

**4.5 Enforcement Program  
Elements**

# **COMPLIANCE AND ENFORCEMENT POLICY**

**Technical Guidance Number 291-4100-001  
Bureau of Radiation Protection**



**COMMONWEALTH OF PENNSYLVANIA**  
**Department of Environmental Protection**  
For more information, visit DEP's website at  
[www.dep.state.pa.us](http://www.dep.state.pa.us), Keyword: "DEP Radiation"

**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**Bureau of Radiation Protection**

**DOCUMENT NUMBER:** 291-4100-001

**TITLE:** Compliance and Enforcement Policy

**EFFECTIVE DATE:** November 26, 2005

**AUTHORITY:** The Bureau's regulatory responsibility is authorized by the Radiation Protection Act, act of July 10, 1984 (P.L. 688, No. 147) (35 P.S. §§7110.101-7110.703); the Radon Certification Act, act of July 9, 1987 (P.L. 238, No. 43) (63 P.S. §§2001-2014); and the Low-Level Radioactive Waste Disposal Act, act of February 9, 1988 (P.L. 31, No. 12), (35 P.S. §§7130.101-7130.905).

The Radiation Protection Act applies to any person who owns, possesses, uses, disposes of, operates or maintains radioactive materials, radiation-producing machines such as x-ray machines, radon measurement devices, or performs radon mitigation, or operates a low-level radioactive waste site. The Act also provides for inspections, investigations, enforcement responsibilities, enforcement actions and civil and criminal penalties.

The Radon Certification Act provides for the certification of persons who perform radon testing, laboratory analysis and radon remediation and mitigation. The purpose of the act is to protect property owners from unqualified or unscrupulous individuals, consultants, and firms.

The Low-Level Radioactive Waste (LLRW) Disposal Act provides for the disposal of LLRW, the siting of a LLRW disposal facility, licensing of operators of the facility, and the permitting of generators, brokers and carriers for access to a regional LLRW disposal facility.

These acts authorize the Department to implement the acts and the regulations promulgated pursuant to the acts.

**POLICY:** The Bureau of Radiation Protection will follow the guidelines contained in this document for the purpose of obtaining compliance with, and enforcing, the regulations which it administers.

**PURPOSE:** The purpose of this document is to create Bureau-wide standard procedures for encouraging compliance with, and enforcing the regulations which the Bureau of Radiation Protection has the authority to administer.

**APPLICABILITY:** This policy applies to the Bureau of Radiation Protection staff involved in the implementation and enforcement of regulations administered by the Bureau. This policy is not intended to apply to individual situations for which application would not be appropriate. Decisions to deviate from

this policy may be made on a case-by-case basis at the discretion of the appropriate personnel.

**DISCLAIMER:**

The policies and procedures outlined in this guidance are intended to supplement existing requirements. Nothing in the policies or procedures shall affect regulatory requirements.

The policies and procedures herein are not an adjudication or a regulation. There is no intent on the part of DEP to give the rules in these policies that weight or deference. This document establishes the framework within which DEP will exercise its administrative discretion in the future. DEP reserves the discretion to deviate from this policy statement if circumstances warrant.

**PAGE LENGTH:**

43 pages

**LOCATION:**

Volume 4, Tab 8

**DEFINITIONS:**

Definitions for this policy can be found in the Radiation Protection Act, act of July 10, 1984 (P.L. 688, No. 147) (35 P.S. §§7110.101-7110.703); the Radon Certification Act, act of July 9, 1987 (P.L. 238, No. 43) (63 P.S. §§2001-2014); the Low-Level Radioactive Waste Disposal Act, act of February 9, 1988 (P.L. 31, No. 12), (35 P.S. §§7130.101-7130.905); and the PA Code, Title 25, Article V.

## TABLE OF CONTENTS

<u>STANDARD INFORMATION</u>	<u>PAGE</u>
Title.....	i
Authority.....	i
Policy.....	i
Purpose.....	i
Applicability.....	i
Disclaimer.....	ii
 PROCEDURES.....	 1
I. Introduction.....	1
II. Inspections.....	1
A. Legal Authority.....	1
1. Radiation Protection Act.....	1
2. Radon Certification Act.....	2
3. Low-Level Radioactive Waste Disposal Act.....	2
4. Memorandum of Understanding (MOU).....	3
B. On-site Inspections.....	3
C. Denial of Access or Hindrance of Agent or Employee of the Department during an Inspection.....	4
1. Search Warrants.....	4
2. Civil Penalties.....	5
III. Compliance Policy.....	5
A. Division of Radiation Control.....	6
B. Radon Division.....	8
C. Radioactive Waste Section.....	8
D. Nuclear Safety Section.....	9
E. Decommissioning and Environmental Surveillance Division.....	9
IV. Civil Enforcement Policy.....	9
A. Notice of Violation (NOV).....	9
1. Content of the Notice of Violation.....	10
2. Response to an NOV.....	11
3. Failure to Correct Violations.....	11
B. Legal Enforcement.....	12

V.	Criminal Actions.....	14
A.	Categories of Crimes.....	14
1.	Summary Offense .....	14
2.	Misdemeanor.....	15
3.	Felony .....	16
4.	Separate Offense for Each Day.....	16
B.	Referral to the Attorney General's Office .....	16
VI.	Complaints, Allegations and Investigations .....	16
A.	Complaints and Allegations.....	16
B.	Investigations .....	17
C.	Violator/Responsible Person Not Known.....	17
VII.	Compliance Assistance.....	17
A.	Information .....	17
B.	Informal Meetings.....	17
C.	Regulation Interpretation and Resolution .....	17
 Appendices		
A.	Commonwealth/NRC Memorandum of Understanding .....	18
B.	Civil Penalty Assessment Procedure .....	30
C.	Civil Penalty Assessment Worksheet .....	38

## **PROCEDURES:**

### **I. Introduction**

The overall goal of the Bureau of Radiation Protection (“Bureau”) is to protect the health, safety, and welfare of the citizens of the Commonwealth of Pennsylvania from unnecessary radiation exposure from radiation sources, radon, and low-level radioactive waste. Obtaining compliance of the regulated community with applicable environmental laws and regulations is the Bureau’s main tool in achieving its goal.

Historically, the Bureau has worked with the regulated community in a cooperative and constructive manner to encourage and achieve compliance. Its philosophy has always been to use formal enforcement actions only as a last resort when reasonable, good faith efforts to facilitate compliance have failed. The current philosophy of the Bureau remains one of focusing its efforts on cooperating with the regulated community to achieve compliance rather than relying on rigorous legal enforcement.

The “Compliance Policy” section of this document discusses the ways in which the Bureau attempts to obtain compliance without resorting to legal enforcement. Most of the instances of regulatory violations are resolved without formal enforcement actions. The “Civil Enforcement Policy” section of this document discusses the policy applied by the Bureau only in the relatively few cases when all reasonable attempts to work in cooperation with the violator to obtain compliance have failed.

### **II. Inspections**

#### **A. Legal Authority**

The Department’s employees and agents may conduct inspections of the records and facilities of registrants and licensees of radiation sources, persons certified to provide radon-related services, the operator of a regional LLRW disposal facility, and generators, brokers and carriers of LLRW.

##### **1. Radiation Protection Act**

Pursuant to **Section 305(a) of the Radiation Protection Act**, the Department or its duly authorized representative shall have the power to enter at all reasonable times with sufficient probable cause upon any public or private property, building, premise or place, for the purposes of determining compliance with this act, any license condition or any rule, regulation or order issued under this act. In the conduct of an investigation, the Department or its duly authorized representatives shall have the authority to conduct tests, inspections or examinations of any radiation source, or of any book, record, document or other physical evidence relating to the use of a radiation source.

When access to a site is refused, a Department representative may apply for a search warrant, pursuant to Section 305(b) of the Radiation Protection Act. It is sufficient probable cause to obtain a search warrant if the Department shows that the inspection is pursuant to a general administrative plan (for example, 25 Pa.

Code Chapter §215.12(c), discussed below); it has reason to believe that a violation of the act has occurred; or the Department has been refused access to a radiation source or a document or property related to a radiation source.

Under 25 Pa. Code Section 215.12(c), the Department or its duly authorized representatives may conduct inspections of the facilities of registrants of radiation-producing machines and licensees of radioactive material as set forth by the Department.

The Department or its duly authorized representatives may conduct additional follow-up inspections if violations of the act or regulations promulgated thereunder were noted at the time of the original inspection (25 Pa. Code Section 215.12(d)). Additional follow-up inspections may be performed if a person presents information, or circumstances arise which give the Department reason to believe that the health or safety of a person is threatened or that the act or radiological health regulations are being violated.

## **2. Radon Certification Act**

Pursuant to **Section 12 of the Radon Certification Act**, the Department is authorized to conduct radon inspections in accordance with Section 305 of the Radiation Protection Act, including the search warrant provisions of that section.

Radon inspections are subject to the inspection provisions of 25 Pa. Code Chapter 220 (relating to notices, instructions and reports to workers; inspections) and 25 Pa. Code Chapter 240 (relating to radon certification). Under Section 240.401 of the regulations, the Department and its agents and employees will:

- a. At all reasonable times, have access to and require the production of books and papers, documents and physical evidence pertinent to a matter under investigation or inspection related to radon testing, mitigation of radon contamination or radon laboratory analysis.
- b. At all reasonable times, enter a building, property, premises or place of a person who conducts radon-related activities for the purpose of making an investigation or inspection necessary to ascertain the compliance or noncompliance with the Radon Certification Act and Chapter 240.

Additional regulatory requirements for the conduct of radon certification inspections are set forth in 25 Pa. Code Section 240.401(b), (c), and (d).

## **3. Low-Level Radioactive Waste Disposal Act**

Pursuant to **Section 502(a) of the Low-Level Radioactive Waste Disposal Act**, the Department or its duly authorized representatives shall have the power to enter each and every facility at any time for the purpose of inspection and the power to enter at any time upon any public or private property, building, premises or place, for the purpose of determining compliance with this act, any permit or license

conditions or regulations or orders issued under this act. In the conduct of any investigation, the Department or its duly authorized representatives shall have the authority to conduct tests and inspections and examine any book, record, document, or other evidence related to the generation, management, transportation or disposal of low-level waste.

#### **4. Memorandum of Understanding (MOU)**

The Commonwealth reserves the right to enter into a Memorandum of Understanding with another governmental agency in order to share certain regulatory responsibilities and eliminate duplicity of effort. MOUs set forth mutually agreeable principles of cooperation in areas subject to the jurisdiction of one or both of the signing parties.

The Commonwealth and the Nuclear Regulatory Commission (NRC) entered into an MOU on November 4, 1986, allowing the development of detailed radiation safety subagreements in areas of mutual concern including transportation regulations, regulation of a low-level waste disposal site, low-level waste packaging and shipping inspections, confirmatory environmental monitoring, and emergency information exchange.

Subagreements under this MOU may provide for activities to be performed by either party under mutually acceptable guidelines and criteria which assure that the needs of both agencies are met.

A copy of the Commonwealth/NRC MOU, including the implementing procedures, is included in Appendix A.

#### **B. On-site Inspections**

The Bureau's Desk Manual defines the different types of on-site inspections - e.g. Routine/Complete Inspection, Full Compliance Evaluation, partial, follow-up, etc. - and identifies the activities/facilities where each type of inspection should be done. The vast majority of these inspections relate to radioactive materials and x-ray source users. The Desk Manual also provides Department personnel guidance on how to prepare for an inspection and how to conduct an inspection, and it defines the frequency of inspections for each activity/regulated facility that is inspected by the program. Inspectors shall be responsible for familiarizing themselves with and following the operating health and safety restrictions in place at the inspection site.

Training for all staff involved in the determination and resolution of violations is defined in the Bureau Desk Manual. This Desk Manual should be audited for effectiveness biennially.

The results of on-site inspections will follow the Department standard requiring the updating of a data system (e.g., eFACTS) for recording all violations within 10 working days of the completion of the inspection and/or the mailing of the Notice of Violation. Furthermore, the Bureau will monitor and track all Department-determined violations in a data system (e.g., eFACTS) until all of the violations are closed. If the result cannot be

determined at the time of inspection, the determination of the violation and the completion of the inspection report should be done within 14 calendar days after receiving any necessary further information, and the data system (e.g., eFACTS) should be updated as well.

The Bureau does **NOT** follow the Department standard requiring that all violations be documented in writing in an inspection report on the date of the inspection and presented to the facility before ending the inspection. Bureau procedures require supervisory review and signature of all written inspection reports.

In addition to an on-site inspection, there is an Administrative/File Review inspection. This is not an on-site inspection, but it is important for the financial sustainability of the Program. It is typically used by central office to establish an inspection type for issuance of a Notice of Violation for non-payment of licensing/registration/certification fees and associated violations. It is needed for an enforcement action to be initiated.

**C. Denial of Access or Hindrance of Agent or Employee of the Department during an Inspection**

**1. Search Warrants**

If an inspector is denied access to any building or record during an inspection, a search warrant may be obtained.

During an inspection or investigation for which a search warrant has been obtained, it is suggested strongly that additional law enforcement or Bureau staff accompany the inspector in order to conduct the required activity as quickly and safely as possible.

a. Under Section 305(b) of the Radiation Protection Act (also applicable to Radon activities), an agent or employee of the Department may apply to an issuing authority for a search warrant for the purposes of testing, inspecting, or examining any radiation source or any public or private property, building, premises, place, book, record or other physical evidence related to the use of radiation sources. A warrant shall be issued only upon a showing of probable cause. It shall be sufficient probable cause to show any the following:

- (1) The test, inspection or examination is conducted pursuant to a general administrative plan to determine compliance with this act.
- (2) The agent or employee of the Department has reason to believe that a violation of this act has occurred or may occur.
- (3) The agent or employee of the Department has been refused access to the radiation source, property, building, premises, place, book, record, document or other physical evidence relating to the use of the radiation source or the agent or employee has been prevented from conducting tests, inspections or examinations.

- b. Under Section 502(c) of the Low-level Radioactive Waste Disposal Act, an agent or employee of the Department may apply to an issuing authority for a search warrant for the purposes of testing, inspecting, or examining any radioactive material or any public or private property, building, premises, place, book, record or other evidence relating to the generation, management, transport or disposal of low-level radioactive waste. It shall be sufficient probable cause for issuance of a search warrant to show any of the following:
- (1) The test, inspection or examination is pursuant to a general administrative plan to determine compliance with this act.
  - (2) The agent, employee or inspector has reason to believe that a violation of this act has occurred or may occur.
  - (3) The agent, employee or inspector has been refused access to the low-level waste property, building, premises, place, book, record, document or other evidence related to the generation, management, transport or disposal of low-level waste, or the agent or employee has been prevented from conducting tests, inspections or examinations to determine compliance with this act.
  - (4) The host municipality or host county inspector has made a written complaint to the Department.
  - (5) A landowner has experienced radioactive contamination within three miles of the boundary of the regional facility and the landowner has notified the Department pursuant to Section 319 of the act.

The Application for Search Warrant and Affidavit may be obtained from the Director, Bureau of Investigations of the Department's Office of Chief Counsel, 9th Floor, RCSOB, Harrisburg, PA 17105-8464, 717-787-0453.

## 2. **Civil Penalties**

The recommended minimum penalty for hindrance, obstruction or delay of an agent or employee of the Department during the conduct of an inspection or investigation is \$2,500. For more information see the Bureau of Radiation Protection Civil Penalty Assessment Procedure, section VI (Appendix B) and the Civil Penalty Assessment Worksheet (Appendix C).

## **III. Compliance Policy**

**Note:** If a violation is observed that could seriously affect the health and safety of workers, the public, or contaminate the environment, the Department may issue an order immediately, without taking the usual intermediate steps, such as issuing a Summary of Inspection Findings (discussed in this part) or a Notice of Violation (discussed in Part IV below).

The Program may establish an alternate timeframe, if necessary and approved by the Regional Director and Bureau Director. All violations, and the bases for the violations, should be clearly and concisely identified on the inspection report. Alternate timeframes should be reported to the Secretary in the Weekly Report.

**A. Division of Radiation Control**

The Division of Radiation Control administers licensing and registration programs that are well established. The regulated community, which consists of the users of radiation producing machines and radioactive materials, has sufficient familiarity with the regulations as well as the technical capacity to achieve compliance without extensive education and assistance. The Bureau provides assistance and guidance on an individual basis as needed.

The compliance strategy of the Division of Radiation Control on-site inspection may be summarized as follows:

1. All fees paid and up to date.
2. Upon completion of an onsite inspection, the inspector shall offer to discuss the inspection findings with the party responsible for radiation protection and senior management. If these parties are not available, the inspector discusses the findings with other appropriate personnel. The inspector does not provide written inspection findings at the time of inspection.
3. If the inspector finds a minor violation that can be remedied readily at the time of the inspection, he gives the appropriate party an opportunity to correct it and logs it in the inspection notes, but does not cite the party for the violation unless the party has a history of violations, or circumstances indicate the violation is willful.
4. Under appropriate circumstances, the inspector may assist in the correction of a violation at the time of the inspection.
5. The inspectors attempt to establish a rapport with the regulated community and encourage members of the community to contact the Bureau for assistance in solving technical problems.
6. If an inspector finds a violation that cannot be easily remedied at the time of the inspection, a letter of non-compliance is sent to the facility. A letter of non-compliance may also contain suggestions for possible ways to correct the violation that would be acceptable to the Department. The letter lists the violations and requests that the Bureau be notified within 30 calendar days from the date of the inspection of the actions taken to correct the violations. It advises that unless the violation has been resolved within the 30-calendar-day period following inspection, or the Regional Director and Bureau Director agree that an extended timeframe for issuing the Notice of Violation is acceptable in the specific case, an NOV will be issued. Case-specific time extensions and waivers such as this should be reported to the Secretary in the Weekly Report. However,

where violations involve issues of health or safety, or past non-compliance indicates an uncooperative attitude, a Notice of Violation may be sent in place of the letter of non-compliance. NOV's that are issued for violations that were resolved within a 30-calendar-day timeframe should be approved by the Regional Director or Bureau Director, and their issuance should be reported to the Secretary in the Weekly Report. In more serious circumstances, the inspector should discuss issuance of an immediate Administrative Order with the inspector's supervisor and counsel. Whenever a time period for response is associated with compliance correspondence, the action will be reviewed by the supervisor of the individual responsible for levying the action.

7. If at any time during the course of an inspection there are conditions that present an imminent radiological threat to health or safety requiring immediate protective action, an inspector may issue a Field Order to cease and desist operations or cause other appropriate action to be taken. Where practical, the inspector shall attempt to contact his supervisor, manager or director for consultation prior to issuing the order. The inspector's supervisor will then apprise BRP regional and central office management of the action being taken.
8. A letter of non-compliance may also contain on a separate attachment any suggestions offered for consideration to enhance the radiation safety program. These suggestions are clearly identified as for informational purposes only.

The compliance strategy of the Division of Radiation Control Central Office (CO) fee related Administrative/File Review Inspection may be summarized as follows:

Ten (10) calendar days after the expiration of a registration or license a Fee Delinquent Letter (FDL) is mailed to the delinquent facility in question. The FDL requests the facility remit all unpaid fees within 10 calendar days from the date on the FDL. The FDL is equivalent to a courtesy late notice and may not immediately constitute a violation of the regulations. Payment in full of unpaid fees must be received within 10 calendar days from the date on the FDL.

If payment is not received, an NOV is mailed via USPS Certified mail 15 calendar days from the date on the FDL. The NOV demands payment in full of unpaid fees within 15 business days from the date of the NOV.

The results of administrative/file review inspections will follow the Department standard requiring the updating of a data system (e.g., eFACTS) for recording all violations within 10 working days of the completion of the inspection and the mailing of the NOV. Furthermore, the Bureau will monitor and track all Department-determined violations in a data system (e.g., eFACTS) until all of the violations are closed.

Thirty (30) days after the issuance of an NOV when full payment has not been received, CO requests regional staff to check the facility in question to verify its existence. If the facility still exists, the collection of fees is referred to the Office of Attorney General, and the data system (e.g., eFACTS) is updated.

## **B. Radon Division**

The Radon Division consists of a Certification Section and a Radon Monitoring Section.

The two general types of non-compliance that are administered or issued by the Certification Section are cases in which certified persons are not in compliance with certain conditions of certification, such as reporting requirements, and cases in which persons are engaged in radon-related activities while not certified to do so. The Certification Section sends a letter to the person advising of the nature of the violation and requesting a response within **10 calendar days for cases in which the person is engaging in radon-related activities while not certified to do so, and within 20 calendar days for other types of noncompliance.**

If the violator is not certified to perform radon-related services, the letter advises that an application for certification may be filed, and an application is enclosed.

The Radon Monitoring Section inspects radon laboratories, testers, mitigators, and mitigation systems. At the conclusion of the inspection the findings are discussed with the certified individual. However, for mitigation system inspections, the inspector is unable to discuss the findings at the time of inspection with the person who installed the system because inspections are performed at the location of the installed mitigation system, rather than the premises of the person who installed the system.

If an inspector finds a violation that cannot be easily remedied at the time of inspection, a Summary of Inspection Findings is sent to the facility. The Summary lists the violations and requests that the Bureau be notified within **20** calendar days from the date of the letter of the actions taken to correct the violations. It advises that if a satisfactory response is not received within **20** days, an NOV will be sent. However, where violations involve issues of health or safety, or past non-compliance indicates an uncooperative attitude, an NOV may be sent concurrently with the Inspection Findings. In very serious circumstances, the inspector should discuss issuance of an immediate Administrative Order with his supervisor and counsel. The Summary of Inspection Findings advises that unless the violation has been resolved within the 20-calendar-day period following notification, or the Regional Director and Bureau Director agree that an extended timeframe for issuing the NOV is acceptable in the specific case, an NOV will be issued. Case-specific time extensions and waivers such as this should be reported to the Secretary in the Weekly Report.

More information on Radon Division compliance can be found in the Pennsylvania Radon Certification Policy, document identification number 294-2309-001.

## **C. Radioactive Waste Section**

A compliance policy has not yet been developed for this program because the regional disposal facility has not yet been licensed.

**D. Nuclear Safety Section**

A compliance policy is not needed for this program because the NRC has exclusive jurisdiction for enforcing compliance with NRC license conditions and NRC regulations.

**E. Decommissioning and Environmental Surveillance Division**

The Decommissioning and Environmental Surveillance Division consists of the Decommissioning Section and the Environmental Surveillance Section.

The Decommissioning Section Compliance and Enforcement Policy parallels that of Radiation Control, and inspections are performed by Regional Office staff. There is currently only one facility in the Commonwealth that has a Pennsylvania Decommissioning License. This facility (Safety Light) is currently under an EPA waste removal order and is scheduled to be added to the National Priorities List (NPL) this year. As such, EPA will have the lead on any compliance and enforcement issues.

The Decommissioning Compliance and Enforcement Policy will support Pennsylvania activities becoming a Nuclear Regulatory Commission (NRC) Agreement State. Pennsylvania will become responsible for several complex decommissioning sites as well as many other routine license terminations and decommissioning licensees upon attaining full NRC Agreement State status.

The Bureau of Radiation Protection has incorporated NRC's regulations regarding decommissioning (10 CFR) into Pa. Code Title 25. Furthermore, it is anticipated that the NRC's Consolidated Decommissioning Guidance and Compliance and Enforcement Policy pertaining to Decommissioning will be adopted and incorporated into a Decommissioning Desk Manual that will be submitted to the NRC as part of the Agreement State approval process.

A compliance policy is not needed for the Environmental Surveillance Program as no enforcement actions are taken as result of Environmental Surveillance activities.

**IV. Civil Enforcement Policy**

Historically, the most common reason for initiating a civil enforcement action is failure of the permittee (registrant, licensee, certified person) to remit required fees.

The issuance of an NOV may be waived by the Regional Director and Bureau Director in cases where neither the regulated entity nor any person or entity legally related to the regulated entity has been issued an NOV or any enforcement action within the past three (3) years and the regulated entity is working towards correcting the current non-compliance in a timely manner. Case-specific time extensions to this standard and waivers should be reported to the Secretary in the Weekly Report.

**A. Notice of Violation (NOV)**

An NOV is a document that notifies a person of the Department's view that violations of the Department's regulations have taken place and, depending on the nature of the

violation, requests the person to advise the Department as to what action has been taken or will be taken to correct the violation. An NOV is not an order and, therefore, is not appealable.

The content of an NOV is virtually the same as that of a Summary of Findings and Letter of Non-Compliance (see "Compliance Policy", above). It is issued if the Department has received either no response or an unsatisfactory response to a Summary of Findings or other preliminary letter (such as that sent by the Certification Section of the Radon Division to a person engaged in radon activities without certification). NOVs should be issued concurrently with a Summary of Findings in cases where a serious, willful or recurrent violation has been found.

For inspections conducted under the State/NRC Memorandum of Understanding (Appendix A), an NOV will be issued by the NRC Regional Office after review of the Bureau inspection report and supporting information.

An NOV may be sent by Bureau staff without consultation with Department counsel. However, if counsel had previously been involved in the matter, or if the facts or issues of the case are appropriate for attorney review, counsel shall be consulted.

#### **1. Content of the Notice of Violation**

The NOV must be worded so that it requests rather than requires action to correct a violation. It may not contain directives such as "shall", or "must". If it contains such directives, it could be construed as an appealable order. Issuance of an order at this stage of the enforcement process may be premature; therefore, use of proper language in the NOV is important.

The NOV shall generally contain the following information:

- a. Facility identification (including specific registration number or license number);
- b. Date of the violation detection;
- c. Name of the Department inspector who detected the violation;
- d. A description of the activity which led to the detection of the violation;
- e. A description of the violation;
- f. The law, regulation, license or certification condition violated;
- g. If appropriate, a specific date by which the person is requested to report to the Department the corrective actions taken to achieve compliance with the applicable statutes and regulations.

The NOV shall not include a civil penalty assessment.

An NOV may also contain reference to possible ways to correct the violation that would be acceptable to the Department. It may also contain a separate attachment for suggestions for the improvement in the effectiveness or efficiency of the radiation protection program. These suggestions are clearly identified as recommendations as distinguished from violations. The Department does not request an acknowledgement or response concerning these recommendations.

**Division of Radiation Control:** An example of a typical NOV used by the Division of Radiation Control, Regional Liaison (Registration) Section for inspection findings and an example of a Licensing Section NOV can be found in the Bureau Desk Manual. The NOV generally requests the person to respond to the Department within 14 calendar days of the date of the NOV.

**Radon Division:** An example of a typical NOV used by the Radon Division for inspection findings can be found in the Bureau Desk Manual. The NOV generally requests the person to promptly correct the violations and to contact the Department within 10 calendar days from the date of the NOV to advise the Department of the progress in making the corrections.

An example of a typical NOV used by the Certification Section of the Radon Division when a person is engaged in radon-related activities while not certified to do so can be found in the Bureau Desk Manual.

## 2. **Response to an NOV**

When a person responds in writing to an NOV, a letter shall be sent to the violator acknowledging receipt. At that time, the Department shall indicate whether it agrees or disagrees with the response, including the proposed means and timeframes for achieving compliance. The NOV should be closed out in a data system (e.g., eFACTS) when the violations identified in the NOV have been resolved, and the violator should be notified in writing that the Department considers the violation(s) resolved.

Compliance deadlines proposed by a person in response to an NOV are not legally enforceable. In many instances, the Department may wish to make these or other deadlines enforceable by incorporating compliance obligations into a Consent Order and Agreement (i.e., a consensual order, signed by both the person and the Department).

Failure of a violator to respond in an acceptable manner to an NOV may result in the issuance of an order requiring correction of the violations. (See “Legal Enforcement” below), and/or a civil penalty assessment.

## 3. **Failure to Correct Violations**

If the violator does not correct the violations in a timely manner, the Bureau, at its discretion, may attempt to obtain compliance through informal contacts with the

violator. If it appears that the violator will not voluntarily correct the violations in a timely manner, the Bureau should consult with the Department counsel concerning appropriate enforcement steps (see "Legal Enforcement" below).

## **B. Legal Enforcement**

Section 309 of the Radiation Protection Act and Section 505 of the Low-Level Radioactive Waste Disposal Act provide the Department with powers of enforcement. Departmental orders and civil penalty assessments are the most commonly used means of enforcement. Orders and civil penalty assessments may be used independently of each other or concurrently to enforce radiation protection statutes and regulations. Civil penalty assessments may be issued regardless of whether an order has been or will be issued.

All unilateral civil penalty assessments and orders are appealable to the Environmental Hearing Board ("EHB"). At a hearing before the EHB, the Department will have the burden of proving that it was factually and legally justified in taking the action. The violator's counsel may cross-examine Department witnesses and present evidence refuting the Department's case. The EHB may affirm, modify or overrule the Department's action.

The particular strategy used in a case depends on the circumstances of that case, as well as on the discretion of the Department. For cases that require legal enforcement after issuance of an NOV, Department counsel must be consulted. Counsel will receive and approve all enforcement actions. The following is an overview of various legal enforcement strategies available.

The Bureau of Radiation Protection's Civil Penalty Assessment Procedure (Appendix B) sets forth the procedure for issuing notices of civil penalties. The procedure begins with a Notice of Proposed Civil Penalty Assessment, which includes an invitation to a conference. This process, which may also be accomplished informally via a telephone conference, is an opportunity for the parties to discuss a mutually acceptable resolution before the Department takes unilateral enforcement action. Depending on whether a conference is held and the outcome of it, either a Consent Order and Assessment of Civil Penalty Agreement or an Assessment of Civil Penalty will be issued next. In appropriate circumstances, an Assessment of Civil Penalty may be issued without the prior issuance of a proposed assessment.

Once final, an Assessment of Civil Penalty is legally enforceable as a debt, which is collectable under Pennsylvania's debt collection laws. In addition, the amount of the debt, together with interest and costs, becomes a lien in favor of the Commonwealth upon the real and personal property of the debtor when the amount of the debt is recorded by the prothonotary of the county where the property is located.

An order to correct the violation(s) may be issued. This order may be issued before, after, or concurrently with an Assessment of Civil Penalty. If the order is not complied with, a civil penalty may be assessed for failure to comply with an order (as well as for the underlying violation(s)). Under the Bureau of Radiation Protection's Civil Penalty Assessment Procedure, the recommended minimum penalty for failure to comply with

the order is \$1,000. In addition to assessing a civil penalty, the Department may petition the Commonwealth Court for a court order requiring compliance with the Department's order. Non-compliance with a court order may result in fines, imprisonment, or both for contempt of court. Where a violation of an enforceable document occurs, the Department may allow settlement negotiations to continue for 60 calendar days before petitioning a court to resolve the violation unless the Regional Director or Bureau Director recommends and the Secretary agrees that an extended timeframe for negotiations is acceptable while the violator is not complying with the terms of the enforceable document.

An order to cease and desist unlawful activities may be issued. As with an order to correct violations, this order may be issued before, after, or concurrently with an Assessment of Civil Penalty. (Under the Civil Penalty Assessment Procedure, the recommended minimum civil penalty for issuance of a cease and desist order is \$1,000.)

The Radon Division of the Bureau may issue orders of suspension of certification and decertification, pursuant to the radon certification regulations at 25 Pa. Code Sections 240.203(b) and 240.403(a), as well as orders to correct improperly installed mitigation systems, to provide the Department with records, to refrain from improper advertising, and to correct other issues of non-compliance.

Orders must contain the following:

1. Recitation of the legal authority of the Department;
2. Name and residence, and business name and address of the violator;
3. Findings of the Department;
4. Regulation(s) and statutory provision(s) violated;
5. Legal authority for issuance of order;
6. Action ordered and date by which it is to be taken;
7. Appealability statement (boilerplate).

Orders must be reviewed prior to issuance by regional counsel, signed by the Regional Program Manager or Bureau Director, and sent to the violator by certified mail, return receipt. Copies of signed orders are forwarded to the Bureau's Central Office as well as to the appropriate regional counsel.

As with Assessments of Civil Penalties, orders may be appealed to the EHB. An appeal does not suspend the violator's duty to comply with the order, unless the violator also requests and justifies issuance of a supersedeas from EHB.

Other enforcement tools authorized by the Radiation Protection Act and the Low-Level Radioactive Waste Disposal Act are the filing of a suit for an injunction; modification or revocation of registrations, licenses or permits; impounding of a radiation source or low-

level radioactive waste; and other actions by the Department as are necessary to abate a public nuisance. As with all other enforcement measures, Department counsel must be consulted on the use of these methods.

Violations that take more than 180 calendar days to resolve should be addressed in an enforceable document unless the Regional Director and Bureau Director agree that an enforceable document is not warranted in the specific case. Negotiations for the enforceable document, including the appropriate penalty assessment, should be finalized within 180 calendar days after the date that the Department notified the violator/responsible person of the violations, unless the Regional Director and Bureau Director agree that an extended time frame is acceptable in the specific case.

Violations that take less than 180 calendar days to resolve may be incorporated into an enforceable document, as appropriate. Case-specific extensions to this standard should be reported to the Secretary in the Weekly Report.

For all violations that are addressed via an enforceable document, all programs should incorporate the Department standard that the negotiations for the enforceable document, including the appropriate penalty assessment, be finalized within 180 calendar days after the date that the Department notified the violator/responsible person of the violations, unless the Regional Director, Bureau Director, or District Mining Manager agrees that an extended time frame is acceptable in the specific case. Otherwise, the Department should take the applicable enforcement action that imposes the obligations necessary to resolve the violations. Negotiations can be re-established once the violator is under an enforceable schedule. Case-specific extensions to this standard should be reported to the Secretary in the Weekly Report.

All material obligations, corrective actions, or milestones for the resolution of a violation that are contained in an enforceable document should be monitored by Department staff and tracked in a data system (default is eFACTS), and be updated within 10 working days of compliance with each material obligation, corrective action, or milestone. EFACTS should be updated within 10 working days of final compliance with the enforceable document.

## **V. Criminal Actions**

The Department may refer to the Office of Attorney General, Environmental Crimes Section, any case in which it believes that a person has committed a crime under the Radiation Protection Act, the Radon Certification Act, or the Low-Level Radioactive Waste Disposal Act. The Department may prosecute summary violations without referral, but must refer more serious violations to the Office of Attorney General.

### **A. Categories of Crimes**

#### **1. Summary Offense**

Under Section 308(a) of the Radiation Protection Act, any person, other than a municipal official exercising his official duties, who violates any provision of the Radiation Protection Act or any regulation or order issued pursuant to the act

commits a summary offense and shall, upon conviction, be sentenced to pay a fine of not less than \$100 and not more than \$1,000 for each separate offense. A person who defaults on payment of the fine shall be imprisoned for a term of not more than 30 days. All summary proceedings under this act may be brought before any district justice in the county where the offense was committed.

Under Section 14 of the Radon Certification Act, a person who violates Section 7 of the act (requiring persons who provide testing or mitigation services to disclose to the Department, within 45 days of the date the services are provided, the address or location of the building, the name of the owner of the building where services were provided, and the results of all tests performed) commits a summary offense.

Under Section 504(a) of the Low-level Radioactive Waste Disposal Act, any person who violates the act or any regulation or order issued pursuant to the act commits a summary offense and shall, upon conviction, be sentenced to pay a fine of not less than \$100 and not more than \$1,000 for each separate offense. A person who defaults on payment shall be imprisoned for a term of not more than 90 days. All summary proceedings under this act may be brought before any district justice in the county where the offense was committed.

Summary prosecutions offer some advantages over Assessment of Civil Penalties. Summaries are quick, are useful where collection of civil penalties would prove difficult, and can result in imprisonment for recalcitrant violators.

## **2. Misdemeanor**

Under Section 308(b) of the Radiation Protection Act, a person other than a municipal official exercising his official duties, who violates any provision of the act or any regulation or order issued pursuant to the act, within two years after having been convicted of any summary offense under the act, commits a misdemeanor of the third degree and shall, upon conviction, be sentenced to pay a fine of not less than \$1,000, but not more than \$25,000, for each separate offense or imprisonment in the county jail of a period of not more than one year, or both.

Under Section 14 of the Radon Certification Act, a person who violates Section 6 of the act (requiring persons who provide radon-related services to be certified), or any regulation issued pursuant to Section 6, commits a misdemeanor of the third degree. Pursuant to the Pennsylvania Crimes Code, 18 Pa. C.S.A. Section 1104, a person who has been convicted of a misdemeanor of the third degree may be sentenced to imprisonment of not more than one year.

Under Section 504(b) of the Low-Level Radioactive Waste Disposal Act, any person who violates the act or any regulation or order issued pursuant to the act, within two years after having been convicted of any summary offense under the act, commits a misdemeanor of the third degree and shall, upon conviction, be sentenced to pay a fine of not less than \$1,000 and not more than \$25,000 for each separate offense or imprisonment in the county jail for not more than one year, or both.

**3. Felony**

Under Section 308(c) of the Radiation Protection Act and Section 504(c) of the Low-Level Radioactive Waste Disposal Act, any person who intentionally, knowingly or recklessly violates any provision of the acts, or any regulation or order of the Department or any condition of a permit or license, and whose acts or omissions cause or create the possibility of a public nuisance or bodily harm to any person, commits a felony of the second degree and shall, upon conviction, be sentenced to pay a fine of not less than \$2,500, but not more than \$100,000 per day for each violation, or to a term of imprisonment of not less than one year but not more than ten years, or both.

**4. Separate Offense for Each Day**

Under Section 308(d) of the Radiation Protection Act and Section 504(d) of the Low-Level Radioactive Waste Disposal Act, each day of continued violation of any provision of these acts or any regulation or order issued pursuant to these acts or (under the Low-Level Radioactive Waste Disposal Act) any term or condition of any permit or license, shall constitute a separate offense.

**B. Referral to the Attorney General's Office**

Regional counsel's advice should be sought early in the investigative phase of a suspected criminal violation, and prior to referral. Counsel can advise on the protocol for referring cases to the Environmental Crimes Section of the Attorney General's Office, including information pertaining to referral criteria, initiating referral, content of referral package, emergency referrals, actions following referrals, and notification by the Attorney General of action taken.

**VI. Complaints, Allegations and Investigations**

**A. Complaints and Allegations**

The Radiation Protection Program follows the Department's current Complaint Response Policy and associated Complaint Tracking System. This policy is used for all types of complaints and allegations, including, but not limited to complaints and allegations from members of the public against regulated or non-regulated entities. Complaints and allegations received by regional offices are processed by a regional service representative. Complaints and allegations received by Central Office are routed to the appropriate Division Chief or the Bureau Director if the severity and urgency warrants.

Members of the public or permit holders seeking to lodge a complaint or allegation against any DEP employee should be directed to contact the Pennsylvania Office of Inspector General. Any complaints and allegations sent to the Department are referred directly to the Pennsylvania Office of Inspector General or through the DEP Deputy Secretary for Administration.

**B. Investigations**

A complaint or allegation may lead to an investigation. Investigations are lead by management or supervisory personnel and are performed on a case-by-case basis. Historically investigations usually involve an unidentified radioactive source in an uncontrolled environment or a medical reportable event. In such cases, the Program, in conjunction with counsel, will conduct an extensive investigation into and a search for potentially responsible parties (PRP) for custody of the sources. Cases of *medical reportable events for radiation-producing machine therapy* are somewhat less involved and are investigated primarily by Program staff.

To clarify, inspections are generally routine and do not involve a complaint or allegation. There are inspections that are of non-routine nature resulting from an event or incident (i.e., NRC Augmented Inspection Team inspections, etc.). An investigation is initiated by a complaint, allegation or an incident. Furthermore, an investigation usually involves an inspection.

**C. Violator/Responsible Person Not Known**

Historically, the Program has investigated very few incidents where the violator or responsible person is not known. In cases where this does occur, the Program will assist in locating an acceptable disposal facility if radioactive material is involved.

**VII. Compliance Assistance**

**A. Information**

The Radiation Protection Program will from time to time distribute via its website and mailings information relevant to the regulated community.

**B. Informal Meetings**

The program will, as necessary, hold meetings where the regulated community can discuss regulations with key program personnel.

**C. Regulation Interpretation and Resolution**

In cases where a regulated entity or the regulated community as a whole raises an issue, in writing, involving interpretation of Radiation Protection regulations, the Program will hold an informal and internal panel of resolution. The opinion of this panel will be disseminated as prescribed in subsection A, above.

Approved for the Department:

Director  
Bureau of Radiation Protection

Appendix A



Commonwealth of Pennsylvania  
Office of the Governor  
Harrisburg

The Governor

November 4, 1986

Nunzio J. Palladino, Chairman  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Chairman Palladino:

As requested, enclosed please find three signed copies of the Memorandum of Understanding between the Commonwealth of Pennsylvania and the U.S. Nuclear Regulatory Commission regarding methods of cooperation in areas of mutual interest involving nuclear safety. On behalf of Pennsylvania I would like to thank you for this opportunity.

Sincerely,

Dick Thornburgh  
Governor

bcc: Honorable Nicholas DeBenedictis  
Barry Hartman, Esquire  
Harold Miller

**MEMORANDUM OF UNDERSTANDING  
BETWEEN THE  
COMMONWEALTH OF PENNSYLVANIA  
AND THE  
U.S. NUCLEAR REGULATORY COMMISSION**

This Memorandum of Understanding between the Commonwealth of Pennsylvania (hereafter "Commonwealth") and the U.S. Nuclear Regulatory Commission (hereafter "NRC") expresses the desire of the parties to cooperate in the regulation of nuclear activities; it sets forth mutually agreeable principles of cooperation between the Commonwealth and NRC in areas subject to the jurisdiction of the Commonwealth or the NRC or both. This Memorandum is intended to provide the basis of subsequent detailed subagreements between the parties.

Close cooperation between the signatories will help assure that the goals and policies of the Commonwealth and Federal law will be carried out efficiently and expeditiously without diminishing the responsibilities or authorities of either party.

With the execution of the Memorandum, the Commonwealth and NRC agree to consult regularly and to cooperate in exploring and devising appropriate procedures to minimize duplication of effort to the extent permitted by Commonwealth and Federal law, to avoid delays in decision making, and to ensure the exchange of information that is needed to make the most effective use of the resources of the Commonwealth and the NRC in order to accomplish the purpose of both parties.

**Principles of Cooperation**

1. Toward these goals, the State and NRC agree to explore together the development of detailed subagreements in areas of mutual concern including, but not necessarily limited to, transportation regulation, at a low-level waste disposal site, low-level waste packaging and shipping inspections, confirmatory environmental monitoring and emergency information exchange.
2. Subagreements under this Memorandum may provide for activities to be performed by either party under mutually acceptable guidelines and criteria which assure that the needs of both are met. For activities performed by one party at the request of the other party under specific subagreements to this Memorandum, either party may explore means by which compensation can be made available to the other party or by which the costs may be shared by the parties.
3. NRC agrees to explore with the Commonwealth the possibility of sharing with the Commonwealth proprietary and other information in NRC's possession that is exempt from mandatory public disclosure.
4. Nothing in this Memorandum is intended to restrict or extend the constitutional or statutory authority of either NRC or the Commonwealth or to affect or vary the terms of a future agreement between the Commonwealth and the NRC under Section 274b. of the Atomic Energy Act of 1954, as amended.
5. The principal NRC contact under this Memorandum shall be the Director of the Office of State Programs. The principal Commonwealth contact shall be the Director of the Pennsylvania Bureau of Radiation Protection or his or her designee. Subagreements will name appropriate individuals, agencies or offices as contacts.

6. This Memorandum shall take effect upon signing by the Governor of the Commonwealth of Pennsylvania and the Chairman of the Nuclear Regulatory Commission, and may be terminated by either party upon 30 days written notice.

FOR THE COMMONWEALTH OF PENNSYLVANIA

---

Dick Thornburgh  
Governor

Dated at Harrisburg, Pa.  
This 4th day of November, 1986

FOR THE UNITED STATES NUCLEAR REGULATORY COMMISSION

---

Nunzio J. Palladino  
Chairman

Dated at Washington, D.C.  
This 7th day of November, 1986

**SUBAGREEMENT 1  
PERTAINING TO LOW-LEVEL RADIOACTIVE WASTE PACKAGE AND  
TRANSPORTATION INSPECTIONS  
BETWEEN THE  
COMMONWEALTH OF PENNSYLVANIA  
AND THE  
U.S. NUCLEAR REGULATORY COMMISSION**

This Subagreement is entered into under the provisions of the Memorandum of Understanding between the Commonwealth of Pennsylvania and the United States Nuclear Regulatory Commission effective November 4, 1986.

The Commonwealth of Pennsylvania, in fulfilling its obligations under the Low-Level Radioactive Waste Policy Amendments Act of 1985 contemplates that it will make periodic inspections of the areas of low-level radioactive waste packages and transport activities of generators located within its borders if shipments of such waste are destined for disposal at a low-level radioactive waste disposal facility.

The United States Nuclear Regulatory Commission (NRC or Commission) has the statutory responsibility to inspect its licensees to determine compliance with NRC requirements, including requirements pertaining to the shipment, packaging and transportation of low-level radioactive waste destined for disposal. In the exercise of this responsibility, the Commission regularly conducts a review of the waste packaging and transportation programs of its licensees including the licensees' procedures for quality assurance, packaging, marking, labeling and loading of vehicles. These program reviews usually have been found adequate to ensure licensee compliance with the Commission's regulations regarding low-level radioactive waste packaging and transportation without the need for Commission inspection of each individual shipment.

Under Section 274(i) of the Atomic Energy Act of 1954, as amended, the Commission in carrying out its licensing and regulatory responsibilities under the Act is authorized to enter into a Memorandum of Understanding (agreement) with any State to perform inspections or other functions on a cooperative basis as the Commission deems appropriate. While the Commission does not conduct on-site inspections of every low-level radioactive waste shipment of its licensees, it desires to foster the goals of the Low-Level Radioactive Waste Policy Amendments Act of 1985, the Commonwealth of Pennsylvania, and the Appalachian Compact.

Accordingly, this Subagreement between the Commonwealth of Pennsylvania and the NRC establishes mutually agreeable procedures whereby the Commonwealth may perform inspection functions for and on behalf of the Commission at certain NRC reactor and materials licensees' facilities which generate low-level radioactive waste.

It is hereby agreed between the Commission and the Commonwealth as follows:

1. The Commission hereby authorizes the Commonwealth to perform, for an on behalf of the Commission, the following functions with respect to low-level radioactive waste, as defined in Section 2(g) of the Low-Level Radioactive Waste Policy Amendments Act of 1985, in the possession of Commission licensees located within the Commonwealth.

- (a) Inspections to determine compliance with the Commission's rules and regulations regarding waste packages and transportation of low-level radioactive waste destined for disposal at a commercial low-level radioactive waste disposal site; and
- (b) Notification of Commission licensees and the Commission in writing of any findings disclosed by such inspections. All enforcement actions (such as Notices of Violations, Civil Penalties or Orders) pursuant to this Subagreement resulting from such inspection findings will be undertaken by the Commission.

The Commission agrees to utilize personnel knowledgeable in radiation safety, waste packaging requirements, and packaging and transportation regulations. The Commonwealth agrees to perform its functions under this Subagreement at no cost or expense to the NRC. NRC may provide training to employees of the Commonwealth at no expense to the Commonwealth (except travel and per diem). The Commission does not normally evaluate the Commonwealth's ability to perform such functions; however, prior to Commonwealth qualification of inspectors, Commonwealth management, accompanied by an NRC representative, will assess its inspectors preparedness to conduct independent inspections.

- 2. The authority to inspect NRC licensees pursuant to the preceding paragraph is limited to the licensee's low-level waste packages and low-level transportation activities. Specifically, this authority is limited to:
  - (a) Review, for understanding, the licensee's written procedures;
  - (b) Inspection of the licensee's written records; and
  - (c) Inspection of completed packages and transportation activities.

The authority does not include assessment of the adequacy of the licensee's written procedures, plant equipment, quality control programs, training programs or staffing. Specific implementing procedures are attached hereto which may be modified, as required.

- 3. In taking any action authorized hereunder, the Commonwealth shall not undertake to amend or revoke Commission licenses. This Subagreement, however, shall not be construed to preclude the Commonwealth from exercising any authority lawfully available to it under its own laws.
- 4. Efforts will be made by both parties to avoid duplicative enforcement action against an NRC licensee for the same inspection finding. However, this is not meant to preclude appropriate complementary actions for the same inspection findings such as termination of a user permit by the Commonwealth and NRC enforcement action.
- 5. Nothing herein shall be deemed to authorize the Commonwealth to inspect or otherwise enter the premises of any licensee of the Commission which is a Federal instrumentality without the prior consent of the licensee.
- 6. Nothing herein shall be deemed to preclude or affect in any manner the authority of the Commission to perform any or all of the functions described herein.

7. Nothing herein is intended to restrict or expand the statutory authority of NRC or the Commonwealth or to affect or vary the terms of any agreement in effect under the authority of Section 274(b) of the Atomic Energy Act of 1954, as amended.
8. Nothing herein shall be deemed to permit the Commonwealth to impose packaging or transport standards beyond those continued in Federal regulations.
9. The principal NRC contacts under this Subagreement shall be the Emergency Preparedness and Radiological Protection Branch Chief for reactor licensees and the Nuclear Materials Safety and Safeguards Branch Chief or materials licensees, both of whom are located in the Division of Radiation Safety and Safeguards, Region I, NRC. The principal Commonwealth contact shall be the Chief, Division of Nuclear Safety, Pennsylvania Bureau of Radiation Protection.
10. This Subagreement shall become effective upon signing by the Secretary, Department of Environmental Resources, Commonwealth of Pennsylvania, and the Regional Administrator, Region I, Nuclear Regulatory Commission and shall remain in effect permanently unless terminated by either party on thirty days prior written notice.

Dated this 17th day of August 1987 at King of Prussia, PA.

FOR THE NUCLEAR REGULATORY COMMISSION

\_\_\_\_\_  
Regional Administrator

FOR THE COMMONWEALTH OF PENNSYLVANIA

\_\_\_\_\_  
Secretary, Department of Environmental Resources

Dated: September 11, 1987

**IMPLEMENTING PROCEDURES-SUBAGREEMENT I  
PERTAINING TO LOW-LEVEL RADIOACTIVE WASTE PACKAGE  
AND TRANSPORTATION INSPECTIONS  
BETWEEN THE COMMONWEALTH OF PENNSYLVANIA AND THE NRC**

**I. TRAINING**

**A. Pennsylvania staff attendance at NRC Sponsored Courses**

1. Pennsylvania staff may attend NRC sponsored training courses when mutually agreed upon by Pennsylvania and NRC.
2. Attendance at any particular course will be scheduled on a space available basis.
3. Staff applying for attendance must fulfill any necessary course prerequisites.
4. Attendance will normally be limited to 1-2 individuals at any one particular course.
5. Pennsylvania will pay any transportation and per diem expenses except for courses offered in connection with the Agreement State Program where NRC pays for travel and per diem of State personnel selected to attend.

**B. On-the-Job Training**

1. On-the-job training will be provided to the Pennsylvania staff in the conduct of inspections to determine compliance with the requirements in 10 CFR Parts 20, 61 and 71.
2. The training accompaniments will normally be limited to NRC licensees located in the Commonwealth of Pennsylvania.
3. The training accompaniments will follow the protocol set out in Mr. Haynes' November 5, 1982 letter to Mr. Gerusky. Under the protocol, the activities of the individual accompanying the NRC inspector will be limited to observation and familiarization with plant activities and the NRC inspection process. The NRC inspector will be responsible for initiating action to correct any program deficiencies identified during the inspection through NRC's normal inspection and enforcement process.
4. Commonwealth of Pennsylvania staff accompanying the NRC inspector will normally be limited to two persons - the senior staff member responsible for the program and the cognizant inspector for the plant being inspected.
5. Emphasis will be placed on training two senior Pennsylvania staff who can learn this area quickly and who, in turn, can begin to train other Pennsylvania staff.

6. The training may also involve pre-inspection planning at the Regional Office or in the NRC resident inspection office prior to the inspection. The Commonwealth inspection staff is expected to have reviewed prior inspection reports, inspection findings and enforcement actions for the facility being inspected. It is also expected that the Commonwealth inspectors are thoroughly knowledgeable of the NRC inspection procedures and reference material cited in those procedures. These are important parts of preparing for the inspection.
7. The training accompaniments will be provided by a Region based inspector who routinely inspects waste packaging and transportation activities, not the resident inspector or TMI-2 inspection staff.
8. The contact for the training accompaniment inspections at reactors will be the Chief, Emergency Preparedness and Radiological Protection Branch, Division of Radiation Safety and Safeguards. The similar contact for materials inspections will be the Chief, Nuclear Materials Safety and Safeguards Branch, Division of Radiation Safety and Safeguards. If either of the above are not available the contact will be the Regional State Liaison Officer.

C. Initiation of Independent Inspections by Pennsylvania Staff

1. The Commonwealth will ensure that its inspectors are qualified in accordance with NRC inspection and Enforcement Manual Chapter 1245, or its equivalent, and will keep NRC informed of the Commonwealth inspectors that have been so qualified and certified. Prior to Commonwealth qualification of inspectors, Commonwealth management, accompanied by an NRC representative, will assess the performance of its inspectors during an inspection to determine their preparedness to conduct independent inspections. Following the accompaniment, the NRC representative will provide a critique to the inspector and his supervisor. Periodically, Commonwealth management will accompany its inspectors during the performance of inspections to verify the inspector's continued effectiveness. Finally, NRC will inform Commonwealth management of problems identified during the NRC review of Commonwealth inspection findings for appropriate corrective action.
2. Commonwealth inspectors may periodically accompany NRC inspectors during NRC's programmatic waste package and transportation inspections to maintain familiarity with a licensee's program and NRC inspection requirements. The Commonwealth and NRC may also meet periodically to exchange information and discuss changes in procedures. Commonwealth inspectors may also contact the region based and resident inspectors prior to or during the Commonwealth's independent inspection at the site.
3. Arrangements to gain access to any licensee's facility are a responsibility of the Commonwealth. Specially, individuals planning to conduct inspections at reactor facilities should meet all licensee requirements for site access.

II. PROCEDURES TO BE FOLLOWED BY PENNSYLVANIA FOR INSPECTIONS  
CONDUCTED UNDER THE SUBAGREEMENT

A. Pennsylvania will perform the following inspection activities relating to 10 CFR 71:

1. Examine the licensee's written waste shipment records. As the situation allows, observe completed packages so as to:
  - a. Verify that the licensee has marked the package with the applicable general and specific package markings which are required (49 CFR 172.300 through 310).

Verify that for NRC-certified packages, or DOT-revalidated packages of foreign origin, the outside of the package is durably and legibly marked with the package identification marking indicated in the COC or the DOT Competent Authority Certificate.
  - b. Verify that for non-exempted packages, the licensee provides for and accomplishes labeling of each package with the appropriate category of RADIOACTIVE (White-I, Yellow-II, or Yellow-III) label, one each on two opposite sides of the package; and accurately completes the entry of the required information in the blank spaces thereon (49 CFR 172, Subpart E).
  - c. Verify that the licensee provides for and accomplishes monitoring of each completed package to assure that external radiation and removable surface contamination are within the allowable limits [49 CFR 173.475(i), 49 CFR 173.411, 49 CFR 173.433, and 10 CFR 71.87(i) and (j)].
2. Examine the licensee's written waste shipment records. As the situation allows, observe actual transport operations so as to:
  - a. Verify whether the licensee prepared the required shipping paper documentation, so as to accurately include all of the applicable required elements of information, including the shipper's certificate. [NOTE: for licensee private motor vehicle shipments, the certificate is not required (49 CFR 172, Subpart C).]
  - b. For non-exclusive use shipments, verify that the licensee provides to a highway carrier or applies directly to a rail vehicle, the required placards whenever he delivers any quantity of RADIOACTIVE-Yellow-III labeled packages to such carrier for transport (49 CFR 172.506 and 508).
  - c. For exclusive use shipments, verify that the licensee assures that the package and vehicle radiation/contamination levels are within the regulatory limits [49 CFR 173.475(i) and 10 CFR 71.897(i) and (j)].

Verify that except for uranium or thorium ores, the transport vehicle is placarded by the licensee when delivering to a carrier any exclusive-use

shipment for which placarding is required [49 CFR 172, Subpart F, and 49 CFR 173.425(b)(7)].

For exclusive use shipments, verify that shipping paper documentation provided by the licensee to the carrier contains satisfactory instructions for maintenance of exclusive-use shipment controls [49 CFR 173.411(c) and 49 CFR 173.425(b)(9)].

Verify that for exclusive-use shipments of low-specific activity materials, the licensee has provided for the additional specific requirements [49 CFR 173.425(b)(1) through (9)].

- d. Verify that the licensee provides for notification to the consignee before shipment: the dates of shipment and expected arrival, any special loading/unloading or operating instructions whenever any non-exempt fissile material and/or packages containing "highway route controlled quantities" are involved [49 CFR 173.22(b) and 10 CFR 71.89].
- e. Verify that the licensee provides for advance notification to the Governor of a State, or his designee, or any shipment or radioactive waste requiring Type B packaging through, to, or across a state boundary (10 CFR 71.97). [NOTE: This requirement is not the same as that required for safeguards purposes pursuant to 10 CFR 73.72.]

3. Review the licensee's records and reports to verify that a system is in place to:

- a. Maintain on file for two years after shipment a record of each shipment of licensed material (which is not exempt there from) and that such records contain the required information [10 CFR 71.87 and 10 CFR 71.91(a)].
- b. Reports to the director, NMSS, within 30 days, any instances where there has been a significant reduction in the effectiveness of any packaging during its use; providing additionally the details of any defects of safety significance to the packaging after first use and the means employed to repair such defects to prevent their recurrence (10 CFR 71.95).
- c. Immediately report to DOT, when transporting licensed material as a private carrier, any incident that occurs in which as a direct result of the radioactive material; any person is killed; receives injuries requiring hospitalization; property damage exceeds \$59,000; or fire, breakage, spillage, or suspected radioactive contamination occurs (49 CFR 171.15 and 49 CFR 171.16).

B. Pennsylvania will perform the following inspection activities relating to 10 CFR Parts 20 and 61:

- 1. Review the licensee's record and, as the situation allows, observe actual packages and transport activities to verify that each shipment of radioactive waste intended for off-site disposal to a broker or a licensed land disposal facility is accompanied

by a shipment manifest which includes all of the required information [10 CFR 20.311(b) and (c)].

2. Review the licensee's documentation and records to determine whether procedures have been established and are being maintained to properly classify all low-level wastes according to 10 CFR 61.55.
  3. Review the licensee's documentation and records to determine whether procedures have been established and are being maintained, to properly characterize low-level waste in conformance with the requirements of 10 CFR 61.56.
  4. Review the licensee's records and as the situation allows, observe actual packages and transport activities to verify that each package of low-level waste intended for shipment to a licensed land disposal facility is labeled, as appropriate, to identify it as Class A, B, or C waste in accordance with the classification criteria of 10 CFR 61.55 [10 CFR 20.311(d)(2)].
  5. Review the licensee's records and, as the situation allows, observe actual packages and transport activities to verify that the licensee has forwarded to receptionist or delivered to waste collectors at the time of shipment a copy of the waste manifest. Verify that acknowledgement of receipt of the manifest is obtained. Verify that the licensee has a procedure in place to effect an investigation in any instances wherein acknowledgement of receipt of the shipment has not been received within the specified period. Verify that procedures are in place to report such investigations to the appropriate NRC Regional Office and file the required written report [10 CFR 20.311(d), (3), (f) and (h)].
  6. Review the licensee's records to verify that the applicable disposal site license conditions are being met. Verify that the licensee has on file a current version of the disposal site license.
- C. Inspections performed by the Commonwealth for and on behalf of the Commission are not to include those elements of NRC inspection procedures dealing with evaluation of the licensee's written procedures, equipment quality control, programs, training or staffing.

### III. DOCUMENTATION OF INSPECTION FINDINGS

Following each inspection, the Commonwealth will document the areas covered and findings of the inspection in an inspection report using guidance set out in NRC Inspection and Enforcement Manual Chapters 0610 and 0611. Following Commonwealth management approval, the report will be sent to the NRC contact listed in Section 9 of the Subagreement with a copy to the licensee. The Commonwealth will complete and forward the inspection report to the NRC within 30 days of completion of the inspection. Following appropriate NRC review, the report will be placed in the Public Document Room and a request sent to the licensee by the NRC for proper corrective action if deemed necessary. For those inspections performed by the Commonwealth which result in deficiencies in compliance with NRC regulations, the

Commonwealth shall identify the deficiencies in the cover letter transmitting the report, and specify that any enforcement action is a responsibility of the NRC. In addition, when any findings which would become a violation once the shipment departs the plant gate are identified, such findings should be furnished to the licensee and the NRC Resident Inspector before the shipment departs the licensee's site. It is the Commission's sole discretion as to whether the licensee will be requested or required to take corrective action or to respond to discrepancies in compliance with NRC regulations as a result of findings from these inspections. Commonwealth inspectors will provide support to NRC during any hearings and other meetings relating to their inspections, as required.

#### IV. CHANGES TO IMPLEMENTING PROCEDURES

These implementing procedures may be changed by mutual written agreement between the Director, Division of Radiation Safety and Safeguards, NRC, and the Chief, Division of Nuclear Safety, Commonwealth of Pennsylvania.

FOR THE NUCLEAR REGULATORY COMMISSION

\_\_\_\_\_  
Division of Radiation Safety and Safeguards

Dated: August 17, 1987

FOR THE COMMONWEALTH OF PENNSYLVANIA

\_\_\_\_\_  
Division of Nuclear Safety

Dated: September 16, 1987

## Appendix B

### BUREAU OF RADIATION PROTECTION CIVIL PENALTY ASSESSMENT PROCEDURE

#### I. INTRODUCTION/BACKGROUND

The Bureau of Radiation Protection (“BRP”) must ensure compliance with radiation protection statutes, regulations and licenses promulgated thereunder in order to protect the public health and safety as well as the natural environment from potential hazards which may result from the use of radiation sources or radioactive materials or the disposal of low-level radioactive waste.

Section §308(e) of the Radiation Protection Act authorizes the Department of Environmental Protection (“Department”) to assess a civil penalty for a violation of the act, a regulation, a license or an order of the Department. The civil penalty shall not exceed \$25,000 plus \$5,000 for each day of continued violation. 35 P.S. §7110.308(e).

Under §504(e) of the Low-Level Radioactive Waste Disposal Act, the Department is authorized to assess a civil penalty for a violation of the act, a regulation or an order of the Department. The civil penalty shall not exceed \$25,000 for each violation. 35 P.S. §7130.504(e). Each day of continued violation shall constitute a separate offense. 35 P.S. §7130.504(d).

When assessing a civil penalty, the Department will consider factors including, but not limited to, the willfulness of the violation, gravity of the violation, good faith of the person charged, previous violation history, danger to public health and welfare, damage to the air, water, land or other natural resources of the Commonwealth. The Department will also consider the cost of restoration or abatement and savings resultant to the violator, deterrence of future misconduct by the same violator or other similarly situated persons, and any other relevant facts. 35 P.S. §§7110.308(e) and 7130.504(e)(2).

The person charged with a violation and assessed a civil penalty will have thirty (30) days to pay the assessed penalty in full or, if the person desires to contest either the amount of the penalty or the fact of violation, an appeal of the departmental action must be filed with the Environmental Hearing Board (“EHB”) within thirty (30) days of receipt of the final civil penalty assessment. Failure to appeal the Departmental action to the EHB within the 30-day appeal period will result in a waiver of all rights to contest the violation or the amount of the civil penalty. 35 P.S. §§7110.308(e) and 7130.504(e)(3). Civil Penalties collected by the Department, whether by unilateral assessment or consent assessment, are deposited in the Radiation Protection Fund, for the Department’s use in carrying out its powers and duties under the Radiation Protection Act.

This civil penalty assessment procedure is designed to encourage compliance with departmental statutes, regulations, licenses and orders and to protect the public health and safety through the assessment of civil penalties in a consistent manner. *However, this civil penalty assessment procedure is a statement of policy and is not a regulation.* The Department reserves the right to deviate from this policy when circumstances warrant based on the department’s administrative discretion.

## II. PURPOSE

The purpose of this document is to establish a BRP policy and procedure for the assessment of civil penalties for violations of applicable statutes, regulations, licenses and orders issued thereunder. This document is limited to describing the procedure for the assessment of civil penalties.

## III. STATUTORY AUTHORITY

The Department of Environmental Protection, Bureau of Radiation Protection derives enforcement authority from the Radiation Protection Act, act of July 10, 1984 (P.L. 688, No. 147) (35 P.S. §§7110.101-7110.703); the Radon Certification Act, act of July 9, 1987 (P.L. 238, No. 43) (63 P.S. §§2001-2014); and the Low Level Radioactive Waste Disposal Act, act of February 9, 1988 (P.L. 31, No. 12) (35 P.S. §§7130.101-7130.905).

## IV. GUIDANCE FOR DETERMINING THE SEVERITY OF A VIOLATION

Whenever a civil penalty is assessed, the following review criteria will be considered when establishing the severity of a violation. However, violations not enumerated in the following categories will be evaluated pursuant to Section 308(e) of the Radiation Protection Act, 35 P.S. §7110.308(e), and where applicable, Section 504(e) of the Low-Level Radioactive Waste Disposal Act, 35 P.S. §7130.504(e).

### A. Level I Violation

A Level I Violation is an act or omission contrary to applicable statutes, regulations, terms of license, registration, order, exemption or variance which result in an **actual exposure** of a person to radiation, or radioactive contamination of the environment. Examples of Level I violations will include, but not be limited to:

1. Violations resulting in serious physical injury, illness or death.
2. Violations resulting in exposure to patients, occupationally-exposed individuals, or members of the general public.
3. Violations resulting in damage to, destruction of or radioactive contamination of property or the environment.
4. Failure to comply with immediate notification requirements prescribed in 10 CFR 20.2201(a)(i) and 10 CFR 20.2202(a) incorporated by reference.
5. Violations resulting from the failure to report to the Department a stolen, lost or missing radiation producing machine immediately as specified in 25 Pa. Code §219.221(1).
6. Violations which cause injury to the general public.
7. Failure to comply with radiation dose limits set forth in 25 Pa. Code §219.5 (Incorporation by Reference) and 10 CFR Part 20, subpart C and D.

8. Failure to comply with the requirements for reporting medical events set forth in 25 Pa. Code §219.228 and 10 CFR 35.3045 incorporated by reference.
9. Violations which result in the radioactive contamination of the waters of the Commonwealth.

**B. Level II Violation**

A Level II Violation is an act or omission, contrary to applicable statutes or regulations, or terms of a license, registration, order or exemption that has the **potential to result in exposure** to radiation or radioactive contamination of the environment, or which impairs the Department's ability to administer the Radiation Protection program. Examples of Level II violations will include, but not be limited to:

1. Failure to comply with twenty-four (24) hour notification requirements prescribed in 10 CFR 20.2202(b) (relating to notification of incidents) incorporated by reference.
2. Failure to obtain a license for radioactive material or to register radiation sources as required under applicable statutes and regulations.
3. Failure to comply with licensing or registration requirements, including notice of acquisition, transfer, installation or disposal, set forth in 25 Pa. Code.
4. Violations which may result in the release of radioactive materials with the subsequent contamination of property or the environment.
5. Violations which may result in radioactive contamination of the waters of the Commonwealth.
6. Failure to permit access to an authorized representative of the Department to perform an inspection or investigation.
7. Failure to comply with radon certification requirements under the Radon Certification Act, or 25 Pa. Code Chapter 240 (relating to radon certification).
8. Failure to survey analytical x-ray machines following repair or repositioning of components as required under 25 Pa. Code §227.12a(d).

**C. Level III Violation**

A Level III Violation is an act or omission, contrary to applicable statutes, regulations, or terms of a license, registration, or exemption or Departmental orders which include violations that are **administrative or clerical in nature and do not** result in actual or potential radiation exposure, radioactive contamination of the environment, or pose a threat to public health and safety. Examples of Level III violations will include, but not be limited to:

1. Violations which do not result in any actual or potential radiation exposure to an individual, the environment or radioactive contamination of the environment.
2. Violations in which records and reports, other than notifications or documentation referred to in Section B3, above, were not on file or otherwise available for inspection, or which were not filed with the Department, or were not furnished to employees.
3. Violations in which instructions or regulations were not provided to appropriate personnel, or licenses, notices or records were not posted in accordance with applicable regulations.
4. Violations for failure of a person to pay annual registration or license fees as required under 25 Pa. Code Chapter 218.
5. Violations resulting from the failure to make a written follow up report to the Department regarding the theft or loss of a radiation source within thirty (30) days of the immediate telephone report as specified in 25 Pa. Code §219.221(2).

#### V. GUIDANCE FOR DETERMINING THE CULPABILITY OF A VIOLATOR

In determining the violator's culpability, the Department will consider whether the violations resulted from willful, reckless or negligent acts or omissions. The Department will also consider circumstances in which violations are accidental in nature. For purposes of determining the violator's culpability, the following definitions apply:

"Accidental Violation" - A violation resulting from factors beyond the control of the violator and, therefore, could not reasonably have been prevented.

"Negligent Violation" - A violation resulting from failure to identify, recognize, correct, or prevent a condition due to indifference, lack of reasonable care, or due diligence.

"Reckless Violation" - A violation resulting from the disregard of an obvious risk, the existence, nature and possible consequence of which are known or of which prior warning had been given.

"Willful Violation" - A deliberate act or omission with prior knowledge that the act, or omission constituted a violation of applicable environmental statutes, regulations, or departmental orders. Evidence of withholding or falsification of information will be considered examples of willful acts of the violator.

#### VI. PROCEDURES FOR THE ASSESSMENT AND CALCULATION OF CIVIL PENALTIES

A. The BRP will review each violation of applicable statutes, regulations, or departmental orders to determine whether assessment of a civil penalty is warranted. The Department will consider severity of the violation and culpability of the violator when assessing a civil penalty. The following types of violations will generally result in the mandatory assessment of a civil penalty:

1. Issuance of a cease and desist order - (recommended minimum penalty: \$1,000).

2. Failure to pay applicable fees - (recommended minimum penalty: 3 times the unpaid fee).
3. Failure to comply with other Departmental orders - (recommended minimum penalty: \$1000).
4. Hindrance, obstruction or delay of an agent or employee of the Department during the conduct of an inspection or investigation - (recommended minimum penalty: \$2,500).

B. The following procedure will be used to calculate the dollar amount of the civil penalty:

- Step 1.** Calculation of the dollar amount of the proposed civil penalty requires classification of the severity of the violation as Level I, Level II, or Level III, and determining the degree of culpability of the violator.
- Step 2.** The matrix cell correlating to the violation classification (i.e., Level I, negligent), is located and the dollar amount is recorded in the Base Assessment section of the Civil Penalty Assessment Worksheet.
- Step 3.** The Department will consider the good faith efforts of the violator to correct the violations. The base civil penalty assessment may be adjusted by up to fifty percent (50%) based on the violator's demonstration of good faith in complying with statutory or regulatory requirements. There will be no good faith adjustment for willful or reckless violations.

The Department may consider the speed in which a violation is corrected as an indication of good faith in correcting the violation. Good faith can also be manifested by the violator's prompt self-reporting of noncompliance. (See: Policy to Encourage Voluntary Compliance by Means of Environmental Compliance Audits and Implementation of Compliance Management Systems, No. 012-0840-001, for circumstances in which voluntary self-reporting may obviate all civil penalties for a violation.) However, when self-reporting of the violation is required by law, or where the violator demonstrates a lack of good faith in taking corrective action, the Department will not consider a reduction in the proposed assessment.

An adjustment to the base assessment based upon a violator's demonstration of good faith is recorded in the *Good Faith Adjustment Section* of the Civil Penalty Assessment Worksheet.

- Step 4.** Cost to the Commonwealth will be determined on a separate ledger, summed and recorded in the *Cost to The Commonwealth* section of the worksheet. The computation of such costs may include, but are not limited to, wages or salaries, benefits, transportation cost, meals and lodging, laboratory costs, and legal costs.

- Step 5.** The economic benefit to the violator for failure to comply with applicable statutes, regulations or departmental orders will be determined and recorded in the Savings to The Violator section of the worksheet. In determining the savings to the violator, the Department will consider benefits derived from avoided or delayed costs within the statutory maximum dollar amount (\$25,000). A penalty may be increased in an amount equal to the savings to the violator.
- Step 6.** The cost necessary for the abatement of an acute problem or long term environmental restoration will be determined and recorded in the *Restoration/Abatement* section of the worksheet. Estimates for the cost of restoration or abatement will be accomplished through the use of a competitive procurement process when feasible.
- Step 7.** The Department will consider the violator's compliance history when determining the total dollar amount of the assessed Civil Penalty. History of the violator will be reviewed of a period of up to ten (10) years. For each violation occurring during the previous ten (10) year period, the base penalty may be increased by an amount deemed appropriate to deter further violations. For purpose of reviewing compliance history, evaluation of previous violations will include any order, consent decree, agreement, Notice of Violation, Summary of Inspection Findings, civil penalty assessment, criminal convictions or adjudicated proceeding.
- Step 8.** All factors will be determined and recorded in the *Total Assessment* section of the worksheet.
- Step 9.** The worksheet with attached cost justification, will be forwarded to appropriate legal counsel for review.

## VII. NOTIFICATION AND APPEAL

Upon a determination that assessment of a civil penalty is warranted, the following procedures will be utilized:

- A. The Department may serve upon the violator a Notice of Proposed Civil Penalty Assessment or a proposed Consent Assessment of Civil Penalty by certified mail or hand delivery.
- B. These documents will include the date of the violation, a summary of the violation, and the amount of the proposed Civil Penalty Assessment.
- C. The Notice of Proposed Civil Penalty Assessment or a cover letter to the proposed Consent Assessment of Civil Penalty will advise the violator that, if requested within fifteen (15) days of receipt of said Notice, the Department will schedule a conference or telephone conference to discuss the final Civil Penalty assessment. If the violator does not request a conference within the fifteen (15) day period, the Department will proceed to issue the final Civil Penalty Assessment based upon information currently before the Department.

- D. Upon receiving a request for a conference, the Department will schedule the conference or telephone conference at a time convenient to both parties.
- E. During the conference, the Department will consider evidence relative to matters pertaining to the nature of the violation, amount of civil penalty and/or manner of payment. Upon completion of the conference, the issues may be mutually resolved or the Department will affirm, adjust or vacate the proposed civil penalty assessment.
- F. If matters related to the proposed civil penalty assessment are mutually agreed upon, the Department will revise or if necessary draft and execute a Consent Assessment of Civil Penalty document.
- G. If the conference does not result in resolution of matters pertaining to the proposed assessment, the Department will timely proceed to assess the final civil penalty. The civil penalty assessment will inform the violator of the right to appeal to the Environmental Hearing Board the fact of the violation, the amount of the civil penalty, or both, within thirty (30) days of said notice.

#### **VIII. CIVIL PENALTY ASSESSMENT MATRIX**

Civil penalty amounts listed in each matrix cell reflect suggested minimum and maximum dollar amounts per violation. Bureau of Radiation Protection personnel calculating proposed assessment will carefully consider the culpability and severity of the violation when assessing the base civil penalty.

The base civil penalty may be raised or lowered because of factors specified in the Civil Penalty Assessment Worksheet. Civil penalties assessed under §308(e) of the Radiation Protection Act shall not exceed \$25,000 plus up to \$5,000 for each day of continued violation.

However, in no case will a final civil penalty assessed under §504(e) of the Low Level Radioactive Waste Disposal Act exceed \$25,000 per violation. Each day of continued violation of applicable statutes, regulations, or orders will constitute a separate violation.

**Violation Severity Levels**

	<b>Level I</b>	<b>Level II</b>	<b>Level III</b>
<b>C u l p a b i l i t y</b> Willful	\$25,000 - \$12,500	\$12,500 - \$6,250	\$6,250 - \$3,125
Reckless	\$25,000 - \$10,000	\$10,000 - \$5,000	\$5,000 - \$2,500
Negligent	\$25,000 - \$6,250	\$6,250 - \$3,125	\$3,125 - \$1,560
Accidental (None)	\$25,000 - \$3,750	\$3,570 - \$1,875	\$1,875 - \$315

The Department uses a gravity-based matrix with the axes being severity of violation and degree of culpability. The matrix utilizes a scale of 100-50-25 percent of the statutory maximum daily penalty of \$25,000. The minimum penalty of \$315 is based on a civil penalty equal to three (3) times unpaid annual fees, the amount due the Department for nonpayment of the annual registration fee at dental, podiatric, and veterinary facilities. This matrix does not preclude Department consideration of any relevant facts which might not be otherwise explicitly accounted for.

**IX. SIGNATURE**

Approved for the Department

\_\_\_\_\_  
Director  
Bureau of Radiation Protection

**MISSION STATEMENT**

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.

## Appendix C

### Department of Environmental Protection Bureau of Radiation Protection Civil Penalty Assessment Worksheet

**I. Identification**

Registrant/Licensee Name \_\_\_\_\_  
 Identification Number \_\_\_\_\_  
 Municipality \_\_\_\_\_  
 County \_\_\_\_\_  
 Inspection Date \_\_\_\_\_  
 Inspection Report Date \_\_\_\_\_  
 N.O.V. of Order Date \_\_\_\_\_

**IV. Penalty Action**

Penalty Assessed  Yes  No  
 Calculated Amount \$ \_\_\_\_\_, Date \_\_\_\_\_  
 Proposed Assessment Notice or CACP Date \_\_\_\_\_  
 Assessment Conference Date \_\_\_\_\_  
 Consent Assessment Date \_\_\_\_\_ Amount \$ \_\_\_\_\_  
 Final Assessment Notice Date \_\_\_\_\_ Amount \$ \_\_\_\_\_  
 Collection Date \_\_\_\_\_ Amount \$ \_\_\_\_\_  
 E.H.B. Appeal Date \_\_\_\_\_

**II. Mandatory Penalty**

Issuance of a Cease and Desist Order - Minimum Penalty \$1,000  
 Issuance of a Departmental Order - Minimum Penalty \$225.  
 Failure to Comply with a Departmental Order - Minimum Penalty \$500.  
 Hinder, Obstruct, or Delay a D.E.P. agent or employee Minimum Penalty \$1,000.

**III.**

Penalty Calculation Criteria				Violation No. _____	Violation No. _____
Culpability	Severity			Base Assessment	Base Assessment
	Level I	Level II	Level III		
Willful	\$25,000 - \$12,500	\$12,500 - \$6,250	\$6,250 - \$3,125	\$ _____	\$ _____
Reckless	\$25,000 - \$10,000	\$10,000 - \$5,000	\$5,000 - \$2,500	Continuing Violation Up to \$5000 per day	Continuing Violation Up to \$5000 per day
Negligent	\$25,000 - \$6,250	\$6,250 - \$3,125	\$3,125 - \$1,560	Up to \$5000 per day	Up to \$5000 per day
Accidental (none)	\$25,000 - \$3,750	\$3,570 - \$1,875	\$1,875 - \$315	\$ _____	\$ _____
Subtotal Assessment				\$ _____	\$ _____
Good Faith Adjustment				\$ _____ +/-	\$ _____ +/-
Cost to the Commonwealth				\$ _____	\$ _____
Savings to the Violator				\$ _____	\$ _____
Restoration/Abatement Cost				\$ _____	\$ _____
Subtotal				\$ _____	\$ _____
Violation History				\$ _____	\$ _____
Subtotal plus amount for repeated violations				\$ _____	\$ _____
Total Assessment				\$ _____	\$ _____

Reviewer \_\_\_\_\_ Date \_\_\_\_\_



#### 4.7.1

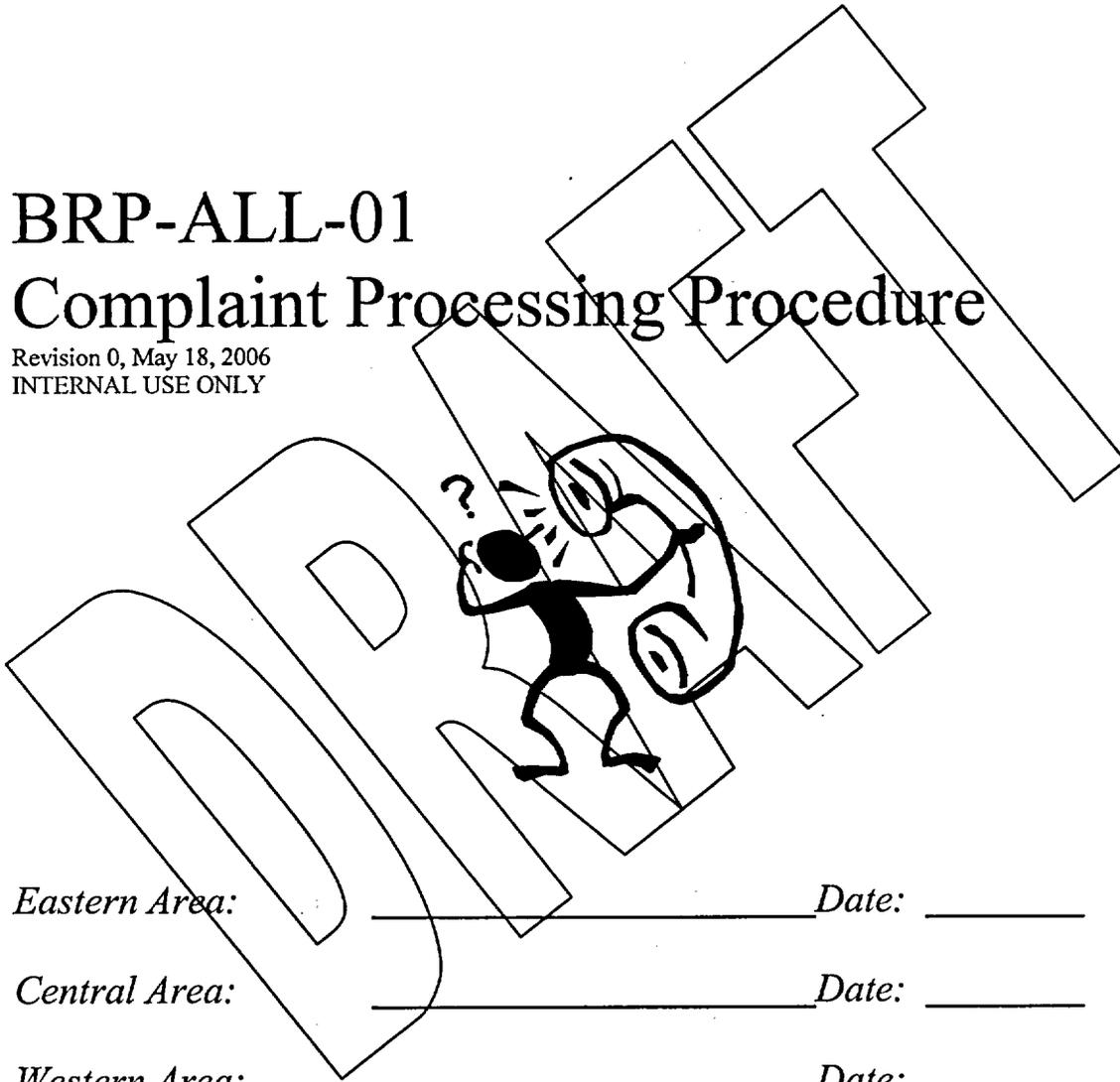
See also enclosed / attached Nuclear Power Plant Station Emergency Plan. This Plan is under revision to include fixed facility events, etc.

Pennsylvania Department of  
Environmental Protection  
Bureau of Radiation Protection

BRP-ALL-01

Complaint Processing Procedure

Revision 0, May 18, 2006  
INTERNAL USE ONLY



*Eastern Area:* \_\_\_\_\_ *Date:* \_\_\_\_\_

*Central Area:* \_\_\_\_\_ *Date:* \_\_\_\_\_

*Western Area:* \_\_\_\_\_ *Date:* \_\_\_\_\_

*Bureau Director:* \_\_\_\_\_ *Date:* \_\_\_\_\_

## 1.0 INTRODUCTION

The eFACTS Complaint Tracking System Abbreviated User's Guide defines a complaint as "a discrete instance of communication to DEP by the public or other source describing an alleged event, incident, wrong doing, or concern which is perceived as a threat to life or the environment, and/or believed to violate environmental law between a client and DEP."

The NRC defines allegation as "a declaration, statement, or assertion of impropriety or inadequacy associated with NRC regulated activities, the validity of which has not been established. This term includes all concerns identified by sources such as individuals or organizations, and technical audit efforts from Federal, State, or local government offices regarding activities at a licensee's site. Excluded from this definition are inadequacies provided to NRC staff by licensee employees acting in their official capacity, matters being handled by more formal processes such as 10 CFR 2.206 petitions, misconduct by NRC employees or NRC contractors; nonradiological occupational health and safety issues; matters reported to the NRC by Agreement States resulting from Agreement State inspections or licensing activities that are forwarded to NRC as a matter of conducting official business, and matters involving law enforcement and other Government agencies."

For the purposes of this procedure the Radiation Protection Program will consider complaints and allegations to be synonymous. In this procedure, the term "complaint" will be used. Furthermore any concern raised by any individual regarding activities within the Commonwealth will be entered into the Complaint Tracking System (CTS) per the CTS Guidance.

### 1.1 Scope

The scope of this document is the handling of complaints relating to radiation, radiation sources, radioactive material or radiation producing machines against any entity within the Commonwealth of Pennsylvania. Examples within Radiation Protection include, but are not limited to, radioactive materials licensees, accelerator licensees, X-ray registrants, and other facilities where radiation sources are located or used.

### 1.2 Definitions

For the purposes of this procedure the definition of complaint shall include both the eFACTS Complaint Tracking System Abbreviated User's Guide and the NRC Management Directive 8.8 definitions. In instances where the two definitions

conflict the more broad should apply. Furthermore, it shall be expanded to include concerns for threats to safety and property.

## 2.0 Processing a Complaint

### 2.1 Complaints Received in Central Office

The staff person receiving the information shall record all relevant information and forward it to the relevant Regional Office CTS Coordinator with the relevant Regional Radiation Protection Program Manager (RPPM) on cc. The Regional Office CTS Coordinator shall follow Department guidance on managing complaints, including the handling of correspondence associated with the complaint.

### 2.2 Complaints Received by the Program in Regional Offices

The staff person receiving the information shall record all relevant information and forward it to the relevant Regional Office CTS Coordinator with the relevant Regional Radiation Protection Program Manager on cc. The Regional Office CTS Coordinator shall follow Department guidance on managing complaints, including the handling of correspondence associated with the complaint.

## 3.0 Complainant Protection

### 3.1 Anonymity

Should the complainant request anonymity, his/her name and contact information shall be collected but NOT entered into the CTS. In such instances the complainant name and contact information shall be recorded on paper along with the related Complaint ID number and stored with the Regional CTS Coordinator until the complaint is closed. When the complaint is closed, the paper record shall be marked confidential and placed in the related facility file.

### 3.2 Whistleblower

The Program will make every effort to facilitate compliance with the Pennsylvania Whistleblower Act (Act 169 of 1986).

## 4.0 Procedure

Upon receipt of the complaint from the CTS Coordinator or from (regional) staff, the Regional Radiation Protection Program Manager (RPPM) will make an initial evaluation of the complaint, and, as necessary, assign regional staff to investigate the matter. This investigation may involve contacting the complainant and obtaining additional information as necessary, and may require a visit to the complainant, the facility, or any location identified in the complaint. As necessary, the regional staff member may conduct a special investigation of the regulated entity or the facility, gathering information to determine whether any threat to life, property or the environment occurred, is occurring, or might occur.

Upon completion of the investigation, the assigned regional staff member will document the investigation, and review it with his/her supervisor and the RPPM. The regional staff member will document the investigation in eFACTS, and start any inspection-related public documents (such as a letter to the regulated entity concerning the results of the investigation, if concluded). The RPPM will forward a summary of the investigation to the regional CTS Coordinator to close out the complaint. The CTS Coordinator will handle correspondence with the complainant concerning the results of the investigation, following the guidance in the Complaint Tracking System guidance and Departmental protocols.

### 4.1 Procedure for Complaints Against Program Personnel

All complaints against Commonwealth employees are to be directed immediately to the employee's supervisor and are NOT to be entered into the CTS. In accordance with the Department of Environmental Protection (DEP) Supervisor's Guide to Progressive Discipline, the supervisor shall contact the DEP Bureau of Human Resources to coordinate an investigation and any subsequent disciplinary action.

## 5.0 References

Complaint Tracking System Guidance (April 26, 2001)

eFACTS Complaint Tracking System Abbreviated User's Guide (July 6, 2004)

NRC Management Directive 8.8 (Management of Allegations)

NRC SA-300 (Reporting Material Events)

Compliant Processing

PA Right to Know Act (159 of 1984)

PA Whistleblower Act (169 of 1986)

PA Management Directive 205.16 (Whistleblower Act Compliance)

Health Insurance Portability and Accountability Act of 1996 (HIPAA)

DEP Supervisor's Guide to Progressive Discipline – available at:  
(<http://intrabhr.pader.gov/ersd/DisciplineandAppeals/Discipline%20Homepage.htm>)

No. 1986-169

## AN ACT

HB 284

Providing protection for employees who report a violation or suspected violation of State, local or Federal law; providing protection for employees who participate in hearings, investigations, legislative inquiries or court actions; and prescribing remedies and penalties.

The General Assembly of the Commonwealth of Pennsylvania hereby enacts as follows:

Section 1. Short title.

This act shall be known and may be cited as the Whistleblower Law.

Section 2. Definitions.

The following words and phrases when used in this act shall have the meanings given to them in this section unless the context clearly indicates otherwise:

"Appropriate authority." A Federal, State or local government body, agency or organization having jurisdiction over criminal law enforcement, regulatory violations, professional conduct or ethics, or waste; or a member, officer, agent, representative or supervisory employee of the body, agency or organization. The term includes, but is not limited to; the Office of Attorney General, the Department of the Auditor General, the Treasury Department, the General Assembly and committees of the General Assembly having the power and duty to investigate criminal law enforcement, regulatory violations, professional conduct or ethics, or waste.

"Employee." A person who performs a service for wages or other remuneration under a contract of hire, written or oral, express or implied, for a public body.

"Employer." A person supervising one or more employees, including the employee in question; a superior of that supervisor; or an agent of a public body.

"Good faith report." A report of conduct defined in this act as wrongdoing or waste which is made without malice or consideration of personal benefit and which the person making the report has reasonable cause to believe is true.

"Public body." All of the following:

(1) A State officer, agency, department, division, bureau, board, commission, council, authority or other body in the executive branch of State government.

(2) A county, city, township, regional governing body, council, school district, special district or municipal corporation, or a board, department, commission, council or agency.

(3) Any other body which is created by Commonwealth or political subdivision authority or which is funded in any amount by or through

Commonwealth or political subdivision authority or a member or employee of that body.

“Waste.” An employer’s conduct or omissions which result in substantial abuse, misuse, destruction or loss of funds or resources belonging to or derived from Commonwealth or political subdivision sources.

“Whistleblower.” A person who witnesses or has evidence of wrongdoing or waste while employed and who makes a good faith report of the wrongdoing or waste, verbally or in writing, to one of the person’s superiors, to an agent of the employer or to an appropriate authority.

“Wrongdoing.” A violation which is not of a merely technical or minimal nature of a Federal or State statute or regulation, of a political subdivision ordinance or regulation or of a code of conduct or ethics designed to protect the interest of the public or the employer.

#### Section 3. Protection of employees.

(a) Persons not to be discharged.—No employer may discharge, threaten or otherwise discriminate or retaliate against an employee regarding the employee’s compensation, terms, conditions, location or privileges of employment because the employee or a person acting on behalf of the employee makes a good faith report or is about to report, verbally or in writing, to the employer or appropriate authority an instance of wrongdoing or waste.

(b) Discrimination prohibited.—No employer may discharge, threaten or otherwise discriminate or retaliate against an employee regarding the employee’s compensation, terms, conditions, location or privileges of employment because the employee is requested by an appropriate authority to participate in an investigation, hearing or inquiry held by an appropriate authority or in a court action.

#### Section 4. Remedies.

(a) Civil action.—A person who alleges a violation of this act may bring a civil action in a court of competent jurisdiction for appropriate injunctive relief or damages, or both, within 180 days after the occurrence of the alleged violation.

(b) Necessary showing of evidence.—An employee alleging a violation of this act must show by a preponderance of the evidence that, prior to the alleged reprisal, the employee or a person acting on behalf of the employee had reported or was about to report in good faith, verbally or in writing, an instance of wrongdoing or waste to the employer or an appropriate authority.

(c) Defense.—It shall be a defense to an action under this section if the defendant proves by a preponderance of the evidence that the action by the employer occurred for separate and legitimate reasons, which are not merely pretextual.

(d) Civil service employees.—An employee covered by civil service who contests a civil service action, believing it to be motivated by his having made a good faith report, verbally or in writing, of an instance of wrongdoing or waste, may submit as admissible evidence any or all material relating to the action as whistleblower and to the resulting alleged reprisal.

**Section 5. Enforcement.**

A court, in rendering a judgment in an action brought under this act, shall order, as the court considers appropriate, reinstatement of the employee, the payment of back wages, full reinstatement of fringe benefits and seniority rights, actual damages or any combination of these remedies. A court may also award the complainant all or a portion of the costs of litigation, including reasonable attorney fees and witness fees, if the court determines that the award is appropriate.

**Section 6. Penalties.**

A person who, under color of an employer's authority, violates this act shall be liable for a civil fine of not more than \$500. Additionally, except where the person holds an elected public office, if the court specifically finds that the person, while in the employment of the Commonwealth or a political subdivision, committed a violation of this act with the intent to discourage the disclosure of criminal activity, the court may order the person's suspension from public service for not more than six months. A civil fine which is ordered under this section shall be paid to the State Treasurer for deposit into the General Fund.

**Section 7. Construction.**

This act shall not be construed to require an employer to compensate an employee for participation in an investigation, hearing or inquiry held by an appropriate authority, or impair the rights of any person under a collective bargaining agreement.

**Section 8. Notice.**

An employer shall post notices and use other appropriate means to notify employees and keep them informed of protections and obligations under this act.

**Section 9. Effective date.**

This act shall take effect in 60 days.

APPROVED—The 12th day of December, A. D. 1986.

DICK THORNBURGH

**Staff Needs / Workload  
Analysis**

**4.6 Technical Staffing and Training  
Programs Elements**

PA Agreement State Program  
 'To Be'  
 Staff Needs Analysis

	A	B	C	D	E	F	G	H	I	J	K
	License Categories	License Fee Category Numbers	Number of Pennsylvania NRC Licenses	Number of Out of State NRC Licenses in PA	Number of PA NARM Licenses	Licensing Actions / year	Avg. Staff Days Per action	Licensing Staff Days	Inspections Per Year	Staff Days / Inspection	Inspection Staff Days
1											
2	Decommissioning, Decon, Restoration	14	6	2	1				Per Priority Class		
3	SNM	1D	16	0							
4	SM for UF6	2A	1	0							
5	SM for Shielding	2B	4	0							
6	All other SM	2C	4	0							
7	M & D Broadscope	3A			2						
8	Part 30 Manu & Dist	3B	5	0							
9	Pharmaceutical Manu & Dist	3C	6	7	21						
10	Pharmaceutical Distribution	3D	1	0							
11	Irradiator Shielded Source	3E	21	0							
12	Irradiator<10K Curies	3F	1	0							
13	Sub A, Part 32 distribution to exempt persons; device requires evaluation	3H	0	1							
14	Sub A, Part 32 distribution to exempt persons; device requires no evaluation	3I	0	2							
15	Distribution Sealed Source-Exempt	3K	1	0	1						
16	Broad Scope R & D	3L	13	0	7						
17	R & D	3M	50	1	2						
18	Services other than leak testing, waste disposal, Calibration	3N	7	1							
19	Industrial Radiography	3O	11	10							
20	Other Material	3P	226	24	79						
21	Waste Receipt for re-packaging	4B	1	0	3						
22	Waste receipt of prepackaged for disposal	4C	1	0							
23	Well logging & Non field flood tracers	5A	4	2	1						
24	Nuclear Laundry	6A	2	0							
25	Human Use Broad Scope -Teletherapy	7A	5	0							
26	Human Use Broad Scope except Teletherapy	7B	10	0	8						
27	Human Use Specific License	7C	278	4	300						
28	Calibration Sources, Storage, etc.	8A			36						
29	SUBTOTALS		674	54	461						
30											
31	<b>Total Licenses in PA*</b>	<b>1189</b>									
32	* Total Number of active licenses in PA. This number will be reduced when NRC and PA licenses are combined.										

**Classification  
Specifications**

Job Code	Pay Scale Group	Pay Scale Type	Bargaining Unit	Civil Service or Non-Civil Service	Executive Board Change	Last Change Effective
14350	11	ST	B3	N	999-99	11/1/1999

Click on Job Code for current expanded information, on Pay Scale Type for current Pay Scale Type, on Civil Service or Non-Civil Service to obtain the Evaluation Guide (if available), on Executive Board Change to obtain the Executive Board amendment listed and on Last Change Effective to obtain history.

10/04/1995

14350

DIRECTOR, BUREAU OF RADIATION PROTECTION

**DEFINITION:** This is professional managerial work directing the activities of the Bureau of Radiation Protection in the Department of Environmental Protection. The Bureau of Radiation Protection is responsible for the planning, development, implementation, coordination and evaluation of statewide programs involving radiation source regulation and inspection, environmental radiation monitoring, nuclear plant safety, emergency radiation planning and response, radon monitoring, and low-level radioactive waste disposal.

The employee in this class directs, through subordinate managers, the activities of a professional and technical staff engaged in a variety of duties involving the statewide radiation protection program. Work involves determining goals, objectives, and priorities for the radiation protection program; developing and implementing rules, regulations, policies, procedures, standards and guidelines to manage program activities; reviewing proposed legislation for possible impact on the program; and determining and preparing budgetary requests. An important aspect of the work is dealing with federal, state and local officials and special interest groups on sensitive or controversial program issues. Work is assigned in the form of broad goals and objectives, and the employee exercises considerable independent judgment in determining specific goals, objectives, and program priorities. Work is reviewed upon completion by the Deputy Secretary for Air, Recycling and Radiation Protection through reports and conferences for attainment of goals and objectives and overall program quality.

**EXAMPLES OF WORK:** Directs, through subordinate managers, the planning, development, implementation, coordination, and evaluation of the statewide radiation monitoring, regulation and control programs.

Directs the development of statewide policies, technical standards and procedures for permitting, monitoring, enforcement and technical assistance activities involving radiation protection programs.

Reviews and analyzes activity reports to determine work being performed, program trends, and program effectiveness.

Develops and prepares budget and rebudget requests.

Reviews proposed legislation for possible impacts on the radiation protection program and recommends whether the Department should support or oppose the legislation.

Plans and organizes work, assigns work, determines work priorities, sets goals, and reviews work performance.

Interprets rules, regulations, policies, procedures, standards, and

objectives of the organization or program for subordinates.

Provides advice to staff on unusual or difficult technical and managerial problems.

Provides advice and information to government officials, industry representatives, regional program staff, and the public regarding Departmental functions, programs, rules, regulations, policies and procedures.

Represents the bureau or deputate in dealings with federal officials and other Commonwealth agencies.

Develops and delivers speeches and presentations to special interest groups, legislators, media and the public on bureau programs.

Performs related work as required.

**REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES:** Knowledge of the Department of Environmental Protection s and federal laws, rules, regulations, policies and procedures governing radiation protection.

Knowledge of the principles, methods and techniques utilized in radiation protection programs.

Knowledge of the applicable collective bargaining agreements.

Skill in the supervision of employees.

Ability to express ideas clearly and concisely, both orally and in writing.

Ability to read and interpret Commonwealth and Departmental administrative rules, regulations, policies, and procedures.

Ability to coordinate the work activities of the assigned programs and to resolve conflicts between the programs.

Ability to establish and maintain effective working relationships with associates, subordinates, public officials, special interest groups, industry representatives, and the public.

**MINIMUM EXPERIENCE AND TRAINING:** A Master s degree in an engineering or scientific field related to radiation protection or health physics, and nine years of professional experience in the radiation protection field. Four of the nine years of required experience must have included managerial and second-level supervisory experience;

or

Any equivalent combination of education and experience which affords the applicant the required knowledges, skills, and abilities, and includes a minimum of four years of managerial and second-level supervisory experience.

**NECESSARY SPECIAL REQUIREMENT:** This position may require licensure as a Professional Engineer by the Commonwealth of Pennsylvania, or a reciprocal jurisdiction, where there can be no exemption from such licensure as defined in Section 5, Exemption from Licensure, of the Engineer, Land Surveyor and Geologist Registration Law (as amended).

This position may require certification by the American Board of Health Physics.

Job Code	Pay Scale Group	Pay Scale Type	Bargaining Unit	Civil Service or Non-Civil Service	Executive Board Change	Last Change Effective
14310	07	ST	B4	C	622-12	5/3/1999

Click on Job Code for current expanded information, on Pay Scale Type for current Pay Scale Type, on Civil Service or Non-Civil Service to obtain the Evaluation Guide (if available), on Executive Board Change to obtain the Executive Board amendment listed and on Last Change Effective to obtain history.

05/03/1999

14310

## RADIATION HEALTH PHYSICIST 1

**DEFINITION:** This is professional work in the monitoring and control of radiation sources in the Department of Environmental Protection.

An employee in this class inspects radiation producing equipment and radioactive materials programs to ensure compliance with state and federal laws and regulations governing radiation protection. At this level, inspection work is characterized by moderately complex equipment and programs that have significant potential impact on human health and safety. Moderately complex radiation producing equipment includes but is not limited to diagnostic x-ray units, panoramic dental units, fluoroscopes, lithotripters, mammographic x-ray units and enclosed analytical x-ray units. Moderately complex radioactive materials programs include but are not limited to storage only licensees, level/density/thickness gauges, portable gauges and calibration labs. Employees independently perform and document these types of inspections and may participate in complex inspections as developmental assignments or as members of an inspection team. Employees at this level may also demonstrate specialized inspection techniques to coworkers. In the central office, work involves assisting higher-level health physicists in their areas of program responsibility. Work may also include interpreting and participating in the development of regulations, policies, procedures and technical guidance documents for the radiation protection program. Work is assigned in the form of specific goals, objectives and priorities, and reviewed by a professional supervisor for the attainment of objectives, completeness, technical accuracy and overall quality.

**EXAMPLES OF WORK:** Performs professional work in radiation health physics in a regional office or in the central office.

Independently conducts inspections of moderately complex radiation producing equipment and radioactive materials programs in medical and industrial settings for compliance with program requirements.

Inspects facilities performing mammography for compliance with the Federal Mammography Quality Standards Act; tests diagnostic mammographic x-ray machines and automatic film processors for operation with prescribed tolerances; suggests improvements to optimize mammographic imaging and quality assurance practices; and prepares facility compliance reports.

Conducts inspections of recently installed or assembled diagnostic radiographic and fluoroscopic equipment for compliance with federal assembly regulations.

Inspects firms that test for the presence and concentration of radon to determine compliance with regulations and certification requirements.

Prepares reports to document the results of inspections and makes recommendations on compliance issues.

Reviews applications for small quantity radioisotope use licenses, such as those for private practitioners, clinics, small hospitals and small industrial users, and recommends approval or disapproval, with additional conditions to impose upon the licensee if necessary.

Participates in special studies on new methods of evaluating and controlling radiation hazards.

Makes presentations to scientific and technical organizations and at public meetings concerning issues related to radon and radiation protection.

Participates as a member of a radiation emergency response team during incidents and exercises.

Operates a motor vehicle to travel to various work sites.

Performs similar work as required.

**REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES:** Knowledge of radiation health physics.

Knowledge of radiation protection principles and current practices related to the recognition, control and elimination of radiation hazards.

Knowledge of state and federal laws, regulations, policies and procedures governing radiation protection.

Knowledge of the methods and techniques used in the collection and analysis of radiological data.

Knowledge of radioactive waste disposal techniques and procedures.

Knowledge of the procedures and techniques used in investigating complaints involving exposure to, or high levels of, radiation.

Ability to conduct surveys and investigations to locate, identify and mitigate radiation hazards and radon problems.

Ability to operate, calibrate and perform routine preventative maintenance on radiation and radon detection equipment and environmental sampling equipment.

Ability to communicate effectively, both orally and in writing.

Ability to determine the appropriate level of enforcement required to encourage or compel compliance with Departmental rules and regulations.

Ability to develop and deliver effective presentations and training sessions for a wide range of audiences, including Departmental staff, facility operators, industry groups, government officials, consultants, special interest groups and the public.

Ability to establish and maintain effective working relationships with coworkers, facility operators, industry groups, legislators, government officials, consultants, special interest groups and the public.

Ability to operate a motor vehicle.

MINIMUM EXPERIENCE AND TRAINING: Two years of professional experience in the recognition, evaluation and control of radiation hazards, and a bachelor's degree with major coursework in the physical, biological or radiological sciences or in engineering, with a minimum of 20 college credits in physical sciences, engineering or mathematics;

or

Six years of technical experience in providing protection to radiation workers, the general public and the environment from the effects of radiation, and possession of a certificate of registration issued by the National Registry of Radiation Protection Technologists;

or

Any equivalent combination of experience and training.

A master's degree in health physics, radiation science, nuclear engineering or a closely related field may be substituted for one year of professional experience in the recognition, evaluation and control of radiation hazards.

A doctoral degree in health physics or a closely related field may be substituted for two years of the required professional experience in the recognition, evaluation and control of radiation hazards.

NECESSARY SPECIAL REQUIREMENT: Certain positions in this class may require possession of a valid Pennsylvania driver's license.

Certain positions in this class may require current certification in mammography issued by the US Food and Drug Administration.

Job Code	Pay Scale Group	Pay Scale Type	Bargaining Unit	Civil Service or Non-Civil Service	Executive Board Change	Last Change Effective
14320	08	ST	B4	C	622-13	5/3/1999

Click on Job Code for current expanded information, on Pay Scale Type for current Pay Scale Type, on Civil Service or Non-Civil Service to obtain the Evaluation Guide (if available), on Executive Board Change to obtain the Executive Board amendment listed and on Last Change Effective to obtain history.

05/03/1999

143

## RADIATION HEALTH PHYSICIST 2

**DEFINITION:** This is advanced professional work in the monitoring and control of radiation sources in the Department of Environmental Protection.

An employee in this class independently inspects complex radiation producing equipment and radioactive materials programs in a regional office, or independently performs a variety of duties in support of a major statewide radiation protection program in the central office. At this level, inspection work is characterized by equipment and programs with acute impact, either potential or actual, on human health and safety; extensive training and/or experience required to perform the inspections; and independent decision making and professional judgment in resolving technical issues at inspection sites. Complex radiation producing equipment includes but is not limited to computerized tomography, therapy simulators, therapy units, angiography units, accelerators, field radiography, electron beam welders and irradiators. Complex radioactive materials programs include but are not limited to diagnostic nuclear medicine, broad licenses, industrial radiography, nuclear pharmacies and facilities that manufacture devices containing radioactive material. Employees at this level may lead or participate in team inspections of complex facilities or demonstrate specialized inspection techniques to coworkers. In the central office, areas of program responsibility may include radon certification, radon monitoring, radioactive material licensing, x-ray equipment registration, accelerator licensing, environmental monitoring, emergency response planning and radioactive waste oversight. In both central and regional office settings, work may include developing regulations, policies, procedures and technical guidance documents; serving as agency site representatives at facilities undergoing decontamination or decommissioning; or performing compliance and performance inspections of radon mitigation firms and radon laboratories. Work is assigned in the form of objectives and priorities, and employees exercise judgment in planning, scheduling and completing assignments within the limits of program policies, guidelines, and state and federal regulations. Work is reviewed by a professional supervisor for the attainment of objectives, completeness, technical accuracy and overall quality.

**EXAMPLES OF WORK:** Performs advanced professional work in radiation health physics in a regional office or in the central office.

Independently conducts inspections of complex radiation producing equipment and radioactive materials programs in medical and industrial settings for compliance with program requirements.

Leads a team of health physicists during inspections of large industrial or medical facilities with radioactive materials programs and/or numerous and complex radiation sources and conducts exit interviews with facility

administrators.

Conducts investigations involving acute internal and/or external radiation exposure to determine causes and preventative measures.

Prepares reports to document the results of inspections and studies, and makes decisions or recommendations on compliance issues.

Responds to radiation emergencies and contamination incidents involving known or unknown radiation sources and materials, makes decisions on the type of analysis to be conducted or testing procedures to be used, and recommends contamination cleanup procedures.

Monitors the decontamination of radioactively contaminated areas by responsible parties or their contractors; reviews site-specific work plans; conducts special surveys relating to facility decontamination/decommissioning activities, plans and procedures; and makes recommendations to improve radiological safety operations or practices.

Inspects firms that mitigate or perform laboratory analyses for radon to determine compliance with regulations and certification requirements.

Directs the radon laboratory and testing inspection program by developing inspection procedures and protocols, training regional staff in conducting inspections, and auditing regional inspection programs.

Operates the department's radon charcoal counting facility, performs quality assurance checks and system calibrations, and conducts analyses of test results.

Reviews applications for radon testing, mitigation and laboratory certification and provides recommendations to supervisor concerning approval or disapproval.

Designs and directs the environmental surveillance program at a nuclear reactor or other large radioisotope facility.

Oversees the reporting, data collection and data analysis requirements of the federal Nuclear Regulatory Commission cooperative agreement on the monitoring of radiation levels around nuclear power plants.

Develops, compiles and produces the Annual Report of Environmental Radiation for the Commonwealth to report on the results of the statewide environmental surveillance program.

Reviews applications for the registration of x-ray equipment and vendors of machines that produce ionizing radiation.

Reviews applications for the licensing of medical and industrial particle accelerators, and prepares draft licenses for review and approval by the supervisor.

Evaluates complex applications for radioisotope licenses and recommends approval or disapproval, with additional conditions to impose upon the licensee if necessary.

Develops and implements components of the statewide radiation emergency response program and serves as the state's emergency response liaison with a number of nuclear power plants.

Monitors, tracks and reports on the generation, storage, transportation and disposal of radioactive waste and answers technical questions from the regulated community and the public.

Develops or participates in the development of statewide regulations, policies, procedures and technical guidance documents for the radiation protection program.

Provides advice and guidance to field staff and interprets state regulations as they apply to unusual or abnormal circumstances encountered during inspections.

Conducts or participates in special studies on new methods of evaluating and controlling radiation hazards.

Makes presentations to scientific and technical organizations and at public meetings concerning issues related to radon and radiation protection.

Participates as a member of a radiation emergency response team during incidents and exercises.

Operates a motor vehicle to travel to various work sites.

Performs similar work as required.

**REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES:** Knowledge of radiation health physics.

Knowledge of radiation protection principles and current practices related to the recognition, control and elimination of radiation hazards.

Knowledge of state and federal laws, regulations, policies and procedures governing radiation protection.

Knowledge of the methods and techniques used in the collection and analysis of radiological data.

Knowledge of radioactive waste disposal techniques and procedures.

Knowledge of the procedures and techniques used in investigating complaints involving exposure to, or high levels of, radiation.

Ability to conduct surveys and investigations to locate, identify and mitigate radiation hazards and radon problems.

Ability to operate, calibrate and perform routine preventative maintenance on radiation and radon detection equipment and environmental sampling equipment.

Ability to communicate effectively, both orally and in writing.

Ability to determine the appropriate level of enforcement required to encourage or compel compliance with Departmental rules and regulations.

Ability to organize and lead inspections of complex radiation producing equipment and facilities.

Ability to plan, develop, organize and evaluate a major component of the statewide radiation protection program.

Ability to conduct or participate in special studies on new methods of evaluating and controlling radiation hazards.

Ability to develop and deliver effective presentations and training sessions for a wide range of audiences, including Departmental staff, facility operators, industry groups, government officials, consultants, special interest groups and the public.

Ability to establish and maintain effective working relationships with coworkers, facility operators, industry groups, legislators, government officials, consultants, special interest groups and the public.

Ability to operate a motor vehicle.

MINIMUM EXPERIENCE AND TRAINING: One year as a Radiation Health Physicist 1;

or

Three years of professional experience in the recognition, evaluation and control of radiation hazards, and a bachelor's degree with major coursework in the physical, biological or radiological sciences or in engineering, with a minimum of 20 college credits in physical sciences, engineering or mathematics;

or

Certification as a health physicist by the American Board of Health Physics;

or

Any equivalent combination of experience and training.

A master's degree in health physics, radiation science, nuclear engineering or a closely related field may be substituted for one year of professional experience in the recognition, evaluation and control of radiation hazards.

A doctoral degree in health physics or a closely related field may be substituted for two years of the required professional experience in the recognition, evaluation and control of radiation hazards.

NECESSARY SPECIAL REQUIREMENT: Certain positions in this class may require possession of a valid Pennsylvania driver's license.

Certain positions in this class may require current certification in mammography issued by the US Food and Drug Administration.

Job Code	Pay Scale Group	Pay Scale Type	Bargaining Unit	Civil Service or Non-Civil Service	Executive Board Change	Last Change Effective
14330	09	ST	B5	C	619-22	10/1/2001

Click on Job Code for current expanded information, on Pay Scale Type for current Pay Scale Type, on Civil Service or Non-Civil Service to obtain the Evaluation Guide (if available), on Executive Board Change to obtain the Executive Board amendment listed and on Last Change Effective to obtain history.

04/30/1999

1433

## RADIATION PROTECTION PROGRAM SUPERVISOR

**DEFINITION:** This is professional and supervisory work involving the monitoring and control of radiation sources and radon in a regional office, or managing a statewide radiation protection program in the central office of the Department of Environmental Protection.

An employee in this class supervises a professional staff in a regional office engaged in a variety of duties to ensure compliance with state and federal laws, regulations, policies and procedures governing radiation protection, or serves as a section manager in central office responsible for directing professional staff in the planning, development, implementation and evaluation of an important component of the Commonwealth's radiation protection program. Work involves providing direction, guidance and training to subordinates and evaluating their performance. In a regional office, work includes determining inspection and investigation priorities and directing emergency response activities. In the central office, areas of statewide program responsibility may include radon certification, radon monitoring, radioactive material licensing, environmental surveillance, emergency response or the registration and licensing of radiation producing equipment. Work requires coordinating the activities of the assigned unit with other organizational units; determining specific program goals, objectives and priorities; evaluating and improving the effectiveness of the assigned program; developing, implementing or recommending changes to regulations, policies and procedures; and reviewing proposed legislation for possible impact on the assigned program. Work is assigned in the form of program goals and objectives, and the employee exercises considerable freedom in determining the specific goals, objectives and program priorities. Work is reviewed by a regional program manager or division manager through reports and conferences for attainment of goals and objectives and overall program quality and effectiveness.

**EXAMPLES OF WORK:** Serves as a program supervisor for the radiation protection program in a regional office or in the central office.

Supervises a professional staff in a regional field operations office by directing and coordinating the x-ray and accelerator safety programs or the radioisotopes safety and special projects programs.

Establishes performance standards for subordinates in the conduct of inspections and investigations.

Reviews reports prepared by subordinates for compliance with procedures, policies and regulations.

Directs and assists in emergency response activities involving accidents and incidents at nuclear power reactors in the Commonwealth and adjacent states, and participates in exercises and drills at nuclear power

reactors.

Leads special or emergency surveys in response to accidents or incidents involving radioactive materials.

Participates in the development of statewide and/or regional policies and procedures involving the radiation protection program.

Reviews and interprets plans and specifications of the most complex radiological installations.

Directs the certification of individuals and firms providing radon-related services to the public, including testing, laboratory analysis and mitigation services; supervises inspections of certified facilities; and enforces civil penalties as needed.

Directs the statewide radon monitoring program, including providing training to central office and regional office staff, providing diagnostic services on unusually difficult radon problems in residential and commercial structures, conducting surveys of areas with high radon activity, and supervising the development of public information services to increase awareness of radon issues.

Directs the licensing program for the use of naturally-occurring and accelerator-produced radioactive material; writes, issues and signs licenses with all necessary items and conditions; develops license guides and program policies and procedures; and analyzes the effectiveness of the program through the review of radioactive material inspection reports.

Directs the statewide registration of x-ray equipment and vendors of machines which produce ionizing radiation.

Directs the licensing of medical and industrial accelerators.

Supervises the development of guidance to assist licensees and registrants in complying with radiation regulations, and provides consultative support to field staff on the interpretation of policies and regulations.

Plans, establishes and directs the environmental radiation surveillance program throughout the Commonwealth and around nuclear power plants and other facilities, including the collection of samples and analysis of data for inclusion in annual reports.

Plans, develops and implements the statewide radiation emergency response program and serves as the bureau's liaison with other federal and state agencies on emergency planning issues.

Plans and organizes work, assigns work, determines workflow and reviews work performance.

Prepares and signs employee performance review reports.

Interviews prospective employees and recommends employee selection or ranks applicants in terms of preferability for employment.

Receives grievances and complaints, conducts initial investigation into causes and conditions, discusses with employee, and resolves or recommends solutions to grievances and complaints.

Interprets rules, regulations, policies, standards, and objectives of the organization or program to subordinates.

Receives, reviews and approves or disapproves leave requests.

Provides training, consultation and assistance to subordinate personnel, other department personnel, and to industry and professional groups.

Makes presentations to scientific and technical organizations and at public meetings concerning issues related to radon and radiation protection.

Employees in this class may participate in the performance of their subordinates' work consistent with operational or organizational requirements.

Operates a motor vehicle to travel to various work sites.

Performs related work as required.

REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES: Knowledge of radiation health physics.

Knowledge of radiation protection principles and current practices related to the recognition, control and elimination of radiation hazards.

Knowledge of state and federal laws, regulations, policies and procedures governing radiation protection.

Knowledge of methods and techniques used in the collection and analysis of radiological data.

Knowledge of radioactive waste disposal techniques and procedures.

Knowledge of the procedures and techniques used in investigating complaints involving exposure to, or high levels of, radiation.

Ability to learn to supervise employees effectively.

Ability to communicate effectively, both orally and in writing.

Ability to determine the appropriate level of enforcement required to encourage or compel compliance with Departmental rules and regulations.

Ability to independently conduct, or direct the conduct of, special studies on new methods of evaluating and controlling radiation hazards.

Ability to negotiate effectively with federal government officials and facility operators on important and sensitive issues affecting the radiation protection program.

Ability to develop and deliver effective presentations and training sessions for a wide range of audiences, including Departmental staff, facility operators, industry groups, government officials, consultants, special interest groups and the public.

Ability to establish and maintain effective working relationships with coworkers, facility operators, industry groups, legislators, government officials, consultants, special interest groups and the public.

Ability to operate a motor vehicle.

MINIMUM EXPERIENCE AND TRAINING: Two years as a Radiation Health Physicist 2;

or

Five years of professional experience in the recognition, evaluation and control of radiation hazards, and a bachelor's degree with major coursework in the physical, biological or radiological sciences or in engineering, with a minimum of 20 college credits in physical sciences, engineering or mathematics;

or

Certification as a health physicist by the American Board of Health Physics;

or

Any equivalent combination of experience and training.

A master's degree in health physics, radiation science, nuclear engineering or a closely related field may be substituted for one year of professional experience in the recognition, evaluation and control of radiation hazards.

A doctoral degree in health physics or a closely related field may be substituted for two years of professional experience in the recognition, evaluation and control of radiation hazards.

NECESSARY SPECIAL REQUIREMENT: Certain positions in this class may require possession of a valid Pennsylvania driver's license.

Certain positions in this class may require current certification in mammography issued by the US Food and Drug Administration.

Job Code	Pay Scale Group	Pay Scale Type	Bargaining Unit	Civil Service or Non-Civil Service	Executive Board Change	Last Change Effective
14340	10	ST	B3	C	619-23	10/1/2001

Click on Job Code for current expanded information, on Pay Scale Type for current Pay Scale Type, on Civil Service or Non-Civil Service to obtain the Evaluation Guide (if available), on Executive Board Change to obtain the Executive Board amendment listed and on Last Change Effective to obtain history.

02/02/1998

14340

## RADIATION PROTECTION PROGRAM MANAGER

**DEFINITION:** This is professional and managerial work directing a radiation protection program area in the Department of Environmental Protection.

An employee in this class serves as a regional program manager for the radiation protection program or as a division manager in central office. Work involves planning, developing, coordinating, implementing and evaluating program activities within the assigned area of responsibility. In a regional office, work involves directing the monitoring and control of radiation sources and radon within a large geographical area of the Commonwealth. In central office, work involves directing the statewide radon program or the statewide radiation control program. Work requires coordinating the activities of the assigned units with other organizational units; determining goals, objectives and priorities; and evaluating the effectiveness of the regional or statewide program. Work also involves developing, implementing or recommending changes to regulations, policies and procedures; reviewing proposed legislation for possible impact on the assigned program; and determining and preparing budgetary requests for the program. Work is assigned in the form of broad program goals and objectives, and is reviewed by the bureau director or regional director through reports and conferences for attainment of goals and objectives and overall program quality and effectiveness.

**EXAMPLES OF WORK:** In central office, serves as a division manager by directing the planning, development, coordination, implementation and evaluation of the statewide radiation control or radon program.

In a regional office, serves as a regional radiation protection program manager by directing the regulation of radioactive materials programs and radiation producing equipment and protective facilities to ensure compliance with Commonwealth and federal regulations governing radiation protection.

Establishes program priorities and objectives to ensure that program goals are met.

Directs and assists in emergency response activities involving accidents and incidents at nuclear power reactors in the Commonwealth and adjacent states, and participates in exercises and drills at nuclear power reactors.

Conducts or directs special studies on new methods of evaluating and controlling radiation hazards.

Assists in the formulation of regulations and proposed legislation for the control of radiological health hazards.

Represents the agency, bureau or regional office in dealing with federal officials and other Commonwealth agencies.

Negotiates and administers contracts with the federal government dealing with special projects in the field of radiological health.

Evaluates the inspection and compliance activities of field offices to ensure statewide uniformity.

Advises and consults with representatives of management, professional groups and regulatory agencies, such as the US Nuclear Regulatory Commission, on matters relating to radiation control.

Makes presentations to scientific and technical organizations and at public meetings concerning issues related to radon and radiation protection.

Employees in this class may participate in the performance of their subordinates' work consistent with operational or organizational requirements.

Operates a motor vehicle to travel to various work sites.

Performs similar work as required.

**REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES:** Knowledge of radiation health physics.

Knowledge of radiation protection principles and current practices related to the recognition, control and elimination of radiation hazards.

Knowledge of state and federal laws, regulations, policies and procedures governing radiation protection.

Knowledge of methods and techniques used in the collection and analysis of radiological data.

Knowledge of radioactive waste disposal techniques and procedures.

Knowledge of the procedures and techniques used in investigating complaints involving exposure to, or high levels of, radiation.

Skill in the supervision of employees.

Ability to communicate effectively, both orally and in writing.

Ability to determine the appropriate level of enforcement required to encourage or compel compliance with Departmental rules and regulations.

Ability to independently conduct, or direct the conduct of, special studies on new methods of evaluating and controlling radiation hazards.

Ability to negotiate effectively with federal government officials and facility operators on important and sensitive issues affecting the radiation protection program.

Ability to develop and deliver effective presentations and training sessions for a wide range of audiences, including Departmental staff, facility operators, industry groups, government officials, consultants, special

interest groups and the public.

Ability to establish and maintain effective working relationships with coworkers, facility operators, industry groups, legislators, government officials, consultants, special interest groups and the public.

Ability to operate a motor vehicle.

MINIMUM EXPERIENCE AND TRAINING: Two years as a Radiation Protection Program Supervisor;

or

Seven years of professional experience in the recognition, evaluation and control of radiation hazards, including a minimum of two years of supervisory experience in the recognition, evaluation and control of radiation hazards, and a bachelor's degree with major coursework in the physical, biological or radiological sciences or in engineering, with a minimum of 20 college credits in the physical sciences, engineering or mathematics;

or

Certification as a health physicist by the American Board of Health Physics, and two years of supervisory experience in the recognition, evaluation and control of radiation hazards;

or

Any equivalent combination of experience and training.

A master's degree in health physics, radiation science, nuclear engineering or a closely related field may be substituted for one year of professional experience in the recognition, evaluation and control of radiation hazards, provided the requirement for a minimum of two years of supervisory experience in the recognition, evaluation and control of radiation hazards is met.

A doctoral degree in health physics or a closely related field may be substituted for two years of professional experience in the recognition, evaluation and control of radiation hazards, provided the requirement for a minimum of two years of supervisory experience in the recognition, evaluation and control of radiation hazards is met.

NECESSARY SPECIAL REQUIREMENT: Certain positions in this class may require possession of a valid Pennsylvania driver's license.

Job Code	Pay Scale Group	Pay Scale Type	Bargaining Unit	Civil Service or Non-Civil Service	Executive Board Change	Last Change Effective
75260	06	ST	B4	C	622-15	5/3/1999

Click on Job Code for current expanded information, on Pay Scale Type for current Pay Scale Type, on Civil Service or Non-Civil Service to obtain the Evaluation Guide (if available), on Executive Board Change to obtain the Executive Board amendment listed and on Last Change Effective to obtain history.

05/03/1999

#### RADIATION PROTECTION SPECIALIST

**DEFINITION:** This is limited professional and advanced technical work in the monitoring and control of radiation sources in the Department of Environmental Protection.

An employee in this class conducts routine inspections of radiation producing equipment and radioactive materials programs, collects environmental samples in support of the statewide radiation monitoring program and/or collects and exchanges dosimeters that measure radiation exposures in and around nuclear power electric generating stations and other licensed facilities. Inspection work at this level is characterized by the relatively limited variability and complexity of the equipment and programs, with emphasis on determining the presence or absence of basic safety features and sound operating procedures. Routine inspections of radiation producing equipment include but are not limited to intra-oral dental units, podiatry units, diagnostic veterinary units, electron microscopes, cabinet x-ray units and baggage x-ray units. Routine inspections of radioactive materials programs include but are not limited to gas chromatography units, lead-in-paint analyzers, liquid scintillation counters and check sources. Employees perform these inspections independently and may recommend ways of reducing patient and operator exposures. Employees at this level may also participate as members of an inspection team or accompany higher-level health physicists to learn specialized inspection techniques. Work is assigned in the form of specific facilities to inspect or according to established sampling and dosimeter exchange schedules. Work is reviewed by a professional supervisor for timeliness, completeness and adherence to established procedures and standards.

**EXAMPLES OF WORK:** Conducts routine inspections of radiation producing equipment and radioactive materials programs in medical and industrial settings for compliance with program requirements.

Determines or estimates operator exposure, patient skin entrance exposure and restricted or unrestricted area exposure.

Prepares reports to document the results of inspections and sampling activities.

Collects samples of surface water, air particulates, precipitation, milk, fish, sediment, soil and vegetation, and prepares and sends samples to environmental laboratories for radioisotopic analysis.

Travels to field sites to collect environmental samples, exchange thermoluminescent dosimeters and exchange air sampler filters and cartridges.

Performs dosimeter readout and analysis using standard operating

procedures and prepares reports of data results.

Ensures the proper operational condition of thermoluminescent dosimeter system by performing periodic calibration and maintenance procedures and arranging for repairs.

Prepares training and documentation on the operation of the thermoluminescent dosimeter system.

Tests, calibrates and performs routine preventative maintenance on radiological survey and sampling equipment.

Operates a motor vehicle to travel to various work sites.

Performs similar work as required.

**REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES:** Knowledge of radiation protection principles and current practices related to the recognition, control and elimination of radiation hazards.

Knowledge of state and federal laws, regulations, policies and procedures governing radiation protection.

Knowledge of the methods and techniques used in obtaining, collecting and transporting samples in various media to evaluate radiation exposures.

Knowledge of radioactive waste disposal techniques and procedures.

Ability to operate, calibrate and perform routine preventative maintenance on radiation detection equipment and environmental sampling equipment.

Ability to communicate effectively, both orally and in writing.

Ability to develop and deliver effective presentations and training sessions for Departmental staff, facility operators and the public.

Ability to establish and maintain effective working relationships with coworkers, facility operators and the public.

Ability to operate a motor vehicle.

**MINIMUM EXPERIENCE AND TRAINING:** One year as an Environmental Trainee;

or

Any equivalent combination of experience and training.

**NECESSARY SPECIAL REQUIREMENT:** Possession of a valid Pennsylvania driver's license.

Job Code	Pay Scale Group	Pay Scale Type	Bargaining Unit	Civil Service or Non-Civil Service	Executive Board Change	Last Change Effective
75400	05	ST	B4	C	999-99	9/1/1994

Click on Job Code for current expanded information, on Pay Scale Type for current Pay Scale Type, on Civil Service or Non-Civil Service to obtain the Evaluation Guide (if available), on Executive Board Change to obtain the Executive Board amendment listed and on Last Change Effective to obtain history.

06/01/1989

75400

## ENVIRONMENTAL TRAINEE

**DEFINITION:** This is training work in the field of Environmental Protection in the Department of Environmental Resources.

An employee in this class participates in on-the-job and formal training programs designed to develop the required knowledges, skills, and abilities necessary to develop professional proficiency in air pollution, solid waste, water quality, radiation, mining, or sanitation. Assignments are designed to develop an employee's technical and academic proficiency. Work assignments increase in scope and complexity as the employee gains technical proficiency in the work. Initially, the employee assists higher level specialists in the appropriate specialty in the performance of the inspections, investigations, enforcement, public relations, and consultation assignments. Once the employee demonstrates the ability to perform the work, specific assignments are given and the employee performs the work under the technical guidance of a higher level specialist or supervisor. Employees will be required to attend training courses to enhance technical knowledge of the technical and regulatory aspects of Environmental Protection. Work is reviewed in progress and upon completion by a professional superior for personal development, completeness, technical accuracy, and quality.

**EXAMPLES OF WORK:** Participates in on-the-job and formal training programs designed to develop the required knowledges, skills, and abilities necessary to perform work in Environmental Protection.

Participates in inspections of industrial plants, water treatment facilities, and other regulated facilities for toxic contaminants and other hazardous environmental conditions.

Assists with the maintenance of mechanical and electronic equipment that produce analyses of environmental conditions.

Participates in the collection of samples from water supply sources, eating and drinking facilities, sewage disposal systems, and in collecting chemical and bacteriological samples.

Determines violations of rules and regulations by comparing case data with rules and regulations, and recommends appropriate action.

Prepares case documentation in terms of violations, past case history, and problems encountered for field use or by legal staff.

Prepares Departmental Orders indicating violations discovered, control measures to be taken, required corrective action, or control devices to be installed, and time frame for its accomplishment.

Attends enforcement conferences to provide background data on cases, answers questions regarding cases, and assists in explaining Departmental Orders or Consent Order/Agreements.

Assist with investigations of complaints involving commercial or industrial contaminant sources.

Assist in reviewing applications and permits, for effect on water quality, erosion control, mining methods, and compliance with Environmental rules and regulations.

Reviews proposed plans and specifications to determine if they meet established rules and regulations, and recommends approval or disapproval.

Responds to emergency situations such as flood disasters by assisting in clean-up operations, setting up evacuation centers, and providing advice and assistance on vector control, sewage disposal, and water supply.

Prepares letters, memorandums, reports, and correspondence to exchange information with facility owners, governmental officials, supervisor and the public.

Researches files and case history to assist in gathering data for use in prosecution of cases.

Perform similar work as required.

REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES: Knowledge of the biological, chemical, and physical sciences related to environmental protection.

Knowledge of the basic methods and techniques utilized in the collection and analysis of environmental data.

Ability to learn the Department of Environmental Resources' rules, regulations, policies, and procedures governing environmental protection.

Ability to express ideas clearly and concisely in oral, written, and graphic form.

Ability to collect, organize, evaluate and present data in graphic and narrative form.

Ability to learn the procedures and techniques utilized in the documentation of violations.

Ability to learn the safety precautions required while conducting inspections and investigations.

Ability to meet with and secure the cooperation of facility operators, and the public during the conduct of investigations, inspections, and surveys.

Ability to learn the various procedures and techniques utilized in inspections of facilities, industries, earthmoving sites, mines and other areas involved in environmental protection.

Ability to establish effective working relationships with co-workers, supervisor, facility operators, and the public.

Ability to operator a motor vehicle.

Possession of eyesight and color perception to permit use of test equipment.

Possession of sufficient eye-hand coordination to permit use of test equipment.

Possession of sufficient physical stamina to permit carrying test equipment over long distances, walking through rough terrain, and working under adverse weather conditions.

**MINIMUM EXPERIENCE AND TRAINING:** A Bachelor's Degree with major course work in an appropriate physical or biological science or an closely related environmental field.

**NECESSARY SPECIAL REQUIREMENT:** Possession of a valid motor vehicle operator's license as issued by the Commonwealth of Pennsylvania.

<u>12470</u>	07	<u>ST</u>	B4	C	<u>999-99</u>	<u>7/1/1999</u>

Click on Job Code for current expanded information, on Pay Scale Type for current Pay Scale Type, on Civil Service or Non-Civil Service to obtain the Evaluation Guide (if available), on Executive Board Change to obtain the Executive Board amendment listed and on Last Change Effective to obtain history.

05/01/1985

12470

NUCLEAR ENGINEER 1

DEFINITION: This is entry-level professional work pertaining to the evaluation of design, construction, operation, and decommissioning of nuclear facilities within the Commonwealth.

An employee in this class participates in the evaluation of the design, construction, operation, and decommissioning of a nuclear facility for conformance to engineering standards, Federal or State rules and regulations. Work includes traveling to participate in effectiveness and

reliability features of nuclear facilities and specific features to the facilities

which affect plant safety; participating and assisting in on-site evaluation

and inspection of nuclear plants. Work also includes participating in the

review and evaluation of proposals for facilities' redesign and improvement to assure effective utilization and the attainment of safety

requirements. Work is assigned on a site-basis or an individual-safeguard basis. Work is reviewed by a higher-level engineer

for completeness, technical accuracy, and soundness of approach.

EXAMPLES OF WORK: Participates in evaluation of nuclear facilities' design, construction, operation, and decommissioning to ascertain whether they meet Federal and State safety requirements.

Participates in Federal inspections of nuclear facilities to assure that all

applicable requirements are being met.

Participates in educating the public about nuclear safety.

Reviews and evaluates industry and Federal reports pertaining to safety or environmental impacts of nuclear facilities to ascertain whether the design, construction, operation, and decommissioning of these facilities provide reasonable assurance of public health and safety.

Participates in the review and application for Federal permits and licenses for the construction, operation, alteration, and decommissioning of nuclear facilities affecting the Commonwealth.

Prepares reports, letters, and memos relating to the ability of nuclear facilities and systems to operate in a manner so as to protect public health and safety.

Provides consultation and assistance to other agency staff in the development and functioning of nuclear facility emergency plans. Provides assistance to the legal staff on matters of nuclear safety and environmental impact of nuclear facilities.

Travels to and from worksite.

Performs related work as required.

**REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES:** Knowledge of diverse aspects of design, construction, operation, and decommissioning of nuclear facilities.

Knowledge of environmental and safety issues related to nuclear facilities of their associated fuel cycles.

Knowledge of fundamental nuclear engineering specialities such as steady state and transient nucleonics, thermal hydraulic response and

heat transfer, fission processes and accompanying radiation, radiological processes and accompanying radiation, radiological and structural design aspects of nuclear facilities.

Ability to recognize and evaluate features of nuclear facilities which have an impact on plant safety and reliability; and to make recommendations regarding their acceptability in accordance with standard nuclear engineering practices.

Ability to understand the concepts behind laws, regulations, and standards in the broad field of nuclear energy.

Ability to read and write and communicate orally in English.

Ability to perform mathematical calculations at the GED 6 level.

Ability to read and interpret Federal rules and regulations.

Ability to read and interpret Commonwealth and Departmental administrative rules, regulations, policies, and procedures.

Ability to prepare and deliver presentations to public, State, and local officials.

MINIMUM EXPERIENCE AND TRAINING: A bachelor's degree with major course work in nuclear engineering.

or

Any equivalent combination of experience and training.

<u>12480</u>	<u>09</u>	<u>ST</u>	<u>B4</u>	<u>C</u>	<u>999-99</u>	<u>5/1/1995</u>

Click on Job Code for current expanded information, on Pay Scale Type for current Pay Scale Type, on Civil Service or Non-Civil Service to obtain the Evaluation Guide (if available), on Executive Board Change to obtain the Executive Board amendment listed and on Last Change Effective to obtain history.

05/01/1985

12480

NUCLEAR ENGINEER 2

DEFINITION: This is advanced professional work pertaining to the evaluation of design, construction, operation, and decommissioning of nuclear facilities within the Commonwealth.

An employee in this class evaluates or causes to be evaluated those engineered safeguard, radioactive waste treatment, and other systems important to the safety of these facilities as to their effectiveness and reliability in protecting the citizens and their environment from the possible effects of abnormal operation or accident. This includes travel for the continuing evaluation of those systems important to safety that may require redesign and improvement, so as to assure the Commonwealth that these facilities can be operated safely and that state-of-the-art designs, materials, and construction techniques are being employed. Work includes providing expert testimony and assistance to legal staff in proceedings relating to matters of safety or environmental impact of nuclear facilities; providing consultation on the facility emergency plans; reviewing and evaluating technical reports dealing with diverse aspects of nuclear facilities and their related fuel cycles. Work is assigned on a site basis or on an individual-safeguard basis. This individual has the authority to make technical decisions within the scope of his responsibilities. Work is reviewed by a supervisor for attainment of program goals and objectives, completeness, and results obtained.

EXAMPLES OF WORK: Participates in the planning and development of systematic techniques for the evaluation of specific nuclear projects and systems.

Reviews and evaluates industry and Federal reports pertaining to safety or environmental impact of nuclear facilities to ascertain whether the design, construction, operation, and decommissioning of these facilities provide reasonable assurance of public health and safety.

Participates in Federal inspections or performs independent inspections of those facilities to which he may be assigned responsibility in order to provide practical and continuing assurance that all applicable requirements are being satisfied and good engineering practices are being

adhered to.

Participates in informing the public about nuclear safety.

Reviews and evaluates technical reports dealing with diverse aspects of nuclear facilities and their fuel cycles.

Participates in the interactions between Federal regulators and applicants for Federal permits and licenses for construction, operation, alteration, and decommissioning of nuclear facilities affecting the Commonwealth.

Participates in the efforts of the nuclear engineering community toward optimizing nuclear system safety and toward the furtherance of public education in matters relating to nuclear safety.

Provides consultation and assistance to other agency staff in the development and functioning of nuclear facility emergency plans.

Prepares reports, letters and memoranda relating to the ability of nuclear facilities and systems to operate in a manner so as to protect public health and safety.

Evaluates nuclear facility design, construction, operation and decommissioning to ascertain whether they meet all applicable Federal and State requirements.

Evaluates the validity of certain assumptions made in estimating the effectiveness and reliability of nuclear system components in mitigating the consequences of various system failure.

Conducts on-the-job training to junior engineers.

Provides expert testimony and assistance in legal proceedings in matters related to nuclear safety.

Travels to and from worksites.

Performs related work as required.

**REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES:** Knowledge of diverse aspects of design, construction, operation, and decommissioning light water nuclear reactors.

Knowledge of the fundamental nuclear engineering specialties such as steady state and transient nucleonics, fluid dynamics, heat transfer, fission processes, fission products, and accompanying radiation, mechanical structural design aspects of nuclear plants.

Knowledge of Federal rules and regulations concerning design,

construction, and operation of nuclear facilities.

Knowledge of diverse aspects of other environmental and safety issues related to nuclear facilities or their associated fuel cycles.

Ability to recognize and evaluate features of nuclear facilities which have an impact on plant safety and reliability and to make responsible recommendations regarding their acceptability as per good nuclear practices.

Ability to read and write and communicate orally in English.

Ability to perform mathematical calculations at the GED 6 level.

Ability to prepare and analyze technical reports.

Ability to establish and maintain effective working relationships with associates, counterparts in various agencies and agencies of other states, industry, professional and non-professional groups and organization, and the general public.

Ability to prepare and develop presentations to public officials and the general public.

MINIMUM EXPERIENCE AND TRAINING: Three years of experience in responsible nuclear systems safety analysis and a Master's Degree with major course work in nuclear engineering;

or

Five years of experience in responsible nuclear systems safety analysis and a Bachelor's Degree with major course work in an appropriate engineering or science field.

or

Any equivalent combination of experience training.

NECESSARY SPECIAL REQUIREMENT: Certain positions in this class will require licensure as a professional engineer by the Commonwealth of Pennsylvania, or a reciprocal jurisdiction. These are positions where there can be no exemption from such licensure, as defined under Section 5, Exemption from Licensure, of the Professional Engineers Registration Law (as amended).

<u>12490</u>	10	<u>ST</u>	B5	C	<u>999-99</u>	<u>11/1/1999</u>

Click on Job Code for current expanded information, on Pay Scale Type for current Pay Scale Type, on Civil Service or Non-Civil Service to obtain the Evaluation Guide (if available), on Executive Board Change to obtain the Executive Board amendment listed and on Last Change Effective to obtain history.

05/01/1985  
12490

NUCLEAR ENGINEERING SUPERVISOR

DEFINITION: This is supervisory professional work in the evaluation of design, construction, operation, and decommissioning of nuclear facilities within the Commonwealth.

An employee in this class plans, develops, and supervises a statewide program for the evaluation of the safety of nuclear facilities and coordinates his program with other radiation protection programs. Work involves travels in establishing standards and procedures for evaluation of nuclear facilities; assuring Commonwealth awareness and input into related matters affecting nuclear facilities and the nuclear fuel cycle; advising and consulting with representatives of professional and key groups and regulatory agencies, such as the U.S. Nuclear Regulatory Commission, on matters relating to nuclear facilities and the nuclear fuel cycle. Work also involves assigning work; reviewing work performance; evaluating employees' performance; preparing and signing employees' Performance Evaluation Reports; interviewing and recommending employee selection; receiving and resolving employee grievances and complaints; approving leave requests; evaluating training needs of subordinates; and demonstrating more efficient work

methods to subordinates. Work is assigned in the form of broad program goals and objectives, and the employee exercises considerable freedom in determining specific goals and objectives and program priorities. Freedom to act is limited only by broad Departmental policy, administrative directives, and appropriate State and Federal laws. Work is reviewed upon completion by a professional superior through reports and conferences for attainment of program goals and objectives, completeness, and overall program quality.

EXAMPLES OF WORK: Plans, develops, and supervises a statewide program for the evaluation of safety of nuclear facilities and coordinates this program with other State radiation protection programs.

Reviews proposed laws and regulations for possible impact on nuclear energy safety and recommends changes if necessary.

Evaluates employees' work performance; prepares and signs employees' Performance Evaluation Reports.

Receives grievances and complaints, conducts initial investigation into cause and conditions, discusses with employees, and resolves or recommends solutions to grievances and complaints.

Approves leave requests and reviews subordinates' sick leave usage to determine if patten of abuse exists; maintains leave requests.

Exercises technical supervision and review over a staff of nuclear engineers who are assigned responsibility for review of specific nuclear facilities.

Coordinates the efforts of committees and consultants as necessary for

required  
analysis in various program phases.

Establishes standards and procedures for review, evaluation, and inspection of nuclear facilities.

Assures Commonwealth awareness and input into related matters affecting nuclear facilities and nuclear fuel cycle.

Provides technical consultation and recommendations concerning policy decisions to the appropriate Commonwealth officials on nuclear-related matters.

Advises and consults with representatives of professional and key groups and regulatory agencies, such as the U.S. Regulatory Commission, on matters relating to nuclear facilities and the nuclear fuel cycle.

Develops and evaluates training programs for nuclear engineering staff.

Supervises the participation in interactions between his staff and Federal regulators and applicants for Federal permits and licenses for the construction, operation, alteration, and decommissioning of nuclear facilities affecting the Commonwealth.

Participates in the efforts of nuclear engineering community toward optimizing nuclear system safety and toward the furtherance of public education in matters of nuclear safety.

Prepares, reviews, and evaluates reports in relating to the ability of nuclear facilities and systems to operate in a manner so as to protect public health and safety.

Provides consultation and assistance to other agency staff in the

development  
and functioning of nuclear facility emergency plans.

Provides expert testimony and assistance to legal staff in proceedings relating to matters of safety or environmental impact of nuclear facilities.

Travels to and from worksites.

Performs related work as required.

REQUIRED KNOWLEDGES, SKILLS, AND ABILITIES: Knowledge of the techniques utilized in evaluating nuclear production facilities.

Knowledge of Federal rules and regulations concerning design, construction, and operation of nuclear facilities.

Knowledge of diverse aspects of design, construction and operation of decommissioning of light water reactors.

Knowledge of divers aspects of other environmental and safety issues related to nuclear facilities or their associated fuel cycles.

Knowledge of the fundamental nuclear engineering specialties, such as steady state and transient nucleonics, thermal hydraulic response and heat transfer, fission processes and accompanying radiation, in addition to associated mechanical, radiological, structural design aspects of nuclear facilities.

Skill in the supervision of employees.

Ability to recognize and evaluate features of nuclear facilities which have an impact on plans safety and reliability; and to make responsible recommendations regarding their acceptability as per good nuclear engineering practices.

Ability to establish and maintain effective working relationships with

associates; counterparts in various Federal agencies and agencies of other

states; counterparts in the industry sector; professional and non-professional groups and organizations; and the general public.

Ability to understand the concepts behind laws, regulations, and standards in the broad field of nuclear energy.

Ability to plan and direct a statewide program for nuclear facility evaluation.

Ability to read and write and communicate orally and in English.

Ability to perform mathematical calculations at the GED 6 level.

Ability to read and interpret Federal rules and regulations.

Ability to plan, organize, and assign work to subordinate engineers.

Ability to evaluate employees' performance and prepare employee Performance Evaluation Reports.

Ability to read and interpret collective bargaining unit contracts applicable to the work performed by the unit.

Ability to read and interpret Commonwealth and Departmental administrative rules, regulations, policies and procedures.

Ability to evaluate employee training needs and request further education and training for subordinates.

Ability to supervise work activities of subordinate engineers effectively.

Ability to prepare and deliver presentations to public officials.

MINIMUM EXPERIENCE AND TRAINING: Seven years of responsible experience in

nuclear system safety analysis and a Master's degree with major course work in nuclear engineering;

or

Nine years of responsible experience in nuclear system safety analysis and a Bachelor's degree with major course work in an appropriate engineering or science field.

or

Any equivalent combination of experience and training.

NECESSARY SPECIAL REQUIREMENT: Certain positions in this class will require licensure as a professional engineer by the Commonwealth of Pennsylvania, or a reciprocal jurisdiction. These are positions where there can be no exemption from such licensure, as defined under Section 5, Exemption from censure, of the Professional Engineers Registration Law (as amended).

Staff Résumés

**David J. Allard, CHP**

PA DEP / BRP  
PO Box 8469  
Harrisburg, PA 17105-8469  
717-787-2480  
717-783-8965 (fax)

**Education:**

University of Massachusetts - Lowell, Lowell, MA  
M.S., Radiological Sciences and Protection, 1984

State University of New York at Albany, Albany, NY  
B.S., Environmental Sciences, 1977

**Certification / Registration / Professional License:**

American Board of Health Physics – Comprehensive Practice, 1988  
National Registry of Radiation Protection Technologists, 1980

**Relevant Employment History:**

Pennsylvania, Department of Environmental Protection, Harrisburg, PA  
1999 – Present

Director, Bureau of Radiation Protection

Responsible for statewide nuclear safety, radiological emergency response, xray, NARM, occupational and environmental radiation protection, decommissioning, radon, and low-level radioactive waste management programs. Experience includes the full range of licensing, inspection, LLRW and decommissioning activities with existing NARM and NRC licensees.

Allard Radiological Consultants, Inc., N. Chelmsford, MA  
1996 – 1999

Principal / Medical Health Physicist

Responsible for government and commercial client support of various radiation protection programs, audits, training, radiation / xray surveys and shielding designs, expert witness, and radioactive waste management projects and tasks. Experience includes update of 10CFR835, event investigations, and the environmental and occupational radiation protection inspection and independent oversight of DOE's production, weapons, reactor, accelerator, D&D and environmental restoration facilities for EH-2.

Arthur D. Little, Inc., Cambridge, MA  
1991 – 1996

Senior Consultant (Health Physicist)

Responsible for managing and supporting government and commercial client projects related to radiation protection programs and radioactive waste management at DOE, DOD and other facilities. Experience includes environmental and occupational radiation

protection inspection and independent oversight of DOE's production, weapons, reactor, accelerator, D&D and environmental restoration facilities for EH-2.

TGM Detectors, Inc., Waltham, MA  
1985 – 1991

Vice President / Radiation Safety Officer (RSO)

Responsible for corporate radiation safety, employee training, gasfilled radiation detector design, engineering, testing, and business management. Experience includes oversight of facility alpha, beta, gamma, neutron sealed source program, and support of customer radiation monitoring instrumentation in the areas of health physics, downhole well logging and fixed / portable nuclear gauges.

Nuclear Metals, Inc., Concord, MA  
1981-1985

Supervisor of Health Physics

Responsible for plant occupational and environmental radiation protection programs related to uranium and thorium processing and fabrication, staff training, and low-level radioactive waste management. Experience includes complete environmental and occupational health physics program for a major fully integrated (i.e., UF4– U metal – U alloy - machining) and NRC source material licensee.

Albany Medical Center, Albany, NY  
1977-1981

Medical Health Physicist / Assistant RSO

Responsible for the hospital and college broad scope NY state license and radiation safety program related to x ray and radioactive material use, patient radiation dosimetry, and Instructor of Radiation Physics, Radiation Biology and Radioisotope Methodology. Experience includes a full range of sealed and unbound sources (i.e., from H3 to U-238) used in research, clinical, nuclear medicine and therapy.

**Professional Affiliations – full member of:**

American Association of Physicists in Medicine

American Nuclear Society

Conference of Radiation Control Program Directors

Health Physics Society

**Professional Activities:**

Officer of the Health Physics Society, 2005- present

Director of the Health Physics Society, 1996 – 1999

Various AAPM, ANSI, ASTSWMO, CRCPD, HPS, IEEE, ISCORS, NCRP committees

**Publications and Presentations on the Topics of:**

- Tritium in Landfill Leachate
- Mammography Experiences in Pennsylvania
- Low-activity Waste Management in Pennsylvania

- New Pennsylvania Regulations and Guidance for Radiation Monitoring of Solid Waste
- The Commonwealth of Pennsylvania's Review, Regulatory Approach, and Actions Regarding the Practice of CT Screening
- Nuclear / Radiological Emergency Response and Homeland Security in Pennsylvania
- Health Physics Instrumentation for Emergency Response
- Radiation Protection in Medicine
- Decommissioning Experiences in Pennsylvania
- Quehanna D&D Project
- Cosmic Ray Doses to Airline Crew
- Analytical X-ray Equipment Surveys
- Radiation Protection Inspection and Auditing (16-hr short course)
- Fundamentals of Radiation Protection (40-hr short course)
- External Dosimetry Considerations Involving Operations with Uranium
- Characteristics of Aerosols Generated at a Depleted Uranium Metal Fabrication Facility
- Radioactivity in Zirconium Oxide Powders Used in Industrial Applications
- Re-evaluation of Scattered to Incident Exposure Ratios: Implications for Diagnostic X-Ray Shielding Design
- Radiation Safety Protocol for Analytical X-Ray Equipment
- Radiological Response Characteristics of Geiger-Mueller Tubes Commonly Used in Radiation Monitoring Instruments
- Revised ANSI Standard on Test Procedures for Geiger-Mueller Counters
- Staff Exposures with Cs-137 Brachytherapy
- Quality Assurance with Commercial Personnel Dosimetry

## **James F. Barnhart - Nuclear Emergency Response**

### ***Formal Accredited Education***

**Master of Science in Nuclear Engineering**, The University of New Mexico, Albuquerque, New Mexico.  
July 1995.

A 36 credit hour graduate program with thesis in the college of Chemical and Nuclear engineering. Some of the courses included nuclear reactor safety engineering, nuclear instrumentation theory, nuclear decontamination and decommissioning, particle interaction with materials physics, FORTRAN design coding for Monte-Carlo nuclear core and shielding computer modeling, and a 6 credit hour thesis. This degree was attained over a period of five years while working full time for DEP and an education leave.

**Bachelor of Science in Environmental Resource Management**, The Pennsylvania State University, University Park, PA. November 1976.

My undergraduate courses included 27 credit hours of physics (eight credits in senior level nuclear and atomic physics) and 24 credit hours of calculus and analytical geometry.

### ***Training non-accredited***

**Pennsylvania State University World Campus GIS Certificate** – June 2000  
16 CEU credit GIS course using *Intergraph Geomedia 3.0*

Course: **ESRI Visual Basics Application (VBA) Programming for ESRI ArcGIS** - May 2003 5-day course

Course: **Applied Health Physics** - A 187 hour course given over a five-week period in September and October 1989. This was an intensive course in theoretical and applied health physics. Approximately one half of the course was theory and the other half was laboratory and field applications. This course was given at Oak Ridge Associated Universities, Oak Ridge, TN.

Course: **Probability Risk Assessment (PRA) for Boiling Water and Pressurized Nuclear Reactors.**

### **Nuclear Power and Radiation Employment Experience - 1985 to present**

Since 1985, I have worked for the **Bureau of Radiation Protection of the Pennsylvania Department of Environmental Protection (DEP)**. Before 1995 it was known as the Department of Environmental Resources (DER). I have been a Radiation Health Physicist since 1990 and before that a Radiation Protection Specialist. Since 1993 I have worked in the Division of Nuclear Safety. Before 1993, I worked in the radon program and special projects division. I have worked on several projects, some simultaneously. They are listed in the following categories.

### **Nuclear Emergency Plume Modeling and Emergency Response Experience - 2001 to present**

### **Low Level Radioactive Waste Tracking and Relational Database Experience - 1995 to present**

### **Quehanna Decontamination and Decommissioning Project - 1996 to 2000.**

### **Predictive Methodology Development - 1994 to 1995**

### **Radiation Instrumentation Computational Code Design - 1987 to 1993**

### **General Nuclear Emergency Response Experience – 1989 to 2001**

### **Low Level Radioactive Waste Experience (LLRW) – 1994 to 1998**

**James F. Barnhart - Nuclear Emergency Response**

**Acting Emergency Planning Coordinator 6/1995 - 12/1995**

***Special Nuclear Safety Projects***

**Saxton Nuclear Power Plant Decommissioning Survey - July to September 1990**

**Nuclear Material Transportation Risk and Tracking Codes.**

**Environmental Radiation - Radon 1985-1993**

**Peer Reviewed Published Papers**

*Spatial and Statistical Techniques for Identifying Regions with Elevated Radon Levels* – thesis at University of New Mexico - Zimmerman Library

*The Utilization of Geographic Information Systems in Nuclear Emergency Response in Pennsylvania-*  
American Health Physics Society Mid-Year Conference January 2003

**Bridget M. Craig**  
PA DEP/BRP  
2 E. Main St  
Norristown, PA 19401  
484-250-5852  
484-250-5951

### **Education**

**Master of Arts in Counseling Psychology, 2003**  
Immaculata College, Exton, PA

**Bachelor of Science in Biology, 1992**  
**Bachelor of Arts in Biology, 1981**  
Bloomsburg University, Bloomsburg, PA

**University of Scranton, Scranton, PA, 1977-1979**  
Major: Biology

### **Relevant Employment History**

**PA Department of Environmental Protection, Norristown, PA**  
**Environmental Protection Compliance Specialist, 2001-present**  
**Air Quality Specialist, 1993-2001**

### **Professional Affiliations**

**Conference of Radiation Control Program Directors**

**Richard F. Croll**  
PA DEP / SERO  
2 East Main St  
Norristown, PA 19401-4915  
484-250-5848 / 570-895-4044  
484-250-5951 (fax) / 570-895-4041 (fax)

**Education**

Thomas A. Edison State College, Trenton, NJ  
B.S. Applied Science and Technology: Radiation Protection, 1992

Thomas A. Edison State College, Trenton NJ  
A.S. Nuclear Engineering Technology, 1989

**Certification / Registration / Professional License**

National Registry Of Radiation Protection Technologists (inactive)

**Relevant Employment History**

Pennsylvania, Department of Environmental Protection, Harrisburg, PA  
2001 - Present

Radiation Health Physicist - 2

Conduct inspections of and provide assistance to facilities using x-ray producing machines, state regulated radioactive materials, radiation monitoring equipment at solid waste facilities and certified radon testers within the east portion of Pennsylvania. Previously assigned to Central Office RAM Licensing section, these duties included implementing the solid waste monitoring program, evaluation of radiological consequences of disposal on non-licensed RAM and administering the Department's TLD program.

Millennium Services, Inc.

2000 - 2001

Health Physicist

Temporary assignments at Maine Yankee, Connecticut Yankee and Susquehanna Nuclear Plants supporting radiological aspects of decommissioning and outage work.

GPU Nuclear Corp.

1986 - 1999

Engineering Associate

Assigned to OCNGS Decommissioning Planning, corp. Nuclear Safety and Engineering & Design Departments in various radiological related positions. Secretary and member of the Saxton NEC decommissioning oversight committee. Previously assigned to TMI-2 in Radiological Engineering, RadCon Field Operations supervisory and technician positions.

**Relevant Military Experience**

1972 - 1979

Mechanical Operator / Engineering Laboratory Technician, MO / ELT  
Leading ELT onboard an operating SSBN. Previously ELT Instructor at an operating prototype

**Professional Affiliations**

BWROG Cobalt Reduction Committee, 1994 - 1996

B&WOG Dose Reduction Task Force, 1995 – 1996

EPEI Cobalt Reduction Guidelines Committee, 1989

Terry W. Derstine  
2 E. Main Street  
Norristown, PA 19401  
484 250-5846  
484 250-5951

Education/degree

The Pennsylvania State University, University Park, PA  
Bachelor of Science Degree in Microbiology 1984 – 1988

Relevant Employment History

June, 1988 - Present

The Pennsylvania Dept. of Environmental Protection

*Southeast Regional Office, Bureau of Radiation Protection*

- *August, 2000 – Present*
  - Radiation Protection Program Supervisor, Radioisotopes Safety and Special Projects Unit
    - Supervision of five employees and Program activities involving radioactive materials and other special projects
- *May, 1994 – August 2000*
  - Radiation Health Physicist 2
    - Assess radiation safety programs, specializing in larger, more complex facilities, and functioning as lead inspector
- *October, 1992 – May, 1994*
  - Radiation Health Physicist 1
- *June, 1989 – October, 1992*
  - Radiation Protection Specialist
- *June, 1988 – June, 1989*  
Radiation Protection Specialist Trainee

Professional Affiliations:

Associate member of the Conference of Radiation Control Program Directors (CRCPD).

Advisor to the CRCPD E-23 Committee on Resource Recovery and  
Radioactivity

**Andrew T. Gardosik**  
PA DEP / BRP  
909 Elmerton Ave.  
Harrisburg, PA 17110  
(717) 705-4895  
(717) 705-4890 fax

### **Education**

Penn State University – State College, PA  
B.S. Environmental Sciences ; minor: Forest Science, 1992

Harrisburg Area Community College – Harrisburg, PA  
A.A. Civil Engineering Tech.

### **Relevant Employment History**

Pennsylvania, Department of Environmental Protection, Harrisburg, PA  
Nov. 1992 – Present  
Radiation Health Physicist

Responsible for performing radiation safety inspections at facilities that use radiation producing equipment and/or radioactive material. These inspections involve making detailed observations and measurements that require proficiency in the use of a variety of radiation detection field instrumentation. The inspection will determine compliance with applicable State and Federal regulations and licenses.

Other responsibilities include performing airborne environmental and occupational sampling and analysis in the field, and to provide assistance to the EOF and Assessment Center as needed during reactor emergencies at Three Mile Island and Peach Bottom.

Respond and investigate all inquiries concerning radiation from the public or registrants.

Provide emergency response to accidents involving radiation; provide assessment, and direct recovery operations as needed.

Employer

Begin date – End date

Position/Title

Brief description of duties / Position Summary  
(Repeat in this format as necessary)

Relevant Military Experience

Begin date – End date

Position/Title

Last Duty Assignment and Major Command  
Description of duties/Position Summary

Professional Affiliations

Publications

**Ronald J. Hamm**

PA DEP/BRP  
PO Box 8469  
Harrisburg, PA 17105-8469  
717-783-5919  
717-783-8965 (FAX)

**Education**

Divine Providence Hospital-  
Radiologic Technology  
Harrisburg Hospital-  
Nuclear Medicine Technology

**Certification/Registration/Professional Licensure**

ARRT-Radiologic Technology  
ARRT-Nuclear Medicine Technology  
NMTCB-Nuclear Medicine Technology  
ASCP-Nuclear Medicine Technology

**Relevant Employment History**

Pennsylvania, Department of Environmental Protection, Harrisburg, PA  
2002-present

Chief, Radioactive Material Licensing

1997-2002

Radioactive Material Licensing

Responsible for evaluation of new license requests, amendment requests and license terminations to assure adherence to regulations in the Pa Code and CFR..

Divine Providence Hospital-Williamsport, PA

1985-1996

Administrative Director of Radiation Oncology, Medical Oncology, Nuclear  
Medicine/RIA

Responsible for the daily operations of these areas including staffing, safety, marketing  
and budgeting. Participated in Radiation Safety Committee meetings.

Divine Providence Hospital-Williamsport, PA

1971-1985

Chief Nuclear Medicine Technologist

Responsible for daily operations of department, scheduling patients, ordered radioactive  
material, completed license amendment requests for Commonwealth and NRC.

Divine Providence Hospital-Williamsport, PA

1965-1967

Staff Radiologic Technologist

Performed daily radiography tasks

**Relevant Military Experience**

1967-1970

NCOIC-Radiology

San Vito Air Station, Italy

USAF Security Service

Responsible for daily operations of the Radiology Department

**Professional Affiliations**

American Registry of Radiologic Technologists

American Society of Radiologic Technologists

Society of Nuclear Medicine

CRCPD

4/27/05

Rich Janati  
PADEP / BRP  
P.O. Box 8469  
Harrisburg, PA. 17105-8469  
717-787-2163  
717-783-8965 (fax)

#### **EDUCATION**

University of Pittsburgh - Pittsburgh, PA  
M.S., Energy Resources and Technology, 1984

University of Massachusetts - Lowell, Lowell, MA  
B.S., Nuclear Engineering, 1980

#### **Relevant Employment History**

Pennsylvania, Department of Environmental Protection, Bureau of  
Radiation Protection, Harrisburg, PA  
1994 - Present

Chief, Division of Nuclear Safety

Responsible for the overall implementation of the Commonwealth's  
nuclear safety oversight, nuclear power plant emergency response  
and low-level radioactive waste (LLRW) disposal programs.

Provides support to the department's secretary in her role as the  
Chairman of the Appalachian States LLRW Compact Commission

Pennsylvania, Department of Environmental Protection, Harrisburg, PA  
09/2002-06/2003

Acting Director, Bureau of Radiation Protection

Responsible for statewide nuclear safety and emergency response, X-  
ray, occupational and environmental radiation protection,  
decommissioning and radon programs, and LLRW management.

Pennsylvania, Department of Environmental Protection, Bureau of  
Radiation Protection

1985-1984

Nuclear Engineer

Performed a general nuclear safety oversight review at the assigned  
power plants, including frequent on-site interactions and  
accompaniment of NRC resident and region based inspectors. Conducted  
inspections of LLRW packaging and transportation activities at the  
nuclear power plants and other major LLRW generators. Participated in  
emergency exercises and drills at the assigned power plants to  
maintain the ability to assess plant conditions during nuclear event  
or emergencies.

Pennsylvania, Public Utility Commission, Bureau of Rates  
1984-1985

Utility valuation Engineer

Performed comparative analysis of rate case elements, including fuel inventories, prices, materials and supplies, decommissioning expense estimates and accrual management. Developed data requests and interrogatories for submittal to the electric utilities.

Westinghouse Electric Corporation, Pittsburgh, PA

1981-1983

Nuclear Fuel Safety and Licensing Engineer

Participated in the nuclear fuel reload design for the assigned nuclear power plants and prepared the Reload Safety Evaluation reports. Participated in the utility presentations and the Nuclear Regulatory Commission meetings regarding Westinghouse fuel safety and licensing issues.

University of Massachusetts-Lowell, Lowell, MA

1980-1981

Research Assistant

Provided assistance in performing research in the areas of nuclear physics and nuclear engineering

#### **PROFESSIONAL Affiliations**

1. Conference of Radiation Control Program Directors (CRCPD)
3. Low-Level Radioactive Waste Forum, Inc.

#### **PUBLICATIONS**

1. Impact of Transportation Considerations in the Selection of LLRW Repositories, presented at the Second International Conference on Radioactive Waste Management.
2. Safety Issues Related to Disposal of I-129 in a LLRW Repository, presented at the Ninth Annual DOE Conference.
3. Safety Issues Related to the Disposal of C-14 in a LLRW Repository - A State Perspective, presented at the National Conference on Radiation Control.

R. Janati

RECORD OF TRAINING

<u>COURSE TITLE</u>	<u>SPONSOR</u>	<u>DATE</u>
Radioactive Materials Transp. Emergency Response Orientation	DOE	10/85
BVPS Radioactive Waste Management	DLCO	10/85
BVPS Station Orientation Training	DLCO	11/85

BVPS Radiation Workers Training	DLCO	11/85
BVPS Quality Control Training	DLCO	11/85
BVPS Licensed Operators Training	DLCO	2/86
Transportation of Radioactive Materials	NRC	5/86
Radiological Accident Assessment	FEMA	7/86
BVPS EP Training For Offsite Agencies	DLCO	10/86
BVPS Solid Waste and Process Control (PCP) Program	DLCO	11/86
BVPS General Employee and Radiation Workers Training	DLCO	10/87
Computer Training Enable OA	Pa DEP	1/88
Westinghouse Technical Managers Course	NRC	2/88
American Board of Health Physics Preparation	PSU	6/88
TMI Radiological and Environmental Assessment Coordinator Course	GPUN	6/88
TMI-1 Operators Training	GPUN	7/89
Computer-Enable Database	Pa DEP	10/89
Computer-Enable Tutorial	Pa DEP	12/89
TMI General Employee and Radiation Workers Training	GPUN	4/90
INEL Performance Assessment Computer Codes (PORFLO & PRESTO)	NLLWMP	4/90
TMI-1 Operators Training	GPUN	6/90
Computer-Enable Spreadsheet	Pa DEP	9/90

TMI-1 Operators Training	GPUN	8/90
BVPS EP Training for Offsite Agencies	DLCO	11/90
Computer-Enable Graphics	Pa DEP	1/91
TMI EP Training for Offsite Agencies	GPUN	4/91
TMI General Employee and Radiation Workers Training	GPUN	5/91
Eberline (ESP-2) Instrument Training	Pa DEP	5/91
Fundamentals of Inspection	NRC	10/90
SSES EP Training for Offsite Agencies	PP&L	11/91
PP&L Fitness for Duty (FFD) Training for Supervisors	PP&L	2/92
Emergency Response Data System (ERDS) Training	NRC	8/92
PB Dose Calculation Model	PECO	8/92
Federal Radiological Emergency Response Plan (FRERP)	NRC	9/92
Team Building for Managers	Pa DEP	10/92
Risk Assessment & Communication	NLLWMP	1/93
Limatorque Motor Operated Valve (MOV) Training	GPUN	1/93
NRC Incident Investigation Team (IIT) Investigation at TMI	NRC	2/93
TMI General Employee and Radiation Workers Training	GPUN	4/93
American Disability Act (ADA) Training	Pa DEP	7/93

BVPS EP Training for Offsite Agencies	DLCO	8/93
Advanced Radiological Accident Assessment Course	FEMA	9/93
Geographical Information System (GIS) Training	Pa DEP	9/93
SSES EP Refresher Training for Offsite Agencies	PP&L	10/93
TMI-2 Post Defueling Monitored Storage (PDMS)- Electrical, Ventilation, and Liquid Waste Disposal Systems Training	GPUN	11/93 & 12/93
BVPS General Employee and Radiation Workers Training	DLCO	12/93
Managing Diversity Workshop	Pa DEP	12/93
General Radiological Emergency Response Training	Pa DEP	2/94
PP&L Fitness For Duty (FFD) Retraining For Supervisors	PP&L	2/94
TMI General Employee and Radiation Workers Training	GPUN	4/94
Susquehanna (SSES) Dose Projection Training	PP&L	4/94
TMI Dose Projection Training	GPUN	4/94
Safety Program	Pa DEP	6/94
Conflict Management	Pa DEP	6/94
Risk Management	ACURI	8/94
Duke University strategic Leadership Program	Pa DEP	9/94
BRP Orientation Training	Pa DEP	10/94
Project Management Training	Pa DEP	1/95

TMI Dose Projection Training	GPUN	3/95
NRC Emergency Response Training	NRC	5/95
Computer Training-Microsoft Word	Pa DEP	7/95
Workshop Design/Meeting Leadership	Pa DEP	8/95
Risk Communications	NLLWMP	10/95
NRC Training on 10 CFR Part 71-Transportation Regulations	NRC	2/96
Computer Training - Power Point	Pa DEP	3/96
Understanding Communities	GJS & Associates	4/96
Computer Training-Microsoft Excel		10/96
How to Survive a Public Hearing	Battelle/NLLWMP	5/97
Sandman Risk Communications Training	NLLWMP	4/98
Managing for Government Responsiveness	Pa DEP	5/98
Pollution Prevention Integration Project	Pa DEP	6/98
EPA Sponsored Training on Protective Action Guidelines (PAG's)	EPA	8/98
Pollution Prevention Assessment Training	Pa DEP	8/98
GPU Nuclear Training on Emergency Action Levels	GPUN	11/98
NRC Region 1 Training on the New NRC Inspection and Oversight Program	NRC	4/00

ERDS Refresher Training	NRC	9/00
PRA for Technical Managers	NRC	6/01
Radiological Emergency Pre- Paredness Exercise Evaluation	FEMA	12/01
Spokesperson Training	PADEP	4/02
Valuating and managing a Diverse Workforce	PADEP	6/02
Expectations For Inspectors	NRC	9/03
Leadership Awareness	PADEP	7/03
Advanced Radiation Safety	EPA	8/03
Prevention of Sexual Harassment	DEP	6/04
Emergency Response Organization (ERO) Requalification Training	Exelon	8/04
RC Response Technical Manual (RTM)	NRC	9/04
PA Radiological Assistance Program (PARAP)	PEMA/PADEP	11/04
Advisory Committee Database Training	PADEP	12/04

#### CONFERENCES AND WORKSHOPS

Effective English Workshop	US OPM	1/85
MORT-Accident/Incident Investigation Workshop	EG&G	11/86
LLRW Project Management QA/QC Workshop	EG&G	4/88
RC Workshop on Systems and	NRC	4/92

## Components Operability

NRC Regulatory Information Conference	NRC	7/92
Emergency Preparedness Executive Seminar	GPUN	9/92
NRC Regulatory Information Conference	NRC	5/93
Total Quality Management Workshop	NLLWMP	7/93
NRC National State Liaison Officers' Meeting	NRC	9/93
Managing Diversity Workshop	Pa DEP	12/93
Radiation Protection Managers Workshop	NRC	12/93
LLW-Host State Technical Coordinating Committee (TCC) Meeting	NLLWMP	4/94
NRC Regulatory Information Conference	NRC	5/94
ACURI Annual Meeting	ACURI	8/94
NRC Performance Assessment Workshop	NRC	10/94
LLW-Host State TCC Meeting	NLLWMP	12/94
NRC Workshop on Performance Assessment	NRC	12/94
LLW-Host State TCC Meeting	NLLWMP	12/94
DOE Annual LLW Conference	DOE	12/94
CRCPD Workshop on Licensing and Regulation of LLRW	CRCPD	4/95
LLW-Host State TCC Meeting	NLLWMP	5/95

NRC Regulatory Information Conference	NRC	5/95
LLW-Host state TCC Meeting	NLLWMP	8/95
CRCPD Workshop on Licensing and Regulation of LLRW (storage)	CRCPD	8/95
LLW-Host State TCC Meeting	NLLWMP	12/95
DOE Annual LLW Conference	DOE	12/95
CRCPD Workshop on LLRW Licensing and Regulations-Tour of Barnwell	CRCPD	3/96
Host State TCC Meeting	NLLWMP	4/96
CRCPD Workshop on Licensing and Regulation of LLRW	CRCPD	3/96
Host State TCC Meeting	NLLWMP	10/96
CRCPD Workshop on Licensing and Regulation of LLRW	CRCPD	10/96
Host State TCC Meeting	NLLWMP	2/97
CRCPD Workshop on Licensing and Regulation of LLRW	CRCPD	3/97
NRC Regulatory Information Conference	NRC	4/97
Host State Technical Coordinating Committee (TCC) Meeting	NLLWMP	5/97
DOE Annual Conference	NLLWMP	5/97
Radiation Workshop	Pa DEP	11/97
NRC Regulatory Information Conference	NRC	4/98
National Radiological Emergency Preparedness Conference	REP	4/98
LLW Forum	Forum	5/98

NEI Workshop on Nuclear Plant Decommissioning and License Renewal	NEI	7/98
EPA Workshop on Radiological Post-Emergency Response Issues	EPA	9/98
LLW Forum Meeting	Forum	9/98
EPA Workshop on Mixed Waste	EPA	10/98
Water Reactor Safety Information Meeting	NRC/NRR	10/98
Host State Technical Coordinating Committee Meeting	NLLWMP	11/98
DOE Annual LLW Meeting	DOE	11/98
LLW Forum Meeting	Forum	2/99
CRCPD Workshop for LLRW Regulators	CRCPD	9/99
ACURI Annual Meeting	ACURI	10/99
LLW Forum Meeting	Forum	10/99
HP Society Meeting	HP Society	10/99
NRC Workshop on the New Inspection And Oversight Program	NRC	1/00
Radioactive Waste Management Conference		2/00
FEMA Region III REP Community Meeting	FEMA	2/00
LLW Forum Meeting	Forum	3/00
NRC Workshop on the Revised New Inspection and Oversight Program	NRC	3/00
Solid Waste & Waste Minimization Workshop	PADEP	6/00
ACURI Annual Meeting	ACURI	9/00
Solid Waste & Waste Minimization Workshop	PADEP	10/00& 11/00

NRC Reactor Oversight Initial Implementation Panel Meeting	NRC/IIEP	2/01
NRC New Reactor Oversight Public Workshop	NRC	3/01
NRC Regulatory Information Conference	NRC	3/01
NRC ACRS Meeting on MOX Fuel and High Burn-up Fuel	NRC/ACRS	4/01
NRC Workshop on Advanced Reactors	NRC/ACRS	6/01
NRC Annual Research Conference	NRC	10/01
Radioactive Waste Management Conference	Industry	02/02
NRC Regulatory Information Conference	NRC	03/02
LLW Forum Meeting	LLW Forum	03/02
PEMA Annual Radiological Officers Workshop	PEMA	09/02
LLW Forum Meeting	LLW Forum	03/03
NRC Regulatory Information Conference	NRC	04/03
LLW Forum Meeting	LLW Forum	09/03
NRC Annual Research Conference	NRC	10/03
LLW Forum Meeting	LLW Forum	09/04
NRC Annual Research Conference	NRC	10/04
Waste Management Conference	Industry	02/05
NRC Regulatory Information Conference	NRC	03/05
LLW Forum Meeting	LLW Forum	03/05

Full name with middle initial: Roy G. Kitzer  
Work address: 909 Elmerton Avenue, Harrisburg, Pa. 17110  
Work telephone: 717 705-4893  
Work fax: 717 705-4890

Education/degree (most recent first)  
University: MS Radiation Science- Rutgers; BS Ch. Eng.- Carnegie Tech  
Degree, year: 1966; 1956

Certification / Registration / Professional License

#### Relevant Employment History

Employer: DEP/RPP  
Begin date – 1963-1964 & 1996-2005  
Position/Title: HP II  
Brief description of duties / Position Summary  
PADEP – Inspection Compliance, Radon, NORM; LLRW

Employer: Westinghouse Nuclear Service Division  
Begin date – End date: 1964-1996  
Position/Title: Manager IH&S & RSO  
Brief description of duties / Position Summary  
Manager Radsafe, Industrial Hygiene, Safety; RSO for Large Broad  
Materials NRC License; LLRW Generator & ACURI Board

Relevant Military Experience: US Coast Guard  
Begin date – End date: 1957-1965 - Reserves  
Position/Title: Seaman II  
Last Duty Assignment and Major Command: Cape May, NJ  
Description of duties/Position Summary: Basic and Critical Skills Exemption

Professional Affiliations: Previous - HPS, AIHA, NSC

Publications - None

Joseph A. Koshy  
2 East Main St  
Norristown, PA 19401  
(484) 250-5836  
(484) 250-5951(fax)

**Education**

M.S., Physics  
Kerala University, India  
1987

**Certification / Registration / Professional License**

Associate Member of CRCPD

**Relevant Employment History**

Pennsylvania Department of Environmental Protection  
1994 – Present

Health Physicist - II

Perform inspections to verify compliance with the Commonwealth of Pennsylvania radiological rules and regulations for the eastern area of state. Perform inspections to verify safe use of isotopes or subject to be licensed by Commonwealth. Perform inspections at accelerator facilities.

Tonda L. Lewis  
Evan Press Building P.O. 1467 Harrisburg, PA  
Phone: 717 783-8541  
Fax: 717 783-1114

Bachelors Degree  
PSU – University Park, PA  
1987

### Relevant Employment History

Commonwealth of PA/Dept. Env. Protection  
Feb 2000 - Present

Radiation Protection Program Supervisor

Brief description of duties / Position Summary - Directs and coordinates the environmental monitoring programs around PA nuclear facilities. Supervises the field operations of section staff in; collection of samples; submission for analysis, review and reporting of results. Serves as RSO in complying with Department's USNRC byproduct material license. Participates in Emergency Response exercises.

Commonwealth of PA/Dept. Env. Protection  
Nov. 1992 - May 1995

Radiation Health Physicist 2

Brief description of duties / Position Summary - Reviewed analysis results of environmental samples, communicated with nuclear utility contractors in resolution of data conflicts. Served as RSO in complying with Department's USNRC byproduct material license. Participates in Emergency Response exercises.

Commonwealth of PA/Dept. Env. Resources  
Nov. 1992 - May 1995

Radiation Health Physicist 1

Brief description of duties / Position Summary - Reviewed analysis results of environmental samples, communicated with nuclear utility contractors in resolution of data conflicts, Participated in Emergency Response exercises. Assisted RSO in complying with Department's USNRC byproduct material license.

Commonwealth of PA/Dept. Env. Resources  
April 1988 – Nov. 1992

Radiation Protection Specialist

Brief description of duties / Position Summary - Collected environmental samples for radiological analysis as part of environmental monitoring program around nuclear facilities. Scheduled calibrations and maintained air sampling equipment. Participated in nuclear power station exercises as part of emergency response field teams. Assisted RSO in complying with Department's USNRC byproduct material license.

John T. Maher  
PADEP, Southcentral Regional Office  
909 Elmerton Avenue  
Harrisburg, PA 17110  
(717) 705-4700  
(717) 705-4930 (fax)

**Education**

SUNY Westchester N.Y.  
A.A.S. Radiology Technology 1971

SUNY Downstate Medical Center Brooklyn, N.Y.  
B.S. Radiology Science 1973

NSEU Fort Lauderdale, Fla.  
M.S. M.I.S 1992

**Certification / Registration / Professional License**

American Registry of Radiological Technologist 1971

**Relevant Employment History**

**Pennsylvania Department of Environmental Protection**  
Harrisburg, PA.

Position Held – Radiation Protection Program Supervisor SC and NC  
Regions  
2004-Present

**Duties:**

As the Radiation Protection Program Supervisor, I am responsible for planning and directing the Radiation Protection Program in the Southcentral and Northcentral Regions. Duties include supervising, coordinating and performing the following: inspection of state licenses or registered radiation sources and radioactive material; surveying of homes and other buildings for the presence of radon; consulting with and advising radiation users concerning good health physics practices; conducting quality control NEXT surveys and Federal Level 11 compliance surveys; responding to all written and oral inquiries; performing MQSA Mammography inspections; and providing emergency response to

accidents involving radiation and investigating accidents and high radiation exposures. Supervisory duties include establishing goals and objectives, assigning and reviewing work, evaluating performance, approving/disapproving leave requests, and initiating discipline when necessary.

**Pennsylvania Department of Environmental Protection**

Harrisburg, PA.

Position Held -Radiation Health Physicist II

1989-2004

Duties:

As a Radiation Health Physicist II, I perform radiation safety inspections of medical and industrial facilities that utilize ionizing radiation producing equipment and radioactive materials. I make detailed observations and measurements that require proficiency in the use of a variety of radiation detection field instrumentation to determine compliance status with Title 25 Pa. Code, its referenced Federal standards 10 CFR §§ 1020.30, 1020.31, and the Radiation Protection Safety Act, of July 10, 1984.

I draw upon my knowledge of "National Council of Radiation Protection" recommendations to evaluate operating procedures with the goal of reducing patient, population, operator and environmental exposures while incorporating more effective industrial and medical management strategies into these practices. I suggest improvements or solutions to deficiencies when ever possible.

I respond, evaluate and take appropriate actions for incidents and accidents involving radioactive material or radiation producing machines, including the evaluations of personnel exposures. Investigate complaints or discoveries that appear to be in violation of Pennsylvania Code, Title 25 Environmental Protection. I participate in Drills, operate and maintain emergency radiation detection instrumentation and demonstrate proficiency in these skills to Federal Emergency Management Evaluators during emergency response drills.

**Pennsylvania Department of Environmental Protection**

Harrisburg, PA.

Position Held –Emergency Response Member

1999-Present

Duties:

Provide expert advice to County Emergency Incident Commanders during hazardous materials incidents for the protection of life, the

environment and economic interest. Maintain readiness to enter, evaluate, sample and remediation of hazardous environments up to and including Level B personal protection.

Assess the need to evacuate and or take environmental protective actions to limit risk of loss of life and property in hazardous material incidents.

Arrange and manage immediate clean ups and site stabilizations through third parties when circumstances dictate action.

Evaluate and express risk to members of the general public, the media and the Pennsylvania Emergency Management Agency. Ensure that emergency workers are working within the guidelines of safety established by OSHA, NIOSH, and DEP.

**Pennsylvania Department of Environmental Protection**

Harrisburg, PA.

Position Held -Radiation Health Physicist I

1987-1989

**Duties:**

As a Radiation Health Physicist I performed a variety of duties required to evaluate Radon levels in homes in Pennsylvania and provide guidance to homeowners on radon dose reduction methods as well as structural modification to remove or limit radon entry. My duties also included the evaluation and testing of homes that have been modified to reduce radon levels.

I operated, calibrated, maintained and deployed radon/radon daughter measurement, testing and counting equipment. These devices included but were not limited to, sodium iodide detectors, Lucas cells with scintillation counters, associated pumps and ancillary equipment, Micro-R meters, alpha track detectors and charcoal canisters.

My duties also included the participation in drills required of nuclear power plants located in the South-Central region. I am required to demonstrate proficiency in the use of radiological environmental monitoring equipment used to assess exposure conditions and isotopic dispositions in the event of a radiological release.

**Pennsylvania Department of Environmental Protection**

Harrisburg, PA.

*Position Held -Radiation Protection Specialist*

**Duties:**

As a Radiation Protection Specialist I performed a variety of duties required in the operation and maintenance of the Bureau of Radiation Protection's Environmental Radiation Surveillance Program. The primary emphasis of my position was the radiological monitoring of nuclear power plants, but monitoring did include radiological monitoring of other sources having an impact on the environment

**Coney Island Hospital**

Brooklyn, N.Y.

Position Held-Supervisor of Cardiovascular Special Procedures

1973-1978

**Duties:**

As The Supervisor of Cardiovascular Special Procedures my prime responsibilities were the gathering and interpretation of physiological data obtained during cardiovascular catheterization, through the application of mathematical and physical science techniques.

Additionally I functioned as the radiation safety officer, monitoring individual exposures, insuring safe exposure practices and instructing staff on radiation safety practices.

**Relevant Military Experience**

1966 -1969

Sergeant, U.S. Army; Medic

Xaun Loc, Viet Nam and Alaska

Treat and evacuate casualties, ID and process KIA's.

**Professional Affiliations**

None

**Publications**

None

Robert C. Maiers  
Bureau of Radiation Protection  
Rachel Carson State Office Building  
P.O. Box 8469  
Harrisburg, PA 17105-8469  
717-783-8979

### **Education**

Associate in Engineering, Nuclear Engineering Technology, Pennsylvania State University, 1980

Bachelor of Science, Environmental Engineering Technology, Pennsylvania State University, 1992

### **Certification / Registration / Professional License**

Professional Engineer, PE-047960E

Certified Wastewater Treatment Plant Operator, T3073 (all wastewater classes and subclasses)

### **Relevant Employment History**

PA Dept. of Environmental Protection, Bureau of Radiation Protection

2001-present

As Chief of the Division of Decommissioning and Environmental Surveillance, manages and oversees statewide programs responsible for decommissioning nuclear facilities and environmental monitoring for operating nuclear facilities. Serves as the primary interface between the Department of Environmental Protection (DEP) and the Nuclear Regulatory Commission (NRC) for all decommissioning projects currently being remediated in Pennsylvania under NRC's authority. Responsibilities within the Bureau of Radiation Protection (BRP) include emergency response for radiological accidents. Within the emergency organization, is designated alternate Incident Manager in the BRP emergency plan for nuclear power plant accidents. Served the role of Incident Manager in graded Federal Emergency Management Agency (FEMA) exercises involving Pennsylvania nuclear power plants.

PA Dept. of Environmental Protection, Bureau of Radiation Protection,

1999-2001

As Decommissioning Section Chief, established the first Decommissioning Section in the Bureau of Radiation Protection. This involved hiring new staff and consultants and establishing training criteria, inspection procedures, and the establishment of regulations and policies regarding decommissioning. Coordinated meetings with the NRC and other agencies regarding decommissioning issues in Pennsylvania. Responsible for scheduling activities and exchanges of documents regarding decommissioning to ensure compliance with the Memorandum of Understanding (MOU) between the NRC and DEP dated July 15, 1996. This MOU provides the basis for cooperation between the two agencies to facilitate the safe and timely remediation and decommissioning of sites in Pennsylvania at which both agencies exercise regulatory authority.

PA Dept. of Environmental Protection, Bureau of Radiation Protection

1998-1999

As Acting Low-level Radioactive Waste Section Chief, supervised staff and managed a \$30 million contract for siting, construction, operation, and closure of a low-level radioactive waste disposal facility to be located in Pennsylvania. Managed activities associated with a state wide Community Action Plan that was designed for soliciting a community that would be willing to host a low-level radioactive waste disposal facility in Pennsylvania.

PA Dept. of Environmental Protection, Bureau of Radiation Protection

1992-1998

As a nuclear engineer in the Division of Nuclear Safety, performed nuclear safety oversight reviews and inspections of nuclear power plants in Pennsylvania and documented the results in monthly reports. . Responsible for the review and evaluation of licensee technical specification requests, review of and evaluation of plant operating reports, licensee event reports and NRC inspection reports.

Pennsylvania Power and Light, Nuclear Plant Engineering

1982-1992

As a Staff Analyst in the Nuclear Plant Engineering Instrumentation and Controls Section, was responsible for the design and use of instrument control valves used throughout the Susquehanna Steam Electric Station. Responsible for environmental and seismic qualification testing performed on solenoid valves used in safety related systems. Engineering responsibilities included design and installation of the meteorological monitoring and seismic monitoring systems for the Susquehanna plant. Prior to his promotion to Staff Analyst, worked in the Nuclear Operations Department as a nuclear plant operator and was involved in the preoperational testing for Emergency Core Cooling Systems and Reactor Control Systems for Susquehanna Unit 1.

Duquesne Power and Light, Shippingport Atomic Power Station

1980-1982

Trained as a nuclear plant operator/reactor operator for the Shippingport Atomic Power Station. Obtained a DOE security clearance and received classified training regarding the design and operation of a light water breeder reactor.

Delvy J McElwain

PA DEP/ Bureau of Radiation Protection/ SWRO  
400 Waterfront Drive  
Pittsburgh, PA 15222  
Office: (412) 442 5824  
Fax: (412) 442 5246

#### Education

Vanderbilt University, Nashville, TN  
Nuclear Medicine Technology Certificate, 1973  
Sterling College, Sterling KS  
B.S. Physics/Math, 1972

#### Relevant Employment History

PA DEP/ Bureau of Radiation Protection  
2002 - present  
Radiation Health Physicist 2  
Responsible for performing regulatory inspections of x-ray registrants and RAM licensees in DEP regions 5 & 6, emergency response, and D&D oversight.

Shadyside Hospital  
1976- 2002  
Nuclear Medicine Coordinator - Responsible for daily activities of nuclear medicine department. Monitor safe use and handling of all radio-pharmaceuticals. Comply with all NRC, JCAHO, OSHA, and State Regulations. performed nuclear imaging studies. Responsible for developing department budgets. Hiring and evaluating employee performance. Evaluate and make recommendations for capitol equipment.

Western Pennsylvania Hospital  
1975 - 1976  
Staff Nuclear Medicine Technician, Performed routine nuclear medicine procedures.

Delvy J McElwain cont.

### Relevant Military Experience

US Army

1968 - 1970

Communication Sgt

Plieku, South Vietnam - In charge of all ground communication in company area.

### Professional Affiliations

2002 - Conference of Radiation Control Program Directors, Inc.  
Western Pennsylvania Chapter

Meredith M. Martin  
2 E. Main Street  
Norristown, PA 19401  
*Phone - 484 250-5835*  
*Fax - 484 250-5951*

Education/degree

Muhlenberg College, Allentown, PA  
Bachelor of Science - 2002 - Environmental Science

Relevant Employment History

The Pennsylvania Dept. of Environmental Protection  
*Bethlehem District Office, Bureau of Waste Management*

- *April, 2003 – April 2005*
  - Waste Management Specialist  
Conducted field inspections and complaint investigations and performed related activities for subjects of the PA Solid Waste Management Act and other regulations addressing hazardous, municipal and residual waste. Encouraged proper waste management practices through public outreach and education.
  
- *April, 2005 – March 2006*
  - State Sanitarian  
Conducted field inspections and performed related activities for subjects of the Safe Drinking Water Act. Contributed to flood emergency response through public outreach and education.
  
- *March 2006 – present*
  - Radiation Protection Specialist  
Conduct field inspections and perform related activities for subjects of the PA Radiation Protection Act. Participate in NRC-led inspections of nuclear material licensees. Contribute to PA's development of NRC Agreement State status. Encourage safe radiological practices through public outreach and education.

Frank J. Peffer  
PA DEP  
309 N. 5<sup>th</sup> St., Ste D  
Sunbury PA 17801  
(570) 988-5570  
(570) 988-5507 (FAX)

Bachelor of Science, 1991  
Pennsylvania State University  
University Park, PA 16801

#### Relevant Employment History

Commonwealth of PA, Department of Environmental Protection  
March 1992 – Present  
Radiation Health Physicist

Responsible for inspections of facilities using x-ray machines, radioactive materials, and particle accelerators operating under PA state regulations.

**Joseph A. Pryber**  
PA DEP/BRP  
2 E. Main St  
Norristown, PA 19401  
484-250-5842  
484-250-5951

**Education**

Mercyhurst College- Erie, PA  
B.A., Biology-Environmental Science, 1978

**Relevant Employment History**

Pennsylvania, Department of Environmental Protection, Norristown, PA  
1990 – Present

**Radiation Health Physicist**

Plan and conduct inspections and investigations to verify compliance with state radiological rules and regulations for safe use of radioactive materials or x-ray equipment by medical, industrial and academic users. Plan and conduct inspections of mammography facilities under state contract with FDA. Respond to radiological incidents involving exposure to radiation or radioactive materials. Prepare reports of inspections and investigations to document findings and conclusions regarding conditions which have or may have an adverse effect on health and safety. Participate in emergency response exercises and activities for protection of public and environment. Respond to public inquiries regarding radiological concerns..

**Gulf Nuclear, Inc., Webster, TX**

**Thermoluminescent Dosimetry Program Supervisor 1982-1988**

Developed record keeping system, training program, customer reporting system, procedures manual, and quality assurance program to obtain and maintain accreditation by the National Voluntary Laboratory Accreditation Program. Served as acting Safety Services manager for over six months. Made sure regulations were met and documentation kept.

**Laboratory Technician 1979-1982**

Manufactured radioactive tracers and industrial radiography sources. Analyzed leak tests and performed survey meter calibrations for customers.

**Professional Affiliations**

Conference of Radiation Control Program Directors

Christopher L. Rittiger

PA DEP/ Bureau of Radiation Protection/SWRO  
400 Waterfront Drive  
Pittsburgh, PA 15222  
Office: (412) 442-4223  
Fax: (412) 442-5246

Education:

Pennsylvania State University, University Park, PA  
B.S. Biology, 1976

Relevant Employment History:

PA DEP/ Bureau of Radiation Protection  
12/1985 - present  
Radiation Health Physicist 2  
Responsible for performing regulatory inspections of x-ray registrants and RAM licensees in DEP regions 5 & 6, emergency response, and D&D oversight.

Duquesne Light Co.  
Beaver Valley Power Station – Unit 1  
6/1980 – 6/1983  
Reactor Operator  
While In training to become an NRC licensed reactor operator, performed system valve alignments, operating surveillance testing on both primary and secondary side systems and other tasks necessary for reactor operations.

Professional Affiliations:

- 1997- Health Physics Society (National) and Western PA Chapter (Local)  
McLean, VA 22101 and Pittsburgh, PA 15213
- 1997- Conference of Radiation Control Program Directors, Inc.  
Western Pennsylvania Chapter

## **Kurt Rutzmoser**

2371 Murray Avenue  
Huntingdon Valley, Pa. 19006  
(484) 250-5853 (W) (215) 947-8103 (H)

### **Work experience**

1994 - Present

#### **The Pennsylvania Department of Environment Protection**

##### **Bureau of Radiation Protection**

*Norristown, PA*

##### **Radiation Health Physicist.**

- Inspect licensed radiological facilities and radiological safety programs for compliance with Commonwealth rules and regulations.
- Prepare reports of inspections and investigations, documenting findings and conclusions in regards to condition which adversely affect or may adversely affect health and safety.
- Participation in Emergency Response Drills to Nuclear Power Plants.

1992-1994

#### **The Pennsylvania Department of Environment Protection**

##### **Bureau of Radiation Protection**

**Solid Waste Specialist.**

*Conshohocken, PA*

- Reviewed compliance histories, environmental assessments, and financial assurances for the regional municipal, residual, and hazardous waste permit application process. Participated in field visits meetings with applicants, engineers, consultants, chemists, and hydro-geologists as necessary for the permitting process.
- Maintained records of insurance and bond documents of regional facilities for the purpose of coordinating with field inspectors to ensure compliance with departmental regulations
- Drafted reports and documents, coordinated information with Harrisburg, and provided testimony as a Departmental witness in legal proceedings.

1969

### **Education**

#### **Roberts Wesleyan College**

*North Chili, N.Y.*

*Bachelor of Science, General Science, minor Biology*

### Additional Experience-

- 1986-1992 Marketing Representative- Represented several major importers/manufactures serving the baking industry. Established and maintained over 250 accounts.
- 1973-1986 Manager of Family Corporate Business -Responsibilities included business administration, production, sales, scheduling, purchasing, hiring, payroll, records keeping, and product development.
- 1972-1973 High School Science Instructor- Conducted classes in biology, chemistry, physics, homeroom, and religious education. Additional teaching was done on a substitute basis (1981-1983).
- 1969-1972 United States Air Force-Served as a Commissioned Officer, Responsible for all vehicle assets on base and operation of vehicle maintenance facilities, command of 60 enlisted men. Served 3 years additional reserve duty, discharged at the rank of Captain.

### Continuing Education and Training at DEP-

8/22-8/26	1994	Basic Radiological Health	University of Texas, San Antonio, Tx.
8/14-8/18	1995	Radiological Accident Assessment	FEMA, Emmitsburg, MD
9/18-9/24	1995	Post Plume Phase	FEMA, Emmitsburg, MD
11/30	1995	CT Training	Suburban General Hospital, Norristown, Pa.
1/24	1996	Nuclear Medicine	Presbyterian Hospital, Phila. Pa.
2/1	1996	Film Processing	Dupont - In office
3/5	1996	Transportation of Radioactive Material	NRC King of Prussia, Pa.
5/29	1996	Therapeutic Accelerator	Sacred Heart Hospital, Allentown, Pa.
10/8	1996	Cyclotron Demonstration	North Shore Hospital, New York, N.Y.
1/12, 8/23	1995	Computer Training	Sunrise Computer Learning Cen
8/27-8/29	1996	Computer Training	Sunrise Computer Learning Cen
9/20-9/25	1998	FEMA RERO Training	Berryville, VA
1/12-1/16	1998	Internal Dosimetry & Whole Body Counting	NRC King of Prussia, PA
6/19-6/29	2000	FDA Diagnostic X-Ray Coarse	San Francisco, CA
8/14-8/18	2000	Diagnostic & Therapeutic Nuc. Med. Coarse	Houston, TX
4/23-4/25	2002	Inspecting for Performance	NRC Rockville, MD
3/11-3/14	2002	Occupational & Environmental Rad. Prot.	Harvard, Boston MA
4/15-4/19	2002	Irradiator Technology	Montreal, Canada
11/1-11/5	2004	Radon Measurement and Mitigation	Rutgers, E. Brunswick NJ

Dwight A. Shearer

PA DEP/ Bureau of Radiation Protection/SWRO  
400 Waterfront Drive  
Pittsburgh, PA 15222  
Office: (412) 442-4223  
Fax: (412) 442-5246

#### Education

University of Florida, Gainesville, FL  
BS Environmental Engineering, 1994

Penn State University, University Park, PA  
BS Chemistry, Sec. Ed, 1990

Professional Engineer License  
PE056003

#### Relevant Employment History:

PA DEP/ Bureau of Radiation Protection/ SWRO  
2001 – present

**Section Chief - Radioactive Materials** - The section covers Regions 5 and 6. The section is responsible for the regulatory control of the following areas: radioactive materials, radon, industrial sources and institutional sources. Each area has over 150 registrants or licensees. I am responsible for supervising 4 Radiation Health Physicists Levels II and a Radiation Protection Specialist. My duties include reviewing and approving all inspections, letters and reports submitted by the inspectors.

**Site Decommissioning Projects** - The region currently has 7 active sites. We review the decommissioning plans, which include; site characterization plans and reports, site cleanup standards, health and safety plans. We also review waste disposal reports, final and confirmatory survey data. We determine site release status by performing final surveys.

**Landfill Radiation Protection Action Plans** – Over 50 facilities in Regions 5 and 6 will have implemented a protective action plan to prevent radioactive materials from entering their facilities. The section is responsible for reviewing those plans and confirming those plans during start-up inspections. As section chief, I have the additional responsibility of advising these facilities, should materials, which fall outside the action plan, end up at their facility.

Dwight A. Shearer cont.

As part of the Beaver Valley Nuclear Power Station response team, I am responsible for reporting to the Emergency Operations Facility where I provide the technical link, in the event of a nuclear accident, between the plant and the State Emergency Operations Facility.

PA DEP/ Bureau of Radiation Protection/ SWRO  
2003

Acting Program Manger – Water Supply -I was responsible for the oversight of the regional water supply program including 5 district offices, a permitting section and compliance section totaling more than 30 staff members. The West Nile and Black fly programs also reported to me.

The program's initiatives include: protecting against waterborne diseases, surface water filtration, protecting surface and groundwater sources, operator licensure for drinking and wastewater systems.

PA DEP/ Bureau of Radiation Protection/ SWRO  
2002 – present

Growing Greener Project Advisor - My responsibilities include: verification of monies spent, interfacing with the award recipient and DEP to make sure all permits are being obtained and making sure the project meets all the requirements and time frames established by the Department.

- Whitsett Storm water Demonstration Project - \$96,240
- Mid Yough Agricultural Best Management Pratices Project - \$299,306

PA DEP/ Bureau of Radiation Protection/ SWRO  
2000

Acting Program Manger – Radiation Protection - Over a 3-month period, I was responsible for the oversight of the regional radiation program, which includes regions 5 and 6 covering the western 22 counties. The program incorporates all aspects of radiation including X-Ray, Radioactive Materials, Radon and Emergency Response to the nuclear power plants within the state.

Dwight A. Shearer cont.

PA DEP/ Bureau of Radiation Protection/ SWRO  
1995 to 2001

Radiation Health Physicist II - Planned and conducted inspections and surveys of sources of ionizing radiation to determine compliance with State and Federal regulations. Surveys included calculating the design parameters of shielding requirements, and working distances to be maintained by the operator / public for safety. Evaluated efficacy of shielding designs as integral part of inspections performed. Consulted and assisted with nuclear engineers in the evaluation of nuclear facilities safety requirements as pertinent to actual or potential releases to the environment. Evaluated system designs of radon mitigation systems. The design parameters included: friction loss, proper use of material, head loss, proper fan allocation (wattage), structural integrity, dampening devices, discharge point, determination of air flow and pressure fields. Made recommendations to radon mitigating entities on how to improve the efficiency of their designed system.

#### Organizations

1995 - Conference of Radiation Control Program Directors, Inc.  
Frankfort, Kentucky

Member:

Decommissioning (E-24)

Advisor:

Radioactive Waste Management (E-25)

2001- Health Physics Society (National)

**Charley M. Smalls**  
PA DEP/BRP  
PO Box 8469  
Harrisburg, PA 17105-8469  
717-783-5922  
717-783-8965(fax)

**Education**

University of Maryland-College Park, MD  
M.S., Zoology(cell biology), 1972

Knoxville College, Knoxville, TN  
B.S., Knoxville, TN, 1965

**Relevant Employment History**

Pennsylvania Department of Environmental Protection, Harrisburg, PA  
2002- Present  
Radiation Health Physicist 2

Reviews radioactive material applications for hospitals, private practitioners and industries. Generates draft license documents for management review and signature. Maintains database of information on individuals, hospitals, and corporations, which are licensed by NRC and state to track sights of use, inventory, types of use, authorized users and Radiation Safety Officers. Coordinates and tracks personnel dosimetry for approximately 75 Department personnel.

Pennsylvania Department of Environmental Protection, Harrisburg, PA  
2000-2001  
Radiation Health Physicist 1

Edited diskettes submitted by radon testers and laboratories for entry into the Radon database using DOS, Excel and Access programs. Reviewed individual and firm applications for renewal of testing, laboratory and mitigation certification in compliance with 25 PA Code Chapter 240, Radon Regulations and DEP policies.

Milton S. Hershey Medical Center, Hershey, PA  
1988-1994  
Environmental Radiation Specialist

Analyzed environmental air and water samples taken in conjunction with HMC/PA-DER Environmental Monitoring Laboratory. This program was related to the 1979 nuclear accident at Three Mile Island. These analyses included gamma spectroscopy, gross beta in air, and tritium in water. Duties included calibration of analyzer systems, troubleshooting of laboratory equipment, participation in Environmental Protection Agency crosscheck program, and interpretation of laboratory data.

United States Environmental Protection Agency, Three Mile Island Field Station  
Middletown, PA  
1981-1988  
Environmental Scientist

Analyzed environmental air and water samples for reactor-related radionuclide content. These analyses also included gas chromatographic techniques for the separation of krypton. Other duties included emergency response by analysis of samples for gamma-emitting radionuclides during the EPA's Office of Radiation Programs' response to the Chernobyl accident. Prepared Standard Operating Procedures for laboratory analyses and conferred with federal and state personnel to discuss laboratory techniques and data interpretation. Reviewed federal and state guidelines for the analysis of environmental air and water samples.

United States Environmental Protection Agency, Three Mile Island Field Station  
Middletown, PA  
1980-1981  
Environmental Radiation Specialist

Served as a field monitor to collect air and water samples within a 10-mile radius of Three Mile Island. Water samples were analyzed by gamma spectroscopy.

Other Relevant Work Experiences  
1965-1979

Work Experiences in Bio-Medical Research- Prepared animal and human tissues for light and electron microscopic examination. Used several types of electron microscopes to study tissues so that various cell types may be identified in normal and pathologic conditions. A listing of work experiences and study in bio-medical research is as follows:

Research Assistant, Milton S. Hershey Medical Center, Hershey, PA  
Graduate Assistant, University of Maryland, College Park, MD  
Research Technician, The Johns Hopkins University, Department of Pathology, Baltimore, MD  
Laboratory Technician, The Medical University of South Carolina, Department of Anatomy, Charleston, SC

**Professional Affiliations**

Conference of Radiation Control Program Directors, Inc.

**Publications**

Smalls, C.M. and Goode, M.D.(1977). "Ca<sup>2+</sup>-accumulating components in developing skeletal muscle," J. Morphol. 151, 213-237

## Other Training

Radiation Safety: Practical Applications	8/4/2004	EPA Training
Radiation Safety: Advanced for Environmental Professionals	8/5/2004	EPA Training
Medical Use of Byproduct Materials 10 CFR Part 35	8/6/2002	NRC Training
Radiological Accident Assessment Concepts	2/12/2001	FEMA Training
Radon Measurement Proficiency Course(computer training)	11/01/2000	Eastern Regional Radon Training Ctr Rutgers Univ.
Basic Incident Command System	1/31/2002	FEMA Independent Study Program
Radiological Emergency Response	4/13/2001	FEMA Independent Study Program
Radiological Emergency Management	3/31/1999	FEMA Independent Study Program
Training in Gamma Spectroscopy and Krypton Separation Techniques	1982 1984	Two 2-week training periods, EMSL, Las Vegas, NV

Louis Ray Urciuolo  
PA DEP / BRP  
PO Box 8469  
Harrisburg, PA 17105-8469  
717-787-2480  
717-783-8965 (fax)

May 26, 2005

### Education

MS Health Physics, University of Florida, Gainesville, FL 1974  
BS Astrophysics, Tufts University, Medford, MA 1971

Certification / Registration / Professional License - none

### Relevant Employment History

Pennsylvania, Department of Environmental Protection, Harrisburg, PA  
January 1979 – Present

**Position:** Radiation Protection Program Manager - January 2002 to Present

**Title:** Chief, Division of Radiation Control

**Duties:** Manager of the X-Ray and Radioactive Materials Sections with programs for x-ray registration, NARM and accelerator licensing. Coordinate with regional program management to ensure uniform inspection, enforcement and implementation of policy. Develop new or revised regulations and guidance to support programs areas. Bureau liaison to the Radiation Protection Advisory Committee, liaison to the Department's Cross Program Policy Working Group and in emergencies Environmental Protection Liaison Officer Radiological Assessment Manager.

**Position:** Radiation Protection Program Supervisor - November 1995 to January 2002

**Title:** Chief, Radioactive Material Licensing Section

**Duties:** Maintain a program of approximately 460 NARM licenses covering nuclear medicine, R&D, MFG & Distribution, waste handling, XRF and density gauges and reciprocity. Review and approve all new licenses or amendments for personnel qualifications, facilities, SOPs, ALARA and safety programs. Create and revise standard license conditions and licensing guides.

**Position:** Radiation Health Physicist II – January 1979 to November 1995

**Duties:** Field Inspector for the Central Regional office. Inspect medical, industrial, research and teaching facilities for compliance with state radiological health regulations and implementation of good health physics practices in the use of x-ray machines and NARM. Investigate over exposures, misadministrations and orphan sources. Respond to accidents (highway spills, damaged moisture density gauges...). Assist in the survey and cleanup of contaminated facilities. Perform calibrations of survey meters used for inspection and emergency response. Provide training in the use of survey meters.

Pan American World Airways Aerospace Division  
Occupational Medicine & Environmental Health Services (OMEHS)  
Cape Canaveral, Florida  
November 1976 to November 1978

**Position:** Senior Health Physicist

**Title:** Supervisor of Health Physics Services

**Duties:** Manage the operational implementation of the radiation safety program services at the Kennedy Space Center and Cape Canaveral Air Force Station. Approve all radiation work permits. Update radiation safety policy and handbooks for KSC. During major radioactive source launches (VOYAGER I,II RTGs) coordinate a multi-agency contingency operation for source recovery and restoration of facility operations, organize and direct 10 onsite field teams. RSO for a broadscope radioactive material license. Management member of OMEHS grievance arbitration board, held Top Secret and Confidential Nuclear Weapons and Defense Installation clearance.

**Position:** Radiation Health Physicist I – January 1975 to November 1976

**Duties:** Field Inspector for the Western Regional office. Inspect medical, industrial, research and teaching facilities for compliance with state radiological health regulations and implementation of good health physics practices in the use of x-ray machines and NARM. Investigate over exposures and orphan sources. Respond to accidents, assist in the survey and cleanup of contaminated facilities.

### Professional Affiliations

Health Physics Society  
Council of Radiation Control Program Directors

Bryan R. Werner  
PA DEP / BRP  
PO Box 8469  
Harrisburg, PA 17105-8469  
717-787-2781  
717-783-8965 (fax)

### Education

University of Massachusetts Lowell, Lowell, MA  
M.S. Radiological Sciences and Protection, 2000

Dickinson College, Carlisle, PA  
B.S., Physics, 1998

### Relevant Employment History

Commonwealth of Pennsylvania, Harrisburg, PA  
September 2000 – Present

#### Radiation Health Physicist Decommissioning Section

Currently assigned as DEP/BRP oversight for the Quehanna Site Decommissioning Project. Some of the duties include, reviewing all documentation pertaining to radioactive materials, walk-downs of the work areas to check radiation controls and safety, radiation safety verification, and collection of DEP air samples. Other general responsibilities include document reviews and decision making for various other decommissioning sites in Pennsylvania. Have also performed final status surveys for the NRC their licensed facilities.

Sciencetech NES, Inc., New Milford, CT

June 2000 – September 2000

#### Radiological Engineer

Worked at Quehanna Site Decommissioning Project as primary radiation laboratory operator. Responsibilities included sample analysis, performing radiation surveys, and providing health physics support. Also spent time working at Connecticut Yankee Nuclear Power Plant working with the Off-Site Radiation recovery Effort. Work there consisted of document review and performing a source term characterization for all the recovered materials.

Oak Ridge Institute for Science and Education, Oak Ridge, TN

May 1999 – August 1999

#### Research Assistant/Intern

Environmental Survey and Site Assessment Program: Performed various radiation surveys and assisted in the analysis of the data. Survey work consisted of DOE labs and areas at the K-25 industrial area.

### Professional Affiliations

Conference of Radiation Control Program Directors  
Health Physics Society

Jeffrey L. Whitehead, RRPT

PA DEP/BRP

PO Box 8469

Harrisburg, PA 17105-8469

717-787-2964

717-783-8965 (fax)

#### Education/degree

University of the State of New York, Albany, NY

B.S., Nuclear Technology, Health Physics Option, 1992

University of the State of New York, Albany, NY

A.S., Liberal Studies, 1986

#### Certification / Registration / Professional License

National Registry of Radiation Protection Technologists- 1981

#### Relevant Employment History

Pennsylvania Dept of Environmental Protection, Bureau of Radiation Protection,  
Harrisburg, PA

December 2001 – Present

Radiation Health Physicist 2, Decommissioning and Environmental Surveillance  
Division

Review and evaluate decommissioning plans for decommissioning sites. Perform inspections at decommissioning sites. Develop and implement confirmatory survey plans for decommissioning sites. Obtain environmental and radiological samples and radiation readings. Perform independent dose assessments for decommissioning sites. Respond as Data Evaluation Coordinator and RASCAL operator for radiological emergencies and drills.

Three Mile Island Nuclear Station, Middletown, PA

February 1981 – November 2001

Senior Emergency Planner, Radiological Emergency Planning

Developed, conducted and evaluated radiological emergency drills. Authored and revised Emergency Plans and procedures. Developed and implemented radiological emergency response procedures, training and drills for hospital and ambulance personnel for the treatment and decontamination of radiation accident patients.

Developed and provided training and administered exams for radiological emergency response personnel. Performed Independent Safety Reviews and Technical Reviews on Emergency Plan and procedures. Performed self-assessments and audits of radiological emergency preparedness programs. Served as the senior corporate radiation protection representative for response to radiological emergencies and drills.

Three Mile Island Nuclear Station, Middletown, PA

February 1980 – January 1981

Health Physics Instructor

Developed and provided classroom and practical (hands-on) training for health physics technicians. Authored and administered written and oral exams.

Three Mile Island Nuclear Station, Middletown, PA

September 1979 – January 1980

Health Physics Foreman/Technician

Supervised health physics technicians in the performance of radiation protection duties in accordance with requirements of 10CFR20 in support of post-accident recovery efforts at Three Mile Island Unit 2. Performed radiation and contamination surveys, air sampling, analysis, dose tracking, personnel monitoring, contamination control and decontamination.

### Relevant Military Experience

U.S. Navy

Active Duty: September 1973 – September 1979,

Reserve Duty: September 1979 – March 1994

Machinist's Mate Chief Petty Officer

Last Active Duty Assignment: USS South Carolina (CGN-37)

Performed radiation protection, chemistry controls, mechanical operations and maintenance duties associated with the operation of a naval nuclear propulsion plant. Supervised technicians in performance of radiation protection and chemistry controls duties. Responsible for oversight of the training program for all nuclear trained crew members. Provided classroom and on-the-job training. Administered practical and written exams and administered oral qualification boards. Responsible for development, conduct and evaluation of all nuclear propulsion plant emergency drills.

### Professional Affiliations

National Registry of Radiation Protection Technologists

Susquehanna Valley Chapter- Health Physics Society

**Full name with middle initial** Stephen E. Williams, Sr.  
**Work address** PO Box 8469  
**Work telephone** 717-787-5385  
**Work fax** 717-783-8965

**Education/degree (most recent first)**

<b>Year</b>	<b>Degree</b>	<b>Institution</b>
2005	MS Environmental Pollution Control	Penn State University
1976	BS Radiological Health	Duquesne University

**Certification / Registration / Professional License**

**Relevant Employment History**

**Employer** Department of Environmental Protection / Bureau of Radiation Protection  
**Begin date** – 2000-Present

**Position/Title** Radiation Protection Program Supervisor, X-ray Section

**Brief description of duties / Position Summary** Radiological Professional, with a working knowledge of radiation hazards and radiation protection. Supervises the X-ray inspection, x-ray and x-ray service provider registration, accelerator licensing and mammography programs. Designated FDA contract contact for MQSA, NEXT and Level 2 surveys. Maintains the x-ray procedures survey manual. For reactor emergencies, Health Physics liaison to the licensee's Emergency Offsite Facility.

**Employer** TECHNICAL MANAGEMENT SERVICES, Simsbury, CT.

**Begin date** – 1995-2000

**Position/Title** Course Instructor

**Brief description of duties / Position Summary** Created and presented a specialized one week course in Effluent and Environmental Monitoring provided to nuclear industry professionals.

**Employer** Environmental Science Technology Inc.

**Begin date** – 2000-2000

**Position/Title** Regional Director

**Brief description of duties / Position Summary** Environmental project manager proficient in identifying and handling environmental and operational problems. Duties include environmental project planning, computer processing, environmental assessments, quality operations, employee relations, training and communications. Supervision of project work groups consisting of qualified technicians, and administrative personnel. Contracts included: Hazardous Waste disposal, Site Environmental Assessments, UST removals, Lead Paint and Asbestos surveys, and air quality surveys. Certified Asbestos Building Inspector.

**Relevant Employment History – Cont.**

**Employer American Plumbing & Petroleum Services Co., INC.**

**Begin date** – 1999-2000

**Position/Title** Regional Director

**Brief description of duties / Position Summary** Director of all phases of Construction Management Team. Responsible for administration and engineering of Bonding, Insurance, Bidding processes, Invoicing, and Coordination of multiple construction projects, including underground tank removals and installations. Supervised construction work teams and project foremen at each project location.

**Employer** Spectra Services

**Begin date – End date** 1998-1999

**Position/Title** Project Manager

**Brief description of duties / Position Summary** Management of Underground and Aboveground Tank Removal and Installation Program. Perform Site Environmental Assessments and Evaluations. Supervised construction work teams and project foremen at each project location.

**Employer** General Public Utilities Nuclear Corp

**Begin date** – 1980-1997

**Position/Title**

**GPU NUCLEAR CORPORATION**

**Three Mile Island Nuclear Station (TMI), Middletown, Pa**

**GPUN Corporate Radiological Project Manager**

**1995 to 1997**

Project Manager for the direction of GPU Nuclear technician survey teams, which provided radiological, environmental, effluent and safety services to Public Service of Colorado at the Fort St. Vrain (FSV) Nuclear Facility.

**GPUN Nuclear Safety and Compliance Committee (NSCC) Member**

**1993 to 1995**

Independent safety and compliance oversight at the GPU Nuclear facilities at Three Mile Island, Oyster Creek, New Jersey and Saxton, Pennsylvania. Computer trended parameters of radiological, environmental, engineering, maintenance, emergency planning, and operations programs for performance indications and areas of concern.

**GPUN Senior Radiological Engineer**

**1980 to 1993**

Provided Radiological, Emergency Planning, Environmental and Administrative support to the Radiological Controls, Quality Assurance, Plant Engineering and Plant Operations Departments. Health physics support for dosimetry, QA, procedures, Technical specifications, regulations, emergency planning, radiological effluent releases, Three Mile Island Unit Two radioactive waste shipments, 10CFR61 waste characterization, RETS, compliance, OTSG tube plugging, environmental monitoring, reactor coolant pump seal replacements, reactor building entries, reports to GPU Nuclear Board of Directors concerning power plant operation, Directed verification release survey of Ft St Vrain nuclear power plant.

**Relevant Employment History - cont.**

**Employer** Consolidated X-Ray Service Corp.

**Begin date** – 1970-1976

**Position/Title** Industrial Radiographer Level 2

**Brief description of duties / Position Summary** Performed Industrial Radiography

**Employer** Wayne State University, Detroit Michigan

**Begin date** – End date 1976-1980

**Position/Title** University Health Physicist

**Brief description of duties / Position Summary** Supervised University Health Physics program including: radioactive material inventory, radiological surveys, waste disposal, dosimetry, x-ray/accelerator surveys and supervising university technicians throughout the university facilities.

**Relevant Military Experience - No**

**Begin date** – End date

**Position/Title**

**Last Duty Assignment and Major Command**

**Description of duties/Position Summary**

**Professional Affiliations**

Health Physics Society

**Publications**

**Scott L. Wilson**

April 28, 2005

PA DEP / BRP  
P.O. Box 8469  
Harrisburg, PA  
717-787-2208  
717-783-8965 (fax)

**Education**

University of Phoenix – Philadelphia, PA  
B.S., Business Administration, 2003

Central Florida Community College – Ocala, Florida  
A.S., Radiation Protection Technology, 1992

National Academy for Nuclear Training – Crystal River, Florida  
Radiological Protection Technician Training Program, 1990

**Certification / Registration / Professional License**

National Registry of Radiation Protection Technologists

**Relevant Employment History**

Pennsylvania Department of Environmental Protection, Harrisburg, PA  
2004 – Present

Health Physicist II, Licensing Section

Responsible for monitoring and controlling radiological health hazards to ensure compliance with applicable Federal and State laws and regulations, technical review of radioactive material license applications; generate draft license documents for management review and signature; plan and conduct onsite inspections and surveys of applicant/licensee facilities as required; review radiation monitoring action plans and reports for Pennsylvania landfill permits and perform RESRAD analysis to support burial of deregulated short lived radioactive materials under solid waste permit. Perform NMED reporting functions for the Commonwealth.

Maryland Department of Environment  
2003 – 2004

Health Physicist II, Radiation Producing Machines Inspector

Responsible for inspecting x-ray machines at dental and veterinary facilities to ensure the machines are performing according to specifications and machine operators are following proper safety procedures. Responsible for Radiological Health Physicist duties in response to emergencies at Calvert Cliffs Nuclear Power Plant and Peach Bottom Atomic Power Station.

Exelon Nuclear - Peach Bottom Atomic Power Station  
2000 – 2003

Radiological Instrumentation Coordinator – 2002/2003

Responsible for oversight of the radiation protection instrumentation calibration program, radioactive source control, personnel contamination event evaluations and investigations, and emergency preparedness equipment related to radiation protection.

**Scott L. Wilson**

PA DEP / BRP  
P.O. Box 8469  
Harrisburg, PA  
717-787-2208  
717-783-8965 (fax)

April 28, 2005

**Relevant Employment History (continued)****Emergency Preparedness Coordinator – 2001/2002**

Responsibilities included: for implementation of the Peach Bottom Atomic Power Station Emergency Plan. Implementation includes: Drill and Exercise planning, coordination, execution and evaluation; corrective action initiation and monitoring including use of the Significant Determination Process for process and equipment changes; program self-assessments; Emergency response organization training, equipment reliability analysis, maintenance and testing; NRC Performance Indicator evaluations and reporting; Procedure review, revision and approval.

**Health Physics Technician – 2000/2001**

Responsible for performance of radiological surveys in support of federal regulations and company procedures; continuous radiological coverage of employees performing duties in High Radiation Areas, Very High Radiation Areas, Airborne Radioactivity Areas, Neutron Radiation Areas, and Contaminated Areas; ALARA planning and pre-activity meetings, post activity reviews and meetings, personnel job safety assessments, emergency response duties, Health Physics technician training and qualification through testing, procedure review and revision, Confined space Monitoring, industrial hygiene condition assessments and monitoring.

**Florida Power Corporation, Health Physics & Industrial Hygiene Technician**

1986 – 2000

Responsible for performance of radiological surveys and area posting in support of federal regulations and station procedures; continuous radiological coverage of employees performing duties in High Radiation Areas, Very High Radiation Areas, Airborne Radioactivity Areas, Neutron Radiation Areas, and Contaminated Areas; ALARA planning and pre-activity meetings, post activity reviews and meetings, personnel job safety assessments, emergency response duties, Health Physics technician training and qualification through testing, procedure review and revision, confined space monitoring, industrial hygiene condition assessments and monitoring, RWP Authoring, personnel and area / environmental dosimetry management, operation and analysis of whole body counter, respiratory protection fit testing, maintenance and operation of respiratory and engineering control devices.

**Florida Power Corporation, Building Serviceman & Radwaste Technician**

1985 – 1986

Responsibilities included: Building maintenance, facility and tool decontamination, radioactive solid waste sorting and packaging, foreign material exclusion area monitoring, radioactive waste handling and processing, Fire Brigade, hazardous waste sampling and processing, protective clothing laundering, escort radiation workers and visitors in the Protected Area and Radiation Controlled Area.

**Professional Affiliations**

National Registry of Radiation Protection Technologists  
Conference of Radiation Control Program Directors

Roy V. Woods

PA DEP/ Bureau of Radiation Protection/SWRO  
400 Waterfront Drive  
Pittsburgh, PA 15222  
Office: (412) 442-4223  
Fax: (412) 442-5246

Relevant Employment History:

PA DEP/ Bureau of Radiation Protection  
1989 - present  
Radiation Health Physicist 2 - Responsible for performing regulatory inspections of x-ray registrants and RAM licensees in DEP regions 5 & 6, emergency response, and D&D oversight.

Allied Nuclear Inc.  
Bettis Atomic Power Lab  
1982-1986  
Radiological Control Foreman - Provided radiation protection during decommissioning activities. Performed routine and special surveys. Supervised radiological control technicians and work crews. Crews consisted of approximately 15 decon technicians. Wrote and reviewed procedures and RWPs. Trained radiological technicians.

Babcock and Wilcox Corp  
1972-1982  
Sr. Health Physics Technician - Provided radiological protection during all plant conditions. Established and inspected criticality control zones. Assisted in procedure and RWP development. Supervised the operation of the health physics department during off hours. Maintained and calibrated health physics department instrumentation.

Professional Affiliations:

1997- Conference of Radiation Control Program Directors, Inc.

**James G. Yusko, CHP**

Pennsylvania Department of Environmental Protection  
Radiation Protection, Field Operations  
400 Waterfront Drive  
Pittsburgh, PA 15222-4745  
412.442.4000; 412.442.5246-fax

**Education**

University of Pittsburgh, Pittsburgh, PA  
M.S., Radiation Health (GSPH), 1975

Carnegie Mellon University, Pittsburgh, PA  
B.S., Physics, 1971

**Certification / Registration / Professional License**

American Board of Health Physics – Comprehensive; 1980; recertified through 2008  
American Board of Radiology – Diplomate, Diagnostic Radiologic Physics; 2005.

**Relevant Employment History**

Pennsylvania Department of Environmental Protection, Pittsburgh, PA  
March, 1980 – present  
Regional Manager, Radiation Protection  
Responsible for regional operations and emergency response for around 4000 facilities using radiation sources in the 22-county western region. See resume.

International Atomic Energy Agency, Vienna, Austria  
March 2000 – February 2001  
Radiation Source Specialist  
Cost-free expert to work on IAEA's "Safety of Radiation Sources and Security of Radioactive Materials: Action Plan of the Agency." See resume.

Allegheny General Hospital, Pittsburgh, PA  
September, 1975 – February, 1980  
Radiation Protection Officer  
Developed, implemented, and effected a comprehensive radiation safety program for a 750-bed research teaching hospital. See resume.

University of Pittsburgh, Pittsburgh, PA  
May, 1974 – September, 1975  
Assistant Health Physicist, Radiation Safety Office  
See resume.

**Professional Affiliations (see resume for details)**

Health Physics Society  
American Academy of Health Physics  
Conference of Radiation Control Program Directors, Inc.

Western Pennsylvania Chapter, Health Physics Society  
Susquehanna Valley Chapter, Health Physics Society  
National Council on Radiation Protection and Measurements  
International Standards Organization  
American National Standards Institute

**Publications**

See attached list of papers and presentations.

**PAPERS AND PRESENTATIONS**

Yusko, J. G., K. D. Modes, J. D. Kinnemann, "Safe Disposition of Endangered Sealed Radioactive Sources," presented at the 38<sup>th</sup> Midyear Topical Meeting of the Health Physics Society, New Orleans, Louisiana, February 13-16, 2005; Included in the CD "HPS 2005 Midyear Meeting: Materials Control & Security: Risk Assessment, Handling & Detection." (Health Physics Society, McLean, Virginia)

"Improving the Regulatory Control over Radioactive Sources," presented at the 48<sup>th</sup> Annual Meeting of the Health Physics Society, San Diego, California, July 20-24, 2003

"Orphan Radiation Sources," presented at the AAHP Professional Enrichment Program (lecture 3-C) for the 2003 HPS Midyear Topical Meeting, San Antonio, Texas, January 26, 2003.

"The IAEA Action Plan on Safety and Security of Radioactive and Nuclear Sources," presented to the Susquehanna Valley Chapter, Health Physics Society, Hershey, Pennsylvania, October 23, 2002.

"Radiation Accidents Involving 'Orphan Sources,'" presented at the 47<sup>th</sup> Annual Meeting of the Health Physics Society, Tampa, Florida, June 16-20, 2002.

"Orphan Sources – The National Perspective," presented at the 9<sup>th</sup> NELRAD Conference, Northeastern University, Weston, Massachusetts, April 24, 2002.

"The IAEA Action Plan on the Safety of Radiation Sources and Security of Radioactive Materials," presented to the Western Pennsylvania Chapter of the Health Physics Society, Pittsburgh, Pennsylvania, May 31, 2001.

"The IAEA action plan on the safety of radiation sources and security of radioactive material," published in *Radiation Safety and ALARA Considerations for the 21<sup>st</sup> Century*, pages 137-142 (Medical Physics Publishing, Madison, Wisconsin); presentation for the 34<sup>th</sup> Midyear Topical Symposium of the Health Physics Society, Anaheim, California, February 4-7, 2001.

Lubenau, J. O. and J. G. Yusko, "Spent/Disused/Orphan Sources: Action is Needed," Health Physics Society *Newsletter*, July 2000

"Harmonization Among Local, State, and Federal Programs in a Non-Agreement State," presented at the 45<sup>th</sup> Annual Meeting of the Health Physics Society, Denver, Colorado, June 25-29, 2000.

"Problems with Radioactive Sources in Recycled Metals," paper presentation for the Society of Automotive Engineers National Meeting, Detroit, March 6-9, 2000; published as SAE Technical Paper 2000-01-0667 (reprinted from: Environmental Concepts for the Automotive Industry (SP-1542)); SAE International, Warrendale, PA

"NORM and Metals Recycling in the United States," invited presentation given at the Natural Radiation and NORM international conference, London, England, September 30 – October 1, 1999.

"Decontamination of Recycling Facilities," presented at the 1999 Health Physics Society Summer School, Messiah College, Grantham, Pennsylvania, June 20-25, 1999 and published in *Decommissioning and Restoration of Nuclear Facilities*, (Michael J. Slobodien, editor), Medical Physics Publishing, Madison, Wisconsin (proceedings of the Summer School).

"Orphan Sources Initiative," presented at the Specialty Steel Institute of North America's Health and Safety Committee meeting, Pittsburgh, Pennsylvania, May 14, 1999.

"Impacts of Radioactive Materials in the Recycling Industry, presented at the "Radioactivity in the Public Domain" seminar of the Pennsylvania Chapter of the Institute of Scrap Recycling Industries, Inc., Harrisburg, Pennsylvania, November 12, 1998.

Yusko, J. G. and J. W. Lubinski, "Radiation Sources in the Public Domain – Control of Radioactive Sources and Devices," presented at the Ohio Radioactive Materials Users Group 1998 Fall Workshop, "A Look Ahead: Radiation in the New Century; A Sampling of Issues to Consider for the 2000's," Columbus, Ohio, November 4, 1998.

Yusko, J. G. and J. Wolfson, "We've Shredded a Radioactive Source! – A Case Study," presented at the Institute of Scrap Recycling Industries, Inc., "Radioactivity in the Scrap Recycling Process" seminar, Orlando, Florida, June 28-29, 1998.

Lubenau, J. O., J. G. Yusko, J. Karhnak, A. Wallo, "Government Regulations – Present and Future: Can They Help?" presented at the Institute of Scrap Recycling Industries, Inc., "Radioactivity in the Scrap Recycling Process" seminar, Orlando, Florida, June 28-29, 1998.

"Radioactivity in Recycling: An International Problem," invited keynote presentation at the international conference "Radioactivity in the Metal Scraps Recycling Industry: Consequences and Solutions," Brescia, Italy, June 23, 1998

"Impacts of Inadvertent Meltings of Radioactive Materials," presented at the Lawrence Berkeley National Laboratory's "Workshop on the Detection of Radioactive Sources in Metal Scrap," Dallas, Texas, June 8-9, 1998.

Lubenau, J. O. and J. G. Yusko, "Unwanted Radioactive Sources in the Public Domain," presented at the Canadian Radiation Protection Association 1998 conference, Ottawa, Ontario, Canada, May 25-28, 1998.

Lubenau, J. O. and J. G. Yusko, "Radioactive Materials in Recycled Metals - An Update," *Health Physics*, Vol. 74, pages 293-299, March, 1998.

Yusko, J. G. and J. O. Lubenau, "Optimizing the Radiation Monitoring of Recycled Metallics," presented at the 31st Midyear Meeting, Health Physics Society, Mobile, Alabama, February 8-11, 1998; published in *Good Practices in Health Physics*, G. R. Komp and M. A. Thompson, editors; pp. 55-58; Medical Physics Publishing, Madison, Wisconsin, 1998

Lubenau, J. O. and J. G. Yusko, "Problems in the United States with Control of Radioactive Sources," presented at the International Conference on the Radiological Accident with Cs-137 in Goiania -- 10 Years Later, Goiania, Brazil, October 26-31, 1997; published in proceedings of that conference.

"Licensed Sources Entering the Waste Stream," presented to the Ohio State University - University of Cincinnati Nuclear Engineering Seminar Program, Columbus, Ohio, October 28, 1997

"Radiation Sources Where You Don't Want Them," presented to a regular chapter meeting of the Buckeye Chapter, Health Physics Society, Columbus, Ohio, October 27, 1997

Lubenau, J. O. and J. G. Yusko, "Radioactive Sources in Recycled Metal: Solving and Preventing the Problem," presented as a Professional Enrichment Program lecture at the 42nd Annual Meeting of the Health Physics Society, San Antonio, Texas, June 29-July 3, 1997

"Report on the NRC-Agreement States Working Group on the Control and Accountability of Radioactive Devices," presented to *New Steel* magazine's "Managing Metallics" seminar, Chicago, Illinois, June 5-6, 1997

"Radioactive Materials in Recycled Metals," presented at a regular chapter meeting of the Western Pennsylvania Chapter, Health Physics Society, Pittsburgh, Pennsylvania, February 19, 1997

"A State's Perspective on NORM," presented at the 4th Annual Conference of the University of Tennessee's Energy, Environment and Resource Center, "Beneficial Reuse '96." Knoxville, Tennessee, October 22-24, 1996

"Recommendations of the Joint Agreement States - Nuclear Regulatory Commission Working Group on Licensed Devices," presented to the meeting of the Environment Committee of the Steel Manufacturers Association, Pittsburgh, Pennsylvania, August 20, 1996

Lubenau, J. O. and J. G. Yusko, "Radioactive Sources in Recycled Metals: Preventing the Problem," presented as a Professional Enrichment Program course at the 41st Annual Meeting of the Health Physics Society, Seattle, Washington, July 25, 1996

"Radiation Misadministrations," presented at regular meeting of the Tri-State Radiation Oncology Society," Pittsburgh, Pennsylvania, June 19, 1996.

Lubenau, J. O., Yusko, J. G., and Cool, D. A., "Radioactive Contamination of Recycled Metals," presented at the 1996 International Congress on Radiation Protection (IRPA 9), April 14-19, 1996, Vienna, Austria.

Rittiger, C. L. and J. G. Yusko, "An Overview of NORM Data Collected in Pennsylvania Specific to Oil and Gas Production," presented at the 29th Health Physics Society Midyear Topical Meeting, "NORM/NARM: Regulation and Risk Assessment," and published in the *1996 Midyear Proceedings: NORM/NARM: Regulation and Risk Assessment*, Scottsdale, Arizona, January 7-10, 1996; published by the Health Physics Society, McLean, Virginia.

"Radioactivity in Recycled Metals," presented at a joint meeting of the Susquehanna Valley Chapter, Health Physics Society and the Central Pennsylvania Section, American Nuclear Society, Harrisburg, Pennsylvania, December 6, 1995.

"Radiation in the Scrap Recycling Stream," presented at the 3rd Annual Conference of the University of Tennessee's Energy, Environment and Resources Center, "Beneficial Reuse '95," Knoxville, Tennessee August 1-3, 1995.

Lubenau, J. O. and Yusko, J. G., "Radioactive Materials in Recycled Metals," presented as a Continuing Education Lecture CEL-8 at the 40th Annual Meeting, Health Physics Society, Boston, Massachusetts, July 23-27, 1995.

Lubenau, J. O. and Yusko, J. G., "Radioactive Materials in Recycled Metals," presented at a regular meeting of the Delaware Valley Society for Radiation Safety, King of Prussia, Pennsylvania, June 7, 1995.

Yusko, J. G. and J. O. Lubenau, "The Continuing Problem of Radioactive Scrap," presented at the 27th National Conference on Radiation Control, San Antonio, TX, May 7-10, 1995; published in the *Proceedings of the 27th National Conference on Radiation Control*, CRCPD Publication 95-4, Frankfort, Kentucky, 1995.

Lubenau, J. O. and Yusko, J. G., "Radioactive Materials in Recycled Metals," published in *Health Physics*, Vol. 68, pages 440-451, April, 1995

Lubenau, J. O. and Yusko, J. G., "Radioactive Materials in Recycled Metals," presented at a regular meeting of the Baltimore-Washington Chapter, Health Physics Society, Rockville, Maryland, February 22, 1995

"Recent Activities of the CRCPD Radiation in Resource Recovery Committee," presented at the Steel Manufacturer's Association Joint Committee Meeting, Point Clear, Alabama, October 16-18, 1994

Angelo, D. A., C. L. Rittiger, R. P. Scott, J. P. Winston and J. G. Yusko, "Exposure Rates Associated with High Level Fluoroscopic Equipment and Data Recording Modes," presented at the 26th National Conference on Radiation Control of the Conference of Radiation Control Program Directors, Inc., Williamsburg, Virginia, May 22-26, 1994. Published in CRCPD Publication 94-9, *26th National Conference on Radiation Control*, Frankfort, Kentucky, October, 1994; also published in *Operational Radiation Safety (Health Physics supplement)*; 76:S78-S82; May, 1999

"Radioactive Materials in Metal Recycling," presented at a regular meeting of the Western New York Chapter, Health Physics Society, Perinton, New York, May 19, 1994.

"The Development and Future of Pennsylvania's Regulations for Radiological Health," presented at the "Regulatory Issues in Medical Physics and Their Implications" Symposium of the Delaware Valley Chapter, American Association of Physicists in Medicine, Philadelphia, Pennsylvania, May 17, 1994.

"Radioactive Materials in Metal Scrap -- A Continuing Problem," presented at a regular chapter meeting of the Pittsburgh Chapter, Institute of Scrap Recycling Industries, Pittsburgh, Pennsylvania, May 11, 1994.

Lubenau, J. O. and Yusko, J. G., "Radioactivity in Metal Scrap - An International Problem," and "Radioactivity in Metal Scrap - An International Problem Supplement," *Proceedings of the Second Regional Congress on Radiological and Nuclear Safety* [to be printed], November 22-26, 1993, Zacatecas, Mexico.

"Special Concerns when Monitoring Scrap for Radioactivity," presented at the Kaiser Aluminum and Chemical Corporation Health and Safety Workshop, Seattle, Washington, August 2-4, 1993.

"Radioactive Scrap Metal - the CRCPD Perspective," presented at the University of Tennessee Energy, Environment and Resources Center's "Radioactive Scrap Metal" Conference, Knoxville, Tennessee, July 13-14, 1993.

Gallagher, R. G., M. Jarosz, and J. G. Yusko, panel discussion on the "Loss of an Ir-192 Source and Therapy Misadministration at Indiana Regional Cancer Center, Indiana, Pennsylvania, on November 16, 1992" presented at a regular meeting of the Western Pennsylvania Chapter, Health Physics Society, Pittsburgh, Pennsylvania, April 28, 1993.

"The Pennsylvania Regulations for Radiologic Health - Current and Future," presented at the 50th Anniversary meeting of the Pennsylvania Society of Radiologic Technologists, Monroeville, Pennsylvania, April 16, 1993.

"Radon," guest television interview for Talkin' Pittsburgh, current and public affairs program of WPXI, Channel 11, Pittsburgh, first broadcast October 31, 1992.

"Hazards and Remedies from Radon Gas," presented at a regular meeting of the Greenville Chapter, American Business Woman's Association, Greenville, Pennsylvania, August 12, 1992

Finklea, S. and J. G. Yusko, "Naturally Occurring Radioactive Material -- Regulation, Disposal, and Health Physics," course sponsored by the American Academy of Health Physics, Columbus, Ohio, June 20, 1992

"E-23 (Metal Scrap Radioactivity) Committee - Recent Activities and Recommendations," presented at the 24th National Conference of the Conference of Radiation Control Program Directors, Inc., Orlando, Florida, May 17-21, 1992. Published in CRCPD Publication 92-5, *24th Annual National Conference on Radiation Control*, Frankfort, KY, September 1992.

"Compliance With The Pennsylvania Regulations For Radiological Health," presented at a regular meeting of the Penn-Ohio Chapter, American Association of Physicists in Medicine, Youngstown, Ohio, August 7, 1991

Yusko, J. G. and J. O. Lubenau, "Radioactive Metal Scrap - Are We Solving The Problem," presented at the 36th Annual Meeting of the Health Physics Society, Washington, D.C., July 21-25, 1991.

Lubenau, J. O., A. LaMastra, M. S. Peters and J. G. Yusko, "A Radiation Protection Primer," published in *Scrap Processing and Recycling*, Vol. 48, pages 107-112, March-April, 1991

"Regulations Regarding Radiation Therapy" presented at the "Concepts In Radiation and Nutrition Therapy for Cancer Patients" Fall Cancer Symposium of the Monongahela Valley Hospital and the American Cancer Society Washington County Unit, Monongahela, Pennsylvania, October 31, 1990

"Will Monitoring Help Me?" presented at the Institute of Scrap Recycling Industries, Inc., "Radioactivity in Scrap Metal" Seminar, Washington, District of Columbia, September 12, 1990

Lubenau, J. O. and J. G. Yusko, "Radioactivity in Metal Scrap: Working Together To Solve a Problem," presented at the 35th Annual Meeting of the Health Physics Society, Anaheim, California, June 24-28, 1990

Yusko, J. G. and J. O. Lubenau, "What To Do When The Alarm Goes Off: A Suggested Procedure For Checking Contaminated Metal Products," presented at the 35th Annual Meeting of the Health Physics Society, Anaheim, California, June 24-28, 1990

"Detection and Monitoring of Radioactivity in Metal Scrap," presented at the 58th Annual Meeting of the Electric Metal Makers Guild, Inc., Malvern, Pennsylvania, June 19-22, 1990

"A Regulatory Health Physicist's View of the BEIR-V Findings," presented at the "Radiation... A Fact of Your Life" session at the 65th Annual Safety, Health and Security Conference and Exhibit of the Western Pennsylvania Safety Council, Monroeville, Pennsylvania, April 10, 1990

"Assistance to Mills and Scrap Yards," letter to the editor of the *Health Physics Society Newsletter*, edition for March 1990.

"Pennsylvania Experience with Radioactivity in Scrap Steel," presented at the Nuclear Regulatory Commission Special Topics Workshop, Downers' Grove, Illinois, November 27 - December 1, 1989

"Changes in State Regulations and Procedures DER Uses in Inspections," presented at the Universal Medical Services, Inc., "Radiation Safety and Quality Control" Seminar, Beaver Falls, Pennsylvania, August 23, 1989

"Radon and its Implications for Schools," presented at the Educational Facilities graduate course of the University of Pittsburgh School of Education Department of Administrative and Policy Studies, Pittsburgh, Pennsylvania, July 13, 1989

"The Danger of Radon Gas and Remedies," presented at a regular meeting of the Fox Chapel Rotary Club, Fox Chapel, Pennsylvania, June 12, 1989

"Concerns About Radon Gas," presented at the 64th Annual Safety, Health and Security Conference and Exhibit of the Western Pennsylvania Safety Council, Monroeville, Pennsylvania, April 4-6, 1989

"Federal Perspectives on Indoor Radon," presented at the 64th Annual Safety, Health and Security Conference and Exhibit of the Western Pennsylvania Safety Council, Monroeville, Pennsylvania, April 4-6, 1989

"Hazards, Detection and Control of Indoor Radon," presented at the Duquesne Light Company "Supervisory Association Safety Night" meeting, Pittsburgh, Pennsylvania, February 22, 1989

"Health Effects From Pediatric Exposure to Indoor Radon," presented at the Mercy Hospital Department of Pediatrics Grand Rounds conference, Pittsburgh, Pennsylvania, February 21, 1989

"Radon - Why We Should Be Concerned," presented at a regular meeting of the Pennsylvania Gas Association Western Division, Pittsburgh, Pennsylvania, February 16, 1989

"Hazards from Indoor Radon," presented at a regular meeting of the Pittsburgh Section, Society of Nuclear Medicine Technologists, Pittsburgh, Pennsylvania, January 19, 1989

"Indoor Radon," presented at a regular meeting of the Sons of the American Revolution, Pittsburgh, Pennsylvania, November 17, 1988

"Radon in the Workplace and at Home," presented at a regular meeting of the West Jefferson Hills Chamber of Commerce, Pittsburgh, Pennsylvania, October 20, 1988

"Hazards of Exposure to Indoor Radon," guest interview for "Pittsburgh 2-Day" public and current affairs program of KDKA TV-2, Pittsburgh, Pennsylvania, program first telecast September 13, 1988

"State Viewpoint (on New Regulations)," presented at the Delaware Valley Association of Physicists in Medicine - Delaware Valley Society for Radiation Safety "Impact of New Regulations on Radiological Physics Practice" Symposium, Philadelphia, Pennsylvania, May 17, 1988

"Natural Radiation Problems - Fact or Fiction," presented at the 23rd Annual Engineering Discussional of the Industrial Health Foundation, Inc., Pittsburgh, Pennsylvania, March 21-22, 1988

"The Pennsylvania Low Level Radioactive Waste Disposal Act," presented at a regular meeting of the Western Pennsylvania Chapter, Health Physics Society, Pittsburgh, Pennsylvania, December 9, 1987

"Indoor Radon," presented at a regular meeting of the Greater Meadville Board of Realtors, Meadville, Pennsylvania, November 10, 1987

"Indoor Radon and Radon in Ground Water," presented at the American Water Works Association - Water Works Operators' Association joint meeting, Pittsburgh, Pennsylvania, October 16, 1987

Yusko, J. G. and J. O. Lubenau, "Steel Contamination Incidents Involving Naturally Occurring Radioactive Materials," presented at the 32nd Annual Meeting of the Health Physics Society, Salt Lake City, Utah, July 5-9, 1987

Lubenau, J. O., J. G. Yusko, E. D. Bailey, and D. A. Nussbaumer, "Incidents Involving NORM Contaminated Materials," presented at the 19th Annual Meeting of the Conference of Radiation Control Program Directors, Inc., Boise, Idaho, May 18-21, 1987

Schell, W. R., J. C. Rosen, D. J. Strom, and J. G. Yusko, "Fallout From Chernobyl In Western Pennsylvania," presented at the Annual Conference of the Pennsylvania Public Health Association, State College, Pennsylvania, October 9-10, 1986

"Public Health Concerns Regarding a Uranium Mill Tailings Disposal Site," presented at the Annual Conference of the Pennsylvania Public Health Association, State College, Pennsylvania, October 9-10, 1986

Talbott, E. O., P. A. Murphy, L. H. Kuller, J. Yusko, R. Schmeltz, E. P. Radford, R. Doll, and C. Portocarrero, "Distribution of Thyroid Abnormalities in a Community Exposed to Gamma Radiation from a Uranium Waste Site," (to be published)

"Remedial Action at Canonsburg: A Retrospective," presented at a regular meeting of the Western Pennsylvania Chapter, Health Physics Society, Pittsburgh, Pennsylvania, March 5, 1986

"Citizen Concerns About the Canonsburg Clean-Up," guest interview for "Pittsburgh 2-Day" public and current affairs program of KDKA TV-2, Pittsburgh, Pennsylvania, program first telecast March 4, 1986

"Acceptable Risk," interview in Gau Productions documentary on Canonsburg, Gau Productions, London, England, (first telecast in 1985)

"Accidental Discoveries of Industrial Radiation Sources," presented at the 113th Annual Meeting of the American Public Health Association, Washington, D.C., November 17-21, 1985

"The Impact of an UMTRA Program on Local School Districts," presented at the 30th Annual Meeting of the Health Physics Society, Chicago, Illinois, May 25-31, 1985

"Canonsburg Site: History and Acquisition," presented at the 1985 Washington Conference on Low Level Nuclear Waste Disposal and Clean-up, Arlington, Virginia, May 16-17, 1985

"Pennsylvania Experience With Public Concerns Regarding the Canonsburg Project," presented at the Department of Energy - States - Tribes Meeting of the Uranium Mill Tailings Remedial Action Project, Meadow Lands, Pennsylvania, September 18-19, 1984

"A State's Perspective on an UMTRA Program," presented at the 29th Annual Meeting of the Health Physics Society, New Orleans, Louisiana, June 3-7, 1984

"Progress in the Canonsburg Remedial Action Program," presented at a regular meeting of the Chartiers Valley Chamber of Commerce, Bethel Park, Pennsylvania, March 24, 1983

"Hazardous Waste Classification and Disposal in a Medical Facility," presented at the "Environmental Hazards and Infection Control" Seminar of the Eastern Allegheny County Health Corporation, Pittsburgh, Pennsylvania, November 18, 1982

"The Clean-Up of an Abandoned Radium and Uranium Extraction Facility," presented at the "Management of Hazardous Waste" Symposium of the Pittsburgh Section, American Nuclear Society and the Western Pennsylvania Chapter, Health Physics Society, Pittsburgh, Pennsylvania, November 5-6, 1982

"Radiological Waste Management," presented at the "Hazardous Waste Management in Hospitals" Seminar of the Hospital Council of Western Pennsylvania, Pittsburgh, Pennsylvania, November 3, 1982

"Practical Considerations in Radiation Emergency Management," presented at a regular meeting of the Penn-Ohio Chapter, American Association of Physicists in Medicine, Pittsburgh, Pennsylvania, February 25, 1982

"The Canonsburg Problem," presented at the Western Pennsylvania District Council Conference of the International Ladies' Garment Workers' Union, Indiana, Pennsylvania, November 14, 1981

"Safety Responsibilities of Therapy Technologists," presented at the Second Annual Workshop in Radiation Therapy Technology, Penn-Ohio Chapter, American Association of Physicists in Medicine, Gibsonia, Pennsylvania, May 8-9, 1981

"Patient Exposure from Dental X-rays and its Health Implications," presented at a regular meeting of the Western Pennsylvania Dental Hygienists Association, Pittsburgh, Pennsylvania, May 6, 1981

"Canonsburg - Remedial Action Options," guest interview for "Nine News Index" public affairs program of WTOV TV-9, Steubenville, Ohio, program first telecast April 26, 1981

"Detection and Clinical Symptoms of Radiation Injuries," presented at the "Hazards in the Workplace" Seminar of the Allegheny General Hospital, Pittsburgh, Pennsylvania, April 9, 1981

"Implications of Federal Regulations on Patient Safety," presented to the Pittsburgh Area Radiology Managers Meeting, Pittsburgh, Pennsylvania, March 19, 1981

"Canonsburg - Remedial Action," guest interview for "Pittsburgh Tomorrow" public affairs program of WPGH TV-53, Pittsburgh, Pennsylvania, program first telecast July 6, 1980

"Compliance Surveys and Methods for Medical Diagnostic X-ray Equipment," presented to the Radiation Subcommittee meeting of the American Iron and Steel Institute, Pittsburgh, Pennsylvania, June 19, 1980

"Known Effects and Concerns for Low Level Environmental Radiation Exposures," presented to the Elfinwild-Shaler Nurses Unit, Glenshaw, Pennsylvania, September 15, 1979

"Nursing Personnel Radiation Doses from Radionuclide Therapy Patients," presented at the 22nd Annual Meeting of the Health Physics Society, Atlanta, Georgia, July 3-7, 1977

"Hospital Radioactive Waste Disposal," presented at the "Radioactive Waste Symposium" of the Pennsylvania State University Milton S. Hershey Medical Center, Hershey, Pennsylvania, October 1, 1976



# PA AGREEMENT STATE STAFF TRAINING

Name: David J. Allard		Date of Hire: 02/01/1999		
Degree in Health Physics: M.S. Radiological Sciences and Protection, Univ. of Lowell, 1984				
Other Degree: B.S. Environmental Sciences, SUNY at Albany, 1977				
ABHP Certification: Yes, Comprehensive Practice, 1988				
Professional Engineering License: No				
National Registry of Radiation Protection Technologists (NRRPT): Yes, 1980				
Training Areas	Formal Courses		Date of Hire: 02/01/1999	Supervisor sign-off
	Date Planned	Date Completed	Equivalent Experience	
<b>BASIC TRAINING</b>				
Basic Health Physics		1984	M.S., OJT since 8/77, see resume	
Five Week Health Physics course		1984	M.S., OJT since 8/77, see resume	
Overall program orientation			OJT since 2/99	
Review of State Regulations			OJT since 2/99	
25 Pa. Code, Art. V			OJT since 2/99	
Act 147 of 1984			OJT since 2/99	
10, 21, 40 and 49 CFR			OJT since 8/77	
Review of Desk Manual and Reference Material			OJT since 2/99	
Essentials of Inspection			OJT since 4/91	
Essentials of Licensing			OJT since 8/77	
Essentials of Transportation		1978, 1980,	OJT since 8/77	
<b>Specialized Training</b>				
Elements of Nuclear Medicine		1979	OJT since 8/77	
Elements of Medical Therapy		1981	OJT since 8/77	
Elements of Industrial Radiography			OJT since 2/99	
Irradiators			OJT since 2/99	
Performance Based Inspections		1991	OJT since 4/91	
<b>ADVANCED TRAINING</b>				
Advanced Health Physics		1984	M.S., CHP, see resume	
Elements of Investigations/Root Cause Analysis		1991	OJT since 4/91	
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO)		2003		
Advanced Radiological Incident Operations (ARIO)		2004		
Advanced Radiological Assessment		1999		
Boiling Water Reactor Technology		2000		
Pressurized Water Reactor Technology		2001		

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: <b>Meredith M. Martin</b>		Date of Hire in Radiation Program: <b>March, 2006</b>		
Degree in Health Physics: <b>No</b>				
Other Degree: <b>BS Environmental Science</b>				
ABHP Certification: <b>No</b>				
Professional Engineering License: <b>No</b>				
National Registry of Radiation Protection Technologists (NRRPT): <b>No</b>				
	Formal Courses			
<u>Training Areas</u>	<u>Date Planned</u>	<u>Date Completed</u>	<u>Equivalent Experience</u>	<u>Supervisor sign-off</u>
<b>BASIC TRAINING</b>				
Basic Health Physics				
Five Week Health Physics course				
Overall program orientation			Ongoing	
Review of State Regulations			Currently reviewing	
25 Pa. Code, Art. V			"	
Act 147 of 1984			"	
10 CFR			"	
Review of Desk Manual and Reference Material				
Essentials of Inspection				
Essentials of Licensing				
Essentials of Transportation				
<b>Specialized Training</b>				
Elements of Nuclear Medicine				
Elements of Medical Therapy				
Elements of Industrial Radiography				
Irradiators				
Performance Based Inspections				
<b>ADVANCED TRAINING</b>				
Advanced Health Physics				
Elements of Investigations/Root Cause Analysis		May 26, 2006		
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)	June 5-9, 2006			

# PA AGREEMENT STATE STAFF TRAINING

Name: Charley M. Smalls			Date of Hire: September 2, 2000		
Degree in Health Physics: No					
Other Degree: M.S. Zoology, B.S.					
ABHP Certification: No					
Professional Engineering License: No					
National Registry of Radiation Protection Technologists (NRRPT): No					
<b>Formal Courses</b>					
Training Areas	Course	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>					
Basic Health Physics					
Five Week Health Physics course	H-109				
Overall program orientation			9/28/2000		
Review of State Regulations				Yes	
25 Pa. Code, Art. V				Yes	
Act 147 of 1984					
10 CFR				Yes	
Review of Desk Manual and Reference Material				Yes	
Essentials of Inspection	G-108				
Essentials of Licensing	G-109		9/9/2002		
Essentials of Transportation	H-308				
<b>Specialized Training</b>					
Elements of Nuclear Medicine	H-304		3/3/2003		
Elements of Medical Therapy	H-313		3/10/2003		
Elements of Industrial Radiography	H-305				
Irradiators	H-315				
Performance Based Inspections	G-304				
<b>ADVANCED TRAINING</b>					
Advanced Health Physics	H-201				
Elements of Investigations/Root Cause Analysis	G-205				
<b>OTHER</b>					
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)	301 or 302				

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: <b>Bridget M. Craig</b>		Date of Hire: <b>September 1993</b>	
Degree in Health Physics: <b>No</b>			
Other Degree: <b>BS Biology</b>			
ABHP Certification: <b>No</b>			
Professional Engineering License: <b>No</b>			
National Registry of Radiation Protection Technologists (NRRPT): <b>No</b>			
	Formal Courses		
Training Areas	Date Planned	Date Completed	Equivalent Experience
			Supervisor sign-off
<b>BASIC TRAINING</b>			
Basic Health Physics			
Five Week Health Physics course			
Overall program orientation			
Review of State Regulations			
25 Pa. Code, Art. V			
Act 147 of 1984			
10 CFR			
Review of Desk Manual and Reference Material			
Essentials of Inspection			
Essentials of Licensing			
Essentials of Transportation			
<b>Specialized Training</b>			
Elements of Nuclear Medicine			
Elements of Medical Therapy			
Elements of Industrial Radiography			
Irradiators			
Performance Based Inspections			
<b>ADVANCED TRAINING</b>			
Advanced Health Physics			
Elements of Investigations/Root Cause Analysis		<b>May-06</b>	
<b>OTHER</b>			
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)		<b>RERO, June 2006</b>	

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Richard F. Croll		Date of Hire: December 17, 2001	
Degree in Health Physics:			
Other Degree: B.S. Applied Science and Technology: Radiation Protection			
ABHP Certification:			
Professional Engineering License:			
National Registry of Radiation Protection Technologists (NRRPT): 1986, currently inactive			
	Formal Courses		
Training Areas	Date Planned	Date Completed	Equivalent Experience Supervisor sign-off
<b>BASIC TRAINING</b>			
Basic Health Physics			USN Engineering Laboratory Technician Training
Five Week Health Physics course			NRRPT Cert and 32 yrs experience in Health Physics related work
Overall program orientation			21 yrs exp in RadCon at NRC reg facilities
Review of State Regulations			
25 Pa. Code, Art. V			1.25 yrs exp performing PA inspections
Act 147 of 1984			1.25 yrs exp performing PA inspections
10 CFR			21 yrs exp in RadCon at NRC reg facilities
Review of Desk Manual and Reference Material			
Essentials of Inspection			1.25 yrs exp performing PA inspections and membership in GPUN's oversight committee for SNEC
Essentials of Licensing		9/13/2002	
Essentials of Transportation			Chem Nuc US DOT courses in 1997, 2000 and RW Shipping course provided by Exelon in 2002
<b>Specialized Training</b>			
Elements of Nuclear Medicine			
Elements of Medical Therapy		8/9/2002	
Elements of Industrial Radiography		8/23/2002	
Irradiators			
Performance Based Inspections			
<b>ADVANCED TRAINING</b>			
Advanced Health Physics			
Elements of Investigations/Root Cause Analysis			
<b>OTHER</b>			
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)			Emergency Management Institute course on Radiological Accident Assessment Concepts, 8/16/2002

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: <b>Terry W. Derstine</b>		Date of Hire: <b>June, 1988</b>		
Degree in Health Physics: <b>No</b>				
Other Degree: <b>BS Microbiology</b>				
ABHP Certification: <b>No</b>				
Professional Engineering License: <b>No</b>				
National Registry of Radiation Protection Technologists (NRRPT): <b>No</b>				
	Formal Courses			
Training Areas	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>				
Basic Health Physics			<b>17 Years PA DEP BRP</b>	
Five Week Health Physics course			<b>17 Years PA DEP BRP</b>	
Overall program orientation			<b>17 Years PA DEP BRP</b>	
Review of State Regulations			<b>17 Years PA DEP BRP</b>	
25 Pa. Code, Art. V			<b>17 Years PA DEP BRP</b>	
Act 147 of 1984			<b>17 Years PA DEP BRP</b>	
10 CFR			<b>17 Years PA DEP BRP</b>	
Review of Desk Manual and Reference Material			<b>17 Years PA DEP BRP</b>	
Essentials of Inspection		<b>Sept. 1989</b>		
Essentials of Licensing		<b>Sept. 2001</b>		
Essentials of Transportation		<b>April, 2001</b>		
<b>Specialized Training</b>				
Elements of Nuclear Medicine		<b>March, 1999</b>		
Elements of Medical Therapy		<b>March, 2000</b>		
Elements of Industrial Radiography		<b>June, 1994</b>		
Irradiators		<b>June, 2001</b>		
Performance Based Inspections		<b>May, 2001</b>		
<b>ADVANCED TRAINING</b>				
Advanced Health Physics				
Elements of Investigations/Root Cause Analysis		<b>March, 2002</b>		
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)		<b>May, 1992</b>		

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Andrew T. Gardosik		Date of Hire: November 15, 1992		
Degree in Health Physics:				
Other Degree: B.S Environmental Science, Minor Forest Science; A.A. Civil Engineering				
ABHP Certification:				
Professional Engineering License:				
National Registry of Radiation Protection Technologists (NRRPT):				
Formal Courses				
Training Areas	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>				
Basic Health Physics			12 yrs experience	
Five Week Health Physics course		4/3/1998		
Overall program orientation		Dec-92		
Review of State Regulations			12 yrs experience	
25 Pa. Code, Art. V			12 yrs experience	
Act 147 of 1984			12 yrs experience	
10 CFR			12 yrs experience	
Review of Desk Manual and Reference Material				
Essentials of Inspection				
Essentials of Licensing				
Essentials of Transportation		5/27/1999		
<b>Specialized Training</b>				
Elements of Nuclear Medicine		3/10/2000		
Elements of Medical Therapy				
Elements of Industrial Radiography		8/13/1999		
Irradiators				
Performance Based Inspections				
<b>ADVANCED TRAINING</b>				
Advanced Health Physics				
Elements of Investigations/Root Cause Analysis				
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)		4/7/2000		

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Ronald J. Hamm		Date of Hire: February 18, 1997	
Degree in Health Physics:			
Other Degree: ARRT in Nuclear Medicine and Radiology; NMTCB in Nuclear Medicine; ASCP in Nuclear			
ABHP Certification:			
Professional Engineering License:			
National Registry of Radiation Protection Technologists (NRRPT):			
	Formal Courses		
Training Areas	Date Planned	Date Completed	Equivalent Experience
			Supervisor sign-off
<b>BASIC TRAINING</b>			
Basic Health Physics			
Five Week Health Physics course		4/3/1998	
Overall program orientation			
Review of State Regulations			
25 Pa. Code, Art. V			
Act 147 of 1984			
10 CFR			
Review of Desk Manual and Reference Material			
Essentials of Inspection		3/10/2000	
Essentials of Licensing		10/2/1998	
Essentials of Transportation		4/30/1999	
<b>Specialized Training</b>			
Elements of Nuclear Medicine			
Elements of Medical Therapy		8/21/1998	
Elements of Industrial Radiography		8/13/1999	
Irradiators			
Performance Based Inspections			
<b>ADVANCED TRAINING</b>			
Advanced Health Physics			
Elements of Investigations/Root Cause Analysis			
<b>OTHER</b>			
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)		4/28/2002	

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: <b>Reza (Rich) Janati</b>		Date of Hire: <b>August 2004</b>		
Degree in Health Physics: <b>Completed Several Graduate Level Training Courses in Radiation Health Phy.</b>				
Other Degree: <b>Nuclear Engineering</b>				
ABHP Certification:				
Professional Engineering License:				
National Registry of Radiation Protection Technologists (NRRPT):				
		Formal Courses		
Training Areas	Date Planned	Date Completed	Equivalent Experience: <b>Nuclear Engineering/Nuclear Safety</b>	Supervisor sign-off
<b>BASIC TRAINING</b>				
Basic Health Physics		1988	<b>U Mass, PSU and GET at Power Plants</b>	
Five Week Health Physics course				
Overall program orientation				
Review of State Regulations				
25 Pa. Code, Art. V		2004	<b>BRP</b>	
Act 147 of 1984		1984/1992	<b>BRP</b>	
10 CFR		1984	<b>BRP</b>	
Review of Desk Manual and Reference Material				
Essentials of Inspection		1990/2003	<b>Fund of Inspections &amp; Expec for Inspectors</b>	
Essentials of Licensing			<b>same as above</b>	
Essentials of Transportation		1985/1986/1996/01	<b>DOE/NRC/NRC/BRP RAM Transportaion</b>	
<b>Specialized Training</b>				
Elements of Nuclear Medicine				
Elements of Medical Therapy				
Elements of Industrial Radiography				
Irradiators				
Performance Based Inspections		2000	<b>NRC Region I Training for Inspectors (ROP)</b>	
<b>ADVANCED TRAINING</b>				
Advanced Health Physics		2003	<b>EPA Advanced Radiation Safety</b>	
Elements of Investigations/Root Cause Analysis		1986	<b>MORT Accident/Incident Investigation</b>	
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)		1986/1993	<b>Rad Accident Assessment Courses (FEMA)</b>	

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

by G. Kitzer		4/1/1996	
Degree in Health Physics: MS in Radiation Science - Rutgers -1966			
Other Degree: BS in Chemical Engineering - Carnegie Tech - 1956			
ABHP Certification: NO			
Professional Engineering License: NO			
National Registry of Radiation Protection Technologists (NRRPT): NO			
		Formal Courses	
Training Areas	Date Planned	Date Completed	Equivalent Experience
			Supervisor sign-off
<b>BASIC TRAINING</b>			
Basic Health Physics		May-62	RATSEC + Oak Ridge
Five Week Health Physics course		May-62	RATSEC - 3 month Rad Safety
Overall program orientation			
Review of State Regulations 25 Pa. Code, Art. V Act 147 of 1984 10 CFR			10+ years Regulatory Compliance
Review of Desk Manual and Reference Material			
Essentials of Inspection		Mar-98	
Essentials of Licensing		Sep-01	
Essentials of Transportation		May-98	
<b>Specialized Training</b>			
Elements of Nuclear Medicine		Sep-99	
Elements of Medical Therapy			
Elements of Industrial Radiography			
Irradiators		May-03	
Performance Based Inspections		Apr-03	
<b>ADVANCED TRAINING</b>			
Advanced Health Physics		Oct-01	
Elements of Investigations/Root Cause Analysis		Mar-02	
<b>OTHER</b>			
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)		Aug-97	

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Joseph A. Koshy		Date of Hire: April 18, 1994	
Degree in Health Physics:			
Other Degree: M.S. (Physics)			
ABHP Certification:			
Professional Engineering License:			
National Registry of Radiation Protection Technologists (NRRPT):			
	Formal Courses		
Training Areas	Date Planned	Date Completed	Equivalent Experience
			Supervisor sign-off
<b>BASIC TRAINING</b>			
Basic Health Physics		N/A	
Five Week Health Physics course		4/2/1999	
Overall program orientation		Apr-97	
Review of State Regulations			11 Years experience
25 Pa. Code, Art. V			11 Years experience
Act 147 of 1984			11 Years experience
10 CFR			11 Years experience
Review of Desk Manual and Reference Material			
Essentials of Inspection			
Essentials of Licensing			
Essentials of Transportation			
<b>Specialized Training</b>			
Elements of Nuclear Medicine			
Elements of Medical Therapy			
Elements of Industrial Radiography			
Irradiators			
Performance Based Inspections			
<b>ADVANCED TRAINING</b>			
Advanced Health Physics			
Elements of Investigations/Root Cause Analysis			
<b>OTHER</b>			
Radiological Accident Assessment - Plume Phase		8/18/1995	

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Tonda L. Lewis		Date of Hire: April 1988		
Degree in Health Physics:				
Other Degree: BS- Wildlife Science-PSU				
ABHP Certification:				
Professional Engineering License:				
National Registry of Radiation Protection Technologists (NRRPT):				
	Formal Courses			
Training Areas	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>				
Basic Health Physics				
Five Week Health Physics course		Aug-95		
Overall program orientation				
Review of State Regulations				
25 Pa. Code, Art. V				
Act 147 of 1984				
10 CFR				
Review of Desk Manual and Reference Material				
Essentials of Inspection				
Essentials of Licensing				
Essentials of Transportation				
<b>Specialized Training</b>				
Elements of Nuclear Medicine				
Elements of Medical Therapy				
Elements of Industrial Radiography				
Irradiators				
Performance Based Inspections				
<b>ADVANCED TRAINING</b>				
Advanced Health Physics				
Elements of Investigations/Root Cause Analysis				
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)		3/20/1992		

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: John T. Maher		Date of Hire: October 10, 1984	
Degree in Health Physics:			
Other Degree: Bachelor of Science (Biology) SUNY A.A.S, B.S, Radiology Sciences; NSU M.S. MIS			
ABHP Certification:			
Professional Engineering License:			
National Registry of Radiation Protection Technologists (NRRPT):			
		Formal Courses	
Training Areas	Date Planned	Date Completed	Equivalent Experience
			Supervisor sign-off
<b>BASIC TRAINING</b>			
Basic Health Physics		May-85	University of Michigan School of Public Health
Five Week Health Physics course		Mar-87	Oak Ridge Associate University
Overall program orientation			22 yrs experience State of Pennsylvania
Review of State Regulations			22 yrs experience State of Pennsylvania
25 Pa. Code, Art. V			22 yrs experience State of Pennsylvania
Act 147 of 1984			22 yrs experience State of Pennsylvania
10 CFR			27 yrs experience Applied Health Physics
Review of Desk Manual and Reference Material			
Essentials of Inspection		Mar-98	USNRC
Essentials of Licensing			
Essentials of Transportation		Apr-98	USNRC
<b>Specialized Training</b>			
Elements of Nuclear Medicine		Aug-98	Advance Health Education Center
Elements of Medical Therapy		May-73	SUNY A.A.S & B.S.
Elements of Industrial Radiography			22 yrs experience State of Pennsylvania
Irradiators			
Performance Based Inspections			
<b>ADVANCED TRAINING</b>			
Advanced Health Physics		Sep-87	Central Connecticut State University Radiation Safety
Elements of Investigations/Root Cause Analysis			
<b>OTHER</b>			
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)		Jan-89 May-	National Emergency Training Center Radiological Accident Assessment and Advanced Radiological Assessment

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Robert C. Maiers		Jan-91		
Degree in Health Physics:				
Other Degree: A.E. Nuclear Engineering Tech., BS Environmental Engineering				
ABHP Certification:				
Professional Engineering License: PE-04760E				
National Registry of Radiation Protection Technologists (NRRPT):				
		Formal Courses		
Training Areas	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>				
Introductory Health Physics		Jul-96		
Five Week Health Physics course				
Overall program orientation				
Review of State Regulations				
25 Pa. Code, Art. V				
Act 147 of 1984				
10 CFR				
Review of Desk Manual and Reference Material				
Fundamentals of Inspection		Jul-94		
Essentials of Licensing				
Essentials of Transportation				
<b>Specialized Training</b>				
Elements of Nuclear Medicine				
Elements of Medical Therapy				
Elements of Industrial Radiography				
Irradiators				
Performance Based Inspections				
<b>ADVANCED TRAINING</b>				
Advanced Health Physics				
Elements of Investigations/Root Cause Analysis				
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)		Jul-92		

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Delvy McElwain		Date of Hire: 2/25/02	
Degree in Health Physics:			
Other Degree: B.S. Physics/Math			
ABHP Certification:			
Professional Engineering License:			
National Registry of Radiation Protection Technologists (NRRPT):			
		Formal Courses	
Training Areas	Date Planned	Date Completed	Equivalent Experience
<b>Supervisor sign-off</b>			
<b>BASIC TRAINING</b>			
Basic Health Physics			
Five Week Health Physics course			
Overall program orientation	2002	2003	
Review of State Regulations	2002	2003	
25 Pa. Code, Art. V	2002	2003	
Act 147 of 1984	2002	2003	
10 CFR	2002	2003	
Review of Desk Manual and Reference Material	2002	2003	
Essentials of Inspection	2003	2004	
Essentials of Licensing			
Essentials of Transportation			
<b>Specialized Training</b>			
Elements of Nuclear Medicine			30 + related work experience
Elements of Medical Therapy			
Elements of Industrial Radiography			
Irradiators			
Performance Based Inspections			
<b>ADVANCED TRAINING</b>			
Advanced Health Physics			
Elements of Investigations/Root Cause Analysis			
<b>OTHER</b>			
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)	2002	2003	

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Frank Peffer		Date of Hire: March 1992		
Degree in Health Physics:				
Other Degree: Bachelor of Science, Geography				
ABHP Certification:				
Professional Engineering License:				
National Registry of Radiation Protection Technologists (NRRPT):				
		Formal Courses		
Training Areas	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>				
Basic Health Physics				
Five Week Health Physics course				
Overall program orientation		Apr-92		
Review of State Regulations			13 years experience	
25 Pa. Code, Art. V			13 years experience	
Act 147 of 1984				
10 CFR			13 years experience	
Review of Desk Manual and Reference Material				
Essentials of Inspection		Mar-98		
Essentials of Licensing				
Essentials of Transportation				
<b>Specialized Training</b>				
Elements of Nuclear Medicine		Mar-00		
Elements of Medical Therapy				
Elements of Industrial Radiography				
Irradiators				
Performance Based Inspections				
<b>ADVANCED TRAINING</b>				
Advanced Health Physics				
Elements of Investigations/Root Cause Analysis				
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)				

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Joseph A. Pryber		Date of Hire: 12/90	
Degree in Health Physics:			
Other Degree: B.A. Biology-Environmental Science Concentration			
ABHP Certification:			
Professional Engineering License:			
National Registry of Radiation Protection Technologists (NRRPT):			
	Formal Courses		
Training Areas	Date Planned	Date Completed	Equivalent Experience
			Supervisor sign-off
<b>BASIC TRAINING</b>			
Basic Health Physics		N/A	
Five Week Health Physics course		4/2/1999	
Overall program orientation		Dec-90	
Review of State Regulations			14 years experience
25 Pa. Code, Art. V			14 years experience
Act 147 of 1984			14 years experience
10 CFR			14 years experience
Review of Desk Manual and Reference Material			
Essentials of Inspection		3/16/2001	
Essentials of Licensing		10/1/1999	
Essentials of Transportation		6/29/2001	
<b>Specialized Training</b>			
Elements of Nuclear Medicine			14 years experience
Elements of Medical Therapy		8/20/1999	
Elements of Industrial Radiography		5/14/1999	
Irradiators			
Performance Based Inspections			
<b>ADVANCED TRAINING</b>			
Advanced Health Physics		10/29/1999	
Elements of Investigations/Root Cause Analysis		7/14/2000	
<b>OTHER</b>			
Radiological Emergency Response Operations (RERO) H-303		3/20/1992	

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Chris Rittiger		Date of Hire: 12/12/1985		
Degree in Health Physics:				
Other Degree: B.S. Biology				
ABHP Certification:				
Professional Engineering License:				
National Registry of Radiation Protection Technologists (NRRPT):				
		Formal Courses		
Training Areas	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>				
Basic Health Physics				
Five Week Health Physics course				
Overall program orientation	1985	1986		
Review of State Regulations	1985	1986		
25 Pa. Code, Art. V	1985	1986		
Act 147 of 1984	1985	1986		
10 CFR	1985	1986		
Review of Desk Manual and Reference Material	1985	1986		
Essentials of Inspection	1997	1998		
Essentials of Licensing	1997	1998		
Essentials of Transportation	1997	1998		
<b>Specialized Training</b>				
Elements of Nuclear Medicine				
Elements of Medical Therapy				
Elements of Industrial Radiography	1997	1998		
Irradiators				
Performance Based Inspections				
<b>ADVANCED TRAINING</b>				
Advanced Health Physics				
Elements of Investigations/Root Cause Analysis	1999	2000		
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)				

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Kurt Rutzmoser		Date of Hire: June 1992		
Degree in Health Physics:				
Other Degree: B.S. Comprehensive Science				
ABHP Certification:				
Professional Engineering License:				
National Registry of Radiation Protection Technologists (NRRPT):				
		Formal Courses		
Training Areas	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>				
Basic Health Physics				
Five Week Health Physics course				
Overall program orientation			9 years experience	
Review of State Regulations			9 years experience	
25 Pa. Code, Art. V				
Act 147 of 1984				
10 CFR				
Review of Desk Manual and Reference Material				
Essentials of Inspection		3/9/1998		
Essentials of Licensing				
Essentials of Transportation		3/5/1996		
<b>Specialized Training</b>				
Elements of Nuclear Medicine		8/18/2000		
Elements of Medical Therapy				
Elements of Industrial Radiography				
Irradiators		4/19/2002		
Performance Based Inspections		4/25/2002		
<b>ADVANCED TRAINING</b>				
Advanced Health Physics				
Elements of Investigations/Root Cause Analysis				
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)		9/25/1998		

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Dwight Shearer		Date of Hire: 07/11/1994	
Degree in Health Physics:			
Other Degree: B.S. Environmental Engineering, B.S. Chemistry, Sec Ed.			
ABHP Certification:			
Professional Engineering License: PE056003			
National Registry of Radiation Protection Technologists (NRRPT):			
		Date of Hire: 07/11/1994	
Training Areas	Formal Courses		Equivalent Experience
	Date Planned	Date Completed	
<b>BASIC TRAINING</b>			
Basic Health Physics			
Five Week Health Physics course			
Overall program orientation	1994	1995	
Review of State Regulations	1994	1995	
25 Pa. Code, Art. V	1994	1995	
Act 147 of 1984	1994	1995	
10 CFR	1994	1995	
Review of Desk Manual and Reference Material	1994	1995	
Essentials of Inspection	1997	1998	
Essentials of Licensing	1997	1998	
Essentials of Transportation	1997	1998	
<b>Specialized Training</b>			
Elements of Nuclear Medicine	1997	1998	
Elements of Medical Therapy			
Elements of Industrial Radiography	1997	1998	
Irradiators	2002	2003	
Performance Based Inspections			
<b>ADVANCED TRAINING</b>			
Advanced Health Physics			
Elements of Investigations/Root Cause Analysis			
<b>OTHER</b>			
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)	1994	1995	

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: James Frederick Barnhart		Date of Hire: August 1985		
Degree in Health Physics:				
Other Degree: Master of Science w/ thesis - Nuclear Engineering Univ. of New Mexico 1995				
ABHP Certification:				
Professional Engineering License:				
National Registry of Radiation Protection Technologists (NRRPT):				
Formal Courses				
Training Areas	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>				
Basic Health Physics			MS Nuclear Engineering & 20 yrs BRP	
Five Week Health Physics course		Oct-89		
Overall program orientation			MS Nuclear Engineering & 20 yrs BRP	
Review of State Regulations			MS Nuclear Engineering & 20 yrs BRP	
25 Pa. Code, Art. V				
Act 147 of 1984				
10 CFR				
Review of Desk Manual and Reference Material				
Essentials of Inspection			MS Nuclear Engineering & 20 yrs BRP	
Essentials of Licensing				
Essentials of Transportation			RAM Transport Course & 20 yrs BRP	
<b>Specialized Training</b>				
Elements of Nuclear Medicine				
Elements of Medical Therapy				
Elements of Industrial Radiography				
Irradiators				
Performance Based Inspections				
<b>ADVANCED TRAINING</b>				
Advanced Health Physics			MS Nuclear Engineering & 20 yrs BRP	
Elements of Investigations/Root Cause Analysis			MS Nuclear Engineering & 20 yrs BRP	
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)			MS Nuclear Engineering & 20 yrs BRP Plume and Pos	

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Louis Ray Urciuolo			Date of Hire: January 5, 1979		
Degree in Health Physics: Yes: MS -1974 University of Florida, Gainesville FL					
Other Degree: BS - 1971 Astrophysics, Tufts Univ, Medford MA					
ABHP Certification: No					
Professional Engineering License: No					
National Registry of Radiation Protection Technologists (NRRPT): No					
Formal Courses					
Training Areas	Course	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>					
Basic Health Physics	H-122			Yes	
Five Week Health Physics course	H-109			Yes	
Overall program orientation			1975	Yes	
Review of State Regulations				Yes	
25 Pa. Code, Art. V				Yes	
Act 147 of 1984				Yes	
10 CFR				Yes	
Review of Desk Manual and Reference Material				Yes	
Essentials of Inspection	G-108		8/5/1983		
Essentials of Licensing	G-109		6/7/1996		
Essentials of Transportation	H-308		5/1/1998		
<b>Specialized Training</b>					
Elements of Nuclear Medicine	H-304			Yes	
Elements of Medical Therapy	H-313		3/20/1998		
Elements of Industrial Radiography	H-305		5/9/1994		
Irradiators	H-315				
Performance Based Inspections	G-304			Yes	
Health Physics Topical Review - HDRs	H-401		2/20/1996		
<b>ADVANCED TRAINING</b>					
Advanced Health Physics	H-201				
Elements of Investigations/Root Cause Analysis	G-205			Yes	
Health Physics Engineering	H-118		8/16/1996		
<b>OTHER</b>					
Radiological Emergency Response Operations (RERO)	H-303		7/30/1988		

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Bryan Werner		Date of Hire: 9/11/00		
Degree in Health Physics: MS Radiological Science and Protection, Umass Lowell May 2000				
Other Degree: BS from Dickinson College Major: Physics Minor: Math May 1998				
ABHP Certification:				
Professional Engineering License:				
National Registry of Radiation Protection Technologists (NRRPT):				
	Formal Courses			
Training Areas	Date	Date	Equivalent Experience	Supervisor sign-off
	Planned	Completed		
<b>BASIC TRAINING</b>				
Basic Health Physics			College, Graduate School, and 5 years Experience	
Five Week Health Physics course			College, Graduate School, and 5 years Experience	
Overall program orientation		Sep-00		
Review of State Regulations			5 yrs Experience	
25 Pa. Code, Art. V			5 yrs Experience	
Act 147 of 1984			5 yrs Experience	
10 CFR			5 yrs Experience	
Review of Desk Manual and Reference Material				
Essentials of Inspection				
Essentials of Licensing				
Essentials of Transportation				
<b>Specialized Training</b>				
Elements of Nuclear Medicine				
Elements of Medical Therapy				
Elements of Industrial Radiography				
Irradiators				
Performance Based Inspections				
<b>ADVANCED TRAINING</b>				
Advanced Health Physics			Graduate School	
Elements of Investigations/Root Cause Analysis				
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)				

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Whitehead, Jeffrey L.		Date of Hire: December 17, 2001		
Degree in Health Physics:				
Other Degree: BS- Nuclear Technology				
ABHP Certification:				
Professional Engineering License:				
National Registry of Radiation Protection Technologists (NRRPT): 1981				
		Formal Courses		
Training Areas	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>				
Basic Health Physics		Mar-76	Navy Eng. Lab. Technician School	
Five Week Health Physics course		Mar-76	Navy Eng. Lab. Technician School	
Overall program orientation		Dec-01		
Review of State Regulations			3 yrs experience	
25 Pa. Code, Art. V			3 yrs experience	
Act 147 of 1984			3 yrs experience	
10 CFR			3 yrs experience	
Review of Desk Manual and Reference Material				
Essentials of Inspection				
Essentials of Licensing				
Essentials of Transportation				
<b>Specialized Training</b>				
Elements of Nuclear Medicine				
Elements of Medical Therapy				
Elements of Industrial Radiography				
Irradiators				
Performance Based Inspections		Apr-02		
<b>ADVANCED TRAINING</b>				
Advanced Health Physics		Mar-03		
Elements of Investigations/Root Cause Analysis				
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)				

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Stephen E. Williams, Sr.			Date of Hire: 8/16/2000		
Degree in Health Physics: BS Radiological Health Duquesne University					
Other Degree: MS Environmental Pollution Control abd Penn State University					
ABHP Certification: No					
Professional Engineering License: No					
National Registry of Radiation Protection Technologists (NRRPT): No					
<b>Formal Courses</b>					
Training Areas	Course	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>					
Basic Health Physics	H-122			yes	
Five Week Health Physics course	H-109			yes	
Overall program orientation				yes	
Review of State Regulations				yes	
25 Pa. Code, Art. V				yes	
Act 147 of 1984				yes	
10 CFR				yes	
Review of Desk Manual and Reference Material					
Essentials of Inspection	G-108			yes	
Essentials of Licensing	G-109			yes	
Essentials of Transportation	H-308			yes	
<b>Specialized Training</b>					
Elements of Nuclear Medicine	H-304				
Elements of Medical Therapy	H-313				
Elements of Industrial Radiography	H-305			yes	
Irradiators	H-315				
Performance Based Inspections	G-304			yes	
<b>ADVANCED TRAINING</b>					
Advanced Health Physics	H-201			yes	
Elements of Investigations/Root Cause Analysis	G-205			yes	
<b>OTHER</b>					
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)	301 or 302			yes	

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Scott L. Wilson			Date of Hire: 6/14/2004		
Degree in Health Physics: YES. Associate in Science - Radiation Protection Technology					
Other Degree: Bachelor in Science (Business Administration)					
ABHP Certification: NO					
Professional Engineering License: NO					
National Registry of Radiation Protection Technologists (NRRPT): YES - 1998					
<b>Formal Courses</b>					
Training Areas	Course	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>					
Basic Health Physics	H-122			Yes	
Five Week Health Physics course	H-109			Yes	
Overall program orientation				Yes	
Review of State Regulations				Yes	
25 Pa. Code, Art. V				Yes	
Act 147 of 1984				Yes	
10 CFR				Yes	
Review of Desk Manual and Reference Material				Yes	
Essentials of Inspection	G-108			Yes	
Essentials of Licensing	G-109	9/1/2005			
Essentials of Transportation	H-308	TBD/2006			
<b>Specialized Training</b>					
Elements of Nuclear Medicine	H-304	TBD/2006			
Elements of Medical Therapy	H-313				
Elements of Industrial Radiography	H-305	TBD/2006			
Irradiators	H-315				
Performance Based Inspections	G-304				
<b>ADVANCED TRAINING</b>					
Advanced Health Physics	H-201	10/17/2005	10/28/2005		
Elements of Investigations/Root Cause Analysis	G-205			Yes	
<b>OTHER</b>					
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)	301 or 302			18 years Nuclear Power Experience including required emergency response training for NPP Field Team Member, OSC Coordinator, NRC Communicator, Field Team Communicator, ERDS, including 12 months experience as NPP Emergency Preparedness Coordinator. Radiological Accident Assessment Concepts (E341) Scheduled.	

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: Roy Woods		Date of Hire: 03/21/1988		
Degree in Health Physics:				
Other Degree:				
ABHP Certification:				
Professional Engineering License:				
National Registry of Radiation Protection Technologists (NRRPT):				
		Formal Courses		
Training Areas	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>				
Basic Health Physics				
Five Week Health Physics course				
Overall program orientation	1988	1989		
Review of State Regulations	1988	1989		
25 Pa. Code, Art. V	1988	1989		
Act 147 of 1984	1988	1989		
10 CFR	1988	1989		
Review of Desk Manual and Reference Material	1988	1989		
Essentials of Inspection	1997	1998		
Essentials of Licensing	1997	1998		
Essentials of Transportation	1997	1998		
<b>Specialized Training</b>				
Elements of Nuclear Medicine				
Elements of Medical Therapy				
Elements of Industrial Radiography				
Irradiators				
Performance Based Inspections				
<b>ADVANCED TRAINING</b>				
Advanced Health Physics				
Elements of Investigations/Root Cause Analysis				
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)				

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

# PA AGREEMENT STATE STAFF TRAINING

Name: James G. Yusko		Date of Hire: March 3, 1980		
Degree in Health Physics: M.Sc., Radiation Health, University of Pittsburgh, Pittsburgh, Pennsylvania, 1975				
Other Degree: B.S., Physics, Carnegie Mellon University; Pittsburgh, Pennsylvania, 1971				
ABHP Certification: Comprehensive Certification; originally certified 1980; Certification extended through 2008				
Professional Engineering License:				
National Registry of Radiation Protection Technologists (NRRPT):				
		Formal Courses		
Training Areas	Date Planned	Date Completed	Equivalent Experience	Supervisor sign-off
<b>BASIC TRAINING</b>				
Basic Health Physics		N/A		
Five Week Health Physics course		N/A		
Overall program orientation		March, 1980		
Review of State Regulations		March, 1980	see also resume	
25 Pa. Code, Art. V		May, 1974		
Act 147 of 1984		March, 1980		
10 CFR		May, 1974		
Review of Desk Manual and Reference Material	August, 2005			
Essentials of Inspection		1988		
Essentials of Licensing		1998		
Essentials of Transportation		1998		
<b>Specialized Training</b>				
Elements of Nuclear Medicine			31 years experience	
Elements of Medical Therapy			30 years experience	
Elements of Industrial Radiography		1994		
Irradiators				
Performance Based Inspections				
<b>ADVANCED TRAINING</b>				
Advanced Health Physics				
Elements of Investigations/Root Cause Analysis				
<b>OTHER</b>				
Radiological Emergency Response Operations (RERO) or Advanced Radiological Incident Operations (ARIO)				

The terms "essential" and "elements" include on the job training and supervisory accompaniments, as appropriate.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Name	Allard, David	Janeli, Reza (Rich)	Meiers, Robert	Vacant	Barnhart, James	Small, Charley	Werner, Bryan	Whitehead, Jeffery	Wilson, Scott	Urciuolo, Louis (Ray)	Hamm, Ron
2	Office / Region	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO
3	Percent FTE	25	25*	100	100	25*	100	100	100	100	50	100
4	Category	1, 10	**	10	1, 11	**	1, 11	9, 10	9, 10	1, 11	1, 11	1, 11
5	Title	Bureau Director	Nuclear Engineer Supervisor	Nuclear Engineer Supervisor	Radiation Health Physicist 1 or 2	Radiation Health Physicist 2	Radiation Protection Program Manager	Radiation Protection Program Supervisor				
6	Fundamentals of Inspection Course (G-101)											
7	Inspection Procedures Course (G-108)											
8	Licensing Practices and Procedures Course (G-109)											
9	OSHA Indoctrination (G-111)											
10	Root Cause/Incident Investigation Workshop (G-205)											
11	Inspecting for Performance Course - Materials Version (G-304)											
12	Site Access Training (H-100) or NMSS Radiation Worker Training (H-102)											
13	Applied Health Physics (H-108)											
14	Environmental Monitoring for Radioactivity (H-111) or Radiological / Decommissioning Surveyor Training (ORAU)											
15	Introductory Health Physics (H-117)											
16	Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (H-121)											
17	Basic Health Physics (H-122)											
18	Health Physics Technology Course (H-201)											
19	Diagnostic and Therapeutic Nuclear Medicine Course (H-304)											
20	Safety Aspects of Industrial Radiography Course (H-305)											
21	Transportation of Radioactive Materials Course (H-308)											
22	Teletherapy and Brachytherapy Course (H-313)											
23	RESRAD (H-410)											
24	National Incident Management System (NIMS), Introduction to Incident Command System (IS-100)											
25	National Incident Management System (NIMS), Basic Incident Command System (IS-200)											
26	National Incident Management System (NIMS), An Introduction (IS-700)											
27	Effective Communications (or equivalent)											
28	Federal Emergency Management Agency Radiological Emergency Response Operations (RERO)											
29	Hazardous Waste Operations and Emergency Response Standard (HAZWOPER)											

	A	M	N	O	P	Q	R	S	T	U	V	W
1	Name	Lewis, Tonda	Vacant	Gardosik, Andrew	Kitzer, Roy	Pfeifer, Frank	Williams, Stephen	Meher, John	Craig, Bridget	Vacant	Groll, Rick	Koshy, Joe
2	Office / Region	CO	SCRO	SCRO	SCRO	SCRO	SCRO	SCRO	SERO	SERO	SERO	SERO
3	Percent FTE	50	100	100	100	100	30	75	50	100	100	20
4	Category	10	2	2	2	2	2	2	2	2	2	2
5	Title	Radiation Protection Program Supervisor	Radiation Health Physicist 1 or 2	Radiation Health Physicist 2	Radiation Health Physicist 2	Radiation Health Physicist 2	Radiation Protection Program Manager	Radiation Protection Program Supervisor	Environmental Protection Compliance Specialist	Radiation Health Physicist 1 or 2	Radiation Health Physicist 2	Radiation Health Physicist 2
6	Fundamentals of Inspection Course (G-101)											
7	Inspection Procedures Course (G-108)											
8	Licensing Practices and Procedures Course (G-109)											
9	OSHA Indoctrination (G-111)											
10	Root Cause/Incident Investigation Workshop (G-205)											
11	Inspecting for Performance Course - Materials Version (G-304)											
12	Site Access Training (H-100) or NMSS Radiation Worker Training (H-102)											
13	Applied Health Physics (H-109)											
14	Environmental Monitoring for Radioactivity (H-111) or Radiological / Decommissioning Surveyor Training (ORAU)											
15	Introductory Health Physics (H-117)											
16	Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (H-121)											
17	Basic Health Physics (H-122)											
18	Health Physics Technology Course (H-201)											
19	Diagnostic and Therapeutic Nuclear Medicine Course (H-304)											
20	Safety Aspects of Industrial Radiography Course (H-305)											
21	Transportation of Radioactive Materials Course (H-308)											
22	Telotherapy and Brachytherapy Course (H-313)											
23	RESRAD (H-410)											
24	National Incident Management System (NIMS), Introduction to Incident Command System (IS-100)											
25	National Incident Management System (NIMS), Basic Incident Command System (IS-200)											
26	National Incident Management System (NIMS), An Introduction (IS-700)											
27	Effective Communications (or equivalent)											
28	Federal Emergency Management Agency Radiological Emergency Response Operations (RERO)											
29	Hazardous Waste Operations and Emergency Response Standard (HAZWOPER)											

	A	X	Y	Z	AA	AB	AC	AD	AE	AF	AG
1	Name	Rutzmoser, Kurt	Derstine, Terry	Pryber, Joe	Martin, Meredith	Vacant	McElwain, Delvy	Rittiger, Chns	Woods, Roy	Yusko, James	Shearer, Dwight
2	Office / Region	SERO	SERO	SERO	SERO	SWRO	SWRO	SWRO	SWRO	SWRO	SWRO
3	Percent FTE	100	30	75	100	100	100	100	100	30	100
4	Category	2	2	2	2	2	2	2, 9	2, 9	2	2, 9
5	Title	Radiation Health Physicist 2	Radiation Protection Program Manager	Radiation Protection Program Supervisor	Radiation Protection Specialist	Radiation Health Physicist 1 or 2	Radiation Health Physicist 2	Radiation Health Physicist 2	Radiation Health Physicist 2	Radiation Protection Program Manager	Radiation Protection Program Supervisor
6	Fundamentals of Inspection Course (G-101)										
7	Inspection Procedures Course (G-108)										
8	Licensing Practices and Procedures Course (G-109)										
9	OSHA Indoctrination (G-111)										
10	Root Cause/Incident Investigation Workshop (G-205)										
11	Inspecting for Performance Course - Materials Version (G-304)										
12	Site Access Training (H-100) or NMSS Radiation Worker Training (H-102)										
13	Applied Health Physics (H-109)										
14	Environmental Monitoring for Radioactivity (H-111) or Radiological / Decommissioning Surveyor Training (ORAU)										
15	Introductory Health Physics (H-117)										
16	Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (H-121)										
17	Basic Health Physics (H-122)										
18	Health Physics Technology Course (H-201)										
19	Diagnostic and Therapeutic Nuclear Medicine Course (H-304)										
20	Safety Aspects of Industrial Radiography Course (H-305)										
21	Transportation of Radioactive Materials Course (H-308)										
22	Teletherapy and Brachytherapy Course (H-313)										
23	RESRAD (H-410)										
24	National Incident Management System (NIMS), Introduction to Incident Command System (IS-100)										
25	National Incident Management System (NIMS), Basic Incident Command System (IS-200)										
26	National Incident Management System (NIMS), An Introduction (IS-700)										
27	Effective Communications (or equivalent)										
28	Federal Emergency Management Agency Radiological Emergency Response Operations (RERO)										
29	Hazardous Waste Operations and Emergency Response Standard (HAZWOPER)										

Training Journal  
(i.e., 1246)

# DEP INSPECTION MANUAL

## MANUAL CHAPTER 1246

### FORMAL QUALIFICATION PROGRAMS IN THE BUREAU OF RADIATION PROTECTION PROGRAM AREA

#### 1246-01 PURPOSE

01.01 To define training and qualification requirements for personnel in the Bureau of Radiation Protection (BRP) program area. Initial qualification is achieved through self-study, formal classroom, and on-the-job training.

1.02 To define additional training to maintain and enhance the effectiveness of experienced personnel in identified specialty areas.

1.03 This manual chapter was adapted for Commonwealth use from the U.S. Nuclear Regulatory Commission (NRC) manual chapter of the same number. The Program has also adapted the related appendices A01, A02, A09, A10, A11, B01, B02, B09, B10, and B11 but at this time has no intention of adapting nor adopting the remaining appendices. Appendices A09 and a10 were combined into one document as were appendices b09 and b10.

#### 1246-02 OBJECTIVES

02.01 To ensure that BRP program area personnel meet minimum knowledge and qualification standards.

2.02 To provide a standardized methodology for determining that BRP program area inspectors or license reviewers or project manager/technical reviewers have met the established qualification requirements.

#### 1246-03 POLICY

BRP program area personnel must understand the facilities, equipment, processes, and activities of the programs they inspect or license, as well as the criteria, techniques, and mechanics of inspection and licensing. The qualification process is intended to provide inspectors, license reviewers, and project manager/technical reviewers with sufficient information to conduct inspections and license reviews that are technically correct and in accordance with DEP regulations, policies and procedures.

Personnel assigned as inspectors, license reviewers, and project manager/technical reviewers in the BRP program area must successfully complete the requirements for their individual inspection or licensing areas, as listed in each section of Appendix A and the appropriate Qualification Journal described in each section of Appendix B. Individuals who inspect facilities being decommissioned must qualify as a Decommissioning Inspector in accordance with Section IX if performing Type 3 and 4 decommissioning activities (As defined in NUREG/BR-0241). Type 1 and 2 decommissioning activities (As defined in NUREG/BR-0241) may be performed by individuals qualified as Radioactive Materials Inspectors in

accordance with Section II as approved by the individual's supervisor. In addition to the formal requirements of this document, other training may be necessary to supplement or enhance inspector, license reviewer, or project manager/technical reviewers development. Exemption from specific training topics may be granted in accordance with Section 1246-11 of this chapter.

The appropriate Qualification Journal described in Appendix B specifies the minimum inspector, reviewer, or project manager/technical reviewer qualification requirements. Only DEP BRP Central Office (CO) may customize specific Qualification Journals to add other requirements as appropriate.

Upon completion of the training identified in the Qualification Journal, the inspector's, license reviewer's, or project manager/technical reviewer's understanding of the material will be evaluated by his/her supervisor.

Inspectors, license reviewers, or project manager/technical reviewers undergoing qualification may perform inspections or license application reviews under the direction of a qualified inspector, license reviewer, or project manager/technical reviewer. In situations where qualification is delayed as a result of the unavailability of required formal training courses, or for other compelling reasons, the Regional Radiation Protection Program Manager or Bureau Director (or designee) may provide interim license reviewer, project manager/technical reviewer, or inspector qualification for those categories in which the inspector, license reviewer, or project manager/technical reviewer is considered qualified.

An individual who changes disciplines must meet or complete the training and qualification requirements for the new discipline. In such cases, previous equivalent training requirements in common between the two disciplines need not be repeated, and credit for the previous similar training will be indicated in the current qualification journal.

Special circumstances (e.g., budget reductions, delays in establishing replacement contracts, or unavailability of critical instructors) may result in the temporary unavailability of courses required for formal qualification. This does not remove the need for the qualifying employee to attend the required course. It is expected that employee schedules will be adjusted as necessary to allow and require the employee to attend the required training when it is made available.

U.S. Nuclear Regulatory Commission (NRC) Temporary Instructions (TIs) or Policy and Guidance Directives (P&GDs) that focus on a specific area may necessitate inspectors, reviewers or project manager/technical reviewers receiving special training before performing inspections or license reviews. The Radiation Protection Program Manager will identify these special training requirements, and communicate the training needs to the Program as necessary. The schedule for preparation of any special training should allow enough advance time to prepare the required training course and implement it, before inspection or licensing is performed using the TI or P&GD.

#### 1246-04 DEFINITIONS

**Equivalency Examination.** An examination administered through the DEP BRP CO staff or its contractors, in lieu of specific course attendance.

**Category.** An area or class of activity for which a license may be issued, such as medical, academic, irradiators, well logging, and so on.

**Core Training.** Minimum formal classroom and on-the-job training required for a specific inspector, license reviewer, or project manager/technical reviewer discipline.

**Specialized Training.** Additional required training beyond that identified as Core Training. The additional training will be determined by the individual's supervisor and will depend on the individual's previous work experience and planned inspection or licensing activities in specific areas.

**Required Initial Training.** Minimum core and specialized training necessary for qualification as an inspector, license reviewer, or project manager/technical reviewer.

**Supplemental Training.** Additional training beyond that identified as required initial training to enhance an inspector's, license reviewer's, or project manager/technical reviewer's technical expertise. The additional training will be determined by the individual's supervisor.

**Refresher Training.** Training designed to update and maintain qualification.

**Qualification Journal.** The document that establishes the minimum training requirements for formal classroom instruction, on-the-job training, local training sessions, and self-study.

**Interim Qualification.** Qualification of an inspector or license reviewer to conduct independent inspections or reviews in specified areas before completion of all qualification journal requirements.

## **1246-05 RESPONSIBILITIES AND AUTHORITIES**

**05.01 DEP BRP CO.** Administers and implements the formal training programs for BRP program area inspectors and license reviewers. Develops and maintains, in conjunction with BRP and the Regions, the Qualification Journals found in each Appendix B section of this chapter.

**05.02 Director, DEP BRP CO (or designee).** Establishes the training requirements needed for BRP program area personnel to qualify to perform inspection and licensing activities. Ensures that inspectors and reviewers achieve and maintain qualifications in accordance with the guidelines provided in this chapter. Develops procedures for the implementation of this chapter for BRP inspectors, license reviewers and project manager/technical reviewers. Certifies that inspectors, reviewers and project manager/technical reviewers are qualified under this chapter.

**05.03 Regional Radiation Protection Program Manager (or designee).** Ensures that regional

inspectors and license reviewers achieve and maintain qualifications in accordance with the guidelines provided in this chapter. Enforces procedures for the implementation of this chapter for regional inspectors and license reviewers. Certifies that regional inspectors and reviewers are qualified under this chapter.

05.04 Directors, BRP and Regional Office. Assist the BRP in developing, monitoring and reviewing training courses for BRP program area qualification program. Identify and document in an individual's Qualification Journal, specialized training activities necessary to supplement core training requirements.

#### 1246-06 TRAINING ACTIVITIES

06.01 Personnel assigned as inspectors or license reviewers project manager/technical reviewers in the BRP program area must successfully complete the requirements for their individual inspection or licensing areas, as listed in each Section of Appendix A and the appropriate Qualification Journal.

- a. Written examinations will be used for designated courses to evaluate the candidate's understanding of the material. The passing grade for most examinations is 70 percent.
- b. Not all courses have formal examinations. In these cases, satisfactory course completion is determined by attendance and completion of class activities.
- c. Individuals who fail examinations may be given the opportunity to review the material through self-study and may then be reexamined. If deemed desirable, individuals who fail a course may also repeat the course in accordance with established NRC policy.
- d. In all cases, completion of formal training courses will be documented by official correspondence from the provider of the training and will be documented in the DEP agency wide training tracking system.

#### 1246-07 QUALIFICATION JOURNAL COMPLETION

07.01 Newly assigned inspectors, license reviewers, or project manager/technical reviewers will be assigned a Qualification Journal. The journal contains a detailed series of activities and study areas as assigned by line management to be completed in a specific period, usually within the first 2 years of assignment.

#### 1246-08 RESERVED

#### 1246-09 INTERIM INSPECTOR AND LICENSE REVIEWER QUALIFICATION

An inspector, license reviewer, or project manager/technical reviewer who has not completed all requirements for final certification in one of the areas listed in the applicable section in Appendix A may obtain interim qualification to independently perform inspections or conduct

license reviews in specified areas for which prescribed training has been completed. To establish an interim certification, the individual's supervisor will evaluate the individual's qualifications and identify the categories for which interim qualification is appropriate. A request will then be generated through the individual's management for interim qualification in the identified areas. The request should be approved by the Regional Radiation Protection Program Manager. Approval of interim qualification will be documented and a record kept in the individual's training file.

## 1246-10 PROGRAM REVISIONS

This manual chapter and qualification journals are periodically revised to reflect the training needs of inspectors, license reviewers, and project manager/technical reviewers as determined by changes to the inspection, license reviewer, and project manager/technical reviewer procedures. When new revisions are issued, personnel who qualified under previous requirements shall remain qualified, but must complete any new formal classroom training requirements in their area within three years from the date of the revision. Personnel in the process of qualifying when new revisions are issued, may complete their qualification under their original requirements, but must complete any new formal classroom training requirements in their area within three years from the date of the revision. Waivers to specific new formal training requirements and extensions to the three year time period can be granted using the procedures outlined in Section 1246-11.

## 1246-11 EXCEPTIONS

11.01 Inspectors, license reviewers, or project manager/technical reviewers who, through education and prior experience of at least 5 years in the specific field, possess sufficient knowledge to meet minimum requirements, may be grandfathered. Requests for such exemptions should be made from the individual's supervisor to the BRP CO Director and should consider the candidate's ability to conduct inspections or licensing activities without the benefit of the additional knowledge and regulatory perspective which would be gained by attending the specific courses.

11.02 Inspectors, license reviewers, or project manager/technical reviewers qualified for one program area covered in this manual chapter need not duplicate qualification requirements that are common for another discipline, such as Radioactive Materials Physicist. The individual, after completing the additional training required, including all of the necessary specialized and technical training for the new discipline, may receive qualification in writing from the BRP CO Director, provided that the common requirements (such as requalification courses) have been kept up to date.

11.03 Inspectors, license reviewers, or project manager/technical reviewers who, through prior experience and education, possess sufficient knowledge to meet minimum requirements, may validate specific courses through satisfactory completion of equivalency examinations. Requests for equivalency examinations should be made from the individual's supervisor to the BRP CO Director and should consider the candidate's ability to conduct inspections or licensing activities without the benefit of the additional knowledge and regulatory perspective which would be gained by attending the course. Use of these examinations is generally

expected to be a rare occurrence.

11.04 The BRP CO Director or their designee has the authority to waive any requirement or extend the time period for any requirement listed for an inspector, reviewer, or project manager/technical reviewer in this manual chapter. Justification for the waiver or extension will be documented, and entered into the individual's training file.

## 1246-12 POST QUALIFICATION TRAINING

This manual chapter identifies training requirements beyond those that are required for initial qualification for the experienced inspector, license reviewer, or project manager/technical reviewer. For inspectors, reviewers, or project manager/technical reviewers who have received certification of initial qualification, additional training is identified in the sections entitled "Supplemental Training" and "Refresher Training." Refresher training is required as specified under each section listed in Appendix A. This additional training recognizes that inspector, reviewer, or project manager/technical reviewer training does not stop with initial qualification, but that training should be made available for experienced inspectors, reviewers or project manager/technical reviewers on the basis of need, special circumstances, and the necessity of keeping current with inspection and licensing programs.

END

Appendices:

Appendix A, Training Activities

Appendix B, Training and Qualification Journal

## Appendix A: Training Activities

Each section of this appendix provides the training requirements for a particular inspection or license reviewer activity as indicated below.

Section	Title
I.	Materials License Reviewer
II.	Radioactive Material Inspector
III.	Reserved
IV.	Reserved
V.	Reserved
VI.	Reserved
VII.	Reserved
VIII.	Reserved
IX.	Decommissioning Inspector and Project Manager / Technical Reviewer
X.	Reserved
XI.	Materials Exempt Distribution License Reviewer
XII.	Reserved
XIII.	Reserved
XIV.	Reserved
XV.	Reserved
XVI.	Reserved
XVII.	Reserved
XVIII.	Reserved
XIX.	Reserved
XX.	Reserved

# Section I: Training Requirements For Materials License Reviewer

## A. Applicability

The training described below is required for all materials license reviewers assigned to perform radiological safety reviews of nuclear material license applications.

## B. Training

### 1. Required Initial Training

#### a. Self Study and on-the job Training

- (1) DEP Orientation
- (2) Code of Federal Regulations and 25 PA Code, Article V
- (3) Office Instructions/Policies and Procedures
- (4) Regulatory Guidance
- (5) DEP Inspection Manual Chapters
- (6) Industry Codes and Standards
- (7) Required Licensing Site Visits to Core Licensees
- (8) DEP Management Directives
- (9) Review of Significant Events at Materials Licensees
- (10) Directed Review of Selected Licensing Case Work
- (11) Formal NRC Training

b. Core Training. These courses establish minimum formal classroom training requirements. Refer to Section 1246-11 for exceptions to these requirements.

- (1) Health Physics Technology Course (H-201)
- (2) Diagnostic and Therapeutic Nuclear Medicine Course (H-304)

- (3) Safety Aspects of Industrial Radiography Course (H-305)
- (4) Teletherapy and Brachytherapy Course (H-313)
- (5) Licensing Practices and Procedures Course (G-109)
- (6) Transportation of Radioactive Materials Course (H-308)
- (7) NMSS Radiation Worker Training (H-102)\*

\*Only if unescorted access to radiation/contaminated areas is required.

c. Specialized Training. Depending on the materials license reviewer's previous work experience and planned reviewer activities, additional courses may be required in order to gain knowledge necessary for specialized licensing activities. Management will make this determination on an individual basis. For example, if a license reviewer is assigned activities in one of the areas listed below then that reviewer should attend the appropriate training course or have equivalent experience as determined by their management.

- (1) Fundamentals of Inspection Course (G-101),  
or Inspection Procedures Course (G-108)
- (2) Internal Dosimetry & Whole Body Counting Course (H-312)
- (3) Safety Aspects of Well Logging Course (H-314)
- (4) Irradiator Technology Course (H-315)
- (5) Environmental Monitoring for Radioactivity Course (H-111)
- (6) Air Sampling for Radioactive Material Course (H-119)
- (7) Site Access Training (H-100)\*

\*Only if unescorted access to radiation/contaminated areas is required.

2. Supplemental Training. Additional training beyond that identified as Core Training. This training will be determined by the individual's supervisor and will depend on the individual's previous work experience and planned inspection or licensing activities in specific areas.

NMSS Radiation Worker Training (H-102)

3. Refresher Training. Refresher training will be conducted every three years following initial certification. Refresher training may include the following course and other courses as determined by management:

a. Health Physics Topical Review Course (H-401)

## SECTION II

### TRAINING REQUIREMENTS FOR RADIATION MATERIAL INSPECTOR

#### A. Applicability

The training described below is required for all materials Radiation Health Physicist I and II inspectors who primarily perform materials radiological safety inspections but may also participate in decontamination, and decommissioning activities at material licensee facilities.

#### B. Training

##### 1. Required Initial Training

##### a. Self Study and On-the-Job Training

- (1) DEP Orientation
- (2) Code of Federal Regulations and 25 PA Code, Article V
- (3) Office Instructions/Regional Procedures
- (4) Regulatory Guidance
- (5) Inspection Forms and Procedures
- (6) DEP Inspection Manual Chapters
- (7) Industry Codes and Standards
- (8) Inspection Accompaniments
- (9) DEP Management Directives
- (10) Review of significant events at materials licensees
- (11) Directed Review of Selected Inspection Case Work
- (12) Formal Training

b. Core Training. These courses establish minimum formal classroom training requirements. Refer to Section 1246-11 for exceptions to these requirements. This listing neither constitutes nor specifies the order in which courses are taken. Courses are subject to availability.

- (1) Fundamentals of Inspection Course (G-101),  
or Inspection Procedures Course (G-108)
- (2) Root Cause/Incident Investigation Workshop (G-205)
- (3) Inspecting for Performance Course- Materials Version (G-304)
- (4) Effective Communications (or equivalent)
- (5) Health Physics Technology Course (H-201)
- (6) Diagnostic and Therapeutic Nuclear Medicine Course (H-304)
- (7) Safety Aspects of Industrial Radiography Course (H-305)
- (8) Teletherapy and Brachytherapy Course (H-313)
- (9) Transportation of Radioactive Materials Course (H-308)
- (10) Hazardous Waste Operations and Emergency Response Standard (HAZWOPER)  
24-hour or 40-hour
- (11) Federal Emergency Management Agency  
Radiological Emergency Response Operations (RERO)
- (12) National Incident Management System (NIMS), An Introduction (IS-700)
- (13) National Incident Management System (NIMS),  
Introduction to Incident Command System (IS-100)
- (14) National Incident Management System (NIMS), Basic Incident Command System (IS-200)

c. Specialized Training. Depending on the inspector's previous work experience and planned inspection activities, additional courses may be required in order to gain knowledge necessary for specialized inspection activities. Management will make this determination on an individual basis. For example, if an inspector is assigned activities in one of the areas listed below then that inspector should attend the appropriate training course or have equivalent experience as determined by their management.

- (1) Internal Dosimetry & Whole Body Counting Course (H-312)
- (2) Safety Aspects of Well Logging Course (H-314)
- (3) Irradiator Technology Course (H-315)
- (4) Environmental Monitoring for Radioactivity Course (H-111)

(5) Air Sampling for Radioactive Material Course(H-119)

(6) Respiratory Protection Course (H-311)

(7) Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) Course (H-121)

(8) Site Access Training (H-100)\*

\*Only if unescorted access to radiation/contaminated areas is required.

2. Supplemental Training. Additional training beyond that identified as Core Training. This training will be determined by the individual's supervisor and will depend on the individual's previous work experience and planned inspection or licensing activities in specific areas.

OSHA Indoctrination Course (G-111)

NMSS Radiation Worker Training (H-102)

3. Refresher Training. Refresher training needs will be determined by management on a case-by-case basis. Refresher training may be formal or self directed and cover core or supplemental training courses such as:

a. Fundamentals of Inspection Refresher (G-102)

b. Health Physics Topical Review Course (H-401)

Or related topics.

## SECTION IX

### TRAINING REQUIREMENTS FOR DECOMMISSIONING PROJECT MANAGERS, TECHNICAL REVIEWERS, AND INSPECTORS

#### A. APPLICABILITY

The training described below is required for all decommissioning management, technical staff and inspectors. Exceptions to these requirements may be approved by program management on a case-by-case basis.

#### B. TRAINING (Note NRC course numbers, where applicable, are provided in parentheses).

##### 1. Required Initial Training

##### a. Self-Study and On-the-Job Training

- (1) DEP Orientation
- (2) Code of Federal Regulations/Pennsylvania Code (applicable sections)
- (3) Regulatory Guidance
- (4) DEP Inspection Manual
- (5) Industry Codes and Standards
- (6) DEP Management Directives
- (7) Review of significant events at facilities being decommissioned

##### b. Core Training. These courses establish minimum formal classroom training requirements. Refer to Section 1246-11 for additional information on equivalency and exceptions.

- (1) Site Access Training (H-100) or NMSS Radiation Worker Training (H-102)
- (2) Inspecting for Performance - Materials Version (G-304)
- (3) (i) Introductory Health Physics (H-117)  
(ii) Basic Health Physics (H-122)  
(iii) Health Physics Technology (H-201)  
(iv) Applied Health Physics (H-109), or  
(v) equivalent formal health physics training/education
- (4) Transportation of Radioactive Materials (H-308)
- (5) Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (H-121)
- (6) (i) Environmental Monitoring for Radioactivity (H-111),  
(ii) Radiological/Decommissioning Surveyor Training (ORAU),  
or  
(iii) equivalent experience

- (7) OSHA Indoctrination (G-111)
- (8) RESRAD (H-410)

2. Supplemental Training. Additional training beyond that identified as Core Training. This training will be determined by the individual's supervisor and will depend on the individual's previous work experience and planned activities in specific areas. Suggested courses include:

- a. OSHA HAZWOPER Training (24 hour or 40 hour)
- b. Root Cause/Incident Investigation (G-205)
- c. Introduction to Risk Assessment in NMSS (P-400)
- d. Groundwater Hydrology
- e. Introduction to Groundwater Investigations (EPA course 165.7)
- f. Environmental Remediation Technologies (EPA course 165.3)

3. Refresher Training. Refresher training needs will be determined by management on a case-by-case basis. Refresher training may be formal or self directed and cover core or supplemental training courses such as:

- a. Fundamentals of Inspection Refresher (G-102)
- b. Health Physics Topical Review (H-401)

Or related topics.

# Section XI: Training Requirements for Materials Exempt Distribution License Reviewer

## A. Applicability

The training described below is required for all materials license reviewers assigned to perform radiological safety reviews of exempt distribution license applications.

## B. Training

### 1. Required Initial Training

#### a. Self Study and on-the job Training

- (1) DEP Orientation
- (2) Code of Federal Regulations and 25 PA Code Article V
- (3) Office Instructions
- (4) Regulatory Guidance
- (5) DEP Management Directives
- (6) eFACTS/Excel
- (7) Directed Review of Selected Licensing Case Work
- (8) Formal Training

b. Core Training. These courses establish minimum formal classroom training requirements. Refer to Section 1246-11 for exceptions to these requirements.

- (1) Health Physics Technology Course (H-201)
- (2) Licensing Practices and Procedures Course (G-109)

c. Specialized Training. Additional courses may be required in order to gain knowledge necessary for specialized licensing activities. Management will make this determination on an individual basis.

2. Supplemental Training. Additional training beyond that identified as Core Training. This training will be determined by the individual's supervisor and will depend on the individual's previous work experience and planned inspection or licensing activities in specific areas.

NMSS Radiation Worker Training Course (H-102)\*

\*Only if unescorted access to radiation/contaminated areas is required.

3. Refresher Training. Refresher training will include the following course and other courses as determined by management:

a. Health Physics Topical Review Course (H-401)

# **Appendix B: DEP Inspector, License Reviewer and Project Manager/Technical Reviewer Training and Qualification Journal**

## **A. Purpose**

To establish a method of conducting and documenting successful completion of the training requirements set forth in this manual chapter.

## **B. Background**

The DEP Training and Qualification Journal (DEP Journal) is designed to ensure that a uniform method of conducting and documenting training is being followed for all inspectors, license reviewers, and project manager/technical reviewers.

The DEP Journal establishes the minimum training requirements that must be met for all required general and formal training courses listed in Appendix A.

## **C. Basic Requirements**

The DEP Journal must be used to conduct and document training activities for all inspectors, license reviewers, and project manager/technical reviewers.

The DEP Central Office is responsible for developing and revising the DEP Training and Qualification Journals. The Training and Qualification Journals included as part of this Appendix B establish the minimum requirements for a Training and Qualification Journal that must be completed for each inspector, license reviewer, project manager/technical reviewer type listed in this manual chapter and defined in Appendix A. Each program and regional office is responsible for maintaining Training and Qualification Journals for their employees and noting completion of the journal in each inspector's personnel file. The program and regional offices can expand on the minimum requirements listed, but cannot establish a Training and Qualification Journal that go below the minimum requirements. When an inspector's assignment involves a change in program area, such as going from a Materials Health Physics Inspector to a Decommissioning Inspector, a modified qualification journal would be prepared to address the training required to address the difference. In addition to the Training and Qualification Journal, formal training courses are to be documented in the DEP training tracking system (i.e., Ingenium).

DEP Training and Qualification Journals have been developed for the following titles.

Section	Title
I.	Materials License Reviewer
II.	Radioactive Material Inspector
III.	Reserved
IV.	Reserved
V.	Reserved
VI.	Reserved
VII.	Reserved
VIII.	Reserved
IX.	Decommissioning Inspector and Project Manager / Technical Reviewer
X.	Reserved
XI.	Materials Exempt Distribution License Reviewer
XII.	Reserved
XIII.	Reserved
XIV.	Reserved
XV.	Reserved
XVI.	Reserved
XVII.	Reserved
XVIII.	Reserved
XIX.	Reserved
XX.	Reserved

## SECTION I

### MATERIALS LICENSE REVIEWER DEP LICENSE REVIEWER QUALIFICATION JOURNAL

#### Applicability

This DEP License Reviewer Qualification Journal implements DEP Manual Chapter 1246, Appendix A, Section I, by establishing the minimum training requirements for personnel assigned to perform license reviews for materials facilities.

The DEP License Reviewer Qualification Journal serves as a guideline for the development of a Qualification Journal, and establishes the minimum training requirements consistent with NRC Manual Chapter 1246. The Qualification Journal must provide traceable documentation to show that minimum requirements are met for each license reviewer.

The DEP License Reviewer Qualification Journal consists of a series of qualification guides and signature cards. Each signature card is used to document task completion, as indicated by the appropriate signature blocks. The corresponding qualification guide establishes the minimum knowledge levels or areas of study that must be completed for each signature card.

Most of the qualification guides are divided into sections. The review sections of the qualification guides identify references with general application to the license reviewer's qualification. The license reviewer is expected to have a general familiarity with these references. Other sections of the qualification guides identify specific references that have direct application to the license review discipline. The license reviewer is expected to demonstrate detailed knowledge of the license review specific references.

In order to support the review of upper tier documents, programs, and policies, the license reviewer's immediate supervisor will assign one or more specific materials licensees as reference licensees. The selection of reference licensees is intended to provide the license reviewer's management with the ability to tailor the qualification process to the experience and training level of the license reviewer, and to meet the needs of the DEP. The use of specific real world material will reinforce the qualification process.

LICENSE REVIEWER QUALIFICATION JOURNAL - Materials License Reviewer

\_\_\_\_\_  
 (Name)                      (Title)                      (Organization Unit)                      (Section)

To complete your qualification as a Materials License Reviewer you are to complete the following signature cards. All signoffs shall include the signature of the responsible reviewer and the date. Maintain these cards in a notebook along with any background or written material required by the program. This notebook will comprise your DEP License Reviewer Qualification Journal.

	Signature When Complete	Date
1. DEP Orientation	_____ Supervisor	_____
2. Code of Federal Regulations and 25 PA Code Article V	_____ Supervisor	_____
3. Office Instructions/Policies and Procedures	_____ Supervisor	_____
4. Regulatory Guidance Supervisor	_____ Supervisor	_____
5. DEP Inspection Manual	_____ Supervisor	_____
6. Industry Codes and Standards	_____ Supervisor	_____
7. Required Lincensing Site Visits to Core License	_____ Supervisor	_____
8. DEP Management Directives	_____ Supervisor	_____
9. Review of Significant events at Materials Licensees	_____ Supervisor	_____
10. Directed Review of Selected Licensing Case Work	_____ Supervisor	_____
11. Formal NRC Training	_____ Supervisor	_____

Qualification Board Requirement Met \_\_\_\_\_

Manager or Division Chief

Recommended as a qualified  
license reviewer

---

Manager or Division Chief

Certification Memo Issued

---

Manager or Division Chief

Qualification Card 1  
DEP Orientation

A. Site Orientation	Initials	Date
1. New employee processing package completed	_____ Employee	_____
2. Facility tour and introduction	_____ Supervisor	_____
B. DEP Organization		
1. Review of DEP headquarters and regional organization	_____ Employee	_____
2. Discussion of DEP organization	_____ Supervisor	_____

Qualification Card 2  
Code of Federal Regulations (CFR)  
And 25 PA Code Article V

	Initials	Date
A. Familiarization with selected 25 PA Code Article V and CFR parts completed	<hr/> Employee	<hr/>
B. Discussion completed on 25 PA Code Article V and CFR Parts related to the materials license review program	<hr/> Supervisor	<hr/>

Qualification Card 3  
Office Instructions/ Regional Procedures

A. Familiarization with office/  
Regional policies and procedures

\_\_\_\_\_  
Employee

B. Discussion completed on office/  
Regional policies and procedures

\_\_\_\_\_  
Supervisor

Qualification Card 4  
Regulatory Guidance

A. Review of Regulatory Guidelines

- |                                       |          |  |
|---------------------------------------|----------|--|
| 1. Regulatory Guides                  | Employee |  |
| 2. Information Notices/Bulletins      | Employee |  |
| 3. NUREGs                             | Employee |  |
| 4. Generic Letters                    | Employee |  |
| 5. Federal Register Notices           | Employee |  |
| 6. NRC Branch Technical Positions     | Employee |  |
| 7. Policy and guidance Directives     | Employee |  |
| 8. Standard Deficiency Paragraphs     | Employee |  |
| 9. Standard License Conditions        | Employee |  |
| 10. Licensing Checklists              | Employee |  |
| 11. Standard Review Plans             | Employee |  |
| 12. Sealed Source and Device Registry | Employee |  |
| 13. Technical Assistance Requests     | Employee |  |

B. Discussion of regulatory guidance with application to the materials license review program

Supervisor

Qualification Card 5  
DEP Inspection Manual Chapters (MC)

Initials      Date \_\_\_\_\_

A. Review of appropriate  
portions of DEP MC completed

\_\_\_\_\_  
Employee

B. Discussion of DEP MCs and  
its relation to the materials  
license review program

\_\_\_\_\_  
Supervisor

Qualification Card 6  
Industry Codes and Standards

Initials      Date \_\_\_\_\_

A. Review of selected codes  
And standards completed

\_\_\_\_\_  
Employee

B. Discussion of the application  
Of codes and standards in the  
Materials license review  
Program.

\_\_\_\_\_  
Supervisor

Qualification Card 7  
 Required (As Appropriate) Licensing Site Visits  
 to Core Licensees

		<u>Initials</u>	<u>Date</u>
A.	Site visits completed		
1.	<u>Facility</u>	<u>Employee</u>	<u>          </u>
2.	<u>Facility</u>	<u>Employee</u>	<u>          </u>
3.	<u>Facility</u>	<u>Employee</u>	<u>          </u>
4.	<u>Facility</u>	<u>Employee</u>	<u>          </u>

B.	Review and discussion by supervisor of licensing site visits and their relation to the materials license review program		
1.	<u>Facility</u>	<u>Supervisor</u>	<u>          </u>
2.	<u>Facility</u>	<u>Supervisor</u>	<u>          </u>
3.	<u>Facility</u>	<u>Supervisor</u>	<u>          </u>
4.	<u>Facility</u>	<u>Supervisor</u>	<u>          </u>

Qualification Card 8  
DEP Management Directives

Initials            Date \_\_\_\_\_

B. Review of selected portions of  
The DEP Management Directives  
completed

\_\_\_\_\_  
Employee

B. Discussion of the application  
of the DEP Management Directives  
to the materials license review  
program.

\_\_\_\_\_  
Supervisor

Qualification Card 9  
Review of Significant Events at Materials Licensees

Initials      Date\_\_\_\_\_

A. Review of selected significant  
Historical materials events

\_\_\_\_\_  
Employee

B. Discussion of the importance  
of these events and lessons learned

\_\_\_\_\_  
Supervisor

Qualification Card 10  
Directed Review of Selected Licensing Case Work

	Initials	Date _____
A. Review of selected licensing casework		
1. _____ Case Study	_____ Employee	_____
2. _____ Case Study	_____ Employee	_____
3. _____ Case Study	_____ Employee	_____
4. _____ Case Study	_____ Employee	_____
B. Discussion by first line supervisor of directed revise of the selected casework and its relation to the materials license review program.		
1. _____ Case Study	_____ Supervisor	_____
2. _____ Case Study	_____ Supervisor	_____
3. _____ Case Study	_____ Supervisor	_____
4. _____ Case Study	_____ Supervisor	_____

Qualification Card 11  
Formal NRC Training

A.CORE TRAINING:	Initials	Date
1. Health Physics Technology Course (H-201)	_____	_____
	Training Coordinator	
2. Diagnostic and Therapeutic Nuclear Medicine Course (H-304)	_____	_____
	Training Coordinator	
3. Safety Aspects of Industrial Radiography Course (H-305)	_____	_____
	Training Coordinator	
4. Teletherapy and Barchytherapy Course (H-313)	_____	_____
	Training Coordinator	
5. Licensing Practices and Procedures Course (G-109)	_____	_____
	Training Coordinator	
6. Transportation of Radioactive Materials Course (H-308)	_____	_____
	Training Coordinator	

B. SPECIALIZED TRAINING:

Other specialized training courses required for license reviewers performing licensing activities in specific areas:

Course Title	Course #	Initials	Initials	Date
_____	_____	_____ Supervisor	_____ Training Coord	_____
_____	_____	_____ Supervisor	_____ Training Coord	_____
_____	_____	_____ Supervisor	_____ Training Coord	_____
_____	_____	_____ Supervisor	_____ Training Coord	_____

Qualification Guide 1  
DEP Orientation

A. Site Orientation

1. The qualifying individual should read and complete, as appropriate, the following forms for processing into DEP:
  - a. Personnel information
  - b. Health insurance elections
  - c. Retirement plan elections
  - d. Savings elections (e.g. U.S. Savings Bonds, TSP, etc.)
  - e. Fitness for Duty requirements and physical examination
  - f. Any other forms which may be required by DEP Office of Human Resources
  - g. Forms for issuance of tagged, controlled DEP equipment
  - h. Payroll forms and time cards
  
2. The Supervisor should orient the qualifying individual to the facility as follows:
  - a. Tour the facility and introduce the qualifying individual to the staff.
  - b. Indicate to the qualifying individual the location of controlled documents, reference material, supplies, office equipment, classrooms, etc.

B. DEP Organization

1. The qualifying individual should review and become familiar with:
  - a. Organizational charts of program, regions and headquarters and overall DEP organization.
  - b. Role of Headquarters in policy and interpretation of regulations
  - c. Role of DEP Counsel
  - d. Role of Bureau of Investigations

- e. Role of Press Office
- f. Physical location of DEP offices and regions
- g. Role of DEP Bureau of Radiation Protection as a regulatory agency
  - (1) Organization
  - (2) Radiation Protection Act, as amended
  - (3) DEP Enforcement Policy
  - (4) Emergency Response Plan

2. The Supervisor should discuss BRP organization and role with the qualifying individual to ensure the qualifying individual has a full understanding of BRP's organization and mission and the role of the license reviewer in that mission.

Qualification Guide 2  
Code of Federal Regulations (CFR)  
And 25 PA Code Article V

A. A selection of currently applicable CFR Parts should be made by the Supervisor. The selection should include the references listed below and be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study-quizzes, briefings, or discussions.

1. 10 CFR Part 19 Notices, instructions and reports to workers; inspections
2. 10 CFR Part 20 Standards for protection against radiation (includes selected Questions and Answers, Q & As)
3. 10 CFR Part 30 Rules of general applicability to domestic licensing of byproduct material
4. 10 CFR Part 31 General domestic licenses for byproduct material
5. 10 CFR Part 32 Specific domestic licenses to manufacture or transfer certain items containing byproduct material
6. 10 CFR Part 33 Specific domestic licenses of broad scope for byproduct material
7. 10 CFR Part 34 Licenses for radiography and radiation safety requirements for radiographic operations
8. 10 CFR Part 35 Medical use of byproduct material
9. 10 CFR Part 36 Licenses and radiation safety requirements for irradiators
10. 10 CFR Part 39 Licenses and radiation safety requirements for well logging
11. 10 CFR Part 40 Domestic licensing of source material
12. 10 CFR Part 70 Domestic licensing of special nuclear material
13. 10 CFR Part 71 Packaging and transportation of radioactive material

14. 10 CFR Part 150 Exemptions and continued regulatory authority in agreement states and in offshore waters under section 274

15. 29 CFR Part 1910 Occupational Safety and Health Standards

17. 40 CFR Part 61 National Emission Standards for Hazardous Air

Pollutants (emphasis on Subpart I)

18. 40 CFR Part 141 National Primary Drinking Water Regulations

19. 49 CFR Parts 171 through 180 Transportation

20. 10 CFR Part 110 Export and Import of Nuclear Material and Equipment

B. A selection of applicable chapters 25 PA Code 215-240 should be made by the Supervisor and documented. The qualifying individual should be expected to have a general knowledge of the chapters. This review may be accomplished by self-study, study-quizzes, briefings, or discussions.

C. Following completion of the qualifying individual's self study of the listed 10 CFR Parts and Article V chapters, a discussion will be held with the qualifying license reviewer by the Supervisor to test the qualifying license reviewer's knowledge of these regulations. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

Qualification Guide 3  
Office Instructions/Regional Procedures

- A. Office/Region Policies and Procedures
  - 1. Read the Policy and Procedures Manual
  - 2. The qualifying individual should review the policies and practices on:
    - a. Travel
    - b. Telephone use
    - c. Policies on use of annual leave and sick leave and excused leave
    - d. Work schedule, Pay
    - e. Use of government equipment, including computers
    - f. Union activities
    - g. Communications outside DEP
    - h. Policies on outside employment and acceptance of gifts
    - i. Participation in political activities
    - j. Routing of mail and procedures for sending mail and materials (via U.S. Mail, Federal Express, etc.)
    - k. Ordering of documents (e.g NUREGs)
    - l. Office emergency and evacuation procedures
    - m. Employee Performance Review and Probationary Period
    - n. Differing Professional Views or Opinions
  
- B. The Supervisor should discuss these policies and practices with the qualifying individual to ensure that the qualifying individual has a full and complete understanding.

Qualification Guide 4  
Regulatory Guidance

A. A selection of currently applicable regulatory guidance should be identified by the Supervisor. These references should include those listed below (documents marked by an asterisk must be selected as a minimum) and should be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. The review may be accomplished by self-study, study-quizzes, briefings, or discussions. Note that many Regulatory Guides reference or endorse industry codes and standards listed in Qualification Guide 6. Study of corresponding and subtier codes and standards is recommended.

1. Regulatory Guides (use latest revision)

4.6 Measurements of Radionuclides in the Environment - Strontium-89 and Strontium-90 Analyses

4.13 Performance, Testing and Procedural Specifications for Thermoluminescence Dosimetry: Environmental Applications

4.15 Quality Assurance for Radiological Monitoring Programs

4.20 Constraint on Releases of Airborne Radioactive Materials to the Environment for Licensees other than Power Reactors.

\*6.1 Leak Testing Radioactive Brachytherapy Sources

6.2 Integrity and Test Specifications

6.3 Design, Construction, and Use of Radioisotopic Power Generators for Certain Land and Sea Applications

6.4 Classifications of Containment Properties of Sealed Radioactive Sources

\*6.5 General Safety Standard for Installations Using Non-medical Sealed Gamma Ray Sources

6.6 Acceptance Sampling Procedures for Exempted and Generally Licensed Items Containing Byproduct Material

6.7 Preparation of an Environmental Report to Support a Rule Making Petition Seeking an Exemption for a Radionuclide-Containing Product

6.8 Identification Plaque for Irretrievable Well-Logging Sources

6.9 Establishing Quality Assurance Programs for the Manufacture and Distribution of Sealed Sources and Devices containing Byproduct Material

7.1 Administrative Guide for Packaging and Transporting Radioactive Material

\*7.2 Packaging and Transportation of Radioactively Contaminated Biological Materials

\*7.3 Procedures for Picking Up and Receiving Packages of Radioactive Material

\*7.4 Leakage Tests on Packages for Shipment of Radioactive Materials

7.5 Administrative Guide for Obtaining Exemptions from Certain NRC Requirements over Radioactive Material Shipments

\*7.7 Administrative Guide for Verifying Compliance with Packaging Requirements for Shipments of Radioactive Materials

7.10 Establishing Quality Assurance Programs for Packaging Used in the Transport of Radioactive Material

\*8.1 Radiation Symbol

\*8.2 Guide for Administrative Practices in Radiation Monitoring

\*8.4 Direct Reading and Indirect Reading Pocket Dosimeters

8.5 Criticality and Other Interior Evacuation Signals

\*8.6 Standard Test Procedure for Geiger Muller Counters

\*8.7 Instructions for Recording and Reporting Occupational Radiation Exposure Data

\*8.9 Acceptable Concepts, Models, Equations and Assumptions for a Bioassay Program

\*8.10 Operating Philosophy for Maintaining Occupational Radiation Exposures As Low As Is Reasonably Achievable

8.11 Applications of Bioassay Uranium

\*8.13 Instruction Concerning Prenatal Radiation Exposure

\*8.14 Personnel Neutron Dosimeters

- \*8.15 Acceptable Programs for Respiratory Protection
- \*8.18 Information Relevant to Ensuring that Occupational Radiation Exposures at Medical Institutions Will be As Low As Reasonably Achievable
- \*8.20 Applications of Bioassay for I-125 and I-131
- \*8.21 Health Physics Surveys for Byproduct Material at NRC Licensed Processing and Manufacturing Plants
- 8.22 Bioassay at Uranium Mills
- \*8.23 Radiation Safety Surveys at Medical Institutions
- 8.24 Health Physics Surveys During Enriched Uranium 235 Processing and Fuel Fabrication
- \*8.25 Air Sampling in the Workplace
- 8.26 Applications of Bioassay for Fission and Activation Products
- \*8.28 Audible Alarm Dosimeters
- \*8.29 Instruction Concerning Risks form Occupational Radiation Exposure
- 8.30 Health Physics Surveys in Uranium Mills
- 8.31 Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Mills Will Be As Low As Reasonably Achievable
- \*8.32 Criteria for Establishing a Tritium Bioassay Program
- \*8.33 Quality Management Program
- \*8.34 Monitoring Criteria and Methods to Calculate Occupational Radiation Doses
- \*8.35 Planned Special Exposures
- \*8.36 Radiation Doses to the Embryo/Fetus
- \*8.37 ALARA Levels For Effluents From Materials Facilities
- \*8.39 Release of Patients Administered Radioactive Materials
- \*10.4 Guide for the Preparation of Applications for Licenses to Process Source Material
- 10.12 Preparation of Petitions for Rulemaking Under 10 CFR 2.802 and Preparation and Submission of Proposals for Regulatory Guidance Documents

2. Information Notices (IN) and Bulletins (BL)

IN 91-002 Brachytherapy Source Management

IN 91-003 Management of Wastes Contaminated With Radioactive Materials ("Red Bag" Waste and Ordinary Trash)

IN 91-014 Recent Safety-Related Incidents at Large Irradiators

IN 91-023 Accidental Radiation Overexposures to Personnel Due to Industrial Radiography Accessory Equipment Malfunctions

IN 91-030 Inadequate Calibration of TLDs Utilized to Monitor Extremity Dose at Uranium Processing and Fabrication Facilities

IN 91-035 Labeling Requirements for Transporting Multi-Hazard Radioactive Materials

IN 91-049 Enforcement of Safety Requirements for Radiographers

IN 91-060 False Alarms of Alarm Ratemeters Because of Radiofrequency Interference

IN 91-071 Training and Supervision of Individuals Supervised by an Authorized User

IN 92-010 Brachytherapy Incidents Involving Iridium-192 Wire Used in Endobronchial Treatments

IN 92-034 New Exposures Limits for Airborne Uranium and Thorium

IN 92-062 Emergency Response Information Requirements for Radioactive Material Shipments

IN 92-072 Employee Training and Shipper Registration Requirements for Transporting Radioactive Materials

IN 92-084 Release of Patients Treated With Temporary Implants

IN 93-004 Investigation and Reporting of Misadministrations by the Radiation Safety Officer

IN 93-005 Locking of Radiography Exposure Devices

IN 93-006 Potential Bypass Leakage Paths Around Filters Installed in Ventilation Systems

IN 93-007 Classification of Transportation Emergencies

IN 93-010 Dose Calibrator Quality Control

IN 93-014 Clarification of 10 CFR 40.22, Small Quantities of Source Material

IN 93-018 Portable Moisture-Density Gauge User Responsibilities During Field Operations

IN 93-030 NRC Requirements for Evaluation of Wipe Test Results;  
Calibration of Count Rate Survey Instruments

IN 93-031 Training of Nurses Responsible for the Care of Patients  
with Brachytherapy Implants

IN 93-036 Notifications, Reports, and Records of  
Misadministrations

IN 93-060 Reporting Fuel Cycle and Materials Events to the NRC  
Operations Center

IN 93-100 Reporting Requirements for Bankruptcy

IN 94-007 Solubility Criteria For Liquid Effluent Releases  
to  
Sanitary Sewerage Under the Revised 10 CFR Part 20

IN 94-009 Release of Patients With Residual Radioactivity From  
Medical Treatment and Control Areas ... Revised 10 CFR Part 20

IN 94-015 Radiation Exposures During an Event Involving a Fixed  
Nuclear Gauge

IN 94-016 Recent Incidents Resulting in Offsite Contamination

IN 94-017 Strontium-90 Eye Applicators: Submission of Quality  
Management Plan (QMP), Calibration, and Use

IN 94-037 Misadministration Caused By a Bent Interstitial Needle  
During Brachytherapy Procedure

IN 94-039 Identified Problems in Gamma Stereotactic Radiosurgery

IN 94-047 Accuracy of Information Provided to NRC During the  
Licensing Process

IN 94-065 Potential Error in Manual Brachytherapy Dose  
Calculations Generated Using a Computerized Treatment Planning  
System

IN 94-070 Issues Associated with the Use of Strontium-89 and Other  
Beta Emitting Radiopharmaceuticals

IN 94-074 Facility Management Responsibilities for Purchased or  
Contracted Services for Radiation Therapy Programs

IN 94-081 Accuracy of Bioassay and Environmental Sampling Results

IN 95-007 Radiopharmaceutical Vial Breakage During Preparation

IN 95-025 Valve Failure During Patient Treatment with Gamma  
Stereotactic Radiosurgery Unit

IN 95-039 Brachytherapy Incidents Involving Treatment Planning

Errors

IN 95-050 Safety Defect in Gammamed 12I Bronchial Catheter Clamping Adapters

IN 95-051 Recent Incidents Involving Potential Loss of Control of Licensed Material

IN 96-004 Incident Reporting Requirements for Radiography Licensees

IN 96-035 Failure of Safety Systems on Self-Shielded Irradiators Because of Inadequate Maintenance and Training

IN 96-047 Recordkeeping, Decommissioning Notifications for Disposals of Radioactive Waste by Land Burial Authorized under Former 10 CFR 20.304, 20.302, and Current 20.2002

IN 96-057 Incident-reporting Requirements Involving Intakes During a 24-hour Period That May Cause a Total Effective Dose Equivalent in Excess of 0.05 SV (5 rems)

IN 96-066 Recent Misadministrations Caused by Incorrect Calibrations of Strontium-90 Eye Applicators

IN 96-072 Undetected Failures That May Occur During Patient Treatments with Teletherapy Devices

IN 97-030 Control of Licensed Material During Reorganizations, Employee-Management Disagreements, and Financial Crises

IN 97-042 Management Weaknesses Resulting in Failure to Comply With Shipping Requirements for Special Nuclear Material

IN 97-043 License Condition Compliance

IN 97-055 Calculation of Surface Activity for Contaminated Equipment and Material

IN 97-065 Failures of High-Dose-Rate Remote Afterloading (HDR) Device Source Guide Tubes, Catheters, and Applicators

IN 97-075 Enforcement Sanctions Issued as a Result of Deliberate Violations of NRC Requirements

IN 97-091 Recent Failures of Control Cables Used on Amersham Model 660 Posilock Radiography Systems

IN 98-001 Thefts of Portable Gauges

IN 98-004 Enforcement Sanctions for Deliberate Violations of NRC Employee Protection Requirements

IN 98-005 Criminal History Record Information

IN 98-006 Unauthorized Use of License to Obtain Radioactive Materials, and its Implications under Expanded Title 18 of the U.S.Code

IN 98-010 Probable Misadministrations Occurring During Intravascular Brachytherapy with Novoste Beta-Cath System

IN 98-012 Licensee's Responsibilities Regarding Reporting and Follow-Up Requirements for Nuclear-Powered Pacemakers

IN 98-018 Recent Contamination Incidences Resulting From Failure to Perform Adequate Surveys

IN 99-004 Unplanned Radiation Exposures to Radiographers, Resulting from Failures to Follow Proper Radiation Safety Procedures

IN 99-009 Problems Encountered When Manually Editing Treatment Data on the Nucletron Microselectron-HDR (New) Model 105.999

IN 99-11 Incidents Involving the Use of Radioactive Iodine-131

IN 99-24 Broad-Scope Licensees' Responsibilities for Reviewing and Approving Unregistered Sealed Sources and Devices

IN 99-27 Malfunction of Source Retraction Mechanism in Cobalt-60 A Teletherapy Treatment Units

BL 86-004 Defective Teletherapy Timer That May Not Terminate Treatment Dose

BL 88-006 Actions To Be Taken for the Transportation of Model No. SPEC 2-T Radiographic Exposure Device

BL 92-002 Safety Concerns Related to "End of Life" of Theratronics Teletherapy Units

BL 92-003 Release of Patients After Brachytherapy

BL 93-001 Release of Patients After Brachytherapy Treatment With Remote Afterloading Devices

BL 95-001 Quality Assurance Program For Transportation of Radioactive Material

BL 97-001 Potential for Erroneous Calibration, Dose Rate, or Radiation

Exposure Measurements with Certain Victoreen Model 530 and  
530SIElectrometer/Dose-Meters

Others as selected by the Supervisor

3. NUREGs (latest revision, where applicable)

NUREG 1400 Air Sampling in the Workplace

NUREG 1460 Guide to NRC Reporting and Recordkeeping  
Requirements

NUREG 1507 Minimum Detectable Concentrations with Typical  
Radiation Survey Instruments for Various Contaminants and  
Field Conditions

NUREG 1556 Consolidated Guidance About Materials Licenses

Vol. 1: Program-Specific Guidance About Portable Gauge Licenses

Vol. 2: Program-Specific Guidance About Industrial Radiography  
Licenses

Vol. 3: Applications for Sealed Source and Device Evaluation  
and Registration

Vol. 4: Program-Specific Guidance About Fixed Gauge Licenses

Vol. 5: Program-Specific Guidance About Self-Shielded  
Irradiator Licenses

Vol. 6: Program-Specific Guidance About 10 CFR Part 36  
Irradiator Licenses

Vol. 7: Program-Specific Guidance About Academic,  
Research and  
Development, and Other Licenses of Limited Scope

Vol. 8: Program-Specific Guidance About Exempt  
Distribution Licenses

Vol. 9: Program-Specific Guidance About Medical Use  
Licenses

Vol. 10: Program-Specific Guidance About Master Material  
Licenses

Vol. 11: Program-Specific Guidance About Licenses of Broad  
Scope

Vol. 12: Program-Specific Guidance About Possession Licenses  
for  
Manufacturing and Distribution

Vol. 13: Program-Specific Guidance About Commercial Radiopharmacy Licenses

Vol. 14: Program-Specific Guidance About Well Logging, Tracer, and Field Flood Study Licenses

Vol. 15: Program-Specific Guidance About About Changes of Control and About Bankruptcy Involving Byproduct, Source, or Special Nuclear Material Licenses

Vol. 16: Program-Specific Guidance About Licenses Authorizing Distribution to General Licensees

Vol. 17: Program-Specific Guidance About Service Provider Licenses

Vol. 18: Program-Specific Guidance About Special Nuclear Material of Less than Critical Mass Licenses

Vol. 19: Guidance For Agreement State Licensees About NRC Form 241, Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Federal Jurisdiction, or Offshore Waters, and Guidance for NRC Licensees Proposing to Work in Agreement State Jurisdiction (Reciprocity)

Vol. 20: Program-Specific Guidance About Administrative Licensing Procedures

NUREG 1575 Multi-Agency Radiation Site Survey and Investigation Manual (MARSSIM)

NUREG 1600 General Statement of Policy and Procedures for NRC Enforcement Actions

NUREG/BR 0195 NRC Enforcement Manual

NUREG/BR 0216 Radioactive Waste: Production, Storage, Disposal

NUREG/BR 0240 Reporting Safety Concerns

NUREG/BR 0241 NMSS Handbook for Decommissioning Fuel Cycle and Materials Licenses

NUREG/CR 4884 Interpretation of Bioassay Measurements

NUREG/CR 5849 Manual for Conducting Radiological Surveys in Support of License Termination

Others as selected by the Supervisor

4. Generic Letters

GL 86-011 Distribution of Products Irradiated in Research Reactors

GL 88-004 Distribution of Gems Irradiated In Research Reactors

GL 94-004 Voluntary Reporting of Additional Occupational Radiation Exposure Data

GL 95-09 Monitoring and Training of Shippers and Carriers of Radioactive Material

GL 99-001 Recent Nuclear Materials Safety and Safeguards Decision on Bundling Exempt Sources

Others as selected by the Supervisor

5. Federal Register Notices

U. S. Nuclear Regulatory Commission, "Decommissioning, Recordkeeping and License Termination: Documentation Additions - Final Rule," Federal Register 58 (No. 141), 39628-39635, July 26, 1993

U. S. Nuclear Regulatory Commission, "General Requirements for Decommissioning Nuclear Facilities - Final Rule, Federal Register 53 (No. 123), 24018-24056, June 27, 1988

Others as selected by the Supervisor

6. NRC Branch Technical Positions

Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material, April 1993

7. Standard Deficiency Paragraphs

8. Standard License Conditions

9. Licensing Checklists

10. Standard Review Plans

11. Sealed Source and Device Registry

7. Through 11. as selected by the Supervisor

B. The application of these guidance documents to the materials license review program should be studied in detail by the

qualifying individual and covered by the Supervisor in discussions, interviews, or oral quizzes.

Qualification Guide 5  
DEP Inspection Manual Chapters(MC)

A. A selection of currently applicable DEP MC and Inspection Procedure (IP) references with direct application to the materials license review program should be identified by the First Line Supervisor. The application of the specific sections to the materials license review program should be studied in detail by the qualifying individual.

1. REPORTS/COMMUNICATIONS/FOLLOW-UP

MC 0610 Inspection Reports

MC 1120 Preliminary Notifications

2. INSPECTIONS

MC 0300 Announced and Unannounced Inspections

MC 2800 Materials Inspection Program (Inspection Priorities and Scheduling)

3. INTERACTIONS WITH OTHER FEDERAL AGENCIES

IP 87102 Maintaining Effluents from Materials Facilities As Low As Is Reasonably Achievable (ALARA) [EPA]<sup>1</sup>

4. INCIDENT RESPONSE

E-Plan Incident Response Actions - Responsibility and Authority

MC 1302 Action Levels for Radiation Exposures and Contamination Associated with Materials Events Involving Members of the Public

MC 1330 Response to Transportation Accidents Involving Radioactive Materials

IP 87103 Inspection of Material Licensees Involved in an Incident or Bankruptcy Filing

---

<sup>1</sup> Required for non-sealed source licensees.

5. LOW-LEVEL WASTE/WASTE MANAGEMENT

IP 84850 Radioactive Waste Management - Inspection of Waste Generator Requirements of 10 CFR Part 20 and 10 CFR Part 61

IP 84900 Low-Level Radioactive Waste Storage

6. MATERIALS SAFETY PROGRAM

MC 1220 Processing of DEP Form 241, Inspection of Licensees Operating under the Reciprocity

MC 2800 Materials Inspection Program

MC 2815 Construction and Preoperational Inspection of Panoramic, Wet- Source Storage Gamma Irradiators

IP 87103 Inspection of Material Licensees Involved in an Incident or Bankruptcy Filing

IP 87126 Industrial/Academic/Research Programs

IP 87125 Materials Processor/Manufacturer Programs

IP 87122 Irradiator Programs

IP 87123 Well Logging Programs

IP 87124 Fixed and Portable Gauge Programs

IP 87131 Nuclear Medicine Programs

IP 87133 Medical Gamma Stereotactic Radiosurgery and Teletherapy Programs

IP 87127 Radiopharmacy Programs

IP 87132 Brachytherapy Programs

IP 87134 Medical Broad-Scope Programs

IP 87121 Industrial Radiography Programs

7. RADIATION PROTECTION

IP 83822 Radiation Protection

IP 83890 Closeout Inspection and Survey

8. TRANSPORTATION

IP 86740 Inspection of Transportation Activities

E-Plan Response to Transportation Accidents Involving Radioactive Materials

B. The Supervisor will hold discussions, interviews, or oral quizzes to test the qualifying individual's knowledge and understanding of the application of the selected sections to the materials license review program.

Qualification Guide 6  
Industry Codes and Standards

A. A selection of currently applicable industry codes and standards should be identified by the Supervisor. These references should include those listed below and be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self study, study quizzes, briefings, or discussions.

1. American National Standards Institute (ANSI)

ANSI N13.1 Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities

ANSI N13.2 Guide for Administrative Practices in Radiation Monitoring

ANSI N13.5 Performance Specifications for Direct Reading and Indirect Reading Pocket Dosimeters for X and Gamma Radiation

ANSI N13.7 Criteria for Photographic Film Dosimeter Performance

ANSI N13.27 Performance Requirements for Pocket Sized Alarm Dosimeters and Alarm Ratemeters

ANSI N42.12 Calibration and Usage of Sodium Iodide Detection Systems

ANSI N42.13 Calibration and Usage of Dose Calibrator Ionization Chambers for the Assay of Radionuclides

ANSI N42.14 Calibration and Use of Germanium Spectrometers for the Measurement of Gamma Ray Emission Rates of Radionuclides

ANSI N42.15 Performance Verification of Liquid Scintillation Counting Systems

ANSI N43.3 General Radiation Safety - Installations Using Non-Medical X-Ray and Sealed Gamma-Ray Sources, Energies up to 10 MeV

ANSI 43.7 Safe Design and Use of Self Contained Dry Source Storage Gamma Irradiators (Category I)

ANSI N43.8 Classification of Industrial Ionizing Radiation Gaging Devices

ANSI N43.10 Safe Design and Use of Panoramic Wet Source Storage Gamma Irradiators (Category IV)

ANSI N44.1 Integrity and Test Specifications for Selected Brachytherapy Sources

ANSI N44.2 Leak Testing Radioactive Brachytherapy Sources

ANSI N44.3 Thyroid Radioiodine Uptake Measurements Using a Neck Phantom

ANSI N319 Personnel Neutron Dosimeters

ANSI N322 Inspection and Test Specifications for Direct and Indirect Reading Quartz Fiber Pocket Dosimeters

ANSI N323 Radiation Protection Instrumentation Test and Calibration

ANSI N449 Guidelines for Maintaining Cobalt-60 and Cesium-137 Teletherapy Equipment

ANSI N449.1 Procedures for Periodic Inspection of Cobalt-60 and Cesium-137 Teletherapy Equipment

ANSI N542 Sealed Radioactive Sources Classification

ANSI Z88.2 Practices for Respiratory Protection

ANSI Standards as selected and documented by the Supervisor

2. DEP Accepted HP Computer Codes Varskin RASCAL
3. National Council on Radiation Protection and Measurements (NCRP)  
NCRP Reports No. 8, 30, 37, 40, 41, 47, 50, 57, 58, 61, 65, 69, 70, 84, 87, 93, 94, 95, 99, 100, 101, 102, 105, 107, 110, 111, 112, 114, 115, 116, 117, 121, 122, 123, 124, 125, 127, 129, 130, 134, 138, 147  
NCRP Commentaries No. 9, 11, 14
4. International Commission on Radiological Protection (ICRP)  
ICRP 19, 23, 25, 26, 27, 28, 30 and Supplements, 35, 44, 51, 52, 53, 54, 56, 60, 61
5. U.S. Environmental Protection Agency (EPA)  
EPA Federal Guidance Report No.11
6. Committee on the Biological Effects of Ionizing Radiation (BEIR)  
BEIR Reports (As selected by supervisor)

7. International Commission on Radiological Units (ICRU)

ICRU 12, 18, 20, 22, 24, 32, 38

8. International Atomic Energy Agency (IAEA)

IAEA Safety Series No. 1, 25, 33, 38

IAEA Technical Report Series No. 120, 133

B. The Supervisor should test the qualifying individual's knowledge of application of these codes and standards to the materials license review program by discussions, interviews, or oral quizzes.

## Qualification Guide 7

### Required (As Appropriate) Licensing Site Visits to Core Licensees

A. Each license reviewer shall (as appropriate) accompany certified license reviewers on at least three site visits to core licensees.

B. The following is a guide for material that should be studied and discussed with the license reviewer in charge during these site visits. The Supervisor will discuss these items, as appropriate, following each site visit.

1. The Inspection Program (as it relates to review of licenses)

MC 2800 Materials Inspection Program

2. Scheduling and Preparation for Site Visits

Announced and Unannounced Inspections

3. Scope of Site Visit

4. Entrance/Exit Interviews

5. Conduct of Site Visit, Accumulation of Data

6. Post-Site Visit Activities (as they relate to review of licenses)

Inspection Reports

Notification of Significant Meetings

7. Non-routine Licensee Events Potential Abnormal Occurrences

a. Incident Investigation

b. Medical Event Assessment

c. Accident Investigation

d. Allegation investigation

9. NRC Bulletins/Information Notices

10. Communication outside DEP

Qualification Guide 8  
Management Directives

A. A selection of currently applicable DEP Management Directive (MD) references and union contract agreements should be identified by the Supervisor. These references should include those listed below and be documented. The qualifying license reviewer should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study-quizzes, briefings, or discussions. The selection should include:

1. Organization
2. Right to Know Law
3. Travel
4. Hours of Work and Premium Pay
5. Time and Attendance Reporting
6. Performance Appraisal System
7. Employee Grievances

B. Application of the selected DEP Management Directives and Contract Agreements to the materials license review program will be discussed with the qualifying individual by the Supervisor to test the qualifying individual's knowledge.

Qualification Guide 9  
Review of Significant Events at Material Licensees

A. A selection of significant historical materials related events should be identified by the Supervisor. These events should be documented and studied in detail by the qualifying individual.

B. The Supervisor should discuss the selected events in detail with the qualifying license reviewer and go over recommendations made, lessons learned, and changes identified to prevent recurrence. The relevance of the event to the overall materials license review program should be stressed.

Qualification Guide 10  
Directed Review of Selected Licensing Case Work

A. The Supervisor will select documents from the file of a licensed facility and direct their review by the qualifying individual. The qualifying individual will study in detail the selected documents. The selection should be documented. Such documents would include:

1. Initial license application and facility description
2. Associated licensing correspondence (DEP staff comments and licensee responses)
3. License renewal applications and associated DEP correspondence
4. Copy of the license
5. Inspection reports related to that licensee's activities

B. The Supervisor will discuss in detail with the qualifying individual the selected documents and their relation to the overall material license review program.

Qualification Guide 11  
Formal NRC Training

The standards for each Formal NRC Training Course are provided in the NRC Technical Training Center Course Catalog and will not be duplicated in the Qualification Guide.

## RADIOACTIVE MATERIAL INSPECTOR QUALIFICATION JOURNAL

### Applicability

This Pennsylvania Department of Environmental Protection (DEP) Radioactive Material Inspector Qualification Journal implements part of the DEP process of employee orientation by establishing the minimum training requirements for personnel assigned to perform safety inspection activities at materials facilities.

This Inspector Qualification Journal serves as a guideline for the development of a Regional Qualification Journal, and establishes the minimum training requirements consistent with Department policies. This Qualification Journal provides traceable documentation to show that minimum requirements are met for each inspector.

This Inspector Qualification Journal consists of a series of qualification guides and signature tab. Each signature tab is used to document task completion, as indicated by the appropriate signature blocks. The corresponding qualification guide establishes the minimum knowledge levels or areas of study that must be completed for each signature tab.

Most of the qualification guides are divided into sections. The review sections of the qualification guides identify references with general application to the inspector's qualification. The inspector is expected to have a general familiarity with these references.

Other sections of the qualification guides identify specific references that have direct application to an inspection discipline. The inspector is expected to demonstrate detailed knowledge of the inspection discipline specific references.

In order to support the review of upper tier documents, programs, and policies, the inspector's first line supervisor will assign one or more specific facilities as reference facilities. The selection of a reference facility is intended to provide the inspector's management with the ability to tailor the qualification process to the experience and training level of the inspector, and to meet the inspection needs of the Department. The use of specific real world material will reinforce the qualification process.

A Master Qualification Journal for each Inspector is to be maintained and stored in the respective Radiation Protection Program Manager regional office. Copies of each Qualification Journal will be forwarded to the DEP Central Office Bureau of Radiation Protection and Human Resources annually. A Master Qualification Journal for each License Reviewer is to be maintained and stored by DEP Central Office Bureau of Radiation Protection and a copy is to be forwarded to the DEP Central Office Bureau of Human Resources annually. In addition formal training courses for all Program personnel are to be entered into the DEP training tracking system, i.e., Ingenium.

**INSPECTOR QUALIFICATION JOURNAL**  
**Radioactive Material Inspector**

Name	Title	Regional Office
------	-------	-----------------

To complete your qualification as a Radioactive Material Inspector you are to complete the following signature tabs. All signoffs shall include the signature of the responsible reviewer and the date. Maintain these cards in a notebook along with any background or written material required by the program. This notebook will comprise your DEP Radioactive Material Inspector Qualification Journal.

		<u>Signature When Complete</u>	<u>Date</u>
1.	DEP Orientation	First Line Supervisor	
2.	25 PA Code, Article V and Code of Federal Regulations	First Line Supervisor	
3.	Office Instructions / Regional Procedures	First Line Supervisor	
4.	Regulatory Guidance	First Line Supervisor	
5.	Inspection forms / procedures	First Line Supervisor	
6.	DEP Inspection Manual	First Line Supervisor	
7.	Industry Codes and Standards	First Line Supervisor	
8.	Inspection Accompaniments	First Line Supervisor	
9.	DEP Management Directives	First Line Supervisor	
10.	Review of significant events at materials licensees	First Line Supervisor	
11.	Directed review of selected inspection casework	First Line Supervisor	
12.	Formal Training	First Line Supervisor	

Recommended as a qualified inspector

\_\_\_\_\_  
Regional Manager

\_\_\_\_\_

Certification Memo Issued

\_\_\_\_\_  
Regional Manager

\_\_\_\_\_

Qualification Tab 1  
DEP Orientation

	<u>Initials</u>	<u>Date</u>
<b>A. Site Orientation</b>		
1. New employee processing package completed	_____ Employee	_____
2. Facility tour and introduction	_____ First Line Supervisor	_____
<b>B. DEP Organization</b>		
1. Review of DEP central office and regional organization	_____ Employee	_____
2. Discussion of DEP organization	_____ First Line Supervisor	_____

Qualification Tab 2  
25 Pennsylvania Code, Chapters 215 – 240  
and Code of Federal Regulations (CFR)

	<u>Initials</u>	<u>Date</u>
A. Familiarization with 25 Pa. Code, Article V and CFR Parts completed	_____ Employee	_____
B. Discussion completed on 25 Pa. Code, Article V and CFR Parts related to the radioactive materials inspection program	_____ First Line Supervisor	_____

Qualification Tab 3  
Office Instructions/Regional Procedures

	<u>Initials</u>	<u>Date</u>
A. Familiarization with office/ regional policies and procedures	_____ Employee	_____
B. Discussion completed on office / regional policies and procedures	_____ First Line Supervisor	_____
C. Familiarization with DEP Computer Systems (e.g., mySAP, eFACTS, CTS, SIS)	_____ First Line Supervisor	_____

Qualification Tab 4  
Regulatory Guidance

	<u>Initials</u>	<u>Date</u>
A. Review of regulatory guidance		
1. Regulatory Guides	_____ Employee	_____
2. Information Notices / Bulletins	_____ Employee	_____
3. NUREGs	_____ Employee	_____
4. Generic Letters	_____ Employee	_____
5. Federal Register Notices	_____ Employee	_____
6. NRC Branch Technical Positions	_____ Employee	_____
7. Policy and Guidance Directives	_____ Employee	_____
8. Sealed Source and Device Registry	_____ Employee	_____
B. Discussion of regulatory guidance with application to the materials inspection program	_____ First Line Supervisor	_____

Qualification Tab 5  
Inspection Manual Chapters (MC) forms / procedures

	<u>Initials</u>	<u>Date</u>
A. Review of appropriate DEP MCs Forms / procedures completed	_____ Employee	_____
B. Discussion of MC forms / procedures and their relation to the radioactive materials inspection program	_____ First Line Supervisor	_____

Qualification Tab 6  
NRC Inspection Manual Chapters (MC)

	<u>Initials</u>	<u>Date</u>
A. Review of appropriate NRC MCs completed	_____ Employee	_____
B. Discussion of NRC MCs and their relation to the materials inspection program	_____ First Line Supervisor	_____

Qualification Tab 7  
Industry Codes and Standards



Initials

Date

A. Review of selected codes  
and standards completed

\_\_\_\_\_  
Employee

\_\_\_\_\_

B. Discussion of the application  
of codes and standards in the  
materials inspection program

\_\_\_\_\_  
First Line Supervisor

\_\_\_\_\_



Qualification Tab 8  
Inspection Accompaniments

		<u>Initials</u>	<u>Date</u>
A.	Inspections completed		
1.	_____ Facility	_____ Employee	_____
2.	_____ Facility	_____ Employee	_____
3.	_____ Facility	_____ Employee	_____
4.	_____ Facility	_____ Employee	_____
5.	_____ Facility	_____ Employee	_____
6.	_____ Facility	_____ Employee	_____
7.	_____ Facility	_____ Employee	_____
8.	_____ Facility	_____ Employee	_____
9.	_____ Facility	_____ Employee	_____
10.	_____ Facility	_____ Employee	_____
11.	_____ Facility	_____ Employee	_____

Qualification Tab 8 (continued)  
Inspection Accompaniments

		<u>Initials</u>	<u>Date</u>
B.	Discussion of inspection and employee's role		
1.	_____ Facility	_____ First Line Supervisor	_____
2.	_____ Facility	_____ First Line Supervisor	_____
3.	_____ Facility	_____ First Line Supervisor	_____
4.	_____ Facility	_____ First Line Supervisor	_____
5.	_____ Facility	_____ First Line Supervisor	_____
6.	_____ Facility	_____ First Line Supervisor	_____
7.	_____ Facility	_____ First Line Supervisor	_____
8.	_____ Facility	_____ First Line Supervisor	_____
9.	_____ Facility	_____ First Line Supervisor	_____
10.	_____ Facility	_____ First Line Supervisor	_____
11.	_____ Facility	_____ First Line Supervisor	_____

Qualification Tab 9  
DEP Management Directives

	<u>Initials</u>	<u>Date</u>
A. Review of selected portions of the DEP Management Directives completed	<hr/> Employee	<hr/>
B. Discussion of the application of the DEP Management Directives to the materials inspection program	<hr/> First Line Supervisor	<hr/>

Qualification Tab 10  
Review of Significant Events at Materials Licensees

	<u>Initials</u>	<u>Date</u>
A. Review of selected significant historical materials events	_____ Employee	_____
B. Discussion of the importance of these events and lessons learned	_____ First Line Supervisor	_____

Qualification Tab 11  
Directed Review of Selected Inspection Casework

	<u>Initials</u>	<u>Date</u>
A. Review of selected inspection casework	_____ Employee	_____
B. Discussion by first line supervisor of directed review of the selected casework and its relation to the materials inspection program	_____ First Line Supervisor	_____

Qualification Tab 12  
Formal Training

A.	CORE TRAINING:	<u>Initials</u>	<u>Date</u>
1.	Fundamentals of Inspection Course (G-101) or Inspection Procedures Course (G-108)	_____ Training Coordinator	_____
2.	Root Cause/Incident Investigation Workshop (G-205)	_____ Training Coordinator	_____
3.	Inspecting for Performance Course - Materials Version (G-304)	_____ Training Coordinator	_____
4.	Effective Communications* * Or a course with similar content	_____ Training Coordinator	_____
5.	Health Physics Technology Course (H-201)	_____ Training Coordinator	_____
6.	Diagnostic and Therapeutic Nuclear Medicine Course (H-304)	_____ Training Coordinator	_____
7.	Safety Aspects of Industrial Radiography Course (H-305)	_____ Training Coordinator	_____
8.	Teletherapy and Brachytherapy Course (H-313)	_____ Training Coordinator	_____
9.	Transportation of Radioactive Materials Course (H-308)	_____ Training Coordinator	_____

10. Hazardous Waste Operations and  
Emergency Response Standard  
(HAZWOPER) 24-hour or 40-hour  
(circle 24 or 40)

\_\_\_\_\_  
Training Coordinator

\_\_\_\_\_

11. Federal Emergency Management  
Agency Radiological Emergency  
Response Operations (RERO)

\_\_\_\_\_  
Training Coordinator

\_\_\_\_\_

12. National Incident Management  
System (NIMS), An Introduction  
(IS-700)

\_\_\_\_\_  
Training Coordinator

\_\_\_\_\_

13. National Incident Management  
System (NIMS), Introduction to  
Incident Command System (IS-100)

\_\_\_\_\_  
Training Coordinator

\_\_\_\_\_

14. National Incident Management  
System (NIMS), Basic Incident  
Command System (IS-200)

\_\_\_\_\_  
Training Coordinator

\_\_\_\_\_

Qualification Tab 12 (continued)  
Formal Training

2. SPECIALIZED TRAINING

Other specialized training courses required for inspectors performing inspection activities in specific areas:

Note: it is also the supervisor's function to ensure that the training records of the employee have been entered into the Department's Ingenium system, as necessary and appropriate.

<u>Course Title</u> <u>Date</u>	<u>Course #</u>	<u>Initials</u>	<u>Initials</u>
_____	_____	_____ Supervisor	_____ Training Coordinator
_____	_____	_____ Supervisor	_____ Training Coordinator
_____	_____	_____ Supervisor	_____ Training Coordinator
_____	_____	_____ Supervisor	_____ Training Coordinator
_____	_____	_____ Supervisor	_____ Training Coordinator

Qualification Tab 1  
DEP Orientation

A. Site Orientation

1. The qualifying individual should read and complete, as appropriate, the following forms for processing into the Department: [reference to DEP's new employee Form H]
  - a. Personnel information
  - b. Health insurance elections
  - c. Retirement plan elections
  - d. Savings elections (e.g. U.S. Savings Bonds, DCF, etc.)
  - e. Fitness for Duty requirements and physical examination
  - f. Any other forms which may be required by DEP Bureau of Human Resources
  - g. Forms for issuance of tagged, controlled DEP equipment
  - h. Payroll forms and time sheets (mySAP)
  
2. The First Line Supervisor should orient the qualifying individual to the facility as follows:
  - a. Tour the facility and introduce the qualifying individual to the staff
  - b. Indicate to the qualifying individual the location of controlled documents, reference material, supplies, office equipment, etc.

B. DEP Organization

1. The qualifying individual should review and become familiar with
  - a. Organizational charts of region and central office and overall DEP organization
  - b. Role of central office in policy and interpretation of regulations
  - c. Role of Regional Counsel
  - d. Role of DEP Community Relations
  - e. Role of DEP Bureau of Investigations
  - f. Physical location of DEP offices and regions

- g. Role of DEP as a regulatory agency
  - (1) Radiation Protection Act
  - (2) Bureau of Radiation Protection (BRP) Technical Guidance
  - (3) BRP Emergency Response Plan
  - (4) Radon Certification Act

- h. Role of NRC as a regulatory agency
  - (1) 10 CFR Part 1
  - (2) Atomic Energy Act of 1954, as amended
  - (3) Energy Reorganization Act of 1974, as amended
  - (4) NRC Enforcement Policy (NUREG 1600)
  - (5) Incident Response Plan (NUREGs 0728 and 0845)
  - (6) Energy Policy Act of 1992
  - (7) Energy Policy Act of 2005

- 2. The First Line Supervisor should discuss DEP organization and role with the qualifying individual to ensure the qualifying individual has a full understanding of DEP's organization and mission and the role of the inspector in that mission.

Qualification Tab 2  
Code of Federal Regulations (CFR)

A. A selection of currently applicable CFR Parts should be made by the First Line Supervisor. The selection should include the references listed below and be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study-quizzes, briefings, or discussions.

1. 10 CFR Part 19 Notices, instructions and reports to workers; inspections
2. 10 CFR Part 20 Standards for protection against radiation (includes selected Questions and Answers, Q & As)
3. 10 CFR Part 21 Reporting of defects and noncompliance
4. 10 CFR Part 30 Rules of general applicability to domestic licensing of byproduct material
5. 10 CFR Part 31 General domestic licenses for byproduct material
6. 10 CFR Part 32 Specific domestic licenses to manufacture or transfer certain items containing byproduct material
7. 10 CFR Part 33 Specific domestic licenses of broad scope for byproduct material
8. 10 CFR Part 34 Licenses for radiography and radiation safety requirements for radiographic operations
9. 10 CFR Part 35 Medical use of byproduct material
10. 10 CFR Part 36 Licenses and radiation safety requirements for irradiators
11. 10 CFR Part 39 Licenses and radiation safety requirements for well logging
12. 10 CFR Part 40 Domestic licensing of source material
13. 10 CFR Part 61 Licensing requirements for land disposal of radioactive waste
14. 10 CFR Part 70 Domestic licensing of special nuclear material
15. 10 CFR Part 71 Packaging and transportation of radioactive material
16. 10 CFR Part 110 Export and import of nuclear equipment and material
17. 10 CFR Part 150 Exemptions and continued regulatory authority in agreement states and in offshore waters under section 274
18. 29 CFR Part 1910 Occupational safety and health standards

19. 40 CFR Part 61 National emission standards for hazardous air pollutants (emphasis on Subpart I)
20. 40 CFR Part 190 Environmental radiation protection for nuclear power operations (uranium fuel cycle standards)
21. 40 CFR Part 141 National primary drinking water regulations
22. 49 CFR Parts 171 through 180 Transportation

- B. A selection of applicable chapters 25PA Code 215-240 should be made by the Supervisor and documented. The qualifying individual should be expected to have a general knowledge of the chapters. This review may be accomplished by self-study, study-quizzes, briefings, or discussions.
- C. Following completion of the qualifying individual's self study of the listed 10 CFR Parts and Article V Chapters, a discussion will be held with the qualifying inspector by the Supervisor to test the qualifying inspector's knowledge of these Parts. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

Qualification Tab 3  
Office Instructions/Regional Procedures

- A. Office/Region Policies and Procedures [refer to DEP new employee Form H]
1. Read the Region Policy and Procedures Manual
  2. The qualifying individual should review the Office/Regional policies and practices on:
    - a. Travel
    - b. Telephone use
    - c. Policies on use of annual leave and sick leave and excused leave
    - d. Work schedules, including Alternate Work Schedules
    - d. Use of government equipment, including computers
    - e. Leave and absences; office closings;
    - f. Union activities
    - g. Communications outside DEP
    - h. Policies on outside employment and acceptance of gifts
    - i. Participation in political activities
    - j. Routing of mail and procedures for sending mail and materials (via U.S. Mail, Federal Express, etc.), including Management Directive 3.23, Mail Management
    - k. Ordering of documents
    - l. Region emergency and evacuation procedures
    - m. Employee appraisal system; Employee Performance Reviews
    - n. Differing Professional Views or Opinions
- B. The First Line Supervisor should discuss these policies and practices with the qualifying individual to ensure that the qualifying individual has a full and complete understanding.

Qualification Tab 5  
Regulatory Guidance

- A. A selection of currently applicable regulatory guidance should be identified by the First Line Supervisor. These references should include those listed below (documents marked by an asterisk must be included as a minimum) and should be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. The review may be accomplished by self-study, study-quizzes, briefings, or discussions. Note that many Regulatory Guides reference or endorse industry codes and standards listed in Qualification Guide 6. Study of corresponding and subtier codes and standards is recommended.
1. Regulatory Guides (use latest revision)
    - 4.6 Measurements of Radionuclides in the Environment- Strontium-89 and Strontium-90 Analyses
    - 4.13 Performance, Testing and Procedural Specifications for Thermoluminescence Dosimetry: Environmental Applications
    - 4.15 Quality Assurance for Radiological Monitoring Programs
    - 4.20 Constraint on Releases of Airborne Radioactive Materials to the Environment for Licensees other than Power Reactors.
    - \*6.1 Leak Testing Radioactive Brachytherapy Sources
    - 6.2 Integrity and Test Specifications
    - 6.3 Design, Construction, and Use of Radioisotopic Power Generators for Certain Land and Sea Applications
    - 6.4 Classifications of Containment Properties of Sealed Radioactive Sources
    - \*6.5 General Safety Standard for Installations Using Nonmedical Sealed Gamma Ray Sources
    - 6.6 Acceptance Sampling Procedures for Exempted and Generally Licensed Items Containing Byproduct Material
    - 6.7 Preparation of an Environmental Report to Support a Rule Making Petition Seeking an Exemption for a Radionuclide Containing Product
    - 6.8 Identification Plaque for Irretrievable Well Logging Sources
    - 6.9 Establishing Quality Assurance Programs for the Manufacture and Distribution of Sealed Sources and Devices containing Byproduct Material
    - \*7.1 Administrative Guide for Packaging and Transporting Radioactive Material

- \*7.2 Packaging and Transportation of Radioactively Contaminated Biological Materials
- \*7.3 Procedures for Picking Up and Receiving Packages of Radioactive Material
- \*7.4 Leakage Tests on Packages for Shipment of Radioactive Materials
- 7.5 Administrative Guide for Obtaining Exemptions from Certain NRC Requirements over Radioactive Material Shipments
- \*7.7 Administrative Guide for Verifying Compliance with Packaging Requirements for Shipments of Radioactive Materials
- \*7.10 Establishing Quality Assurance Programs for Packaging Used in the Transport of Radioactive Material
- \*8.1 Radiation Symbol
- \*8.2 Guide for Administrative Practices in Radiation Monitoring
- \*8.4 Direct Reading and Indirect Reading Pocket Dosimeters
- 8.5 Criticality and Other Interior Evacuation Signals
- 8.6 Standard Test Procedure for Geiger Muller Counters
- \*8.7 Instructions for Recording and Reporting Occupational Radiation Exposure Data
- \*8.9 Acceptable Concepts, Models, Equations and Assumptions for a Bioassay Program
- \*8.10 Operating Philosophy for Maintaining Occupational Radiation Exposures As Low As Is Reasonably Achievable
- 8.11 Applications of Bioassay for Uranium
- \*8.13 Instruction Concerning Prenatal Radiation Exposure
- \*8.14 Personnel Neutron Dosimeters
- \*8.15 Acceptable Programs for Respiratory Protection
- \*8.18 Information Relevant to Ensuring that Occupational Radiation Exposures at Medical Institutions Will be As Low As Reasonably Achievable
- \*8.20 Applications of Bioassay for I-125 and I-131
- \*8.21 Health Physics Surveys for Byproduct Material at Licensed Processing and Manufacturing Plants

- 8.22 Bioassay at Uranium Mills
  - \*8.23 Radiation Safety Surveys at Medical Institutions
  - 8.24 Health Physics Surveys During Enriched Uranium 235 Processing and Fuel Fabrication
  - \*8.25 Air Sampling in the Workplace
  - 8.26 Applications of Bioassay for Fission and Activation Products
  - \*8.28 Audible Alarm Dosimeters
  - \*8.29 Instruction Concerning Risks from Occupational Radiation Exposure
  - 8.30 Health Physics Surveys in Uranium Mills
  - \*8.31 Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Mills Will Be As Low As Reasonably Achievable
  - \*8.32 Criteria for Establishing a Tritium Bioassay Program
  - \*8.33 Quality Management Program
  - \*8.34 Monitoring Criteria and Methods to Calculate Occupational Radiation Doses
  - \*8.35 Planned Special Exposures
  - \*8.36 Radiation Doses to the Embryo/Fetus
  - \*8.37 ALARA Levels For Effluents From Materials Facilities
  - \*8.39 Release of Patients Administered Radioactive Materials
  - \*10.4 Guide for the Preparation of Applications for Licenses to Process Source Material
  - 10.12 Preparation of Petitions for Rulemaking Under 10 CFR 2.802 and Preparation and Submission of Proposals for Regulatory Guidance Documents
2. Information Notices (IN) and Bulletins (BL)
- IN 91-002 Brachytherapy Source Management
  - IN 91-003 Management of Wastes Contaminated With Radioactive Materials ("Red Bag" Waste and Ordinary Trash)
  - IN 91-014 Recent Safety-Related Incidents at Large Irradiators

*IN 91-023	Accidental Radiation Overexposures to Personnel Due to Industrial Radiography Accessory Equipment Malfunctions
IN 91-030	Inadequate Calibration of TLDs Utilized to Monitor Extremity Dose at Uranium Processing and Fabrication Facilities
IN 91-035	Labeling Requirements for Transporting Multi-Hazard Radioactive Materials
*IN 91-049	Enforcement of Safety Requirements for Radiographers
IN 91-060	False Alarms of Alarm Ratemeters Because of Radiofrequency Interference
*IN 91-071	Training and Supervision of Individuals Supervised by an Authorized User
IN 92-010	Brachytherapy Incidents Involving Iridium-192 Wire Used in Endobronchial Treatments
IN 92-034	New Exposures Limits for Airborne Uranium and Thorium
IN 92-062	Emergency Response Information Requirements for Radioactive Material Shipments
IN 92-072	Employee Training and Shipper Registration Requirements for Transporting Radioactive Materials
*IN 92-084	Release of Patients Treated With Temporary Implants
IN 93-004	Investigation and Reporting of Medically Reportable Events by the Radiation Safety Officer
IN 93-005	Locking of Radiography Exposure Devices
IN 93-006	Potential Bypass Leakage Paths Around Filters Installed in Ventilation Systems
IN 93-007	Classification of Transportation Emergencies
IN 93-010	Dose Calibrator Quality Control
IN 93-014	Clarification of 10 CFR 40.22, Small Quantities of Source Material
*IN 93-018	Portable Moisture-Density Gauge User Responsibilities During Field Operations
IN 93-030	NRC Requirements for Evaluation of Wipe Test Results; Calibration of Count Rate Survey Instruments
IN 93-031	Training of Nurses Responsible for the Care of Patients With Brachytherapy Implants

IN 93-036	Notifications, Reports, and Records of Misadministrations
IN 93-060	Reporting Fuel Cycle and Materials Events to the NRC Operations Center
IN 93-069	Radiographic Events At Operating Power Reactors
IN 93-100	Reporting Requirements for Bankruptcy
IN 94-007	Solubility Criteria For Liquid Effluent Releases to Sanitary Sewerage Under the Revised 10 CFR Part 20
IN 94-009	Release of Patients With Residual Radioactivity From Medical Treatment and Control Areas ... Revised 10 CFR Part 20
IN 94-015	Radiation Exposures During an Event Involving a Fixed Nuclear Gauge
IN 94-016	Recent Incidents Resulting in Offsite Contamination
IN 94-017	Strontium-90 Eye Applicators: Submission of Quality Management Plan (QMP), Calibration, and Use
IN 94-037	Misadministration Caused By a Bent Interstitial Needle During Brachytherapy Procedure
IN 94-039	Identified Problems in Gamma Stereotactic Radiosurgery
IN 94-047	Accuracy of Information Provided to NRC During the Licensing Process
IN 94-065	Potential Error in Manual Brachytherapy Dose Calculations Generated Using a Computerized Treatment Planning System
IN 94-070	Issues Associated with the Use of Strontium-89 and Other Beta Emitting Radiopharmaceuticals
IN 94-074	Facility Management Responsibilities for Purchased or Contracted Services for Radiation Therapy Programs
IN 94-081	Accuracy of Bioassay and Environmental Sampling Results
IN 95-007	Radiopharmaceutical Vial Breakage During Preparation
IN 95-025	Valve Failure During Patient Treatment with Gamma Stereotactic Radiosurgery Unit
IN 95-039	Brachytherapy Incidents Involving Treatment Planning Errors
IN 95-039	Brachytherapy Incidents Involving Treatment Planning Errors
IN 95-050	Safety Defect in Gammamed 12I Bronchial Catheter Clamping Adapters

- \*IN 95-051      Recent Incidents Involving Potential Loss of Control of Licensed Material
- \*IN 96-004      Incident Reporting Requirements for Radiography Licensees
- IN 96-035      Failure of Safety Systems on Self-Shielded Irradiators Because of Inadequate Maintenance and Training
- IN 96-047      Recordkeeping, Decommissioning Notifications for Disposals of Radioactive Waste by Land Burial Authorized under Former 10 CFR 20.304, 20.302, and Current 20.2002
- IN 96-057      Incident-reporting Requirements Involving Intakes During a 24-hour Period That May Cause a Total Effective Dose Equivalent in Excess of 0.05 SV (5 rems)
- IN 96-066      Recent Misadministrations Caused by Incorrect Calibrations of Strontium-90 Eye Applicators
- IN 96-072      Undetected Failures That May Occur During Patient Treatments with Teletherapy Devices
- IN 97-030      Control of Licensed Material During Reorganizations, Employee-Management Disagreements, and Financial Crises
- IN 97-042      Management Weaknesses Resulting in Failure to Comply With Shipping Requirements for Special Nuclear Material
- IN 97-043      License Condition Compliance
- IN 97-055      Calculation of Surface Activity for Contaminated Equipment and Material
- IN 97-065      Failures of High-Dose-Rate Remote Afterloading (HDR) Device Source Guide Tubes, Catheters, and Applicators
- IN 97-075      Enforcement Sanctions Issued as a Result of Deliberate Violations of NRC Requirements
- IN 97-091      Recent Failures of Control Cables Used on Amersham Model 660 Posilock Radiography Systems
- \*IN 98-001      Thefts of Portable Gauges
- IN 98-004      Enforcement Sanctions for Deliberate Violations of NRC Employee Protection Requirements
- IN 98-005      Criminal History Record Information
- IN 98-006      Unauthorized Use of License to Obtain Radioactive Materials, and its Implications under Expanded Title 18 of the U.S. Code
- IN 98-010      Probable Misadministrations Occurring During Intravascular Brachytherapy with Novoste Beta-Cath System

- IN 98-012 Licensee's Responsibilities Regarding Reporting and Follow up Requirements for Nuclear Powered Pacemakers
  - IN 98-018 Recent Contamination Incidences Resulting from Failure to Perform Adequate Surveys
  - \*IN 99-004 Unplanned Radiation Exposures to Radiographers, Resulting from Failures to Follow Proper Radiation Safety Procedures
  - IN 99-009 Problems encountered when Manually Editing Treatment Data on the Nucletron Microselectron - HDR (New) Model 105.999
  - IN 99-11 Incidents involving the Use of Radioactive Iodine131
  - IN 99-24 Broad Scope Licensee's Responsibilities for Reviewing and Approving Unregistered Sealed Sources and Devices
  - IN 99-27 Malfunction of Source Retraction Mechanism in Cobalt60 Teletherapy Treatment Units
  - BL 86-004 Defective Teletherapy Timer That May Not Terminate Treatment Dose
  - BL 88-006 Actions To Be Taken for the Transportation of Model No. SPEC 2-T Radiographic Exposure Device
  - BL 92-002 Safety Concerns Related to "End of Life" of Aging Theratronics Teletherapy Units
  - BL 92-003 Release of Patients After Brachytherapy
  - BL 93-001 Release of Patients After Brachytherapy Treatment With Remote Afterloading Devices
  - BL 95-001 Quality Assurance Program For Transportation of Radioactive Material
  - BL 97-001 Potential for Erroneous Calibration, Dose Rate, or Radiation Exposure Measurements with Certain Victoreen Model 530 and 530SI Electrometer/Dose-Meters
  - BL 97-002 Puncture Testing of Shipping Packages Under 10 CFR Part 71
- Others as selected by the First Line Supervisor

3. NUREGs (latest revision, where applicable)

- NUREG 1324 Proposed Method for Regulating Major Materials Licensees
- NUREG 1400 Air Sampling in the Workplace
- NUREG 1460 Guide to NRC Reporting and Recordkeeping Requirements

- NUREG 1507 Minimum Detectable Concentrations with Typical Radiation Survey Instruments for Various Contaminants and field Conditions
- NUREG 1556 Consolidated Guidance About Materials Licensees
- Vol. 1: Program-Specific Guidance About Portable Gauges Licenses
  - Vol. 2: Program-Specific Guidance About Industrial Radiography Licenses
  - Vol. 3: Applications for Sealed Source and Device Evaluation and Registration
  - Vol. 4: Program-Specific Guidance About Fixed Gauge Licenses
  - Vol. 5: Program-Specific Guidance About Self-Shielded Irradiator Licenses
  - Vol. 6: Program-Specific Guidance About 10 CFR Part 36 Irradiator Licenses
  - Vol. 7: Program-Specific Guidance About Academic, Research, and Development, and other Licensees of limited Scoop
  - Vol. 8: Program-Specific Guidance About Exempt Distribution Licenses
  - Vol. 9: Program-Specific Guidance About Medical Use Licenses
  - Vol. 10: Program-Specific Guidance About Master Material Licenses
  - Vol. 11: Program-Specific Guidance About Licenses of Broad Scope
  - Vol. 12: Program-Specific Guidance About Possession Licenses for Manufacturing and Distribution
  - Vol. 13: Program-Specific Guidance About Commercial Radiopharmacy Licenses
  - Vol. 14: Program-Specific Guidance About Well Logging, Tracer, and Field Flood Study Licenses
  - Vol. 15: Program-Specific Guidance About Changes of Control and About Bankruptcy Involving Byproduct, Source, or Special Nuclear Material Licensees
  - Vol. 16: Program-Specific Guidance About licenses Authorizing Distribution To General Licensees
  - Vol. 17: Program-Specific Guidance About Service Provider Licenses
  - Vol. 18: Program-Specific Guidance About Special Nuclear Material of Less Than Critical Mass Licenses

Vol. 19 Guidance for Agreement State Licensees About NRC Form 241 Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Federal Jurisdiction, or Offshore Waters, and Guidance for NRC Licensees Proposing to Work in Agreement State Jurisdiction (Reciprocity)

Vol.20: Program-Specific Guidance About Administrative Licensing Procedures

NUREG 1575 Multi-Agency Radiation Site Survey and Investigation Manual (MARSSIM)

NUREG 1600 General Statements of Policy and Procedures for NRC Enforcement Actions

NUREG/BR 0216 Radioactive Waste Production, Storage, Disposal

NUREG/BR 0240 Reporting Safety Concerns

NUREG/BR 0241 NMSS Handbook for Decommissioning fuel Cycle and Materials Licenses

NUREG/CR 4884 Interpretation of Bioassay Measurements

NUREG/CR 5849 Manual for Conducting Radiological Surveys in Support of License Termination

Others as selected by the First Line Supervisor

#### 4. Generic Letters (GL)

GL 86-011 Distribution of Products Irradiated in Research Reactors

GL 88-004 Distribution of Gems Irradiated In Research Reactors

GL 94-004 Voluntary Reporting of Additional Occupational Radiation Exposure Data

GL 95-09 Monitoring and Training of Shippers and Carriers of Radioactive Material

GL 199-001 Recent Nuclear Materials Safety and Safeguards Decision on Bundling Exempt Sources.

Others as selected by the First Line Supervisor

#### 5. Federal Register Notices

U. S. Nuclear Regulatory Commission, "Decommissioning, Recordkeeping and License Termination: Documentation Additions- Final Rule," *Federal Register* 58 (No. 141), 39628-39635, July 26, 1993

U. S. Nuclear Regulatory Commission, "General Requirements for Decommissioning Nuclear Facilities - Final Rule, *Federal Register* 53 (No. 123), 24018-24056, June 27, 1988

Others as selected by the First Line Supervisor :

6. NRC Branch Technical Positions

Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material, April 1993

7. Policy and Guidance Directives

As selected by the First Line Supervisor

8. Sealed Source and Device Registry

9. Technical Assistance Requests

As selected by the First Line Supervisor

B. The application of these guidance documents to the materials license review program should be studied in detail by the qualifying individual and covered by the First Line Supervisor in discussions, interviews, or oral quizzes.

Qualification Tab 6  
Inspection Manual Chapters (MC)

A. A selection of currently applicable MC and Inspection Procedure (IP) references with direct application to the materials inspection program should be identified by the First Line Supervisor. The application of the specific references to the materials inspection program should be studied in detail by the qualifying individual.

1. REPORTS/COMMUNICATIONS/FOLLOW-UP

MC 0610 Inspection Reports

MC 1120 Preliminary Notifications

2. INSPECTIONS

MC 0300 Announced and Unannounced Inspections

MC 1246 Formal Qualification Programs in Nuclear Material Safety and Safeguards Program Area

MC 2800 Materials Inspection Program (Inspection Priorities and Scheduling)

3. INTERACTIONS WITH OTHER FEDERAL AGENCIES

IP 87102 Maintaining Effluents from Materials Facilities As Low As Is Reasonably Achievable (ALARA) [EPA]

4. INCIDENT RESPONSE

MC 1301 Response to Radioactive Material Incidents that Do Not Require Activation of the Incident Response Plan

MC 1302 Action Levels for Radiation Exposures and Contamination Associated with Materials Events Involving Members of the Public

MC 1330 Response to Transportation Accidents Involving Radioactive Materials

IP 87103 Inspection of Material Licensees Involved in an Incident or Bankruptcy Filing

5. LOW-LEVEL WASTE/WASTE MANAGEMENT

---

<sup>1</sup> Required for non-sealed source licensees.

- IP 84850 Radioactive Waste Management - Inspection of Waste Generator Requirements of 10 CFR Part 20 and 10 CFR Part 61
- IP 84900 Low-Level Radioactive Waste Storage

6. MATERIALS SAFETY PROGRAM

- IMC 1220 Processing of NRC Form 241, Inspection of Agreement State Licensees Operating under the Reciprocity Provisions of 10 CFR 150.20
- IMC 2800 Materials Inspection Program
- IMC 2815 Construction and Preoperational Inspection of Panoramic, Wet Source Storage Gamma Irradiators
- IP 87102 Maintaining Effluents from Materials Facilities As Low As Is Reasonably Achievable (ALARA)
- IP 87103 Inspection of Material Licensees Involved in an Incident or Bankruptcy Filing
- IP 87126 Industrial/Academic/Research Programs
- IP 87125 Materials Processor/Manufacturer Programs
- IP 87122 Irradiator Programs
- IP 87123 Well Logging Programs
- IP 87124 Fixed and Portable Gauge Programs
- IP 87132 Nuclear medicine Programs
- IP 87127 Radiopharmacy Programs
- IP 87132 Brachytherapy Programs
- IP 87134 Medical Broad-Scope Programs
- IP 87121 Industrial Radiography Programs

7. RADIATION PROTECTION

- IP 83822 Radiation Protection
- IP 83890 Closeout Inspection and Survey

8. TRANSPORTATION

- MC 1330 Response to Transportation Accidents Involving Radioactive Materials
- IP 86740 Inspection of Transportation Activities

9. OTHER

- B. The First Line Supervisor will hold discussions, interviews, or oral quizzes to test the qualifying individual's knowledge and understanding of the application of the selected references to the materials inspection program.

Qualification Tab 7  
Industry Codes and Standards

- A. A selection of currently applicable industry codes and standards should be identified by the First Line Supervisor. These references should include those listed below and be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self study, study quizzes, briefings, or discussions.
1. American National Standards Institute (ANSI)
- |             |  |
|-------------|--|
| ANSI N13.1  | Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities   |
| ANSI N13.2  | Guide for Administrative Practices in Radiation Monitoring   |
| ANSI N13.5  | Performance Specifications for Direct Reading and Indirect Reading Pocket Dosimeters for X and Gamma Radiation       |
| ANSI N13.7  | Criteria for Photographic Film Dosimeter Performance   |
| ANSI N13.27 | Performance Requirements for Pocket Sized Alarm Dosimeters and Alarm Ratemeters                                      |
| ANSI N42.12 | Calibration and Usage of Sodium Iodide Detection Systems   |
| ANSI N42.13 | Calibration and Usage of Dose Calibrator Ionization Chambers for the Assay of Radionuclides                          |
| ANSI N42.14 | Calibration and Use of Germanium Spectrometers for the Measurement of Gamma Ray Emission Rates of Radionuclides      |
| ANSI N42.15 | Performance Verification of Liquid Scintillation Counting Systems  |
| ANSI N43.3  | General Radiation Safety - Installations Using Non-Medical X-Ray and Sealed Gamma-Ray Sources, Energies up to 10 MeV |
| ANSI 43.7   | Safe Design and Use of Self Contained Dry Source Storage Gamma Irradiators (Category I)                              |
| ANSI N43.8  | Classification of Industrial Ionizing Radiation Gaging Devices   |
| ANSI N43.10 | Safe Design and Use of Panoramic Wet Source Storage Gamma Irradiators (Category IV)                                  |
| ANSI N44.1  | Integrity and Test Specifications for Selected Brachytherapy Sources   |
| ANSI N44.2  | Leak Testing Radioactive Brachytherapy Sources   |
| ANSI N44.3  | Thyroid Radioiodine Uptake Measurements Using a Neck Phantom   |
| ANSI N319   | Personnel Neutron Dosimeters   |

ANSI N322	Inspection and Test Specifications for Direct and Indirect Reading Quartz Fiber Pocket Dosimeters
ANSI N323	Radiation Protection Instrumentation Test and Calibration
ANSI N449	Guidelines for Maintaining Cobalt-60 and Cesium-137 Teletherapy Equipment
ANSI N449.1	Procedures for Periodic Inspection of Cobalt-60 and Cesium-137 Teletherapy Equipment
ANSI N542	Sealed Radioactive Sources Classification
ANSI Z88.2	Practices for Respiratory Protection

ANSI Standards as selected and documented by the First Line Supervisor

2. NRC Accepted HP Computer Codes

PC-DOS  
Varskin  
RASCAL

3. National Council on Radiation Protection and Measurements (NCRP)

NCRP Reports No., 30, 37, 40, 41, 47, 50, 57, 58, , 61, 65, 69, 70, 82, 84, 87, 88, 93, 94, 95, 99, 100, 101, 102, 105, 107, , 111, 112, 114, 115, 116, 117, 118, 121, 122, 123, 124, , 127, 128,129, , 133, 134, 138, 141, 143, 144,145, 146,147, 148,150

NCRP Commentaries No. 9, 11, 14

4. International Commission on Radiological Protection (ICRP)

ICRP 19, 23, 25, 26, 27, 28, 30 and Supplements, 35, 44, 51, 52, 53, 54, 56, 60, 61

5. U.S. Environmental Protection Agency (EPA)

EPA Federal Guidance Report No.11

6. Committee on the Biological Effects of Ionizing Radiation (BEIR)

BEIR Reports (As selected by supervisor)

7. International Commission on Radiological Units (ICRU)

ICRU 12, 18, 20, 22, 24, 32, 38

8. International Atomic Energy Agency (IAEA)

Safety Series 115 ("Basic Safety Standards")

Safety Reports Series No. 1, 7, 13, 16, 17, 25, 33, 38

Safety Standards Series TS-R-1, WS-G-2.2, WS-R-2,RS-G-1.2, RS-G-1.3,

- B. The First Line Supervisor should test the qualifying individual's knowledge of application of these codes and standards to the materials inspection program by discussions, interviews, or oral quizzes.

Qualification Tab 8  
Inspection Accompaniments

- A. Each inspector should accompany certified inspectors on at least four inspections.
  
- B. The following is a guide for material that should be studied and discussed with the inspector in charge during these inspection accompaniments. The First Line Supervisor will discuss these items, as appropriate, following each inspection accompaniment.
  - 1. The Inspection Program  
MC 2800 Materials Inspection Program
  - 2. Scheduling and Preparation for Inspections  
MC 0300 Announced and Unannounced Inspections
  - 3. Scope of Inspection
  - 4. Entrance / Exit Interviews
  - 5. Conduct of Inspection, Accumulation of Data
  - 6. Post-inspection Activities of Inspectors  
MC 0610 Inspection Reports
  
  - 7. BRP Compliant Processing Procedure (BRP-ALL-01)

Qualification Tab 9  
DEP Management Directives

- A. A selection of currently applicable DEP Management Directive (MD) references should be identified by the First Line Supervisor. These references should include those listed below and be documented. The qualifying inspector should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study-quizzes, briefings, or discussions. The selection should include:
1. Organization Management
  2. Right To Know Law
  3. Travel
  4. Hours of Work and Premium Pay
  5. Time and Attendance Reporting
  6. Performance Appraisal System
  7. Employee Grievances
  8. DEP/RP Compliance & Enforcement Policy (291-4100-001)
- B. Application of the selected DEP Management Directives to the materials inspection program will be discussed with the qualifying individual by the First Line Supervisor to test the qualifying individual's knowledge.

Qualification Tab 10  
Review of Significant Events at Materials Licensees

- A. A selection of significant historical materials related events should be identified by the First Line Supervisor. These events should be documented and studied in detail by the qualifying individual.
  
- B. The First Line Supervisor should discuss the selected events in detail with the qualifying inspector and go over recommendations made, lessons learned, and changes identified to prevent recurrence. The relevance of the event to the overall materials inspection program should be stressed.

Qualification Tab 11  
Directed Review of Selected Inspection Case Work

- A. The First Line Supervisor will select documents from the file of a licensed facility and direct their review by the qualifying individual. The qualifying individual will study in detail the selected documents. The selection should be documented. Such documents would include:
1. Initial license application and facility description
  2. Associated licensing correspondence
  3. License renewal applications and associated correspondence
  4. Copy of the license
  5. Inspection reports related to that licensee's activities
- B. The First Line Supervisor will discuss in detail with the qualifying individual the selected documents and their relation to the overall material inspection program.

Qualification Tab 12  
Formal Training

The standards for each Training Course are provided in the NRC Technical Training Center Course Catalog and will not be duplicated in the Qualification Guide.

## SECTION IX

### QUALIFICATION JOURNAL FOR DEP DECOMMISSIONING MANAGEMENT TECHNICAL STAFF AND INSPECTORS

#### Applicability

This Qualification Journal documents completion of the minimum training requirements of DEP Manual Chapter 1246, Appendix A, Section X for decommissioning management personnel, technical staff and inspectors.

A Qualification Journal consists of a series of qualification guides and a signature card. The signature card is used to document task completion, as indicated by the appropriate signature blocks. The qualification guide for the corresponding signature card establishes the minimum knowledge levels or areas of study (tasks) that must be completed.

In order to support the review of upper tier documents, programs, and policies, the individual's supervisor will assign one or more specific decommissioning facilities as reference facilities. The selection of a reference facility is intended to provide the individual's management with the ability to tailor the qualification process to the experience and training level of the individual, and to meet the inspection/oversight needs of the DEP. The use of specific real-world material will reinforce the qualification process.

**Name**

**Title**

**Unit**

Document completion of qualification requirements below. All signoffs shall include the signature of the responsible reviewer and the date. Maintain this qualification journal in DEP files.

**Self-Study and On-the-Job Training**

Item	Supervisor's Signature	Date Completed
1. DEP Orientation		
2. Code of Federal Regulations/ Pennsylvania Code (applicable sections)		
3. Regulatory Guidance		
4. DEP Inspection Manual		
5. Industry Codes and Standards		
6. DEP Management Directives		
7. Review of Significant Events at Facilities being Decommissioned		
8. Core Training		

**Core Training Worksheet - Check completed course(s)**

Item	Supervisor's Signature	Date Completed
<input type="checkbox"/> Site Access Training (H-100), or <input type="checkbox"/> NMSS Radiation Worker Training (H-102)		
<input type="checkbox"/> Inspecting for Performance- Materials Version (G-304)		
<input type="checkbox"/> Introductory Health Physics (H-117) <input type="checkbox"/> Basic Health Physics (H-122) <input type="checkbox"/> Health Physics Technology (H-201) <input type="checkbox"/> Applied Health Physics (H-109), or <input type="checkbox"/> Equivalent formal health physics training/education		
<input type="checkbox"/> Transportation of Radioactive Materials (H-308)		
<input type="checkbox"/> Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (H-121)		
<input type="checkbox"/> Environmental Monitoring for Radioactivity (H-111), <input type="checkbox"/> Radiological/Decommissioning Surveyor Training (ORAU), or <input type="checkbox"/> Equivalent experience		
<input type="checkbox"/> OSHA Indoctrination (G-111)		

**Supplemental and Refresher Training Worksheet**

Item	Supervisor's Signature	Date Completed
RESRAD (H-410)		
OSHA HAZWOPER Training ( <input type="checkbox"/> 24 hour or <input type="checkbox"/> 40 hour)		
Root Cause/Incident Investigation (G-205)		
Introduction to Risk Assessment in NMSS (P-400)		
<input type="checkbox"/> Groundwater Hydrology  <input type="checkbox"/> Introduction to Groundwater Investigations (EPA course 165.7)		
Environmental Remediation Technologies (EPA course 165.3)		
Fundamentals of Inspection Refresher (G-102)		
Health Physics Topical Review (H-401)		

## Qualification Guide 1 DEP Orientation

### A. Organization

1. The qualifying individual should review and become familiar with:
  - a. Organizational charts of bureau, division, regions and central office and overall DEP organization
  - b. Role of BRP, Environmental Quality Board and Environmental Hearing Board in policy, regulation and interpretation of regulations
  - c. Role of Regulatory Counsel, Bureau of Investigations, Inspector General and Auditor General.
  - d. Role of Office of Communications
  - f. Role of Bureau of Human Resources
  - g. Role and capabilities of the Bureau of laboratories
  - h.. Enabling legislation for Radiation Protection
    - (1) Atomic Energy Act of 1954, as amended
    - (2) Energy Reorganization Act of 1974, as amended
    - (3) Energy Policy Act of 1992
    - (4) Energy Policy Act of 2005
    - (5) Radiation Protection Act (Act 1984-147)
    - (6) Low Level Radioactive Waste Disposal Acts (Act 1988-12, Act 1990-197)
    - (7) Appalachian States Low Level Radioactive Waste Compact Act (Act 1985-120)
    - (8) Radon Gas Certification Act (Act 1987-43)
    - (9) Radon Gas Demonstration Project and Home Improvement Act (Act 1986-62)
  - h. BRP Compliance and Enforcement Policy
  - i. BRP Emergency Plan
2. The Supervisor should ensure the qualifying individual has a full understanding of the qualifying individual's role in his unit and the unit's mission.

**Qualification Guide 2**  
**Code of Federal Regulations (CFR)/Pennsylvania Code**

A. The Supervisor will identify the currently applicable portions of the CFR and Pennsylvania Code. A suggested list is provided below. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study-quizzes, briefings, or discussions.

1. 10 CFR:
  - a. Part 19 Notices, instructions and reports to workers: inspection and investigations
  - b. Part 20 Standards for protection against radiation
  - c. Part 30 Rules of general applicability to domestic licensing of byproduct material
  - d. Part 31 General domestic licenses for byproduct material
  - e. Part 32 Specific domestic licenses to manufacture or transfer certain items containing byproduct material
  - f. Part 33 Specific domestic licenses of broad scope for byproduct material
  - g. Part 34 Licenses for radiography and radiation safety requirements for radiographic operations
  - h. Part 35 Medical use of byproduct material
  - i. Part 36 Licenses and radiation safety requirements for irradiators
  - j. Part 39 Licenses and radiation safety requirements for well logging
  - k. Part 40 Domestic licensing of source material
  - l. Part 70 Domestic licensing of special nuclear material
  - m. Part 71 Packaging and transportation of radioactive material
  - n. Part 150 Exemptions and continued regulatory authority in agreement states and in offshore waters under section 274
  
2. 40 CFR:
  - a. Part 141 National Primary Drinking Water Regulations
  - b. Part 192 Health and environmental protection standards for uranium and thorium mill tailings
  
3. 49 CFR      Parts 171-180 Transportation
  
4. 25 PA Code Article V. Chapters 215 – 240 Radiological Health

B. Following completion of the qualifying individual's self study of the selected regulations, a discussion will be held with the individual by the Supervisor to test the qualifying license reviewer's knowledge level. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

### Qualification Guide 3 Regulatory Guidance

A. A selection of currently applicable regulatory guidance should be identified by the Supervisor. A suggested list is provided below. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. The review may be accomplished by self-study, study-quizzes, briefings, or discussions.

1. NRC Regulatory Guides (use latest revision)
  - c. 1.86 Termination of Operating Licenses for Nuclear Reactors
  - d. 3.65 Standard Format and Content of Decommissioning Plans for Licenses Under 10 CFR Parts 30, 40, and 70
  - e. 3.66 Standard Format and Content of Financial Assurance Mechanisms Required for Decommissioning Under 10 CFR Parts 30, 40, 70, and 72
  - f. 4.15 Quality Assurance for Radiological Monitoring Programs
  - g. 7.1 Administrative Guide for Packaging and Transporting Radioactive Material
  - h. 8.1 Radiation Symbol
  - i. 8.2 Guide for Administrative Practices in Radiation Monitoring
  - j. 8.4 Direct Reading and Indirect Reading Pocket Dosimeters
  - k. 8.6 Standard Test Procedure for Geiger Muller Counters
  - l. 8.7 Instructions for Recording and Reporting Occupational Radiation Exposure Data
  - m. 8.9 Acceptable Concepts, Models, Equations and Assumptions for a Bioassay Program
  - n. 8.10 Operating Philosophy for Maintaining Occupational Radiation Exposures As Low As Is Reasonably Achievable
  - o. 8.11 Applications of Bioassay for Uranium
  - p. 8.13 Instruction Concerning Prenatal Radiation Exposure
  - q. 8.15 Acceptable Programs for Respiratory Protection
  - r. 8.20 Applications of Bioassay for I-125 and I-131
  - s. 8.21 Health Physics Surveys for Byproduct Material at NRC Licensed Processing and Manufacturing Plants
  - t. 8.25 Air Sampling in the Workplace
  - u. 8.28 Audible Alarm Dosimeters
  - v. 8.29 Instruction Concerning Risks from Occupational Radiation Exposure
  - w. 8.34 Monitoring Criteria and Methods to Calculate Occupational Radiation Doses
  - x. 8.35 Planned Special Exposures
  - y. 8.36 Radiation Doses to the Embryo/Fetus
  - z. 10.1 Compilation of Reporting Requirements for Persons Subject to NRC Regulations
  - aa. DG-1006 Records Important for Decommissioning of Nuclear Reactors (Draft for Comment)

2. NRC Information Notices(IN) and Bulletins(BL)
  - a. IN 85-092 Surveys of Wastes Before Disposal From Nuclear Reactor Facilities
  - b. IN 91-060 False Alarms of Alarm Ratemeters Because of Radiofrequency Interference
  - c. IN 91-065 Emergency Access to Low-Level Radioactive Waste Disposal Facilities
  - d. IN 92-034 New Exposure Limits for Airborne Uranium and Thorium
  - e. IN 92-072 Employee Training and Shipper Registration Requirements for Transporting Radioactive Materials
  - f. IN 93-030 NRC Requirements for Evaluation of Wipe Test Results; Calibration of Count Rate Survey Instruments
  - g. IN 94-007 Solubility Criteria For Liquid Effluent Releases to Sanitary Sewerage Under the Revised 10 CFR Part 20
  - h. IN 94-081 Accuracy of Bioassay and Environmental Sampling Results
  - i. BL 79-019 Packaging of Low-Level Radioactive Waste for Transport and Burial
  - j. BL 79-020 Packaging, Transport and Burial of Low-Level Radioactive Waste
  
3. NUREGs (latest revision, where applicable)
  - a. NUREG-0041 Manual of Respiratory Protection Against Airborne Radioactive Materials
  - b. NUREG-1101 On-site Disposal of Radioactive Waste: Vol. 1 - Guidance for Disposal by Subsurface Burial; Vol. 2 - Methodology for the Radiological Assessment of Disposal by Subsurface Burial; Vol. 3 - Estimating Potential Groundwater Contamination
  - c. NUREG-1444 Site Decommissioning Management Plan Supplement 1
  - d. NUREG-1460 Guide to NRC Reporting and Recordkeeping Requirements Rev 1
  - e. NUREG-1500 Working Draft Regulatory Guide on the Release Criteria for Decommissioning: NRC Staff's Draft for Comment
  - f. NUREG-1501 Background as a Residual Radioactivity Criterion for Decommissioning
  - g. NUREG-1507 Minimum Detectable Concentrations with Typical Radiation Survey Instruments for Various Contaminants and Field Conditions
  - h. NUREG-1575 Multi-Agency Radiation Site Survey and Investigation Manual (MARSSIM)
  - i. NUREG-1600 General Statements of Policy and Procedures for NRC Enforcement Actions
  - j. NUREG/BR 0195 NRC Enforcement Manual

- k. NUREG/BR-0241 NMSS Handbook for Decommissioning Fuel Cycle and Materials Licenses
  - l. NUREG/CR-1496 Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for Decommissioning of NRC - Licensed Nuclear Facilities
  - m. NUREG/CR-4884 Interpretation of Bioassay Measurements
  - n. NUREG/CR-5512 Residual Radioactive Contamination from Decommissioning
  - o. NUREG/CR-5569 Health Physics Positions Data Base
  - p. NUREG/CR-5849 Manual for Conducting Radiological Surveys in Support of License Termination
  - q. NUREG/CR-6204 Questions and Answers Based on Revised 10 CFR Part 20
4. NRC Generic Letters (GL)
- a. GL 80-009 Low Level Radioactive Waste Disposal
  - b. GL 80-051 On-Site Storage Of Low-Level Waste
  - c. GL 81-038 Storage of Low Level Radioactive Wastes at Power Reactor Sites
  - d. GL 83-007 The Nuclear Waste Policy Act of 1982
  - e. GL 85-014 Commercial Storage At Power Reactor Sites Of Low Level Radioactive Waste Not Generated By The Utility
5. Federal Register Notices
- a. U. S. Nuclear Regulatory Commission, "Radiological Criteria for Decommissioning", Federal Register, Vol. 59, No. 161, 43200-43232, August 22, 1994.
  - b. U. S. Nuclear Regulatory Commission, "Decommissioning, Recordkeeping and License Termination: Documentation Additions - Final Rule", Federal Register, Vol. 58, No. 141, 39628-39635, July 26, 1993.
  - c. U. S. Nuclear Regulatory Commission, "Order Establishing Criteria and Schedule for Decommissioning the Bloomsburg Site", Federal Register, Vol. 57, No. 34, 6136-6141, February 20, 1992.
  - d. U. S. Nuclear Regulatory Commission, "Action Plan to Ensure Timely Cleanup of Site Decommissioning Management Plan Sites", Federal Register, Vol. 57, No. 74, 13389-13392, April 16, 1992.
  - e. U. S. Nuclear Regulatory Commission, "General Requirements for Decommissioning Nuclear Facilities - Final Rule", Federal Register, Vol. 53, No. 123, 24018-24056, June 27, 1988.
  - f. U. S. Nuclear Regulatory Commission, "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations", Federal Register, Vol. 53, No. 205, 52061-52063, October 23, 1981.
  - g. U. S. Nuclear Regulatory Commission, "Clarification of Decommissioning Funding Requirements," Federal Register Vol. 60, 38235, July 26, 1995

6. NRC Branch Technical Positions
  - a. When to Remediate Inadvertent Contamination of the Terrestrial Environment, October 1994.
  - b. Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material, August 1987.
  - c. Disposal or Onsite Storage of Thorium and Uranium (Either as Natural Ores or Without Daughters present) from Past Operations (SECY 81-576), dated October 5, 1981
  - d. Branch Technical Position on Site Characterization for Decommissioning, November 1994
  
7. NRC Policy and Guidance Directives
  - a. PG-8-08 "Scenarios for Assessing Potential Doses Associated with Residual Radioactivity", May 1994.
  - b. PG 8-01 Termination of Byproduct, Source and Special Nuclear Material Licenses, November 4, 1983.

## **Qualification Guide 4 DEP Inspection Manual**

- A. A selection of currently applicable DEP Inspection Manual references with direct application to the materials decommissioning inspection program should be identified by the First Line Supervisor. The application of the specific references to the materials decommissioning inspection program should be studied in detail by the qualifying individual.
  
- B. The Supervisor will hold discussions, interviews, or oral quizzes to test the qualifying individual's knowledge and understanding of the application of the selected references to the materials decommissioning inspection program.

## **Qualification Guide 5 Industry Codes and Standards**

A. A selection of currently applicable industry codes and standards should be identified by the Supervisor. A suggested list is provided below. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self study, study quizzes, briefings, or discussions.

1. American National Standards Institute (ANSI)
  - a. ANSI N13.1 Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities
  - b. ANSI N13.2 Guide for Administrative Practices in Radiation Monitoring
  - c. ANSI N13.7 Criteria for Photographic Film Dosimeter Performance
  - d. ANSI N13.27 Performance Requirements for Pocket Sized Alarm Dosimeters and Alarm Ratemeters
  - e. ANSI N42.12 Calibration and Usage of Sodium Iodide Detection Systems
  - f. ANSI N42.14 Calibration and Use of Germanium Spectrometers for the
  - g. Measurement of Gamma Ray Emission Rates of Radionuclides
  - h. ANSI N42.15 Performance Verification of Liquid Scintillation Counting Systems
  - i. ANSI N323 Radiation Protection Instrumentation Test and Calibration
  - j. ANSI Z88.2 Practices for Respiratory Protection
  - k. ANSI Standards as selected and documented by the First Line Supervisor
  
2. HP Computer Codes
  - a. RESRAD Family of Codes
  - b. MicroShield
  - c. RASCAL
  
3. National Council on Radiation Protection and Measurements (NCRP)  
Reports No. 30, 46, 57, 58, 59, 65, 76, 77, 87, 93, 94, 106, 112, 114, 115, 116, 121, 122, 123, 127, 129, 134 and 146
  
4. Committee on the Biological Effects of Ionizing Radiation (BEIR) Reports  
(As selected by Supervisor)

B. The Supervisor should test the qualifying individual's knowledge of application of these codes and standards to the materials inspection program by discussions, interviews, or oral quizzes.

**Qualification Guide 6**  
**DEP Management Directives**

- A. A selection of currently applicable DEP Management Directives should be identified by the Supervisor. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study-quizzes, briefings, or discussions.
  
- B. Application of the selected DEP Management Directives to the decommissioning inspection program will be discussed with the qualifying individual by the Supervisor to test the qualifying individual's knowledge.

**Qualification Guide 7**  
**Significant Events at Facilities being Decommissioned**

- A. A selection of currently applicable significant events at facilities being decommissioned should be identified by the Supervisor. The qualifying individual should be expected to have a general knowledge of the events and lessons learned from the events. This review may be accomplished by self-study, study-quizzes, briefings, or discussions.
  
- B. The selected significant events at facilities being decommissioned will be discussed with the qualifying individual by the Supervisor to test the qualifying individual's knowledge.

## **Qualification Guide 8 Core Training: Formal**

- A. The Core Training requirements include completion of at least one of the following courses offered through the NRC: Initial Health Physics (H-117), Basic Health Physics (H-122), Health Physics Technology (H-201) or Applied Health Physics (H-109).
- B. As an alternative, the qualifying individual can meet the requirement by completion of "Equivalent formal health physics training/education." The equivalence of any training is at the discretion of the supervisor. The following list is intended to suggest training/education programs that are equivalent to the NRC courses listed above.
  - 1. Associates (or higher) degree in health physics or radiation protection.
  - 2. Nuclear power plant senior health physics technician formal qualification program.
  - 3. U.S. Navy Engineering Laboratory Technician training.

### **Core Training: Equivalent Training/Experience**

- A. The Core Training requirements include completion of at least one of the following courses: Environmental Monitoring for Radioactivity (NRC course # H-111), or Radiological/Decommissioning Surveyor Training (offered by ORAU).
- B. As an alternative, the qualifying individual can meet the requirement by obtaining "Equivalent experience." The equivalence of any experience is at the discretion of the supervisor. The following list is intended to suggest experience that should be considered in evaluating the equivalence of the experience possessed by the qualifying individual.
  - 1. Operation of radiation detection instruments, including hand-held and cart mounted (e.g., floor monitor) instruments. Detector types include:
    - G-M,
    - Gas proportional,
    - NaI(Tl) (including portable gamma spectroscopy instruments),
    - ZnS, and
    - Alpha/Beta scintillation detectors.
  - 2. Initial and operational check-out of instruments.
  - 3. Performance of background determinations and source checks.
  - 7. Activity conversion calculations including MDA / MDC determinations.
  - 4. Performance of building surface scans and direct measurements.
  - 5. Performance of walkover scans and direct measurement in outdoor areas.
  - 6. Performance of surface contamination smear surveys, including smear counting.
  - 8. Performance of surface soil sampling.
  - 9. Performance of surface and groundwater sampling.
  - 10. Chain-of-custody controls for samples.

## SECTION XI

### MATERIALS EXEMPT DISTRIBUTION LICENSE REVIEWER DEP LICENSE REVIEWER QUALIFICATION JOURNAL

#### Applicability

This DEP License Reviewer Qualification Journal implements DEP Manual Chapter 1246, Appendix A, Section I, by establishing the minimum training requirements for personnel assigned to perform license reviews for exempt distribution applications.

The DEP License Reviewer Qualification Journal serves as a guideline for the development of a Qualification Journal, and establishes the minimum training requirements consistent with DEP Manual Chapter 1246. The Qualification Journal must provide traceable documentation to show that minimum requirements are met for each license reviewer.

The DEP License Reviewer Qualification Journal consists of a series of qualification guides and signature cards. Each signature card is used to document task completion, as indicated by the appropriate signature blocks. The corresponding qualification guide establishes the minimum knowledge levels or areas of study that must be completed for each signature card.

Most of the qualification guides are divided into sections. The review sections of the qualification guides identify references with general application to the license reviewer's qualification. The license reviewer is expected to have a general familiarity with these references. Other sections of the qualification guides identify specific references that have direct application to the license review discipline. The license reviewer is expected to demonstrate detailed knowledge of the license review specific references.

In order to support the review of upper tier documents, programs, and policies, the license reviewer's immediate supervisor will assign specific materials licenses as reference licenses. The selection of reference licensees is intended to provide the license reviewer's management with the ability to tailor the qualification process to the experience and training level of the license reviewer, and to meet the needs of the DEP. The use of specific real world material will reinforce the qualification process.

MATERIALS EXEMPT DISTRIBUTION LICENSE REVIEWER  
DEP LICENSE REVIEWER QUALIFICATION JOURNAL

Name	Title	Org. Unit	Section
------	-------	-----------	---------

To complete your qualification as a Materials Exempt Distribution License Reviewer you are to complete the following signature cards. All signoffs shall include the signature of the responsible reviewer and the date. Maintain these cards in a notebook along with any background or written material required by the program. This notebook will comprise your DEP License Reviewer Qualification Journal.

	<u>Signature When Complete</u>	<u>Date</u>
1. DEP Orientation	_____ Supervisor	_____
2. Code of Federal Regulations and 25 PA Code Article V	_____ Supervisor	_____
3. Office Instructions	_____ Supervisor	_____
4. Regulatory Guidance	_____ Supervisor	_____
5. DEP Management Directives	_____ Supervisor	_____
6. eFACTS/Excel	_____ Supervisor	_____
7. Directed Review of Selected Licensing Case Work	_____ Supervisor	_____
8. Formal Training	_____ Supervisor	_____

8. Formal Training

Recommended as a qualified  
exempt distribution license  
reviewer

\_\_\_\_\_  
Supervisor

\_\_\_\_\_  
Manager  
Or Division Chief

Certification Memo Issued  
granting signature authority

\_\_\_\_\_  
Manager  
Or Division Chief

Signature Authority

A. SIGNATURE AUTHORITY<sup>1</sup> - License signature authority is divided into two phases with reviewers authorized for more routine casework first and more complex casework later.

1. Phase I -Reviewer must demonstrate program knowledge by competent completion of a minimum of 4 - 8 new, renewal or amendment<sup>2</sup> licensing actions (at least 1 new or renewal licensing action in each category) under the supervision of the assigned senior reviewer or Section Chief in each of the following categories. Licensing actions may be actual or case studies:

- a. 32.14 (certain items)
- b. 32.17 (resins)<sup>3</sup>
- c. 32.18 (small quantities)
- d. 32.21 (carbon-14 urea capsules)

2. Phase II -Reviewer must demonstrate program knowledge by competent completion of at least 1 new, renewal or amendment<sup>3</sup> licensing action in each category under the supervision of the assigned senior reviewer or Section Chief in each of the following categories. Licensing actions may be actual or case studies:

- a. 32.11 (exempt concentrations and items)
- b. 32.22 (self-luminous products)
- c. 32.26 (smoke detectors)

Competency will be determined by review of completed deficiency letters and licenses, and an oral examination of exempt distribution licensing, conducted by the Section Chief or the assigned senior health physicist/exempt license reviewer. The Section Chief or the assigned senior health physicist\exempt license reviewer will complete Qualification Guide 6 for each license reviewed, and will discuss comments with the license reviewer-in-training.

<sup>1</sup>As the reviewer completes the specific category knowledge and completed case requirements, the reviewer can be delegated signature authority for that specific category.

<sup>2</sup>The amendment would consist of a change of ownership, new product or device review and would be considered of an equivalent difficulty level as a new or renewal licensing action.

<sup>3</sup>When the reviewer meets the §§32.14 and 32.18 category requirements, signature authority for §32.17 will be automatically delegated.

Qualification Card 1  
DEP Orientation

A. Site Orientation	<u>Initials</u>	<u>Date</u>
1. New employee processing package completed	<u>Employee</u>	<u>                    </u>
2. Facility tour and introduction	<u>Supervisor</u>	<u>                    </u>
B. DEP Organization	<u>Initials</u>	<u>Date</u>
1. Review of DEP CO and regional organization	<u>Employee</u>	<u>                    </u>
2. Discussion of DEP organization	<u>Supervisor</u>	<u>                    </u>

Qualification Card 2  
Code of Federal Regulations (CFR)  
and 25 PA Code Article V Radiological Health

Initials

Date

A. Familiarization with selected  
PA Code and CFR parts completed

\_\_\_\_\_  
Employee

\_\_\_\_\_

B Discussion completed on CFR  
parts related to the materials  
license review program and  
PA Code

\_\_\_\_\_  
Supervisor

\_\_\_\_\_



Qualification Card 4  
Regulatory Guidance

	<u>Initials</u>	<u>Date</u>
A. Review of regulatory guidance		
1. Regulatory Guides	<u>Employee</u>	<u>                    </u>
2. Information Notices / Bulletins	<u>Employee</u>	<u>                    </u>
3. NUREGs	<u>Employee</u>	<u>                    </u>
4. Generic Letters	<u>Employee</u>	<u>                    </u>
5. Federal Register Notices	<u>Employee</u>	<u>                    </u>
6. DEP Technical Positions	<u>Employee</u>	<u>                    </u>
7. Policy and Guidance Directives	<u>Employee</u>	<u>                    </u>
8. Standard Deficiency Paragraphs	<u>Employee</u>	<u>                    </u>
9. Standard License Conditions	<u>Employee</u>	<u>                    </u>
10. Licensing Checklists	<u>Employee</u>	<u>                    </u>
11. Standard Review Plans	<u>Employee</u>	<u>                    </u>
12. Sealed Source & Device Registry	<u>Employee</u>	<u>                    </u>
13. Technical Assistance Requests	<u>Employee</u>	<u>                    </u>
B. Discussion of regulatory guidance with application to the materials license review program	<u>Supervisor</u>	<u>                    </u>



Qualification Card 6  
eFACTS/Excel

Initials

Date

A. Review of selected portions of  
the eFACTS/Excel User's Manual  
and system access completed

\_\_\_\_\_  
Supervisor

B. Familiarization with eFACTS/Excel  
station(s) and operation

\_\_\_\_\_  
Employee

Qualification Card 7  
Directed Review of Selected Licensing Casework

	<u>Initials</u>	<u>Date</u>
A. Review of selected licensing casework	<u>Employee</u>	_____
B. Completion <sup>4</sup> of Phase 1 (QG 7) / Discussion by First Line Supervisor of directed review of the selected casework and its relation to the exempt distribution license review program	_____ Supervisor	_____
C. Completion <sup>4</sup> of Phase 2 (QG 7) / Discussion by First Line Supervisor of directed review of the selected casework and its relation to the exempt distribution license review program	_____ Supervisor	_____

---

<sup>4</sup>As the reviewer completes the specific category knowledge and completed case requirements, the reviewer can be delegated signature authority for that specific category.



Qualification Guide 1  
DEP Orientation

A. Site Orientation

1. The qualifying individual should read and complete, as appropriate, the following forms for processing into the Department:
  - a. Personnel information
  - b. Health insurance elections
  - c. Retirement plan elections
  - d. Savings elections (e.g. U.S. Savings Bonds, TSP, etc.)
  - e. Fitness for Duty requirements and physical examination
  - f. Any other forms which may be required by DEP Bureau of Human Resources
  - g. Forms for issuance of tagged, controlled NRC equipment
  - h. Payroll forms and time cards
  - i. eFACTS
2. The Supervisor should orient the qualifying individual to the facility as follows:
  - a. Tour the facility and introduce the qualifying individual to the staff
  - b. Indicate to the qualifying individual the location of controlled documents, reference material, supplies, office equipment, classrooms, etc.

B. DEP Organization

1. The qualifying individual should review and become familiar with:
  - a. Organizational charts of division, DEP, BRP, regions and headquarters and overall DEP organization
  - b. Role of Central Office in policy and interpretation of regulations
  - c. Role of DEP General Counsel
  - d. Role of DEP Inspector General
  - e. Role of DEP Public Affairs / Community Relations

- f. Role of DEP Office of Investigations
  - g. Role of DEP Office of Enforcement
  - h. Physical location of DEP offices and regions
  - i. Role of DEP as a regulatory agency
    - (1) Radiation Protection Act of 1984, as amended
    - (2) BRP Enforcement Policy
    - (3) Incident Response Plan
    - (4)
    - (5)
    - (6)
2. The Supervisor should discuss DEP organization and role with the qualifying individual to ensure the qualifying individual has a full understanding of DEP's organization and mission and the role of the license reviewer in that mission.

Qualification Guide 2  
Code of Federal Regulations (CFR)  
and 25 PA Code Article V Radiological Health

A. A selection of currently applicable CFR Parts should be made by the First Line Supervisor. The selection should include the references listed below and be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study-quizzes, briefings, or discussions.

- 1.
- 2.
- 3.
4. 10 CFR Part 19 Notices, instructions and reports to workers; inspections
5. 10 CFR Part 20 Standards for protection against radiation (includes selected Questions and Answers, Q & As)
6. 10 CFR Part 21 Reporting of defects and noncompliance |
7. 10 CFR Part 30 Rules of general applicability to domestic licensing of byproduct material
8. 10 CFR Part 31 General domestic licenses for byproduct material
9. 10 CFR Part 32 Specific domestic licenses to manufacture or transfer certain items containing byproduct material
10. 10 CFR Part 40 Domestic licensing of source material
11. 10 CFR Part 70 Domestic licensing of special nuclear material
12. 10 CFR Part 71 Packaging and transportation of radioactive material
13. 10 CFR Part 110 Export and import of nuclear equipment and material
- 14.
16. 49 CFR Part Transportation 173.421
17. 10 CFR Parts Statements of Consideration 30, 31, and 32
18. Pennsylvania Code

B. Following completion of the qualifying individual's self study of the listed 10 CFR Parts and Pennsylvania Code, a discussion will be held with the qualifying license reviewer by the Supervisor to test the qualifying license reviewer's knowledge of these Parts. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

Qualification Guide 3  
Office Instructions

A. Office/Division Policies and Procedures

1. Read the Office/division Policy and Procedures Manual
2. The qualifying individual should review the Office/Division policies and practices on:
  - a. Travel, including Management Directive 230.15 Amended
  - b. Telephone use
  - c. Policies on use of annual leave and sick leave, excused leave and personal leave.
  - d. Work schedule, including Master Agreement, Hours of Work and Premium Pay
  - e. Use of government equipment, including computers eFACTS and Excel and Property Management
  - d. Union activities, Labor-Management Relations Program for Commonwealth Employees
  - g. Communications outside the Department
  - h. Policies on outside employment and acceptance of gifts
  - i. Participation in political activities
  - j. Routing of mail and procedures for sending mail and materials (via U.S. Mail, Federal Express, etc.)
  - k. Ordering of documents (e.g NUREGs)
  - l. Division emergency and evacuation procedures
  - m. Employee appraisal system and Individual Development Plan (IDP)
    - (1) Employee probationary period)
    - (2) Employee Performance Evaluations
  - n. Differing Professional Views or Opinions

B. The Supervisor should discuss these policies and practices with the qualifying individual to ensure that the qualifying individual has a full and complete understanding.

Qualification Guide 4  
Regulatory Guidance

A. A selection of currently applicable regulatory guidance should be identified by the Supervisor. These references should include those listed below and should be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. The review may be accomplished by self-study, study-quizzes, briefings, or discussions. Note that many Regulatory Guides reference or endorse industry codes and standards listed in Qualification Guide 6. Study of corresponding and sub-tier codes and standards is recommended.

1. Regulatory Guides (use latest revision)

6.6 Acceptance Sampling Procedures for Exempted and Generally Licensed Items Containing Radioactive Material

6.9 QA Programs for Manufacture & Distribution of Sealed Sources and Devices Containing Byproduct Material

2. Information Notices (IN) and Bulletins (BL)

As selected by the Supervisor

3. NUREGs (latest revision, where applicable)

NUREG 1556 Consolidated Guidance About Materials Licenses:

Vol. 8: Program-Specific Guidance About Exempt Distribution Licenses

Vol. 15: Program-Specific Guidance About Changes of Control and About Bankruptcy Involving Byproduct, Source, or Special Nuclear Material Licenses

NUREG/CR 1775 Environmental Assessment of Consumer Products Containing Radioactive Material

Others as selected by the Supervisor

4. Generic Letters (GL)

As selected by the Supervisor

5. Policy and Guidance Directives

6. Standard Deficiency Paragraphs

7. Standard License Conditions

8. Licensing Checklists

9. Sealed Source and Device Registry

10. Technical Assistance Requests

As selected by the Supervisor

B. The application of these guidance documents to the materials license review program should be studied in detail by the qualifying individual and covered by the Supervisor in discussions, interviews, or oral quizzes.

Qualification Guide 5  
DEP Management Directives

- A. A selection of currently applicable DEP Management Directive (MD) references should be identified by the Supervisor. These references should include those listed below and be documented. The qualifying license reviewer should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study-quizzes, briefings, or discussions. The selection should include:
1. Organization Management
  2. Organization and Function of Regional Offices
  3. DEP Functional Organization Chart
  4. Privacy Act
  5. Right to Know Law
  6. Protection of DEP Employees Against Ionizing Radiation
  7. Official Temporary Duty Travel
  8. Differing Professional Views or Opinions
  9. Hours of Work and Premium Pay
  10. Time and Attendance Reporting
  11. Non-SES Performance Appraisal System
  12. Employee Grievances
  13. Management of Allegations
- B. Application of the selected DEP Management Directives to the materials license review program will be discussed with the qualifying individual by the Supervisor to test the qualifying individual's knowledge.

Qualification Guide 6  
eFACTS/Excel

The use and training for eFACTS/Excel will consist of structured training in using eFACTS; review of the Excel Spreadsheet; knowledge of capturing and retrieving eFACTS information.

Qualification Guide 7  
 Certification - Directed Review of Selected Licensing Case Work

Amendment No.: \_\_\_\_\_ Control No.: \_\_\_\_\_  
 Licensee Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 License No.: \_\_\_\_\_ Docket No.: \_\_\_\_\_  
 Reference No.: \_\_\_\_\_ Expiration Date: \_\_\_\_\_  
 Action Type:   New License   \_\_\_\_\_  
                   Renewal       \_\_\_\_\_  
                   Amendment   \_\_\_\_\_  
                   New License/Licensee   \_\_\_\_\_  
                   Product Transfer       \_\_\_\_\_  
                   Termination           \_\_\_\_\_

Program Code/Type:

Exempt Concentrations (Gemstones)	03251/32.11	_____
Certain Items (Electron tubes, Watches)	03251/32.14	_____
Resins	03252/32.17	_____
Small Quantities (Check sources)	03253/32.18	_____
Carbon-14 urea capsules	03256/32.21	_____
Self Luminous Products (Watches, Gunsights)	03254/32.22	_____
Gas & Aerosol Detectors (Smoke detectors)	03255/32.26	_____

I certify that I have reviewed the licensee's request dated \_\_\_\_\_ as supplemented by any letters referenced in the license and in accordance with guidance provided by the Office of Nuclear Material Safety and Safeguards applicable Standard Review Plans and the attached checklist.

\_\_\_\_\_  
 REVIEWER

\_\_\_\_\_  
 DATE

\_\_\_\_\_  
 PERSON SIGNING THE LICENSE

\_\_\_\_\_  
 DATE

GENERAL COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_

Qualification Guide 8  
Formal Training

The standards for each Training Course are provided in the NRC Technical Training Center Course Catalog and will not be duplicated in the Qualification Guide.