



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

July 12, 2000

Docket No. 999-90001

General License

W. J. Anderson, Jr.  
Assistant Vice President for Physical Plant  
The Pennsylvania State University  
Physical Plant Building  
University Park, PA 16802-1118

SUBJECT: INSPECTION 999-90001/99-012 AND NOTICE OF VIOLATION

Dear Mr. Anderson:

On May 9, 2000, Sattar Lodhi of this office conducted a safety inspection at the New Kensington Campus, 3550 Seventh Street Road, Upper Burrell, Pennsylvania, of activities authorized by the general license in 10 CFR 31.5(a). The inspection was limited to a review of: the disappearance of 12 generally licensed devices ('EXIT' signs), your actions following the discovery of their disappearance, and your efforts to retrieve the missing devices. The findings of the inspection were discussed with Mr. Jason Bush and other members of your organization at the conclusion of the inspection. The enclosed report presents the results of this inspection.

Based on the results of this inspection, it appears that your activities were not conducted in full compliance with NRC requirements. A Notice of Violation is enclosed that categorizes the violation by severity level in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy), NUREG 1600. The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence is already adequately addressed on the docket in your report dated December 15, 1999 (enclosed). Additionally, on May 9, 2000, Mr. Eric Boeld of your staff informed the inspector of your plan to replace all such devices that may be in use at any other campus of the Pennsylvania State University, with those that do not contain licensed material. Therefore, you are not required to respond to this letter unless the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

In accordance with Section 2.790 of NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and your reply will be placed in the Public Document Room (PDR).

W. Anderson, Jr.  
The Pennsylvania State University

2

Your cooperation with us is appreciated.

Sincerely,

***Original signed by John R. McGrath***

John D. Kinneman, Chief  
Nuclear Materials Safety Branch 2  
Division of Nuclear Materials Safety

Enclosures:

1. Inspection Report No. 999-90001/99-012
2. Licensee's Report dated December 15, 1999
3. Notice of Violation

cc:

Eric Boeldt, Radiation Safety Officer  
Jason Bush, Assistant to Financial Officer  
Commonwealth of Pennsylvania

W. Anderson, Jr.  
The Pennsylvania State University

3

Distribution:  
D. J. Holody, RI  
Sharon Johnson, RI

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OFFICE	DNMS/RI	N	DNMS/RI		DNMS/RI			
NAME	Slodhi ASL		Jkinneman JRM					
DATE	07/03/00		07/03/00					

OFFICIAL RECORD COPY

## NOTICE OF VIOLATION

The Pennsylvania State University  
University Park, Pennsylvania.

Docket No. 999-90001  
General License

During an NRC inspection conducted on May 9, 2000, one violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy), NUREG-1600, the violation is listed below:

10 CFR 31.5(c)(10) requires, in part, that any person who acquires, receives, possesses, byproduct material in a device pursuant to the general license in 10 CFR 31.5(a), comply with provisions of 10 CFR 20.2201 for reporting theft or loss of licensed material.

10 CFR 20.2201(a)(ii) requires, in part, that each licensee report by telephone within 30 days after the discovery of any lost, stolen or missing licensed material becomes known to the licensee, all licensed material in a quantity greater than 10 times the quantity specified in Appendix C to 10 CFR Part 20 that is still missing.

Contrary to the above, the licensee discovered that at least one device containing 19.8 curies of hydrogen 3 (tritium), which is in excess of 10 times the quantity specified in Appendix C to 10 CFR Part 20, was missing or stolen and the licensee did not report the missing material within 30 days. Specifically, the licensee became aware of several missing "EXIT" signs that contained tritium in 1997, and the licensee did not report the missing material until December 6, 1999.

This is a Severity Level IV violation (Supplement IV).

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence and the date when full compliance will be achieved is already adequately addressed on the docket. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation," and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555 with a copy to the Regional Administrator, Region I, within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

If you contest this enforcement action, you should also provide a copy of your response to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

Because your response will be placed in the NRC Public Document Room (PDR), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR without redaction. However, if you find it necessary to include such information, you should clearly indicate the specific information that you desire not to be

Notice of Violation  
The Pennsylvania State University

2

placed in the PDR, and provide the legal basis to support your request for withholding the information from the public.

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

INSPECTION REPORT

Inspection No. 999-90001/99-012  
Docket No. 999-90001  
License No. General License  
Licensee: The Pennsylvania State University  
Address: Office of Physical Plant  
University Park, Pennsylvania  
Locations Inspected: Penn State New Kensington  
3550 Seventh Street Road  
Upper Burrell, Pennsylvania  
Inspection Dates: May 9, 2000

Inspector:	<i>/RA/</i> _____ Sattar Lodhi, Ph.D. Health Physicist	<i>07/03/00</i> _____ date
Approved By:	<i>/RA John R. McGrath for/</i> _____ John D. Kinneman, Chief Nuclear Materials Safety Branch 2 Division of Nuclear Materials Safety	<i>07/03/00</i> _____ date

## **EXECUTIVE SUMMARY**

The Pennsylvania State University,  
Penn State New Kensington  
NRC Inspection Report No. 999-90001/99-012

An inspection was performed in response to an electronic mail notification by the licensee, of the disappearance of approximately 6 to 8 self-luminous "EXIT" signs each containing hydrogen-3 (tritium). The licensee had acquired these devices under the general license in 10 CFR 31.5(a). The inspection determined that between June 1989 and May 1998, the licensee acquired 17 such devices. The licensee is unable to account for 12 of these devices. The licensee is conducting an inventory of all such devices at all of its facilities across the Commonwealth of Pennsylvania, and has decided to replace all such devices with electrically operated devices. All remaining devices will be collected and stored at one location until final disposal. The inspection identified one violation of 10 CFR 31.5(c)(10), failure to report the loss or theft of licensed material.

## REPORT DETAILS

### I. The Event

#### a. Inspection Scope

The scope of the inspection was limited to a review of the licensee's actions following the report of missing "EXIT" signs.

#### b. Observations and Findings

On December 6, 1999, the licensee's Radiation Safety Officer (RSO) informed an inspector in Region I via electronic mail (attached) that approximately 6 to 8 self-luminous "EXIT" signs (devices) containing hydrogen-3 (tritium) were noted missing from a building at its New Kensington Campus located in Upper Burrell, Pennsylvania. The notification stated that the signs were installed in July 1989 during new construction and were reported missing in 1997.

A follow up by Region I determined that these devices were distributed by NRD, Inc., of Grand Island, New York, under the general license in 10 CFR 31.5(a). The RSO of NRD, Inc., stated that their records indicated that on June 12, 1989, eleven of these devices, each containing 19.8 curies of tritium were shipped to the licensee. All of these devices were Perm-Ex Model No. P-160-20-R and had serial numbers 53475 through 53485, and on August 25, 1989, another of these devices with serial number 55593 was shipped to the licensee. Again, on May 8, 1998, five additional devices with serial numbers 119701 through 119705 were purchased by the licensee. However, each of these five devices contained 6.7 curies of tritium.

The licensee stated that the Science & Technology Building was constructed in 1989. The building includes class rooms, laboratories, and offices. The 12 devices were acquired for installation in the corridors of the building. There were four locations on each of the three floors of the building where these devices appeared to have been installed.

A few of these devices were noted missing some time in 1997. An employee who noted the missing devices informed the management (Director of Business Services). The management assumed that an investigation of the disappearance of the devices would have been futile and did not investigate their disappearance. Instead, the licensee acquired five replacement devices in May 1998. The licensee became aware of missing devices in 1997, but did not report the missing licensed material to the NRC until December 6, 1999.

10 CFR 31.5(c)(10) requires, in part, that any person who acquires byproduct material in a device pursuant to the general license in 10 CFR 31.5(a) comply with provisions of 10 CFR 20.2201.

10 CFR 20.2201(a)(ii) requires, in part, that each licensee report by telephone, within 30 days after the occurrence of any stolen or missing licensed material becomes known to the licensee, all licensed material in a quantity greater than 10 times the quantity specified in Appendix C to 10 CFR Part 20 that is still missing. 10 CFR 2201(a)(2)(ii) requires that such a report be made by telephone to the NRC Operations Center at (301 951 0550).

The disappearance of hydrogen-3 in quantities greater than the quantity specified in Appendix C to 10 CFR Part 20, became known to the licensee in 1997, and the licensee did not report to the NRC the missing material within 30 days as required by 10 CFR 2201(a)(ii).

Failure of the licensee to comply with provisions of 10 CFR 20.2201 is a violation of 10 CFR 31.5(c)(10).

A newly employed Physical Plant Foreman (Foreman) conducted a routine safety review of the building in the later part of October 1999, and noted that the second and third floors did not have the required number of "EXIT" signs. Another employee informed him that replacement "EXIT" signs were acquired but were never installed and are still in storage. On November 9, 1999, the Foreman found five devices stored in a locked closet in the storage area of the building. The Foreman had the five devices installed on November 9, 1999, and on the same day, contacted the licensee's Radiation Safety Officer to report the missing devices. Two of these devices were installed on the first floor and three were installed on the second floor. One of the older devices was still on the second floor, making a total of four of these devices on the second floor.

On January 31, 2000, the licensee reported to the NRC's Operations Center that another one of these devices was stolen from the building. The notification stated that some time between January 28, and January 31, 2000, someone removed one of the devices from the second floor of the Science & Technology building. The stolen device (serial number 119704) was one of devices that the licensee had acquired on May 8, 1998, and was among the devices that were installed on November 9, 1999. In its efforts to retrieve the missing devices, the licensee posted notices on the New Kensington Campus warning the public of the hazardous nature of the devices, and met with students and representatives of student government to seek their help in retrieving the missing devices. However, as of May 9, 2000, none of the missing devices was retrieved.

c. Conclusions

The inspection identified a violation of 10 CFR 31.5(c)(10). The licensee failed to report to the NRC within 30 days of the disappearance of devices containing licensed material. However, the licensee has implemented corrective actions to prevent the recurrence of a similar violation. These actions are documented in the licensee's report dated December 15, 1999. The licensee also made efforts to retrieve the missing signs by

posting notices requesting return of these devices and promising no disciplinary action against the individual(s) returning the device(s).

The licensee initially stated in its report dated December 15, 1999, that as a corrective action, an inventory of all such devices installed at each of its facilities across the Commonwealth of Pennsylvania will be made and all such devices that are installed at less secured locations will be removed. On May 9, 2000, the Radiation Safety Officer stated that because this is an educational institution and members of the public have free access to the facilities where these devices are installed, it is difficult to ensure security of these devices. Therefore the licensee has decided to remove all remaining "EXIT" signs containing radioactive material and replace them with battery powered signs. The removed devices will be collected and stored at a central location under the supervision of Radiation Protection Office, until they are disposed of appropriately.

## **II. Facilities and Equipment**

### **a. Inspection Scope**

The inspector reviewed the use of generally licensed devices at the facilities.

### **b. Observations and Findings**

The acquired devices appeared to have been installed in the corridors and hallways of the newly constructed Science & Technology Building. The inspector noted marks that indicated that at one time four devices were installed in the hallways and corridors on each of the three floors of the building. However, no device was left at the installation location. The licensee stated that the remaining five devices were removed following the theft of the latest device during the last weekend of January 2000. The licensee installed battery operated devices at all appropriate locations in the building. The five devices were stored in a secured locked cabinet and were awaiting shipment to the main storage location at the main Campus of the Pennsylvania State University at University Park, Pennsylvania.

### **c. Conclusions**

No violations were identified.

## **III. Radiation Surveys**

### **a. Inspection Scope**

The inspector reviewed the licensee's actions to assure that removal of the devices did not result in contamination.

b. Observations and Findings

The licensee surveyed the locations where the devices were installed. The surveys were made by collecting and analyzing wipe samples taken from these locations. The analyses of these wipe samples did not indicated any contamination of these areas.

c. Conclusions

No violations were identified.

**IV. Exit Meeting**

The results of the inspection were discussed with the Assistant to the Financial Officer and the Radiation Safety Officer.

**PARTIAL LIST OF PERSONS CONTACTED**

Licensee

Eric Boeldt, Radiation Safety Officer  
Richard Manslow, Physical Plant Foreman  
Charles Yanoff, Advanced Engineering Aide  
Jason Bush, Assistant to Finance Officer

Attachment:

Licensee's electronic Notification

**From:** "Eric Boeldt" <ejb6@psu.edu>  
**To:** KP\_DO.kp1\_po(JPD1)  
**Date:** Mon, Dec 6, 1999 10:17 AM  
**Subject:** Tritium Exit Signs

Good morning Jim,

This is just a note for your information .

Last month Richard A Manslow, a maintenance foreman at the Penn State New Kensington campus, informed me of the disappearance of approximately six to eight self-luminous exit signs. The signs were installed in July, 1989 during new construction and reported missing in 1997 (no one remembers quite when.)

Richard reported that "The old units were ripped down from the walls. It appears there were approximately 6 to 8 units in all. Chuck felt that they were taken at night or over a weekend."

There are currently five of these units installed in the Tech Bldg at the Penn State New Kensington campus, no other building has them. They are planning to get battery-backup signs as replacements.

The signs were constructed by Perm-Ex Mnfg. Cat. # P-160 series Model T -4001.

Please contact me if there is any more information that you would like concerning this disappearance. I am not planning to do any follow up investigation of this matter.

Thank you.

Eric

Eric Boeldt  
Manager of Radiation Protection 814-865-6391  
6 Eisenhower Parking Deck FAX-865-7225  
University Park, PA 16802

**CC:** "Maurine Claver" <CLAVER@SAFETY-1.SAFETY.PSU.EDU>

Received: from igate.nrc.gov ([148.184.176.31])  
by smtp (GroupWise SMTP/MIME daemon 4.1 v3)  
; Mon, 6 Dec 99 10:17:23 EST  
Received: from nrc.gov  
by smtp-gateway ESMTPo8 id KAA23978  
for <JPD1@nrc.gov>; Mon, 6 Dec 1999 10:17:58 -0500 (EST)  
Received: from HPO2 (hpo2.fsc.psu.edu [128.118.95.73]) by f04n07.cac.psu.edu (8.8.7/8.6.12) with  
SMTP id KAA146134; Mon, 6 Dec 1999 10:17:51 -0500  
From: "Eric Boeldt" <ejb6@psu.edu>  
To: <JPD1@nrc.gov>  
Cc: "Maurine Claver" <CLAVER@SAFETY-1.SAFETY.PSU.EDU>  
Subject: Tritium Exit Signs  
Date: Mon, 6 Dec 1999 10:17:26 -0500  
Message-ID: <000801bf3ffd\$00dfb580\$495f7680@HPO2.fsc.psu.edu>  
MIME-Version: 1.0  
Content-Type: text/plain;  
charset="iso-8859-1"  
Content-Transfer-Encoding: 7bit  
X-Priority: 3 (Normal)  
X-MSMail-Priority: Normal  
X-Mailer: Microsoft Outlook 8.5, Build 4.71.2173.0  
Importance: Normal  
X-MimeOLE: Produced By Microsoft MimeOLE V4.72.3110.3

PENNSTATE



Office of Physical Plant

The Pennsylvania State University  
Physical Plant Building  
University Park, PA 16802-1118

December 15, 1999

Sattar Lodhi  
U. S. Nuclear Regulatory Commission  
Nuclear materials Safety Branch, Region I  
475 Allendale Road  
King of Prussia, PA 19406

Subject: General License, New Kensington Exit signs

Dear Mr. Lodhi:

On November 9, 1999, Richard A. Manslow from the New Kensington campus notified Environmental Health and Safety (EHS) that about five (5) self-luminous signs had been removed from their brackets sometime in 1997. Each of these missing, presumably stolen, signs would now contain about 11 curies of tritium. Eric Boeldt, Manager of Radiation Protection from Environmental Health and Safety, reported the missing signs to the Nuclear Regulatory Commission by e-mail on December 6, 1999 with an update on December 8. Also, on December 6, he verbally reported the loss of the signs to the NRC Operation Center.

The manufacturer of the signs reported to Eric Boeldt and the NRC that twelve signs were sold to Penn State New Kensington in 1989, and five signs were sold to Penn State New Kensington on May 8, 1998. The manufacturer was also able to provide the serial numbers of all of these signs. The signs sold to Penn State New Kensington were:

Purchase date	Number purchased	Activity (each)	Serial numbers
6/12/89	11	19.8 Ci	53,475 - 53,485
8/25/89	1	19.8 Ci	55,593
5/8/98	5	6.72 Ci	119,701 - 119,705

On December 7, 1999, Mr. Manslow performed a physical inventory and found a total of six signs. He found the five new ones installed on 11/5/99, (which were purchased in May 1998) and one that had been purchased in 1989 (serial number 53,482).

Mr. Manslow has been sent some wipes to be used to take smears of the building where the signs had been installed. He was also given verbal and written instructions for performing the contamination survey. Mr. Boeldt will send the results of the survey to you as soon as it has been completed.

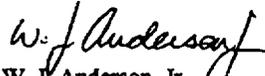
Penn State has a number of other self luminous signs but currently has no accurate inventory or process for preventing inadvertent disposal. Based on this information, Penn State has decided to establish a program that addresses the following issues:

1. Each Penn State building will be inventoried to determine the location and number of signs present at this time. This will include buildings leased by Penn State.
2. Regular inspections of these signs will be performed to verify that all are still present and properly labeled.
3. Signs that are in locations vulnerable to theft will be removed and replaced with non-radioactive systems as soon as feasible. The old signs will be transferred to the Radiation Protection Office so that the appropriate NRC notifications can be performed prior to returning them to the vendor.

Because the whole University closes during the last week in December, the inventory will begin in January. The procedures for performing the initial inventory and the continuing verification is still under development.

If you have any further questions or concerns, or require more information, please contact Eric Boeldt at [ejb6@psu.edu](mailto:ejb6@psu.edu) or (814) 865-6391.

Sincerely,



W. J. Anderson, Jr.  
Assistant Vice President for Physical Plant  
(814) 865-4402, Fax (814) 863-7757  
E-mail - [wja3@psu.edu](mailto:wja3@psu.edu)

cc: Eric Boeldt  
Maurine Claver  
Robert Finley  
Steve Maruszewski  
Carol Rush  
Eva Pell  
Gary Schultz