NRC FORM 591M PART 1
(4-2008)
10 CFR 2.201

U.S. NUCLEAR REGULATORY COMMISSION

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. LICENSEE/LOCATION INSPECTED:	2. NRC/REGIONAL OFFICE
University of Wyoming 1000 E. University Ave. Laramie, WY REPORT NO: 2015-001	U.S. Nuclear Regulatory Commission Region IV, 1600 East Lamar Blvd Arlington, Texas 76011-4511

3. DOCKET NUMBER	4. LICENSE NUMBER	5. DATE OF INSPECTION
030-01176	49-09955-10	March 25-April 9, 2015

LICENSEE:

The inspection was an examination of the activities conducted under your license as they relate to radiation safety and to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your license. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector. The inspection findings are as follows:

☑ 1. Based on the inspection findings, no violations were identified.

☐ 2. Previous violation(s) closed.

☐ 3. The violations(s), specifically described to you by the inspector as non-cited violations, are not being cited because they were self-identified, non-repetitive, and corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy to exercise discretion, were satisfied.

☐ Non-Cited Violation(s) was/were discussed involving the following requirement(s) and Corrective Action(s):

☐ 4. During this inspection certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11. (Violations and Corrective Actions)

Licensee's Statement of Corrective Actions for Item 4, above.

I hereby state that, within 30 days, the actions described by me to the inspector will be taken to correct the violations identified. This statement of corrective actions is made in accordance with the requirements of 10 CFR 2.201 (corrective steps already taken, corrective steps which will be taken, date when full compliance will be achieved). I understand that no further written response to NRC will be required, unless specifically requested.

Title	Printed Name	Signature	Date
LICENSEE'S REPRESENTATIVE			
NRC INSPECTOR	Lizette Roldán-Otero, Ph.D.	Lizette Roldán-Otero	04/09/15
BRANCH CHIEF	Michael Vasquez	for	05/22/2015

☐ Non-Public ☐ Sensitive – Security-Related ☒ Public ☒ Non-Sensitive

Roldan, Lizette

From: Roldan, Lizette
Sent: Thursday, April 09, 2015 12:10 PM
To: Jim F. Herrold
Cc: Laura Lynn Peterson; Gary Egge
Subject: RE: Information you requested on tritium waste amounts
Attachments: SR4-KM554-C15040911040.pdf

Hi Jim,

It was nice talking to you today. Attached you will find my inspection report showing that no violations were identified. Keep up the good work.

Thanks,

Lizette Roldán-Otero, Ph.D.
US NRC Region IV – NMSB-B
1600 Lamar Blvd
Arlington, TX 76011
Office: 817-200-1596
Fax: 817-200-1188

From: Jim F. Herrold [mailto:Herrold@uwyo.edu]
Sent: Friday, March 27, 2015 5:58 PM
To: Roldan, Lizette
Cc: Laura Lynn Peterson; Gary Egge
Subject: Information you requested on tritium waste amounts

Greetings Dr. Roldán-Otero,

I hope your return travels have been uneventful. You requested that we provide the activity of the tritium waste that was in the labs you visited in in the Animal Science/Molecular Biology (AS/MB) building on the University of Wyoming campus. I apologize that it has taken us a couple of days to make that determination. I have arrived at a conservative estimate that I hope is satisfactory. The cabinet in Animal Science/Molecular Biology (AS/MB) room 259 contained less than 68.1 microcuries of tritium in solid waste and liquid scintillation vials. The aqueous waste in the fume hood in AS/MB 268 contained 1.8 microcuries. I will explain how we arrived at those quantities:

When asked to provide the quantities, the lab informed me that some of the waste in the cabinet in AS/MB 259 consisted of several trays of liquid scintillation vials, which had been intended for a disposal request on an earlier date. Because those vials were not packaged in the sealed bucket, our waste technicians did not realize they were supposed to be removed from the lab at that time.

The total activity specified in the waste disposal paperwork - including the vials that were and were not picked up - was 64.5 microcuries (decay-corrected to 3/25/2015). As I see it, the only way to determine the true activity of the vials that were left behind would be to either (1) count hundreds of individual vials and add them up or (2) empty all of them into a single container and count representative samples to estimate the total activity. From a Radiation Safety and Chemical Hygiene standpoint, I am concerned about the risks associated with either of these approaches, while I don't believe it would appreciably reduce the hazard estimate of the unsecured waste.

Since the time of that waste disposal request, only 3.6 microcuries had been added to the waste. Therefore, the most that could have been in the cabinet at the time of your inspection on March 25, 2015 was approximately 68.1 microcuries. The aqueous waste in the fume hoods in AS/MB 268 contained 1.8 microcuries. Therefore, the tritium that was unsecured in both labs totaled just under 70 microcuries.

If the NRC wants a closer (but less conservative) estimate, I can ask our waste technicians to proceed with either method (1) or (2) specified above. I sincerely hope we do not have to go that route, as it will be both time-consuming and messy. Putting it into perspective: the quantity of tritium requiring licensing and labeling (from 10CFR30) is 1,000 microcuries; the amount of tritium ingested (based on ALI) that would result in a dose to the general public greater than 100 mrem is 1,600 microcuries; and hundreds to thousands of times greater are placed in exempt consumer products.

This does not mean that we do not take seriously the security of licensed radioactive material. I have made the following requests of Dr. Don Jarvis and his lab (Dr. Jarvis left town yesterday, so I expect his response next week):

1. Have the waste picked up by the RMMC as soon as possible (this will happen Monday, March 30)
2. Stop evaporating aqueous waste in the hood in ASMB 268
3. Store the aqueous waste in the cabinet in 259 from now on (they have moved the aqueous waste)
4. Put a sign on the cabinet in 259 that it must remain locked at all times (I made up some signs and took them to the Jarvis lab)
5. Give refresher training to all lab personnel in the proper waste storage and disposal process (this will also happen on March 30)
6. A letter from Don Jarvis describing why the cabinet was unlocked and that these (and other things they wish to accomplish) have been taken care of to avoid it in the future

Sincerely,

Jim F. Herrold, CHP
Radiation Safety Officer
herrold@uwyo.edu

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