuries

C. 60 millicuries

D. 100 millicuries

E. 29 millicuries

F. Not to exceed 15
millicuries per
foil

9. Authorized use

A. through E. For use in conducting tracer studies in plants and soils. Laboratory
analysis of samples.

F. For use in gas chromatographs for sample analysis.

d/1
ML40

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
53-00515-01

Docket or Reference Number
030-06839

Amendment No. 58

CONDITIONS

10. Licensed material shall be used only at the licensee's facilities located at 99-193 Aiea Heights Drive; Aiea, Hawaii and at the Kunia Substation; Kunia Road; Waipahu, Hawaii.
11. Licensed material shall be used by, or under the supervision and in the physical presence of, individuals who have been trained as specified in application dated October 31, 1994, and who have been designated by the Radiation Safety Officer.
12. The Radiation Safety Officer for this license is Mel C. Jackson, Ph.D.
13.
 - A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as specified by the certificate of registration referred to in 10 CFR 32.210.
 - B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.
 - C. In the absence of a certificate from a transferor indicating that a leak test has been made within 6 months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
 - D. Sealed sources need not be leak tested if:
 - (i) they contain only hydrogen-3; or
 - (ii) they contain only a radioactive gas; or
 - (iii) the half-life of the isotope is 30 days or less; or
 - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
 - (v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transferred to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

53-00515-01

Docket or Reference Number

030-06839

Amendment No. 58

13. (Continued)

- E. The leak 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, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30(b)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011, ATTN: Director, Division of Radiation Safety and Safeguards. The report shall specify the source involved, the test results, and corrective action taken.
- F. The licensee is authorized to collect leak test samples for analysis by Gamma Corporation. Alternatively, tests for leakage and/or contamination may be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.
14. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
15. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.
16. The licensee shall conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license.
17. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
18. The licensee is authorized to hold radioactive material with a physical half-life of less than 90 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 10 half-lives.
- B. Before disposal as ordinary trash, byproduct material shall be surveyed at the container surface with the appropriate meter set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
53-00515-01

Docket or Reference Number
030-06839

Amendment No. 58

18. (Continued)

- C. A record of each disposal permitted under this License Condition shall be retained for three years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.
19. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the minimum limit specified in 10 CFR 30.35(d) for establishing decommissioning financial assurance.
20. 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 August 25, 1994
 - B. Application dated October 31, 1994 except Item 10, Section K., "Waste Management" Number 6, regarding the release of plants and soils to unrestricted areas
 - C. Letter dated November 8, 1994
 - D. Letter dated November 22, 1994
 - E. Letter dated December 20, 1994
 - F. Letter dated December 27, 1994 except Item 10, Section K., "Waste Management", Number 6 regarding the release of plants and soils to unrestricted areas
 - G. Letter dated March 31, 1995
 - H. Letter dated July 26, 1996
 - I. Letter dated October 3, 1996

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date OCT - 9 1996

By Beth A. Prange
Materials Branch
Region IV, WCFO
Walnut Creek, California 94596

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)
INFORMATION FROM LTS

PROGRAM CODE: 03620
STATUS CODE: 0
FEE CATEGORY: 3M
EXP. DATE: 20000430
FEE COMMENTS:
DECOM FIN ASSUR REQD: N

RECEIVED
NRC
RIV WCFO

95 DEC 26 11:02 46

LICENSE FEE TRANSMITTAL

A. REGION V

1. APPLICATION ATTACHED

APPLICANT/LICENSEE: HAWAIIAN SUGAR PLANTER'S ASSOC.
RECEIVED DATE: 951215
DOCKET NO: 3006839
CONTROL NO.: 572279
LICENSE NO.: 53-00515-01
ACTION TYPE: AMENDMENT

2. FEE ATTACHED

AMOUNT: \$ 590.00
CHECK NO.: 42331

3. COMMENTS

SIGNED
DATE

Jan Garcia
12-15-95

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED ☒)

1. FEE CATEGORY AND AMOUNT: 3M \$590

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:

AMENDMENT ☒
RENEWAL ☐
LICENSE ☐

3. OTHER

SIGNED
DATE

Peter Messers
10/21/95

Log	<u>Dec 1</u>
Remitter	
Check No.	<u>42331</u>
Amount	<u>\$590</u>
Fee Category	<u>3M</u>
Type of Fee	<u>amd</u>
Date Check Rec'd.	<u>12/20</u>
Date Completed	<u>12/21/95</u>
By:	<u>km</u>



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV

Walnut Creek Field Office
1450 Maria Lane
Walnut Creek, California 94596-5368

OCT - 9 1996

Hawaiian Agriculture Research Center
ATTN: Stephanie A. Whalen
President and Director
99-193 Aiea Heights Drive, Suite 300
Aiea, Hawaii 96701-3911

SUBJECT: LICENSE AMENDMENT

Please find enclosed License No. 53-00515-01. You should review this license carefully and be sure that you understand all conditions. If you have any questions, you may contact the reviewer who signed your license at (510) 975-0250.

NRC expects licensees to conduct their programs with meticulous attention to detail and a high standard of compliance. Because of the serious consequences to employees and the public which can result from failure to comply with NRC requirements, you must conduct your program involving radioactive materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

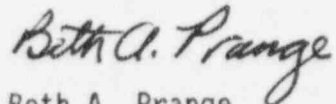
1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers: Inspection and Investigations," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Possess radioactive material only in the quantity and form indicated in your license.
3. Use radioactive material only for the purpose(s) indicated in your license.
4. Notify NRC in writing of any change in mailing address (no fee required if the location of radioactive material remains the same).
5. Request and obtain written NRC consent before transferring your license or any right thereunder, either voluntarily or involuntarily, directly or indirectly, through transfer of control of your license to any person or entity. A transfer of control of your license includes not only a total change of ownership, but also a change in the controlling interest in your company whether it is a corporation, partnership, or other entity. In addition, appropriate license amendments must be requested and obtained for any other planned changes in your facility or program that are contrary to your license or contrary to representations made in your license application, as well as supplemental correspondence thereto, which are incorporated into your license. A license fee may be charged for the amendments if you are not in a fee-exempt category.

6. Maintain in a single document decommissioning records that have been certified for completeness and accuracy listing all the following items applicable to the license:
 - Onsite areas designated or formerly designated as restricted areas as defined in 10 CFR 20.3(a)(14) or 20.1003.
 - Onsite areas, other than restricted areas, where radioactive materials in quantities greater than amounts listed in Appendix C to 10 CFR 20.1001-20.2401 have been used, possessed, or stored.
 - Onsite areas, other than restricted areas, where spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment, or site have occurred that required reporting pursuant to 10 CFR 30.50(b)(1) or (b)(4), including areas where subsequent cleanup procedures have removed the contamination.
 - Specific locations and radionuclide contents of previous and current burial areas within the site, excluding radioactive material with half-lives of 10 days or less, depleted uranium used only for shielding or as penetrators in unused munitions, or sealed sources authorized for use at temporary job sites.
 - Location and description of all contaminated equipment involved in licensed operations that is to remain onsite after license termination.
7. Submit a complete renewal application with proper fee, or termination request at least 30 days before the expiration date on your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of radioactive material after your license expires is a violation of NRC regulations.
8. Request termination of your license if you plan to permanently discontinue activities involving radioactive material.

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action against you. This could include issuance of a notice of violation; imposition of a civil penalty; or an order suspending, modifying, or revoking your license as specified in the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), 60 FR 34381, June 30, 1995.

Thank you for your cooperation.

Sincerely,

A handwritten signature in cursive script that reads "Beth A. Prange".

Beth A. Prange
Sr. Health Physicist (Licensing)
Materials Branch

Docket: 030-06839
License: 53-00515-01
Control: 572279

Enclosures: As stated

bcc:

Docket File
WCFO Inspection File
LFDCB, T-9 E10
State of HI (License Only)

DOCUMENT NAME: G:\beth\572279

To receive copy of document, indicate in box: "C" = Copy without enclosures "E" = Copy with enclosures "N" = No copy

RIV:MB	N	C:MB						
BPrange <i>bat</i>		FWenslawski						
10/9/96		10/ /96	10/ /96	10/ /96	10/ /96	10/ /96	10/ /96	

OFFICIAL RECORD COPY



HAWAII AGRICULTURE RESEARCH CENTER

FORMERLY HAWAIIAN SUGAR PLANTERS' ASSOCIATION

99-193 AIEA HEIGHTS DRIVE, SUITE 300, AIEA, HAWAII 96701-3911

TELEPHONE: (808) 487-5561 FAX: (808) 486-5020

3 October 1996

Ms. Beth A. Prange
Walnut Creek Field Office
1450 Maria Lane
Walnut Creek, CA 94596-5368

Dear Ms. Prange:

Subject: Mail Control No. 572279

This letter is in response to your July 30, 1996 request for additional information.

1. Dr. Jackson's outline of training given by Radiation Safety and Control Services, Inc. is enclosed.
2. I am requesting a change in our name on the license agreement, from the Hawaiian Sugar Planters' Association (HSPA) to the Hawaii Agriculture Research Center (HARC). Note, this change reflects the change in name our organization underwent effective April 2, 1996, but does not involve changes in ownership, facilities, personnel, or commitments identified in the existing license.

Although the name change does not involve a change in ownership or control, the information requested in the IN 89-25 guidance is provided below:

- a. Hawaii Agriculture Research Center (HARC).
- b. I am requesting that the Radiation Safety Officer identified in the Materials License (condition 12) be changed from Philip J. Manly to Dr. Mel C. Jackson.
- c. There is no change in ownership (no buyer or seller involved); this is just a name change.
- d. There have been no transfer of stocks or assets; this is just a name change.
- e. The change in name reflects the company's shift in emphasis from agricultural research on sugarcane to diversified crops.

There is no change in location (still 99-193 Aiea Heights Drive, Suite 300, Aiea, HI 96701-3911).

The facility is still called the Experiment Station.

There are no changes in equipment or procedures.

The list of authorized users continues to change as it has in the past due to the temporary hires (e.g., postdoctoral fellows).

572279

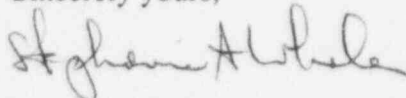
Ms. Beth A. Prange

-2-

October 3, 1996

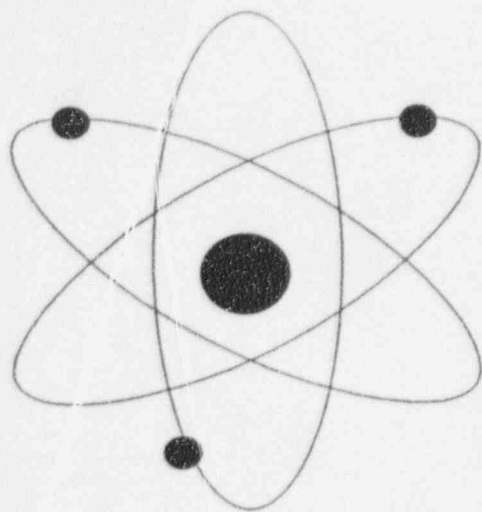
- f. As part of the license amendment, a request is being made to increase the material limits from 10 mCi ^{32}P , 10 mCi ^{33}P , 15 mCi ^{35}S , 50 mCi ^3H , and 50 mCi ^{14}C to 50 mCi ^{32}P , 30 mCi ^{33}P , 29 mCi ^{35}S , 100 mCi ^3H , and 60 mCi ^{14}C . The request is based upon an increase in users and experiments.
 - g. The status of surveillance requirements and records is enclosed.
 - h. The most recent summary of the monthly contamination survey is enclosed.
 - i. No decontamination is needed.
 - j. There is no change of ownership or control involved.
 - k. See the enclosed letter (item 3, below).
3. The content of the 1 February 1996 agreement has been updated, signed, and herewith resubmitted.

Sincerely yours,



Stephanie A. Whalen
President and Director,
Experiment Station

SAW:BV:mb
Enclosures



Radiation
Safety
Officer
Training
Course

RSCS, Inc.

June 10-14, 1996
Portsmouth, NH

Math Review

Nuclear Physics Review

3	Radiation and Radioactivity
4	Interaction of Radiation with Matter
5	Radiation Exposure and Dose
6	Biological Effects of Radiation
7	Radiological Hazards
8	Principles of Radiation Detection
9	Operational Radiation Safety
10	Planning for Emergencies
11	NRC Regulations
12	Transportation of Rad. Material
13	Rad. Prot. Program Assessments
14	NCRP Report No. 59
15	Miscellaneous

Radiation Safety & Control Services, Inc.

Radiation Safety Officer Training Course

**June 10 - 14, 1996
Portsmouth, New Hampshire**

Course Schedule

Monday, June 10, 1996

- | | |
|--------------|--------------------------------------|
| 8:30 | Introduction and Course Objectives |
| 9:15 | Math Review |
| 10:00 | <i>Break</i> |
| 10:15 | Nuclear Physics Review |
| 12:00 | <i>Complimentary Lunch</i> |
| 1:00 | Radiation and Radioactive Material |
| 2:30 | <i>Break</i> |
| 2:45 | Interaction of Radiation With Matter |
| 5:00 | <i>Class Ends</i> |
| 5:30 | <i>Social Hour</i> |

Tuesday, June 11, 1996

- | | |
|--------------|--|
| 8:00 | Interaction of Radiation with Matter (con't) |
| 10:00 | <i>Break</i> |

Radiation Safety & Control Services, Inc.

Radiation Safety Officer Training Course

**June 10-14, 1996
Portsmouth, New Hampshire**

Course Schedule

Tuesday, June 11, 1996 (Con't)

10:15	Radiation Exposure and Dose
12:00	<i>Lunch</i>
1:00	Biological Effects of Radiation
2:30	<i>Break</i>
2:45	Radiological Hazards
5:00	<i>Class Ends</i>

Wednesday, June 12, 1996

8:00	Radiological Hazards (con't)
10:00	<i>Break</i>
10:15	Radiological Hazards (con't)
12:00	<i>Lunch</i>
1:00	Principals of Radiation Detection

Radiation Safety & Control Services, Inc.

Radiation Safety Officer Training Course

**June 10 - 14, 1996
Portsmouth, New Hampshire**

Course Schedule

Wednesday, June 12, 1996 (con't)

2:30	<i>Break</i>
2:45	Principals of Radiation Detection (con't)
5:00	<i>Class Ends</i>

Thursday, June 13, 1996

8:00	Operational Radiation Safety Program
10:00	<i>Break</i>
10:15	Operational Radiation Safety Program (Con't)
12:00	<i>Lunch</i>
1:00	Operational Radiation Safety Program (Con't)
2:30	<i>Break</i>
2:45	Planning For Emergencies
5:00	<i>Class Ends</i>

Radiation Safety & Control Services, Inc.

Radiation Safety Officer Training Course

**June 10 - 14, 1996
Portsmouth, New Hampshire**

Course Schedule

Friday, June 14, 1996

8:00	Nuclear Regulatory Commission Regulations
10:00	<i>Break</i>
10:15	Transportation of Radioactive Material
12:00	<i>Class Commencement</i>



Gamma Corporation

P.O. Box 240370, Honolulu, HI 96824

Phone (808) 373-7009
FAX (808) 373-7017

Audit of NRC Licensed Activities

Facility: **Hawaii Agriculture Research Center**

Department: Second, Third & Fourth floor labs, HBG, USDA, HARC

NRC License No: 53-00515-01

License Expiration Date: 4/30/2000

Audit Date: 8/26/96

Audit Interval: 2/26/96 - 8/26/96

Auditor: Ronald Frick *RF*

Reviewed By: Philip Manly, M.S., CHP, DABR *PJ Manly*

Introduction

An audit was performed of the operations and records of the facility with respect to the receipt, storage, use, and disposal of licensed radioactive material. The requirements of the Code of Federal Regulations, Title 10, Parts 19, 20, 21, and 30 as well as relevant license conditions were used as the basis for the audit.

This report should be kept on file as evidence of the management review of licensed operations at this facility, along with a record of any corrective action taken in response to the deficiencies identified.

Scope of Audit

All records required by the NRC regulations and license conditions for the audit interval were reviewed for completeness and accuracy.

Results of Audit

Within the scope of this audit, no deficiencies were identified.

RSO Signature:

PJ Manly

Date:

9-5-96



Monthly Contamination Survey

Facility: Hawaii Agriculture Research Center

Date of Survey: 9/24/96

Performed By: Ronald Frick *Ruf*

Description: All work surfaces and sinks in areas designated for use of radioactive materials were monitored using the Bicron Analyst survey meter with the Bicron B100 scintillation probe.

Wipe samples were taken at the circled locations on the survey sheets using pieces of filter paper. The wipe samples were then placed in counting vials with 10 ml of Ecolite counting solvent and analyzed in the Beckman LS 5000 TD liquid scintillation counter.

Results: A survey of a pipetter in Room 217 resulted in a count rate of 1,000 net cpm (approx. 10,000 net dpm). Lab personnel were notified of the contamination.

Surveys of all other lab areas showed that count rates did not exceed the minimum detectable count rate of 100 net cpm (1000 net dpm). The background count rate was measured to be 250 cpm.

Wipe results from all areas showed no removable contamination above the trigger level of 200 net dpm/100 cm².

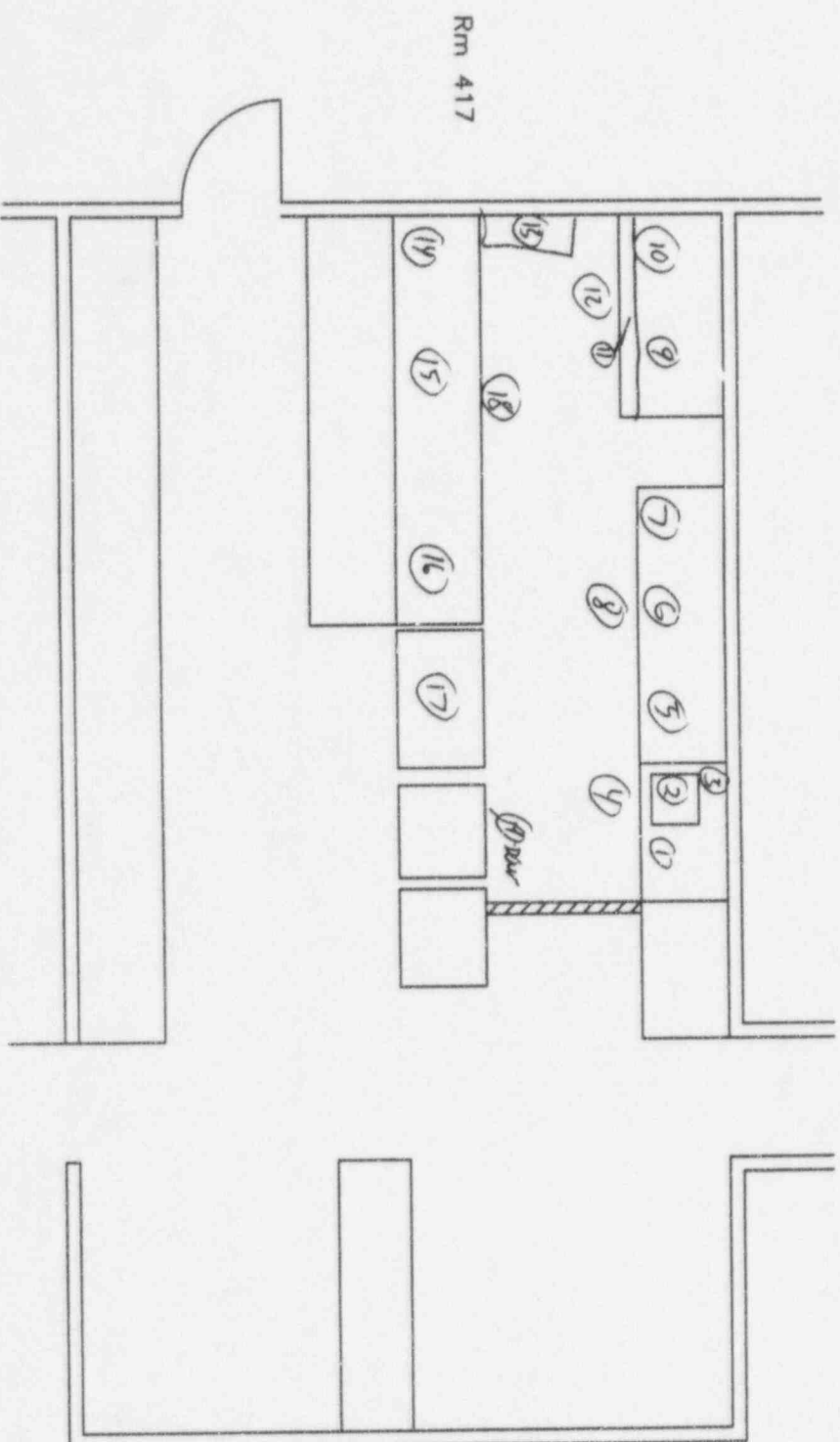
The results of this survey will be presented at the next meeting of the Radiation Safety Committee.

HARC
Experiment Station Survey Sheet

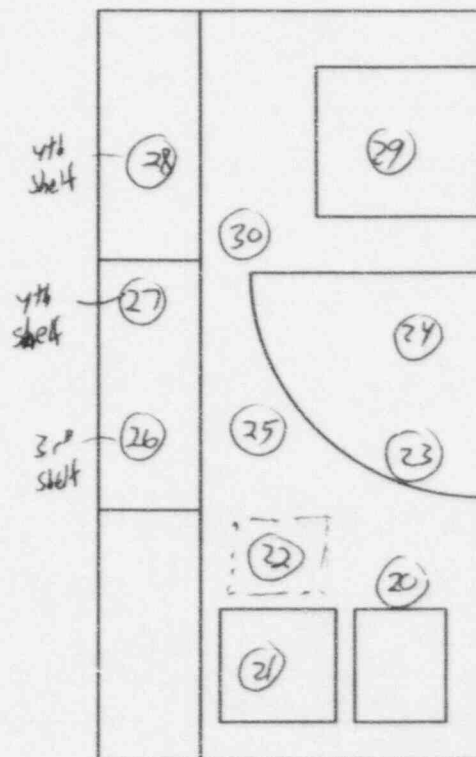
Date: 9/24/96 Performed By: *Scott*

Type of Survey: ☒ Monthly Contamination
☐ Other:

Instruments Used: Bicron Analyst S/N B798M with
Bicron B-100 Scintillation Probe/Beckman LS5000 TD

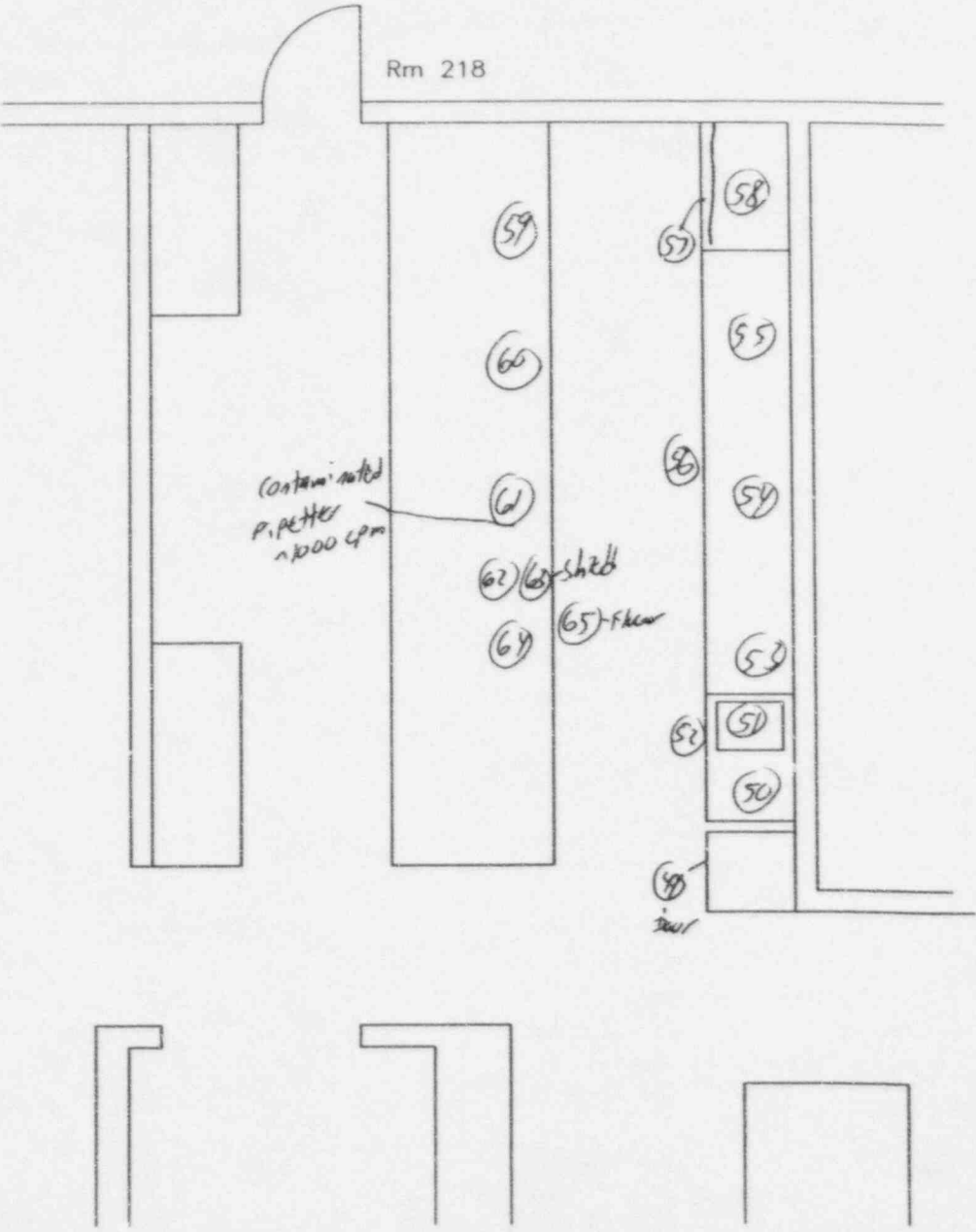


HARC Experiment Station		Survey Sheet	
Date: 9/24/96	Performed By: <i>[Signature]</i>		
Type of Survey:		<input checked="" type="checkbox"/> Monthly Contamination <input type="checkbox"/> Other:	
Instruments Used: Bicon Analyst S/N B798M with Bicon B-100 Scintillation Probe/Beckman LS5000 TD			

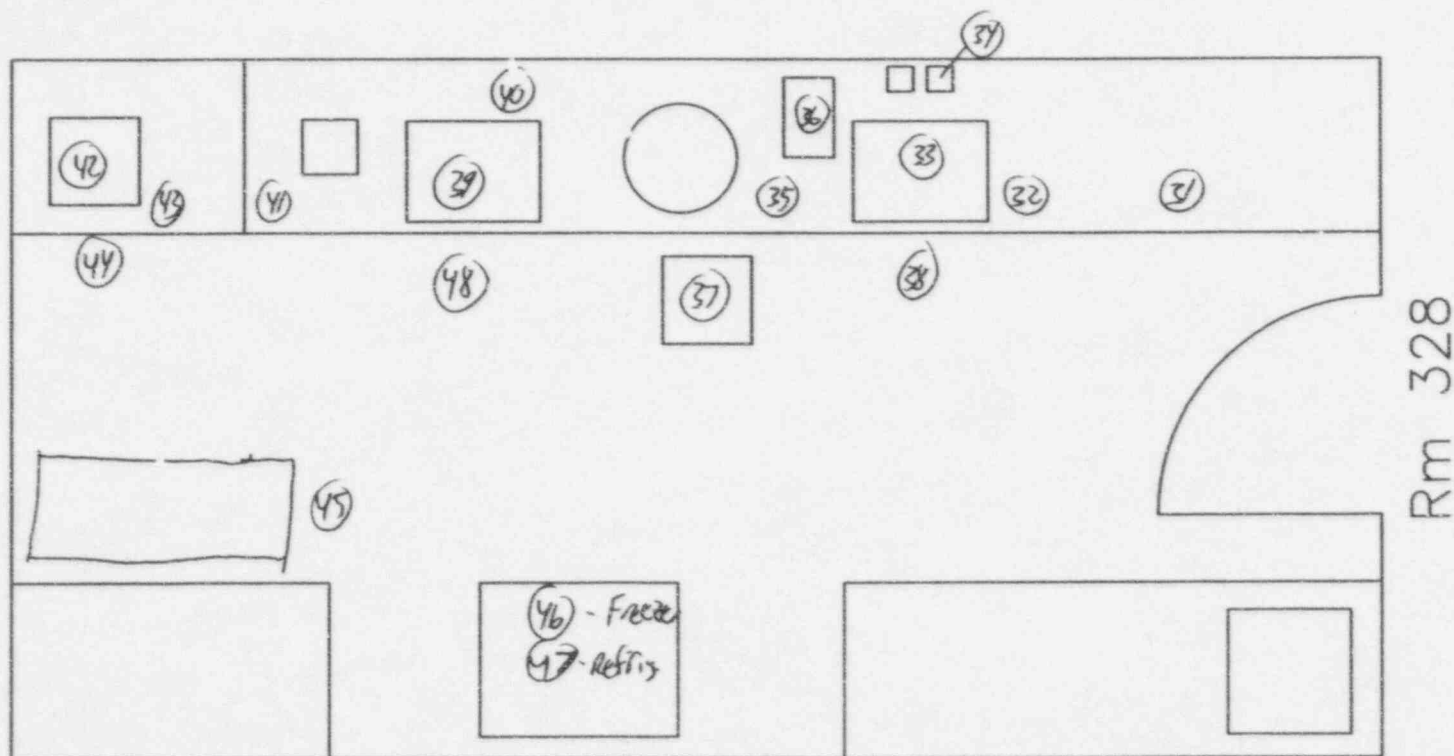


Rm 432

HARC Experiment Station		Survey Sheet
Date: 9/24/96	Performed By: <i>[Signature]</i>	
Type of Survey:	<input checked="" type="checkbox"/> Monthly Contamination <input type="checkbox"/> Other:	
Instruments Used: Bicron Analyst S/N B798M with Bicron B-100 Scintillation Probe / Beckman LS5000 TD		



HSPA Experiment Station		Survey Sheet
Date: 9/24/96	Performed By: <i>[Signature]</i>	
Type of Survey: <input checked="" type="checkbox"/> Monthly Contamination <input type="checkbox"/> Other:		
Instruments Used: Bicron Analyst S/N B798M with Bicron B-100 Scintillation Probe/Beckman LS5000 TD		



USER: 3 ID:ONEMIN PRESET TIME: 10.00 TUE 24 SEP 1996 17:01
 SAMPLE REPEAT: 1 CYCLE REPEAT: 1 SCR:N RS232:Y
 H#: 1 AQC:Y QCF:N RCM:Y
 RCM-TIME: 0.10 INT:999.95
 CHANNEL 1-LL: 0 UL: 400 2SIGMA: 2.00 BKG SUB: 0.00 BKG 2SIG: 0.00 LSR: 0
 CHANNEL 2-LL: 0 UL: 670 2SIGMA: 2.00 BKG SUB: 0.00 BKG 2SIG: 0.00 LSR: 0
 CHANNEL 3-LL: 0 UL:1000 2SIGMA: 2.00 BKG SUB: 0.00 BKG 2SIG: 0.00 LSR: 0
 DATA CALC: CPM, UNKNOWN REPLICATES: 1 NORM FACTOR:Q 1.00000
 HALF LIFE(DAYS):N

SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	ERR
1	**--	1	16.40	15.62	10.00	10.58	90.0	35.99	
		2	30.90	11.38					
		3	48.40	9.09					
2	**--	2	18.80	14.59	10.00	21.32	82.0	6.52	
		2	29.10	11.72					
		3	45.30	9.40					
3	**--	3	16.00	15.81	10.00	32.06	87.0	12.76	
		2	29.70	11.61					
		3	42.80	9.67					
4	**--	4	15.10	16.28	10.00	42.80	85.0	3.78	
		2	24.80	12.70					
		3	41.90	9.77					
5	**--	5	18.00	14.91	10.00	53.53	93.0	2.53	
		2	27.70	12.02					
		3	45.70	9.36					
6	**--	6	17.20	15.25	10.00	64.27	88.0	4.53	
		2	28.60	11.83					
		3	46.00	9.33					
7	**--	7	17.50	15.12	10.00	75.00	90.0	2.47	
		2	28.90	11.76					
		3	45.00	9.43					
8	**--	8	15.20	16.22	10.00	85.71	81.0	4.76	
		2	26.10	12.38					
		3	40.20	9.98					
9	**--	9	15.30	16.17	10.00	96.43	77.0	1.49	
		2	26.20	12.36					
		3	40.90	9.89					
10	**--	10	15.70	15.96	10.00	107.19	83.0	10.20	
		2	24.90	12.67					
		3	38.60	10.18					
11	**--	11	13.30	17.34	10.00	117.92	85.0	1.83	
		2	24.70	12.73					
		3	38.70	10.17					
12	**--	12	14.50	16.61	10.00	128.65	90.0	2.97	
		2	24.60	12.75					
		3	40.10	9.99					
13	**--	1	15.30	16.17	10.00	139.46	83.0	2.80	
		2	25.00	12.65					
		3	40.80	9.90					
14	**--	2	15.20	16.22	10.00	150.20	63.0	3.66	
		2	25.00	12.65					
		3	38.30	10.22					

SAM	PDS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	ERR
15	**	3	1	14.80	16.44	10.00	160.94	79.0	4.20
			2	29.30	11.68				
			3	44.30	9.50				
16	**	4	1	14.20	16.78	10.00	171.65	81.0	4.96
			2	24.00	12.91				
			3	37.70	10.30				
17	**	5	1	14.60	16.55	10.00	182.41	82.0	1.65
			2	26.70	12.24				
			3	42.10	9.75				
18	**	6	1	15.00	16.33	10.00	193.14	85.0	4.11
			2	24.80	12.70				
			3	41.90	9.77				
19	**	7	1	16.80	15.43	10.00	203.86	80.0	2.14
			2	28.10	11.93				
			3	42.10	9.75				
20	**	8	1	20.50	13.97	10.00	214.61	86.0	1.40
			2	36.20	10.51				
			3	62.00	8.03				
21	**	9	1	20.80	13.87	10.00	225.33	83.0	1.29
			2	38.80	10.15				
			3	53.70	8.63				
22	**	10	1	18.10	14.87	10.00	236.06	81.0	1.01
			2	34.60	10.75				
			3	50.60	8.89				
23	**	11	1	14.80	16.44	10.00	246.77	82.0	1.30
			2	29.00	11.74				
			3	46.50	9.27				
24	**	12	1	16.80	15.43	10.00	257.51	90.0	8.31
			2	29.40	11.66				
			3	46.10	9.31				
25	19	1	1	14.40	16.67	10.00	268.31	81.0	1.81
			2	29.40	11.66				
			3	49.00	9.04				
26	19	2	1	15.50	16.06	10.00	279.03	89.0	2.60
			2	25.80	12.45				
			3	42.20	9.74				
27	19	3	1	15.20	16.22	10.00	289.78	83.0	1.47
			2	27.60	12.04				
			3	42.00	9.76				
28	19	4	1	16.70	15.48	10.00	300.50	88.0	2.42
			2	26.40	12.31				
			3	42.20	9.74				
29	19	5	1	15.90	15.86	10.00	311.23	92.0	1.90
			2	26.00	12.40				
			3	42.30	9.72				
30	19	6	1	18.70	14.63	10.00	321.95	83.0	1.86
			2	30.50	11.45				
			3	44.30	9.50				
31	19	7	1	13.40	17.28	10.00	332.67	82.0	2.25
			2	23.40	13.07				
			3	39.00	10.13				

SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RDM%	ERR
32	19- 8	1	16.40	15.62	10.00	343.41	85.0	2.07	
		2	27.90	11.97					
		3	42.80	9.67					
33	19- 9	1	15.90	15.86	10.00	354.15	80.0	1.02	
		2	25.70	12.48					
		3	43.00	9.64					
34	19-10	1	13.90	16.96	10.00	364.89	85.0	1.73	
		2	24.20	12.86					
		3	40.00	10.00					
35	19-11	1	15.30	16.17	10.00	375.63	79.0	2.50	
		2	28.00	11.95					
		3	41.80	9.78					
36	19-12	1	15.00	16.33	10.00	386.36	88.0	1.78	
		2	27.00	12.17					
		3	41.70	9.79					
37	** - 1	1	15.10	16.28	10.00	397.16	82.0	2.97	
		2	26.40	12.31					
		3	43.10	9.63					
38	** - 2	1	15.40	16.12	10.00	407.91	83.0	5.41	
		2	26.30	12.33					
		3	41.30	9.84					
39	** - 3	1	13.90	16.96	10.00	418.65	79.0	1.33	
		2	25.70	12.48					
		3	40.80	9.90					
40	** - 4	1	15.90	15.86	10.00	429.39	84.0	5.15	
		2	25.20	12.60					
		3	37.80	10.29					
41	** - 5	1	15.60	16.01	10.00	440.13	83.0	2.16	
		2	27.30	12.10					
		3	43.30	9.61					
42	** - 6	1	17.30	15.21	10.00	450.87	83.0	0.87	
		2	30.10	11.53					
		3	50.70	8.88					
43	** - 7	1	15.70	15.96	10.00	461.61	81.0	8.09	
		2	27.60	12.04					
		3	42.80	9.67					
44	** - 8	1	17.20	15.25	10.00	472.34	86.0	2.50	
		2	28.30	11.89					
		3	42.90	9.66					
45	** - 9	1	14.90	16.38	10.00	483.08	82.0	2.45	
		2	27.00	12.17					
		3	42.70	9.68					
46	** -10	1	24.00	12.91	10.00	493.82	80.0	1.66	
		2	35.60	10.60					
		3	48.50	9.08					
47	** -11	1	17.00	15.34	10.00	504.55	87.0	3.00	
		2	27.40	12.08					
		3	43.30	9.59					
48	** -12	1	15.10	16.28	10.00	515.30	86.0	3.78	
		2	24.00	12.91					
		3	41.00	9.88					

SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	ERR
49	**	1	16.50	15.57	10.00	526.10	80.0	1.41	
		2	28.60	11.83					
		3	42.30	9.72					
50	**	2	16.80	15.43	10.00	536.85	80.0	1.83	
		2	28.80	11.79					
		3	45.10	9.42					
51	**	3	16.90	15.38	10.00	547.59	86.0	1.93	
		2	33.90	10.86					
		3	49.60	8.98					
52	**	4	16.80	15.43	10.00	558.32	86.0	3.47	
		2	29.80	11.59					
		3	44.20	9.51					
53	**	5	16.90	15.38	10.00	569.05	83.0	5.29	
		2	27.40	12.08					
		3	43.50	9.59					
54	**	6	16.90	15.38	10.00	579.80	79.0	2.12	
		2	28.90	11.76					
		3	44.10	9.52					
55	**	7	14.90	16.38	10.00	590.55	83.0	2.36	
		2	26.50	12.29					
		3	40.90	9.89					
56	**	8	15.80	15.91	10.00	601.30	82.0	2.15	
		2	27.30	12.10					
		3	43.20	9.62					
57	**	9	16.60	15.52	10.00	612.05	84.0	2.73	
		2	28.40	11.87					
		3	43.60	9.58					
58	**	10	18.40	14.74	10.00	622.79	87.0	2.42	
		2	31.80	11.22					
		3	49.20	9.02					
59	**	11	14.80	16.44	10.00	633.53	92.0	3.89	
		2	27.70	12.02					
		3	41.50	9.82					
60	**	12	15.40	16.12	10.00	644.27	84.0	1.73	
		2	25.90	12.43					
		3	40.90	9.89					
61	6-	1	14.60	16.55	10.00	655.07	84.0	1.85	
		2	25.60	12.50					
		3	39.90	10.01					
62	6-	2	15.80	15.91	10.00	665.80	83.0	4.03	
		2	28.90	11.76					
		3	41.10	9.87					
63	6-	3	14.60	16.55	10.00	676.54	84.0	1.20	
		2	26.50	12.29					
		3	41.90	9.77					
64	6-	4	14.90	16.38	10.00	687.30	82.0	4.63	
		2	26.20	12.36					
		3	40.90	9.89					
65	6-	5	15.70	15.96	10.00	698.05	88.0	6.56	
		2	28.40	11.87					
		3	43.60	9.58					

SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	ERR
66	6-	6	1	15.10	16.28	10.00	708.80	79.0	2.63
			2	26.00	12.40				
			3	42.90	9.66				
67	6-	7	1	19.80	14.21	10.00	719.56	84.0	3.50
			2	31.50	11.27				
			3	46.00	9.33				
H-3 103807 dpm 9/23/93	6-	8	1	54780.00	1.91	0.20	720.21	0.0	0.00
85560 dpm 9/24/96 E: .65			2	55560.00	1.90				
			3	55570.00	1.90				
C-14	6-	9	1	19018.18	1.96	0.55	721.24	-2.0	0.00
107100 dpm E: .963			2	102421.81	0.84				
			3	103096.36	0.84				
Bky	6-	10	1	11.70	18.49	10.00	731.98	-3.0	26.42
			2	21.40	13.67				
			3	32.00	11.18				

Recvd. 3/21/96 M.J.

Certificate of Calibration

Facility	Hawaiian Sugar Planters' Assoc.	Dept.	HSPA		Batteries	
					<input checked="" type="checkbox"/> OK	<input type="checkbox"/> Replaced
Mfr/Model	Bicron Surveyor M	S/N	B693S	Probe	B-50/B135Q	Detector Voltage 1208

☐ Calibrated with Cs-137 radiation source with NIST traceable output.

☐ Calibrated with electronic pulser for scales below 0.1 mR/hr.

☒ Calibrated with electronic pulser for all scales.

Range	Calculated Value	As Found Value	Accepted Value	Corr. Factor	Corrected Value	% Error
X1000	800000	1000000	880000	1.0	880000.00	10.0%
X1000	200000	220000	200000	1.0	200000.00	0.0%
X100	80000	81000	81000	1.0	81000.00	1.3%
X100	20000	20000	20000	1.0	20000.00	0.0%
X10	8000	8000	8000	1.0	8000.00	0.0%
X10	2000	2000	2000	1.0	2000.00	0.0%
X1	800	810	810	1.0	810.00	1.3%
X1	200	200	200	1.0	200.00	0.0%

Detector Type ☐ G.M. ☒ Plastic Scint. ☐ NaI Scint. ☐ Proportional ☐ Ion Chamber

Detector Exposure Orientation ☐ Parallel ☐ Perpendicular ☐ Internal

Condition Received ☐ In tolerance ☒ Out of tolerance

Comments C-14: 43000/(.148 x 2.22e6) = 0.13; P-32: 39000/81252 = 0.487 check source = C-14 planchett

Calibrated by: <u><i>[Signature]</i></u> Q/A Review: <u><i>P. Manly</i></u> Date: <u>3-21-96</u>	Check Source Reading	43000 cpm
	Calibration Date	March 20, 1996
	Calibration Due	March 20, 1997

Acceptable tolerance is stated as $\pm 10\%$ of calculated value at each calibration point.

Rec. 29 Feb 96
BW

Certificate of Calibration

Facility	Hawaiian Sugar Planters' Assoc.	Dept.				Batteries	
						<input checked="" type="checkbox"/> OK	<input type="checkbox"/> Replaced
Mfgr/Model	Ludlum Model 3	S/N	116871	Probe	44-38	Detector Voltage	898

- ☒ Calibrated with Cs-137 radiation source with NIST traceable output.
- ☒ Calibrated with electronic pulser for scales below 0.1 mR/hr.
- ☐ Calibrated with electronic pulser for all scales.

Range	Calculated Value	As Found Value	Accepted Value	Corr. Factor	Corrected Value	% Error
X100	160	170	175	1.0	175.00	9.4%
X100	40	35	36	1.0	36.00	-10.0%
X10	16	16	16	1.0	16.00	0.0%
X10	4	4	4	1.0	4.00	0.0%
X1	1.6	1.65	1.5	1.0	1.50	-6.3%
X1	0.4	0.5	0.4	1.0	0.40	0.0%
X0.1	0.16	0.16	0.16	1.0	0.16	0.0%
X0.1	0.04	0.04	0.04	1.0	0.04	0.0%

Detector Type ☒ G.M. ☐ Plastic Scint. ☐ NaI Scint. ☐ Proportional ☐ Ion Chamber

Detector Exposure Orientation ☐ Parallel ☒ Perpendicular ☐ Internal

Condition Received ☐ In tolerance ☒ Out of tolerance

Comments

Calibrated by: <u><i>[Signature]</i></u>	Check Source Reading	
	Calibration Date	February 28, 1996
	Calibration Due	February 28, 1997
Q/A Review: <u><i>P. Manly</i></u>	Date: <u>2-29-96</u>	

Acceptable tolerance is stated as $\pm 10\%$ of calculated value at each calibration point.

Certificate of Calibration

Facility	Hawaiian Sugar Planters' Assoc.	Dept.	HBG	Batteries <input checked="" type="checkbox"/> OK <input type="checkbox"/> Replaced	
Mfgr/Model	T/A PUG-1	S/N	066104	Probe	P-11B
				Detector Voltage	935

☐ Calibrated with Cs-137 radiation source with NIST traceable output.

☐ Calibrated with electronic pulser for scales below 0.1 mR/hr.

☒ Calibrated with electronic pulser for all scales.


Range	Calculated Value	As Found Value	Accepted Value	Corr. Factor	Corrected Value	% Error
X100	40000	38000	38000	1.0	38000.00	-5.0%
X100	10000	10000	10000	1.0	10000.00	0.0%
X10	4000	3650	3650	1.0	3650.00	-8.7%
X10	1000	950	950	1.0	950.00	-5.0%
X1	400	370	370	1.0	370.00	-7.5%
X1	100	100	100	1.0	100.00	0.0%

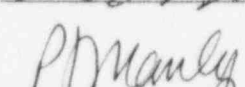
Detector Type ☒ G.M. ☐ Plastic Scint. ☐ NaI Scint. ☐ Proportional ☐ Ion Chamber

Detector Exposure Orientation ☐ Parallel ☒ Perpendicular ☐ Internal

Condition Received ☒ In tolerance ☐ Out of tolerance

Comments Efficiency for C-14 = 7.9% MDA = 100 cpm = 1266 dpm

Calibrated by: 	Check Source Reading	14,000 cpm
	Calibration Date	February 28, 1996
	Calibration Due	February 28, 1997

Q/A Review:  Date: 2-29-96

Acceptable tolerance is stated as $\pm 10\%$ of calculated value at each calibration point.



Instrument Calibration Certificate

1380

Customer HAWAII BIOTECHNOLOGY Order Number 18100
Instrument SURVEYOR M S/N B689S - NEW

Calibration Data

Range	Simulated Count Rate cpm	Instrument Reading cpm	% Error	Simulated Count Rate cpm	Instrument Reading cpm	% Error
x1000	800000	800000	0.0	200000	218000	9.0 %
x100	80000	80000	0.0	20000	20000	0.0
x10	8000	8000	0.0	2000	2000	0.0
x1	800	800	0.0	200	200	0.0

Calibration Source Intensity at 1 meter 226 mR/h Date 10/20/95 Source to Detector Geometry perpendicular
Zero Check ok HV Check ok Threshold Set n/a
Battery Ok ok Scaler Rate n/a Geotronic Check ok
Checkband ok Response +/- 1% +/- 2%
Reproducibility ok (Checked 3 times, identical conditions +/- 10%)
Check Source n/a Check Source Reading _____
Quality Assurance Review By: TB Date 01/29/96
Calibrated By RC Date 01/29/96
Re-Cal Due 01/29/97



**HARSHAW
BICRON** RADIATION
MEASUREMENT
PRODUCTS

BICRON • 6801 Cochran Road • Solon, Ohio 44139

Phone: (216) 248-7400 • Fax: (216) 349-6581

Calibration Certificate

1380

Customer HAWAII BIOTECHNOLOGY Order Number 18100
Date 01/29/96
Instrument SURVEYOR M S/N B689S

TEST EQUIPMENT USED DURING CALIBRATION

Type	DIGITAL MULTIMETER	S/N	5795107	Re-Cal Due	07/25/96
Type		S/N		Re-Cal Due	
Type		S/N		Re-Cal Due	
Type		S/N		Re-Cal Due	

PROCEDURES USED DURING CALIBRATION

Procedure Used QC ACCEPTANCE PROCEDURE #102993J
Procedure Used _____
Procedure Used _____

LABORATORY CONDITIONS

Temperature 22 °C Humidity 19 % Air Pressure 1015 mBar Elevation 1036 FT.

Calibration Performed By

Rg Compt

The above referenced products have been manufactured and tested in accordance with the Bicron Electronic Products Quality Assurance Program. See attached data sheets for response information. The calibration performed above complies with ANSI N323 (Radiation Protection Instrumentation Test and Calibration), and all standards referenced are traceable to NIST.



HARSHAW BICRON RADIATION MEASUREMENT PRODUCTS

BICRON • 6801 Cochran Road • Solon, Ohio 44139

Phone: (216) 248-7400 • Fax: (216) 349-6581

Instrument Calibration Certificate

1382

Customer HAWAII BIOTECHNOLOGY Order Number 18100
Instrument B50 S/N B128M - NEW

Source Geometry SOURCE IN CONTACT WITH WINDOW ON PROBE
CENTERLINE

Hv Set 1180V Threshold Set 50mv Window Set 350mv
Background Reading 200cpm

Isotope	Isotope S/N	Isotope Activity	Efficiency as a Percent of 2fl Flux	Uniformity of Response over Window Area
		dpm	Analyzer in Out Position	Analyzer in Out Position
C-14	R7121	131743.9	27.0%	+/-1.14%
CL-36	375-35-1	97902	68.9%	+/- .909%
TC-99	233-61-2	116883	44.6%	+/-1.85%
TH-230	233-62	113997	51.5%	+/-1.46%

Each source used for this calibration has a certificate stating its traceability to N.B.S.
(N.I.S.T.) standards.

Calibrated By Rg Compt Date 1-29-96
Re-Cal Due 1-29-97



**HARSHAW
BICRON** RADIATION
MEASUREMENT
PRODUCTS

BICRON • 6801 Cochran Road • Solon, Ohio 44139

Phone: (216) 248-7400 • Fax: (216) 349-6581

Calibration Certificate

1382

Customer HAWAII BIOTECHNOLOGY Order Number 18100
Date 01/29/96
Instrument B50 S/N B128M

TEST EQUIPMENT USED DURING CALIBRATION

Type	LABTECH	S/N	A145Q	Re-Cal Due	02/10/96
Type		S/N		Re-Cal Due	
Type		S/N		Re-Cal Due	
Type		S/N		Re-Cal Due	

PROCEDURES USED DURING CALIBRATION

Procedure Used QC ACCEPTANCE PROCEDURE #1034930
Procedure Used _____
Procedure Used _____

LABORATORY CONDITIONS

Temperature 22 °C Humidity 19 % Air Pressure 1015 mBar Elevation 1036 FT.

Calibration Performed By

Rg Compt

The above referenced products have been manufactured and tested in accordance with the Bicron Electronic Products Quality Assurance Program. See attached data sheets for response information. The calibration performed above complies with ANSI N323 (Radiation Protection Instrumentation Test and Calibration), and all standards referenced are traceable to NIST.



Gamma Corporation

P.O. Box 240370, Honolulu, HI 96824

Phone (808) 373-7009
FAX (808) 373-7017

Leak Test Certificate

Facility: HI Agriculture Research Center
Department:

Number 308

Fac ID harc

Address: 99-193 Aiea Heights Drive

Honolulu

HI

96701

Wipe Date: June 25, 1996

Analysis Date: June 25, 1996

The following sources were leak tested according to the procedures described in NRC License No. 53-23207-01.

All sources used for calibration are traceable to NTIS.

Isotope	Model Number	Serial Number	Activity (mCi)	Results (uCi)
Ni-63	Elec. Capt. Det.	2204	15	<0.001
Ni-63	Elec. Capt. Det.	2206	15	<0.001
Ni-63	Elec. Capt. Det.	4333	15	<0.001
Ni-63	Elec. Capt. Det.	L2226	15	<0.001
Ni-63	Elec. Capt. Det.	3298	15	<0.001

This report must be on file for review by the NRC or state regulatory authorities.

Performed by:


Ronald Frick

Radiation Safety Officer:





Monthly Contamination Survey

Facility: Hawaii Agriculture Research Center

Date of Survey: 8/26/96

Performed By: Ronald Frick

Description: All work surfaces and sinks in areas designated for use of radioactive materials were monitored using the Bicron Analyst survey meter with the Bicron B100 scintillation probe.

Wipe samples were taken at the circled locations on the survey sheets using pieces of filter paper. The wipe samples were then placed in counting vials with 10 ml of Ecolite counting solvent and analyzed in the Beckman LS 5000 TD liquid scintillation counter.

Results: A survey of the plastic tray in Room 328 (location #53) resulted in a count rate of 12,000 net cpm (approx. 120,000 net dpm). Several attempts at decontamination were made. A final survey of the tray resulted in 2,000 cpm (approx. 20,000 net dpm) of fixed contamination.

Surveys of all other lab areas showed that count rates did not exceed the minimum detectable count rate of 100 net cpm (1000 net dpm). The background count rate was measured to be 250 cpm.

The wipe taken of the floor in front of the waste compactor in Room 432 (wipe #21) resulted in a count rate of 190 cpm (approx. 156 net dpm/100 cm²). The wipe taken of the shelf in Room 432 (former location of several bottles of Uranyl Acetate, wipe #27) resulted in a count rate of 152 cpm (approx. 117 net dpm/100 cm²). Although both of these wipe tests are below the trigger level, an attempt should be made to identify the source of this low-level contamination.

Wipe results from all other areas showed no removable contamination above the trigger level of 200 net dpm/100 cm².

The results of this survey will be presented at the next meeting of the Radiation Safety Committee.



HAWAII AGRICULTURE RESEARCH CENTER

99-193 AIEA HEIGHTS DRIVE, SUITE 300, AIEA, HAWAII 96701-3911

TELEPHONE: (808) 487-5561 FAX: (808) 486-5020

September 13, 1996

Dr. Paul H. Moore
USDA, ARS

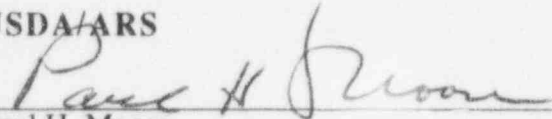
Dr. Tom Humphreys
President & CEO
Hawaii Biotechnology Group (HBG)

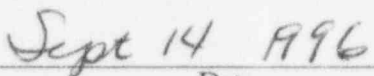
Ms. Stephanie A. Whalen
President & Director
Hawaii Agriculture Research Center (HARC)

The above listed organizations, all housed in the R. L. Cushing Building, 99-193 Aiea Heights Drive, Aiea, HI 96701-3911, operate under the NRC Material License No. 53-00515-01. HARC, as the holder of the license, is responsible for all activities involving licensed material. The Radiation Safety Officer (RSO) will be Dr. Mel C. Jackson of Hawaii Agriculture Research Center, who has full authority to carry out procedures, enforce rules, and perform any other duties of the RSO as they apply to any designated users of licensed material within the employer organizations.

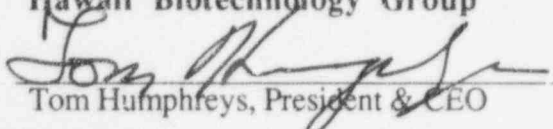
By signing this agreement, all user organizations agree to abide by the decisions of the RSO, the Radiation Safety Committee, and by the conditions of the license in all situations involving licensed material.

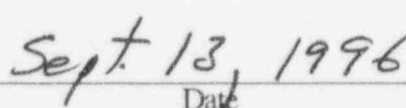
USDA/ARS


Paul H. Moore

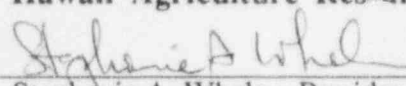

Date

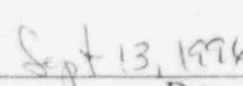
Hawaii Biotechnology Group


Tom Humphreys, President & CEO


Date

Hawaii Agriculture Research Center


Stephanie A. Whalen, President & Director


Date

cc: Regulatory Administration, U.S. NRC
P. H. Moore, USDA, ARS
E. Clark, HARC
P. Manly, Gamma Corp.

S. A. Whalen, HARC
T. Humphreys, HBG
Authorized Users

572279



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV

Walnut Creek Field Office
1450 Maria Lane
Walnut Creek, California 94596-5368

JUL 30 1996

Hawaii Agriculture Research Center
ATTN: Stephanie A. Whalen
President and Director
P.O. Box 1057
99-193 Aiea Heights Dr., Suite 300
Aiea, Hawaii 96701-3911

SUBJECT: LICENSE AMENDMENT REQUEST

This is in response to a letter dated July 26, 1996 from Mel Jackson, Ph.D., copy enclosed.

There is currently an open amendment request, Control No. 572279, concerning changing the Radiation Safety Officer (RSO) at your facility. This action was initiated with an application dated December 6, 1995, and it was also discussed in your letter dated January 31, 1996 and in correspondence from this office dated January 8, 1996 and February 23, 1996. Future letters discussing the RSO change should reference Mail Control 572279.

The information which Dr. Jackson submitted on his recent training and experience should be supplemented with an outline of the training given by Radiation Safety and Control Services, Inc.

In addition, it should be noted that Dr. Vance sent a telefacsimile copy of a press release documenting the company name change which occurred on April 2, 1996. This name change should be reflected in this license amendment. To accomplish this, we will need a formal request to do so, as well as a statement that this change did not also involve changes in ownership, facilities, personnel, or commitments identified in the existing license. Please refer to NRC Information Notice 89-25, copy enclosed, and supply the appropriate information in your reply.

We hope that this is fully responsive to your concerns. If you have questions concerning these matters, I can be contacted at (510) 975-0250.

Sincerely,

Beth A. Prange

Beth A. Prange
Sr. Health Physicist (Licensing)
Materials Branch

Enclosures: As Stated

License: 53-00515-01
Docket: 030-06839
Control: 572279

ORC

bcc:

Docket File
WCFO Inspection File
LFDCB, T-9 E10

DOCUMENT NAME: G:\beth\jackson

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HAWAII AGRICULTURE RESEARCH CENTER

FORMERLY HAWAIIAN SUGAR PLANTERS' ASSOCIATION

99-193 AIEA HEIGHTS DRIVE, SUITE 300, AIEA, HAWAII 96701-3911

TELEPHONE: (808) 487-5501 FAX: (808) 486-5020

July 26, 1996

Ms. Beth A. Prange
Walnut Creek Field Office
1450 Maria Lane
Walnut Creek, CA 94596-5386

Dear Ms. Prange:

This letter is in anticipation of a licence amendment that we will be sending to the N.R.C. in the near future, which will include an application to name me as our radiation safety officer. In a previous telephone conversation, I had asked you about the kind of training that would be required for me to assume the position of radiation safety officer. You suggested that I take a 40 hour radiation safety officer training course and spend some time with the RSO at the University of Hawaii. I have since attended a 40 hour training course in New Hampshire, (June 10-15th), organised by Radiation Safety & Control Services Inc. I have enclosed a copy of the certificate that I received and also a copy of my test score. I have also spent some time with Irene Sakamoto, RSO at the University of Hawaii, where she outlined her radiation safety management procedures. I was also present during a recent N.R.C. inspection of our facility by Mr. Emilio Garcia, escorting and helping to explain our current radiation safety procedures.

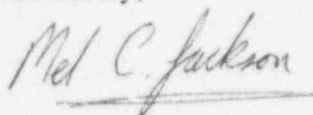
I hope that this will satisfy any concerns about my taking up the RSO position. I should like to add that Mr. Phil Manly from Gamma Corp. (our current RSO), Dr. Iain Peters (our former RSO) and Dr. Blake Vance (Assistant RSO) will all remain on our radiation safety committee and will be available for advice as needed.

572279

July 26, 1996

if you have any questions or require further information, please contact me at the above address or by telephone: (808) 486 5421

Sincerely,

A handwritten signature in cursive script that reads "Mel C. Jackson". The signature is written in dark ink and is positioned above a horizontal line.

Mel C. Jackson, Ph.D.,
Assistant Chemist,
Crop Science Department

Radiation Safety & Control Services, Inc.

Awards this certificate to

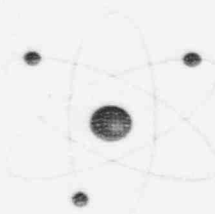
Mel Jackson

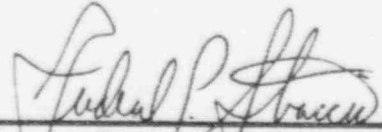
in recognition of satisfactory completion of

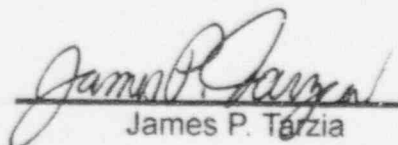
**RADIATION SAFETY OFFICER
TRAINING COURSE**

Portsmouth, New Hampshire

June 10 - 14, 1996




Frederick P. Straccia


James P. Tarzia


Eric L. Darois





L96113

Jul 15, 1996

Mel Jackson
Hawaii Agriculture Research Center
99-193 Aiea Heights Drive
Aiea, HI 96701

Dear Mel,

This letter certifies that you have successfully passed the Radiation Safety Officer Exam for the course given from Jun 10, 1996 through Jun 14, 1996. Your grade on the exam was 95% (passing grade of 70%). Congratulations on your accomplishment.

As we mentioned in class, please contact us for advice or questions as it relates to your RSO duties or other radiation protection needs.

Thank-you for participating in our class, we hope you will participate in some of our other upcoming courses.

Sincerely,

Eric L. Darois, CHP
Director

"other correspondence"
send to DCS with case

HAWAII AGRICULTURE RESEARCH CENTER*FORMERLY HAWAIIAN SUGAR PLANTERS' ASSOCIATION*

99-193 AIEA HEIGHTS DRIVE, SUITE 300, AIEA, HAWAII 96701-3911

TELEPHONE: (808) 487-5561 FAX: (808) 486-5020

FAX TRANSMISSION COVER SHEET

To: Beth A. Prange Date: 20 June 1996

Location: Materials Branch, Region IV, WCFO Fax No.: 510-975-0381

From: Blake Vance, Ph.D. cc: S. Whalen

Number of pages (including this cover sheet): 3

Dear Ms. Prange:

Mr. Philip Manly, our Radiation Safety Officer, is preparing an amendment to our Materials License (No. 53-00515-01) that will among other things formally document our name change. In the interim, I am informing you of our organization's change in name. The former name was the Hawaiian Sugar Planters' Association and the new name is the Hawaii Agriculture Research Center; they are abbreviated HSPA and HARC, respectively. Attached is a 2-page news release attesting to the change.

If there are any question, I can be reached at 808-486-5401 (voice) or 808-486-5346 (FAX).

572279



News Release from
HAWAII AGRICULTURE RESEARCH CENTER

A second century of excellence in research

Contact: Stephanie Whalen, President 486-5314 (office)

Date: April 1, 1996

For Immediate Release

Historic Name Change: From HSPA to HARC

(Aiea, Hawaii) The Hawaiian Sugar Planters' Association (HSPA) will have a new name—**Hawaii Agriculture Research Center (HARC)**, effective April 2, 1996.

"We chose April 2 as the effective date of the name change to the Hawaii Agriculture Research Center because it is on this date that we celebrate the establishment of the HSPA Experiment Station in 1895," said Allen Doane, co-chairman of the HARC Board of Directors and president and chief operating officer of A & B-Hawaii, Inc. This is the second time in the association's history that a name change has been made. The first occasion was when the Planters' Labor and Supply Company, formed in 1882, changed its name to Hawaiian Sugar Planters' Association in 1895, at the time the Experiment Station was established.

"The name change to HARC reflects the historic changes that have taken place both within the sugar industry and the rest of Hawaii's agriculture industry over the last several years," said E. Alan Kennett, co-chairman of the HARC Board of Directors and president and general manager of Gay & Robinson, Inc., a Kauai-based sugar company. "Today, sugar growers and others are cultivating crops such as coffee, macadamia, guava, taro, and vegetables on former cane lands. This has required our research center to significantly expand its efforts in non-sugarcane research over the last decade."

Besides sugarcane, current research includes work on vegetables and forage crops. For example, recent work shows increasing promise of leading to statewide production of asparagus. Parties on Oahu, Kauai, Maui, and Hawaii have expressed interest in this crop. In a cooperative project with the University of Hawaii, HARC is helping the state's cattle ranchers rediscover

(more)

Hawaii Agriculture Research Center

Page 2

haole koa as a high-protein feed. Cattle feeding on improved lines of haole koa could double the average daily weight gains that are normally achieved by feeding on tropical grasses.

In addition to the name change, an advisory council will be established to formulate and recommend to the board of directors policies for advancing, improving, and diversifying agriculture and silviculture in Hawaii.

"HARC's research capabilities present a great opportunity to address many of the crop production problems confronting Hawaii's agriculture industry," said Stephanie Whalen, president and director of HARC. "Our research services are a means for those agriculturists who recognize the need for a commitment to research to remain competitive."

The center currently employs sixty-eight professional and support staff, and, in addition to its Aiea laboratory, maintains field research substations on Oahu, Kauai, and Maui.

The headquarters of the Hawaii Agriculture Research Center will continue to be located at 99-193 Aiea Heights Drive, Suite 300, Aiea, Hawaii, 96701-3911. The telephone, 808-487-5561, and fax telephone, 808-486-5020, will remain the same.

-30-

572279



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV

Walnut Creek Field Office
1450 Maria Lane
Walnut Creek, California 94596-5368

FILE COPY

FEB 23 1996

Hawaiian Sugar Planter's Association
ATTN: Stephanie A. Whalen,
President and Director
P.O. Box 1057
99-193 Aiea Heights Drive
Aiea, Hawaii 96701-1057

SUBJECT: LICENSE AMENDMENT REQUEST

This is in reference to your request dated December 6, 1995, and to your letter dated January 31, 1996 for amendment of your byproduct material license.

Although Dr. Vance has had training in radiochemistry and has assisted the Radiation Safety Officer with many of his duties, he has not had experience in the actual use of the radioactive materials authorized on your license. Also, he has not had training pertinent to managing a radiation safety program. We believe that this would handicap him in trying to respond to emergency situations and in correcting radiation safety problems which may occur at your facilities.

One option in this case would be to develop a training plan for Dr. Vance to supply him with the training and experience described above. If you choose this course of action, you should submit the training plan along with the provisions which will be made to assure that Drs. Peters, Albert, or Jackson, and/or your consultant, will be available to your staff to respond in emergency situations until Dr. Vance can successfully complete the planned training.

Alternatively, you may withdraw your amendment request and remain with the status quo, or choose someone else as your new radiation safety officer.

You should decide which course of action you will follow, and submit appropriate information. If you have questions concerning these matters, I can be reached at (510) 975-0250.

We will continue the review of your amendment request upon receipt of this information. In order to continue prompt review of your application, we request that you submit your response to this letter within 30 days from the date of this letter. Please reply in duplicate, and refer to Mail Control 572279.

Sincerely,

Beth A. Prange

Beth A. Prange,
Sr. Health Physicist (Licensing)
Materials Branch

License: 53-00515-01
Docket: 030-06839
Control: 572279

Hawaiian Sugar Planter's Association -3-

bcc:

Docket File
WCFO Inspection File
LFDCB, T-9 E10

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U.S. NUCLEAR REGULATORY COMMISSION
REGION V

TELEPHONE OR VERBAL CONVERSATION
RECORD

DATE

00/00/00 3/11/96

TIME

12:45
00:00 am/pm

☐ INCOMING CALL

☒ OUTGOING CALL

^{returned}
_{call}

☐ VISIT

PERSON CALLING:

OFFICE/ADDRESS:

PHONE NUMBER:

PERSON CALLED:

Dr. Mel Jackson

OFFICE/ADDRESS:

HSPA

PHONE NUMBER:

(808) 486-5421

CONVERSATION

SUBJECT -

New RSO

SUMMARY -

Discussed plans for Dr. Jackson to work w/ Irene Sakimoto, Ian Peters, and Phil Manly on aspects of managing radiation safety programs.

stated that it would be useful to obtain formal course, if available.

There will be a turnover period with Blake Vance + Phil Manly for day-to-day radiation safety concerns.

He will look at emergency response for spills + special considerations for P-32 use.

There will be a new agreement letter.

- B. Prange

REFERRED TO:

☐ ADVISE ME ON ACTION
TAKEN

ACTION REQUESTED:

INITIALS:

DATE:

ACTION TAKEN:

INITIALS:

DATE:



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NRC
RIV WCFO
HAWAIIAN SUGAR PLANTERS' ASSOCIATION, 99-193 AIEA HEIGHTS DRIVE, AIEA, HAWAII
MAILING ADDRESS: P.O. BOX 1057, AIEA, HAWAII 96701-1057
TELEPHONE: (808) 487-5561 FAX: (808) 486-5020

31 January 1996

Ms. Beth A. Prange
Walnut Creek Field Office
1450 Maria Lane
Walnut Creek, CA 94596-5368

Dear Ms. Prange:

Subject: Mail Control No. 572279

This letter is in response to your 8 January 1996 request for additional information.

- 1a. Dr. Vance's radiochemistry course was taken at the University of Hawaii, Honolulu, HI during the Spring 1976 semester.
- b. Dr. Vance has been a member of the Radiation Safety Committee, which meets monthly, since December 1994. As Assistant Radiation Safety Officer, he has revised the Radiation Safety Handbook; informed users of changes in the receipt policy; approved Gamma Corporation's monthly invoices; maintained HSPA's files of monthly surveys, diestablishments, and authorized users; coordinated HSPA's annual safety training; kept records of material received for accounting purposes; conducted correspondence with suppliers of radioactive material as it pertained to our materials license and US Ecology; informed the cleaning staff of restrictions they were to observe; and evaluated written laboratory procedures from the three users groups.
- c. Dr. Vance has not had experience with unsealed licensed material.
- d. Gamma Corporation has been retained to conduct monthly surveys and provide consulting services. Dr. Iain Peters, a former RSO, continues to serve on the Radiation Safety Committee. Other members are Drs. Henrik Albert and Mel Jackson; all three are authorized users. Their training and experience with radiation safety and licensed radioactive materials is as follows:

Dr. Iain Peters - Chairman of the Radiation Safety Committee (January 1995 to present), RSO for HSPA, Aiea, HI (January 1994 to December 1994). Attended half-day seminars given annually at HSPA (September 1993 to 1995), attended half-day seminar given at Fox Chase Cancer Center, Philadelphia, PA, attended full-day course given at Queen's University, Ontario, Canada (July 1988). Lab experience with ^{32}P at Fox Chase Cancer Center and Queen's University (1985 and 1993), with ^{125}I at Queen's University (1986 to 1989), with ^3H at Queen's University (1988 to 1990), and with ^{14}C at Queen's University (1990).

572279

Dr. Henrik Albert - Member of the Radiation Safety Committee (1993 to present). Received training in the use of radioisotopes from Dr. John Stiles, Department of Plant Molecular Physiology, University of Hawaii, Honolulu, HI and the University of Hawaii's Radiation Safety Office, from the USDA Plant Gene Expression Center's radiation safety committee, Albany, CA and from Dr. Robert Roberts (then RSO) and annual training sessions at HSPA. Lab experience with ^{32}P , ^{35}S , and ^3H at the University of Hawaii (1984 to 1991), with ^{32}P and ^{35}S at the USDA Plant Gene Expression Center (1991 to 1992), and with ^{32}P and ^{35}S at the USDA Agricultural Research Service, Aiea, HI (1992 to present).

Dr. Mel Jackson - Member of the Radiation Safety Committee (September 1995 to present). Completed 42 hours of hands-on training between 23 June and 30 August 1995 with ^{14}C isotopes to become an authorized user at HSPA. Experience gained between June 1983 and June 1984 included preparation of ^{14}C - and ^{125}I -labeled homomethacrylate polymers under the direction of Dr. Ruth Duncan in the Department of Biological Sciences at the University of Keele, Keele, Staffordshire, England. The latter work involved hands-on use of radioisotopes approximately 8 hours per day; fully trained in all aspects of radioisotope safety.

2. The content of the 20 December 1994 agreement has been updated, signed, and herewith resubmitted.

Sincerely yours,



Stephanie A. Whalen

SAW:BV:fc



HAWAIIAN SUGAR PLANTERS' ASSOCIATION, 99-193 AIEA HEIGHTS DRIVE, AIEA, HAWAII

MAILING ADDRESS: P.O. BOX 1057, AIEA, HAWAII 96701-1057

TELEPHONE: (808) 487-5561 FAX: (808) 486-5020

February 1, 1996

Dr. Paul H. Moore
USDA/ARS

President & CEO
Hawaii Biotechnology Group (HBG)

Ms. Stephanie A. Whalen
President & Director
Hawaiian Sugar Planters' Association (HSPA)

The above listed organizations, all housed in the R. L. Cushing Building, 99-193 Aiea Heights Drive, Aiea, HI 96701-3911, operate under the NRC Material License No. 53-00515-01. HSPA, as the holder of the license, is responsible for all activities involving licensed material. The Radiation Safety Officer (RSO) will be Dr. Blake Vance of Hawaiian Sugar Planters' Association, who has full authority to carry out procedures, enforce rules, and perform any other duties of the RSO as they apply to any designated users of licensed material within the employer organizations.

By signing this agreement, all user organizations agree to abide by the decisions of the RSO, the Radiation Safety Committee, and by the conditions of the license in all situations involving licensed material.

USDA/ARS

Paul H. Moore
Paul H. Moore

Feb 01, 1996
Date

Hawaii Biotechnology Group

Joseph V. Micari
President & CEO

Feb 3, 1996
Date

Hawaiian Sugar Planters' Association

Stephanie A. Whalen
Stephanie A. Whalen, President & Director

Feb 05, 1996
Date

cc: Regulatory Administration, U.S. NRC
P. H. Moore
E. Clark
P. Manly

S. A. Whalen
K. K. Wu
Authorized Users

572279



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV

FILE COPY

Walnut Creek Field Office
1450 Maria Lane
Walnut Creek, California 94596-5368

JAN - 8 1996

Hawaiian Sugar Planter's Association
ATTN: Stephanie A. Whalen,
President and Director
P.O. Box 1057
99-193 Aiea Heights Drive
Aiea, Hawaii 96701-1057

SUBJECT: LICENSE AMENDMENT REQUEST

This is reference to your request dated December 6, 1995 for amendment of your byproduct material license. In order to complete our review, we need the following additional information:

1. The documentation provided of Dr. Vance's training and experience relative to the use of unsealed licensed materials is limited. Please provide the following additional information:
 - a. Specify where and when his class in radiochemistry was completed.
 - b. Describe the job responsibilities which Dr. Vance routinely performed as Assistant Radiation Safety Officer.
 - c. Describe any other experience which Dr. Vance may have had with unsealed licensed material.
 - d. Specify whether he will have continued support from an outside consultant or from additional persons on your staff who may act as Assistant Radiation Safety Officers or as radiation safety technologists. If the person's (or persons') training and experience with radiation safety and licensed radioactive materials has not been provided, please include that information in your response.
2. The December 20, 1994 agreement (copy enclosed) should be updated and resubmitted. This agreement was originally submitted in a letter dated December 27, 1994, which is referenced in License Condition 20. Please provide a copy of the new agreement in your reply.

We will continue the review of your amendment request upon receipt of this information. In order to continue prompt review of your application, we request that you submit your response to this letter within 30 days from the date of this letter. Please reply in duplicate, and refer to Mail Control No. 572279.

Sincerely,

Beth A. Prange

Beth A. Prange,
Sr. Health Physicist (Licensing)
Materials Branch

Enclosures: As Stated

Docket: 030-06839

License: 53-00515-01

Control: 572279

bcc:

Docket File
WCFO Inspection File
LFDCB, T-9 E10
State of HI (License Only)

DOCUMENT NAME: G:\beth\572279.def

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HAWAIIAN SUGAR PLANTERS' ASSOCIATION, 99-193 AIEA HEIGHTS DRIVE, AIEA, HAWAII
MAILING ADDRESS: P.O. BOX 1057, AIEA, HAWAII 96701-1057
TELEPHONE: (808) 487-5561 FAX: (808) 486-5020

December 20, 1994

Dr. Paul H. Moore
USDA/ARS

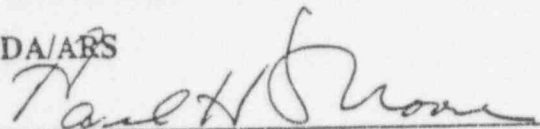
Mr. Steven Brauer
President & CEO
Hawaii Biotechnology Group (HBG)

Ms. Stephanie A. Whalen
Acting President & Director
Hawaiian Sugar Planters' Association (HSPA)

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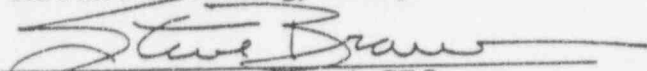
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USDA/ARS


Paul H. Moore

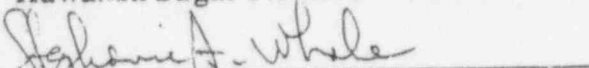
12/20/94
Date

Hawaii Biotechnology Group


Steven Brauer, President & CEO

12/20/94
Date

Hawaiian Sugar Planters' Association


Stephanie A. Whalen, Acting President &
Director

12-20-94
Date

cc: Regulatory Administration, U.S. NRC
S. Brauer
P. H. Moore
Elon Clark
L. Jakeway
P. Manly

R. V. Osgood
S. A. Whalen
K. K. Wu
Authorized Users (see attached list)
Library



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Amendment
030-06839

HAWAIIAN SUGAR PLANTERS' ASSOCIATION, 99-193 AIEA HEIGHTS DRIVE, AIEA, HAWAII
MAILING ADDRESS: P.O. BOX 1057, AIEA, HAWAII 96701-1057
TELEPHONE: (808) 487-5561 FAX: (808) 486-5020

STEPHANIE A. WHALEN

President - Director
Experiment Station

December 6, 1995

Ms. Billy Gruszynski
U.S. Nuclear Regulatory
Commission, Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 760112-8064

Subject: NRC License No. 53-00515-01 Amendment Application

Dear Ms. Gruszynski:

Enclosed are two copies of an amendment application for Hawaii Sugar Planters' Association NRC License No. 53-00515-01. The purpose of the amendment is to change the Radiation Safety Officer for the license.

Sincerely,

Stephanie A. Whalen

SAW:cp
Enclosure

572279

APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATIONS FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION
DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY, NMSS
WASHINGTON, DC 20555

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND,
MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA,
RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I
NUCLEAR MATERIALS SAFETY SECTION B
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA,
PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR
WEST VIRGINIA, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION II
NUCLEAR MATERIALS SAFETY SECTION
101 MARIETTA STREET, SUITE 2900
ATLANTA, GA 30333

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR
WISCONSIN, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION III
MATERIALS LICENSING SECTION
799 ROOSEVELT ROAD
GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA,
NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH,
OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
MATERIAL RADIATION PROTECTION SECTION
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON,
AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS
TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V
NUCLEAR MATERIALS SAFETY SECTION
1460 MARIA LANE, SUITE 210
WALNUT CREEK, CA 94596

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION.

1. THIS IS AN APPLICATION FOR (Check appropriate item)

- ☐ A. NEW LICENSE
☒ B. AMENDMENT TO LICENSE NUMBER 53-00515-01
☐ C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip Code)

Hawaiian Sugar Planter's Association
P.O. Box 1057
Aiea, HI 96701

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED.

99-193 Aiea Heights Drive
Aiea, HI 96701

Kunia Substation
Kunia Road
Waipahu, HI

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Philip J. Manly, M.S., CHP, DABR

TELEPHONE NUMBER

808-373-7009

SUBMIT ITEMS 5 THROUGH 11 ON 8 1/2 x 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL

a. Element and mass number, b. chemical and/or physical form, and c. maximum amount
which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSEE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY 3M

AMOUNT
ENCLOSED \$ \$590.00

13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS
PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN,
IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948, 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION
TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

SIGNATURE—CERTIFYING OFFICER

TYPED/PRINTED NAME

TITLE

DATE

Stephanie Whalen

Stephanie Whalen

Acting President
President and Director,
Experiment Station

12/6/95

FOR NRC USE ONLY

TYPE OF FEE FEE LOG FEE CATEGORY COMMENTS

AMOUNT RECEIVED

CHECK NUMBER

APPROVED BY

DATE

B. Radiation Safety Officer

Radiation Safety Officer	Record of Training and Experience
T. Blake Vance, Ph.D.	<p data-bbox="638 485 1372 591">Dr. Vance has taken a one-semester graduate level course on Radiochemistry which covered the following topics:</p> <p data-bbox="638 629 1279 661">Principles and practices of radiation protection.</p> <p data-bbox="638 700 1398 732">Radioactivity measurement and monitoring techniques.</p> <p data-bbox="638 770 1403 838">Mathematics pertaining to the use and measurement of radioactivity.</p> <p data-bbox="638 876 1040 908">Biological effects of radiation.</p> <p data-bbox="638 946 1398 1123">From 1971 to 1982 Dr. Vance has conducted x-ray diffraction experiments at University of Hawaii, University of Wyoming, and University of Colorado, which involved the direct application of radiation safety principles to his work.</p> <p data-bbox="638 1161 1382 1266">He has also served for one year as Assistant Radiation Safety Officer at H.S.P.A. under the direction of the current Radiation Safety Officer, Philip J. Manly.</p>

Effective: 12/1/95

New mailing address for:

**Hawaiian Sugar Planters' Association (HSPA)
99-193 Aiea Heights Drive
Aiea, HI 96701**
