



Office of Waste, Air, Radiation & Remediation

Radiation Protection Program Updates

SWEP Capital Chapter Seminar
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Radiation Protection Program

BUREAU OF RADIATION PROTECTION

“Building on the past to shape the future.”

MISSION

“Our mission is to safeguard the public health and safety and the environment from harmful and unwanted, unnecessary or inappropriate exposure from controllable radiation sources.”

We “LEAD BY EXAMPLE” and value:

- Public Service
- Teamwork
- Professional Development
- Open Communication
- Effective Radiation Protection

Radiation Protection Program

Divisions:

- Nuclear Safety
- Decommissioning and Environmental Surveillance
- Radon
- Radiation Control

Regulatory Updates

Four Regulatory Proposals

- Security Rule – In effect March of 2016
- Fee Proposal – In effect October of 2017
- Radiological Health Update – Possible Spring of 2018
- Sealed Source Financial Assurance – TBD

Fee Proposal

- **Radiation Protection Act**

Act 1984-147 as amended 2014-190

“set reasonable annual fees for the registration of radiation sources and the licensing of radiation source users.”

- **Radon Certification Act**

Act 1987-43

“establish a fee schedule to cover the costs of the certification programs”

Fee Proposal

- Radiation-Producing Machines
 - X-ray devices
 - Accelerators
 - Vendors
- Radioactive Materials
 - Specific Licenses
 - General Licenses
 - Reciprocity
- Decommissioning
- Radon

Fee Proposal

- Radioactive Materials
 - Specific Licenses
 - General Licenses
 - Reciprocity
- Radon

Radiological Health Proposal

Pa. Code Title 25 Chapters 215 – 240 Radiological Health

- 215. GENERAL PROVISIONS
- 216. REGISTRATION OF RADIATION-PRODUCING MACHINES AND RADIATION-PRODUCING MACHINE SERVICE PROVIDERS
- 217. LICENSING OF RADIOACTIVE MATERIAL
- 218. FEES
- 219. STANDARDS FOR PROTECTION AGAINST RADIATION
- 220. NOTICES, INSTRUCTIONS AND REPORTS TO WORKERS; INSPECTIONS AND INVESTIGATIONS
- 221. X-RAYS IN THE HEALING ARTS
- 223. VETERINARY MEDICINE
- 224. MEDICAL USE OF RADIOACTIVE MATERIAL
- 225. RADIATION SAFETY REQUIREMENTS FOR INDUSTRIAL RADIOGRAPHIC OPERATIONS
- 226. LICENSES AND RADIATION SAFETY REQUIREMENTS FOR WELL LOGGING
- 227. RADIATION SAFETY REQUIREMENTS FOR ANALYTICAL X-RAY EQUIPMENT, X-RAY GAUGING EQUIPMENT, ELECTRON MICROSCOPES AND X-RAY CALIBRATION SYSTEMS
- 228. RADIATION SAFETY REQUIREMENTS FOR PARTICLE ACCELERATORS
- 230. PACKAGING AND TRANSPORTATION OF RADIOACTIVE MATERIAL
- 232. LICENSES AND RADIATION SAFETY REQUIREMENTS FOR IRRADIATORS
- 236. LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT AND DISPOSAL
- 237. REBUTTABLE PRESUMPTION OF LIABILITY OF THE OPERATOR OF THE REGIONAL LOW-LEVEL WASTE FACILITY
- 240. RADON CERTIFICATION



Radiological Health Proposal

Some important sections that will be updated:

- Training requirements
- Emerging technologies
- Transitional period from becoming an Agreement State
- Reporting requirements
- Definitions
- Quality control

Sealed Source Financial Assurance

- Not all radioactive materials licensees are required to carry financial assurance mechanisms
- The regulations on this topic have vastly improved in the past 20 years
- However, deficiencies have become apparent with certain types of licenses.
- In particular, our bureau will be looking to add financial assurance requirements to sealed source users.

Sealed Source Financial Assurance

Are new regulations needed, and why is financial assurance so important?

AVAX 's Blood Irradiator



Avax Technologies

- Small biotech firm
- Developing cancer vaccine therapy.
 - Melanoma – Phase II
 - Cervical – Phase I
 - Small Cell Lung – Pre-Clinical Trial
- Funded by investors
- 600 Ci Cs-137 Irradiator

Just the Facts!

- **February 2015**: PADEP performs inspection and discovers that AVAX had been shut down since May 2014. All employees, except RSO, laid off.
- **May 27, 2015**: Property manager calls. He was beginning eviction proceedings and was in need of information on the disposal of radioactive materials.

AVAX Given One More Chance

- Property manager agreed to restore the security and return to the property back over to Avax
- Avax paid a portion of the outstanding rent
- On May 2, 2016, they defaulted again.
- PA DEP decided Avax was unable to handle the situation and DEP would lead the source removal efforts.

Result of Licensee Failure

- \$200,000 financial mechanism existed only because of a CO&A.
- Legal enforcement actions provided security, but little more.
- The President, The Pope, and the DNC all were in Philly during this time.
- Costs exceeded \$145,000 to dispose of the source. This does not include their failure to pay penalties and fines.

PSC Metals, Inc.

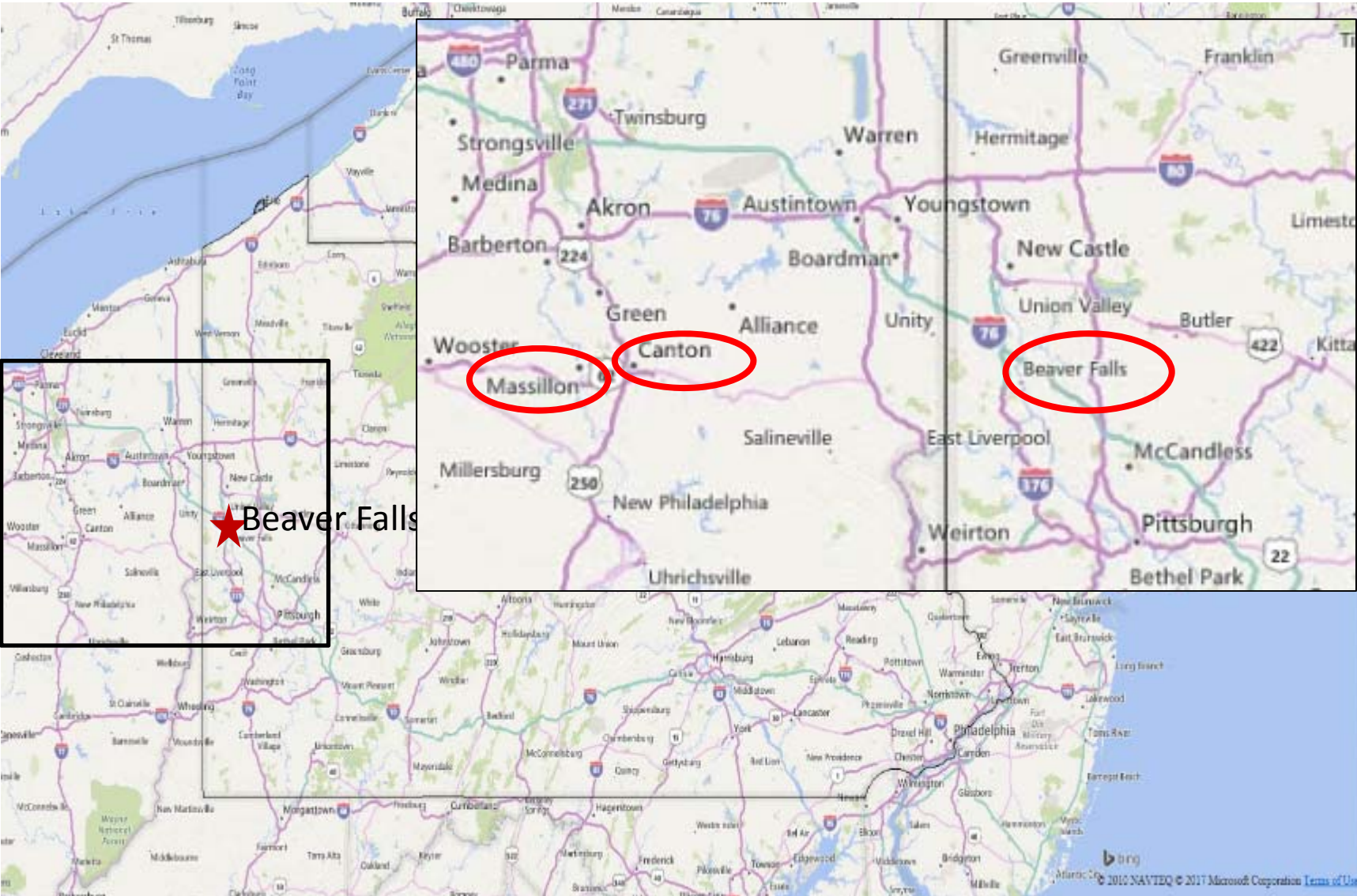


PSC Metals, Inc.

- Initiating Event

- February 23, 2016 a large amount of Ra-226 mixed with other scrap material passed through the detectors in Beaver Falls, PA without triggering alarms. Ra-226 has a 1,600 year half life.
- This material was shredded with other scrap material directly into a series of transfer trucks.
- The scrap material was then transferred to three PSC processing facilities in Ohio in 10 truckloads.
- 5 loads went to Massillon, 2 to Mansfield, and 3 to Canton.
- The two loads that went to the Mansfield facility were rejected and shipped to Canton. The Mansfield facility was not a PSC facility.

PSC Metals, Inc.



PSC Metals, Inc.



Fragments found in OH

PSC Metals, Inc.

- The Cleanup:
 - The work in PA was performed under a Consent Order and Agreement that was signed in early May 2016.
 - Conditions in the agreement laid out the expectations the PADEP had for PSC to return their facility for unrestricted use.
 - This incorporated the preparation and approval of a remedial investigation report and a decommissioning plan.

PSC Metals, Inc.



**Figure 3: Satellite View of PSC Metals – Beaver Falls Shredder Yard
(Yellow box indicates estimated Class 1 extent; Red indicates Remedial Decontamination and Waste Removal)**

PSC Metals, Inc.

- Approximate Costs:
 - PSC officials did not provide a complete breakdown.
 - However, the amount that we have been told is about **\$18 million**.
 - Much of this cost was handled through PSC's insurance carrier.

Improving How and What We Regulate

- For decades no regulations existed for the use of radioactive materials.
- Federal and State Regulators continue to work to correct the problems from the past and prevent problems in the future.
- The use of radioactive materials is a major part of industry and health care with new advancements happening frequently.
- All groups must continue to work together to protect the public, workers, and the environment.



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Thank you. Questions?

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