

U. S. NUCLEAR REGULATORY COMMISSION
REGION II

Docket No.: 999-90002

License No.: General License (10 CFR 40.22)

Report No.: 999-90002/97-02

Facility: West Potomac High School

Location: Alexandria, Virginia

Date of Inspection: June 6, 1997

Inspector: Jerry D. Ennis, Radiation Specialist

Approved by: Thomas R. Decker, Acting Chief
Materials Licensing/Inspection Branch 1
Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

West Potomac High School
NRC Inspection Report 999-90002/97-02

This special, unannounced inspection was conducted to review the circumstances surrounding the possession of an unknown type and quantity of radioactive material in unsealed form at West Potomac High School. Through discussions with school officials and a representative of the Office of Security and Risk Management, Fairfax County Public Schools, the inspector determined that a jar containing approximately 30 grams of thorium nitrate ($\text{Th}[\text{NO}_3]_4$) had been picked up at West Potomac High School by Risk Management personnel on May 27, 1997. The material was being held by Risk Management pending pick up by a licensed broker for transfer to an authorized radioactive material disposal facility. The inspector surveyed the room in which the container of thorium nitrate had been stored. No evidence of radioactive contamination was found. No violations of NRC regulations or safety issues were identified.

Attachment

List of Persons Contacted
Inspection Procedure Used

REPORT DETAILS

01. Materials Possession and Control (87100)

a. Scope

This special, unannounced inspection was conducted to review the circumstances surrounding the possession of an unknown type and quantity of radioactive material in unsealed form at West Potomac High School.

The inspector reviewed the possession and control of radioactive material in forms other than exempt sealed sources to determine if the school possessed a licensable quantity of byproduct, source, or special nuclear material and if any such material was being properly handled and stored.

b. Observations and Findings

The inspector interviewed school personnel concerning radioactive material at the school. School personnel stated that several months ago, a former teacher had found a jar in a storage area and the material had been secured and subsequently turned over to school system Risk Management personnel for disposal. School personnel said that the material was thorium nitrate and had been used, at one time, in biology experiments/demonstrations.

A representative of the Fairfax County Public School system's Office of Security and Risk Management advised the inspector that the school had contacted his office concerning the material. Inasmuch as thorium nitrate was not on the approved list of materials to be used in the school, arrangements were made for the material to be secured pending its pickup by Risk Management, which occurred on May 27, 1997. The material was described as being in a plastic jar with a screw-on cap. The label indicated that the jar's capacity was 125 grams and Risk Management determined that the jar contained approximately 30 grams of material. The label indicated the material was thorium nitrate ($\text{Th}[\text{NO}_3]_4$), 0.05 microcuries per gram ($\mu\text{Ci/gm}$) for use as an analytic reagent.

The Risk Management representative stated that, in addition to the thorium nitrate retrieved from West Potomac High School, one other similar jar was being held at the school system's Hazmat/Secure Storage Facility pending transfer to a licensed waste broker for disposal at authorized hazardous material/radioactive material disposal facility. It was anticipated that transfer to a disposal facility would take place in July 1997. The inspector was told that jars containing thorium nitrate were obtained by schools, probably more than ten years ago, and were still found in schools

from time to time. When such material was identified by the schools or found during Risk Management's inspections of schools, the material was removed and disposed of through a licensed broker.

Using a calibrated Eberline Model E-120 survey meter with an HP-260 pancake probe, the inspector surveyed the area in which the jar had been stored. No evidence of radioactive contamination was found.

Based on the information available from the label, the exact nature and origin of the thorium could not be determined. As a result, a determination could not be definitively made as to whether the material was subject to Commonwealth of Virginia regulations, as naturally-occurring radioactive material, or NRC regulations, as source material. The inspector evaluated the possession, use, storage, and transfer of the material against NRC regulatory requirements.

NRC regulations, in 10 CFR 40.22, grant a general license for educational institutions and local governmental agencies to use and transfer not more than 15 pounds (6,803 grams) of source material, such as thorium, at any one time for educational purposes. Additionally, such persons are exempt from NRC regulations in 10 CFR Parts 19 ("Notices, Instructions and Reports to Workers: Inspection and Investigations"), 20 ("Standards for Protection Against Radiation"), and 21 ("Reporting of Defects and Noncompliance").

10 CFR 40.51 states that source material may be transferred to any person authorized to receive such material under terms of a specific or general license issued by the NRC or an Agreement State. Transfer to a waste broker licensed to receive source material would meet this requirement.

c. Conclusions

The possession and intended method of transfer of source material contained in the chemical compound thorium nitrate by West Potomac High School and the Fairfax County Public Schools were in compliance with applicable NRC requirements.

EXIT MEETING SUMMARY

An exit meeting was held with representatives of West Potomac High School and the Office of Security and Risk Management, Fairfax County Public Schools, on June 6, 1997. The scope and inspection findings were discussed.

On June 9, 1997, the inspector discussed the inspection findings with Mr. Leslie Foldesi, Director, Radiological Health Program, Commonwealth of Virginia.

ATTACHMENT

LIST OF PERSONS CONTACTED

Fairfax County Public Schools

- *C. Norman, Principal, West Potomac High School
- *P. Tiscornia, Assistant Principal, West Potomac High School
- R. Bolland, Science Teacher, West Potomac High School
- #M. La Croix, Coordinator of Environmental and Occupational Health, Office of Security and Risk Management, Fairfax County Public Schools

*Present at June 6, 1997, exit interview.

#Participated in exit interview by telephone.

INSPECTION PROCEDURE USED

IP 87100 Licensed Material Program