# ENCLOSURES

# 1-15

# ENCLOSURE 1

January 26, 2007

Mr. David J. Allard, Director
Bureau of Radiation Protection
Department of Environmental Protection
Rachel Carson State Office Building
P. O. Box 8469
Harrisburg, PA 17105-8469

Dear Mr. Allard:

We have completed our review of the Pennsylvania formal request for an Agreement, signed by Governor Rendell on November 9, 2006. An interoffice staff team (Review Team), identified in Enclosure 1, conducted the review. The review was based on a Commission Policy Statement that provides criteria for new agreements, and followed the Office of Federal and State Materials and Environmental Management Programs (FSME) Procedure SA-700, and Handbook, *Processing an Agreement.*

The review was conducted to determine whether the proposed Pennsylvania Program (hereafter, the Program) met the evaluation criteria for an Agreement Program that is adequate to protect public health and safety and compatible with the U.S. Nuclear Regulatory Commission (NRC) materials program. The Review Team found that the request provided information on all major program elements and reflected significant Pennsylvania staff effort. However, as reflected in the comments documented in Enclosure 2, the Review Team identified a number of areas where additional information or documentation is needed. A response to the comments is requested.

For your reference, the comments are correlated to the pertinent sections of your request and the pertinent sections of the FSME Procedure SA-700 Handbook. In addition, the results of our review of the Pennsylvania draft Order on Increased Controls included in your request were transmitted separately to the State, in a letter dated December 27, 2006, from Mr. Scott Moore, Deputy Director, Division of Materials Safety and State Agreements, FSME, to you.

Among the comments, two significant issues of concern to the NRC are the staffing level of the Program and the training and qualifications of the staff. The issues are discussed below and have been discussed by the NRC staff in telephone conversations with you and members of your staff.

First, the evaluation criteria for a new Agreement requires the Program to have an adequate number of trained and fully qualified licensing and inspection staff, before the effective date of the Agreement. Although the request describes the training and qualifications process for the Program staff, it did not appear to provide specific information confirming that an adequate number of trained and qualified licensing and inspection staff would be available in the Program at the time the Agreement is signed. The distribution of licensing and inspection staff qualifications should be reasonably matched to the workload for the categories of licenses to be transferred from NRC before the Agreement is signed.

Second, in your request, the staff-needs analysis indicated that the Program will need approximately 12.33 full-time equivalents to perform licensing activities under the Agreement. However, in another portion of your request, you stated that you plan to have only four qualified license reviewers, including two managers. We noted that the four license reviewers will be responsible not only for the approximately 460 naturally occurring or accelerator-produced radioactive materials licenses, but also the addition of approximately 670 radioactive materials licenses from NRC. Based on the discrepancy between your staff-needs analysis and the actual number of staff you plan to use, it appears that you may have overestimated your staffing needs and allocated insufficient staff to assume the regulatory workload on licensing activities to be transferred from NRC. The staff-needs analysis and staffing plan need to be revised to ensure that they are consistent.

As noted in our discussion on January 8, 2007, NRC Region I will stop processing incoming routine licensing actions approximately one month before the effective date of the Agreement. These pending licensing actions will then be transferred to the State for action upon the effective date of the Agreement. Therefore, it is expected that the licensing staff will start with a full workload when the Agreement takes effect. In contrast, NRC Region I is planning to complete all inspections that are due now and out to at least three months beyond the anticipated effective date of the Agreement. This effectively gives the Program a three month buffer period upon assumption of regulatory authority from NRC, regarding routine inspections.

Based on our review of the request, we conclude that the Program may not be adequately staffed to assume the regulatory authority being requested until: (1) the distribution of licensing and inspection staff qualifications is reasonably matched to the workload for the categories of licensees that will be transferred; and (2) the licensing group is fully staffed with individuals qualified according to your training and qualification procedures.

We understand that you have taken actions to address these two significant issues including a plan to increase interactions on licensing and inspections between NRC Region I staff and Pennsylvania staff in the upcoming months. These interactions should provide your staff with additional knowledge and experience on more complex materials licenses. The initial meeting to coordinate these activities and discuss other transition issues was held on January 12, 2007, at NRC Region I office. It is my understanding that the meeting was productive, and NRC and Pennsylvania staffs are working together on these issues.

The NRC staff notes, as it did during the January 16, 2007, conference call with your staff, that any memoranda of understanding (MOU) or protocol agreements that the NRC maintains with the Commonwealth with respect to nuclear power plants located in Pennsylvania have no affect on the NRC's review of your Agreement State request or the authority that would be relinquished if the Commission approves Pennsylvania's request. MOUs are governed by Section 274i of the Atomic Energy Act, whereas the NRC's Agreement State Program is controlled by Section 274b of the Act. Likewise, the protocol agreements to observe NRC inspections at nuclear power plants are governed by the Statement of Policy on "Cooperation with States at Commercial Nuclear Power Plants and other Nuclear Production or Utilization Facilities", and not Section 274b of the Act. Further, the NRC also does not consider Pennsylvania's Nuclear Reactor Oversight Program described in Section 2.1.1 of its Agreement State Formal Request – Program Narrative to be part of the Agreement State request review.

We are prepared to recommend that the Commission approve publication of the proposed Agreement in the *Federal Register* (FR) after all the comments identified in Enclosure 2 are resolved, and receipt of your commitment to address the staff level and distribution concerns, discussed above, before the Agreement is signed. Your commitment to address the concerns will be clearly identified in the FR notice. During the comment period, the public will be able to comment on all aspects of the Agreement, including the concerns related to staffing. After the public comment period, we will forward the Agreement to the Commission for final approval only after the Program actually achieves adequate staffing with qualified individuals. This approach presumes that all other significant issues and any public comments are resolved.

Enclosure 3, "Elapsed-Weeks Milestone Schedule," provides a current estimate of the timing associated with anticipated Agreement signing and its effective date. Based on the Milestone Schedule, the comments identified in Enclosure 2 must be resolved, and your commitment to address the staff level and distribution concerns discussed above must be received, by February 28, 2007, in order to meet your target date to become an Agreement State on October 1, 2007.

If you have any questions about the review, the information needed, or steps involved in processing the Agreement, please contact me at (301) 415-7197, or Mr. Kevin Hsueh, Team Leader for the Pennsylvania Agreement Review Team, at (301) 415-2598. Please note that, over the next few weeks, Mr. Hsueh will transition to a new management assignment and Mr. Andrew Mauer will assume the duties of the Team Leader. I would like to assure you that there will be no disruption in terms of the Review Team's ability to respond to any questions you may have, process your response to its comments, or proceed to finalize the Agreement when appropriate.

Sincerely,

Charles L. Miller, Director
Office of Federal and State Materials
and Environmental Management Programs

Enclosures:
1. State of Pennsylvania Review Team
2. State of Pennsylvania Formal Request Comments
3. Elapsed-Weeks Milestone Schedule

# STATE OF PENNSYLVANIA
# REVIEW TEAM

| | |
|---|---|
| Kevin Hsueh,<br>Office of Federal and State Materials and<br>Environmental Management Programs (FSME) | Team Leader<br>Regulatory Elements |
| Jason Zorn<br>Office of the General Counsel | Legal Elements/Regulatory Elements |
| Richard Blanton, FSME | Legal, Enforcement, Technical Staffing and Training Elements |
| Sandra Gabriel, Region I | Licensing Elements |
| John Buckley, FSME | Licensing Elements |
| Diana Diaz-Toro,<br>Office of Nuclear Material Safety<br>and Safeguards (NMSS) | Licensing Elements |
| Duncan White, Region I | Inspection Elements |
| Tomas Herrera, FSME | Event and Allegation Elements |
| Gary Purdy,<br>Office of Nuclear Security<br>and Incident Response | Events and Allegation Elements |



**ENCLOSURE 1**

# STATE OF PENNSYLVANIA
# FORMAL REQUEST COMMENTS

After conducting the detailed review of the Pennsylvania Agreement formal request, dated November 9, 2006, the Review Team has the following comments.

## Section 4.1 Legal Elements

### 4.1.2 Organization of the Proposed Program

1. On page 4, a sentence, in the first paragraph of the Program Narrative, which reads: "At this time, there is no intent to license sealed source manufacturers or uranium processing facilities." The sentence needs to be revised to reflect that Pennsylvania does not request authority for the sealed source and device evaluation program and the uranium recovery program.

2. Table 1 - "PA Complex Decommissioning Sites," does not include two current complex sites that should transfer to PA - Westinghouse (Churchill Facility) and Curtiss-Wright Cheswick. Although these sites have special nuclear material (SNM), the possession limits of SNM listed on their licenses are less than the limits specified in 10 CFR 150.10 and 150.11, and thus should transfer to PA. These sites need to be included in Table 1.

## 4.3 Licensing Program Elements

### 4.3.1 Procedures for the Technical Evaluation of Proposed Uses of Radioactive Material

The Pennsylvania procedures should be revised to include the following items:

a. Technical licensing procedures for 10 CFR Part 40 licenses (which are not addressed in the NUREG-1556 series), including standard review plans, checklists, and licensing guides.

b. Qualifications of individual license reviewers for each license category.

c. A qualification process for license reviewers for the complex licensed activities encountered under NRC licenses, compared to those activities currently licensed by the Program.

### 4.3.5 Procedures for Assuring the Technical Quality of Licenses

Pennsylvania should provide additional information to clarify the following two items:

a. In the Administrative Licensing Procedures, Pennsylvania provided differing descriptions of its "consistent" method for supervisory review of licensing actions: Section 2.1 states that the Chief, Radioactive Materials Licensing, will review and sign all licenses, or, in his/her absence, the Chief, Radiation Control Division. However, Section 3.5 states that the Section Chief may sign the license if the Chief is not available. This needs to be clarified.

b. Pennsylvania's staff-needs analysis indicated that the Program will need approximately 12.33 full-time equivalents to perform licensing activities under the Agreement. However, in another portion of your request, you stated that you plan to have only four qualified license reviewers, including two managers. We noted that the four license reviewers will be responsible not only for the approximately 460 naturally occurring or accelerator–produced radioactive material licenses, but also the addition of approximately 670 radioactive licenses from the U.S. Nuclear Regulatory Commission (NRC). Based on the discrepancy between your staff-needs analysis and the actual number of staff you plan to use, it appears that you may have overestimated your staffing needs and allocated insufficient staff to assume the regulatory workload on licensing activities to be transferred from NRC. Pennsylvania's staff-needs analysis and staffing plan need to be revised to ensure that they are consistent.

### 4.3.6 Administrative Licensing Procedures

Pennsylvania needs to address the following specific comments on the License Termination Procedure (LTP):

a. Sections 217.131 and 217.171 of Title 25 Pennsylvania Code incorporate the license termination regulations of 10 CFR Parts 30 and 40, respectively. However, the LTP is incomplete since it does not contain provisions for implementing a number of the regulations (for example: the Timeliness Rule [30.36 (d) and 40.42 (d)]), or reviewing license termination plans and final status survey reports. These provisions are in NRC NUREG-1757. The Pennsylvania LTP should include these provisions or adopt the NUREG-1757 guidance.

b. Section 3.1 of the LTP states, "The criteria for termination of a license is listed in 25 Pa Code 215.27 and 25 Pa Code 236.411." The Review Team noted that 25 Pa Code 215.27 is titled, "Vacating premises" and 25 Pa Code 236.411 is titled, "Site closure and decommissioning plan." The radiological criteria for license termination are incorporated by reference in 25 Pa Code 219.5. The citations of 215.27 and 236.411 need to be clarified, or revised to 219.5. In addition, please complete the table in Section 3.1 by indicating that the criteria of 10 CFR 20.1401 - 1404 are included by reference in 25 Pa Code 219.5.

c. Section 3.4 of the LTP, states that NUREG-1575 and NUREG/CR-5849 [see sub-Section 1.2 of the LTP (Section 3.4)] can be used in the development, implementation of the LTP and the termination of the license(s). It further states that NUREG-1727 can be used to evaluate the LTP by the Radioactive Materials Program.

NUREG/CR-5849 is no longer applicable and NUREG-1727 has been superseded by NUREG-1757, and therefore the language needs to be revised accordingly.

d. Section 4.0 identifies some types of records with no description. Additional language is needed in this section to clarify the purpose of this section.

## 4.4 Inspection Program Elements

### 4.4.1 Procedures for Inspecting Facilities Where Radioactive Materials Are Stored or Used

The Review Team identified a number of specific items during its review of the Program's inspection procedure provided as part of the request. Most of the these items could be grouped into two categories: (1) those activities restricted only to NRC; and (2) superseded documents NRC no longer uses. During a conference call between the NRC Region I staff and Program staff on December 20, 2006, the Program was provided with the specific items in the inspection procedures that require modification. Pennsylvania would need to provide the modified procedures for review.

## 4.6 Technical Staffing and Training Program Elements

### 4.6.1 Technical Staff Organization

The staffing analysis provided in the formal request does not include a program staffing plan showing the number of staff members assigned to specific responsibilities, such as license review and inspection for each major category of licensee. Pennsylvania would need to provide the information for review (also see comment under Section 4.3.5.b).

### 4.6.3 Qualifications of Current Technical Staff

Pennsylvania's request did not identify each individual's qualifications under the State's written qualification plan. As discussed during our conference calls on January 8 and 10, 2007, one acceptable response to this comment is a matrix identifying each individual's completion of criteria (i.e., training courses) outlined in your qualification plan.

## 4.7 Event and Allegation Response Program Elements

### 4.7.1 Procedures for Responding to Events and Allegations

1. Manual Chapter 1301, page 6, reference to Appendix C should be removed because Appendix C was deleted.

2. Manual Chapter 1303 references the Office of State Programs, the Source Containment and Devices Branch, IMNS/NMSS, LLDP/NMSS. Due to the reorganization, the organization names need to be revised to the Office of Federal and State Materials and Environmental Management Programs (FSME).

3. Inspection Procedure 87103 references Incident Investigation Teams (IITs) and Augmented Inspection Teams (AITs). If the Program does not have IITs or AITs, the reference should be removed. If the Pennsylvania Bureau of Radiation Protection (BRP) has inspection teams equivalent to IITs or AITs (but does not call them IITs or AITs), the reference should be changed to Pennsylvania's name for these inspection teams.

4. The document, BRP-ALL-01, "Complaint Processing Procedure," should include procedures for handing sensitive information, if these procedures are not included in the Pennsylvania's guidance on handling of correspondence associated with complaints.

5. Sections 2.1 and 2.2 of the BRP-ALL-01 state that a staff person shall record all relevant information. It would be helpful for staff to have a list of questions to be asked during contact with the complainant or reference where staff can find a list of questions.

6. In Section 3.0 of the BRP-ALL-01, a statement is needed to reflect that the complainant should be advised that it is not always possible to protect his/her identity (particularly in cases where action was taken against the complainant by his/her employer).

**4.7.2 Procedures for Identifying Significant Events and Allegations, and for Entering Reports into the Nuclear Material Events Database (NMED)**

1. BRP-ER-6.10 and BRP-RM-03 reference STP Procedure SA-300. Because of the reorganization, the title of this document needs to be revised to state the FSME Procedure SA-300.

2. Clarification is needed in BRP-ER-6.10 - 3.3 regarding the position responsible for entering the report into NMED.

## ELAPSED-WEEKS MILESTONE SCHEDULE*

The following events will not start until the U.S. Nuclear Regulatory Commission (NRC) sends an acknowledgment letter to the Pennsylvania Program confirming that all the Review Team's comments documented in the January 26, 2007, letter have been resolved, and Pennsylvania's commitment to address the staff level and distribution concerns discussed in that letter has been received.

| Event | Event Time (Weeks) | Elapsed Times (Weeks) |
|---|---|---|
| Team completes Notation Vote Commission Paper, including draft staff assessment and FR Notice | 2 | 2 |
| NRC offices concur on Commission Paper | 3 | 5 |
| EDO sends Paper to Commission | 2 | 7 |
| Commission gives notation vote | 2 | 9 |
| First publication in FR | 1 | 10 |
| Public comment period ends | 4 | 14 |
| Team analyzes comments; completes final assessment and Commission Paper | 4 | 18 |
| **HOLD, IF NECESSARY, PENDING COMPLETION OF STAFF HIRING AND QUALIFICATION BY PENNSYLVANIA** | Hold | 18 + Hold |
| NRC offices concur on final assessment and paper | 3 | 21 + Hold |
| EDO signs paper | 2 | 23 + Hold |
| Commission SRM approving Agreement | 4 | 27 + Hold |
| Signing of Agreement | 4 | 31 + Hold |
| Effective Date of Agreement | To Be Determined (Pennsylvania's target date is October 1, 2007.) | |

*** Assumes that all significant issues, including sufficient qualified staff and any public comments, are resolved.**

Enclosure 3

# ENCLOSURE 2

## 1.0 INTRODUCTION

The Commonwealth of Pennsylvania has established itself as a regulatory leader in the area of radiation protection and nuclear safety. This has resulted from an active state-level Radiation Protection (RP) Program and numerous significant events and initiatives that have contributed to the Commonwealth attaining this leadership role. A summary of the major areas of regulatory investigations and initiatives applicable to this application and other significant programmatic radiation protection experience include: radium worker protection in the 1940s and 1950s; investigation of the Gulf Accelerator accident in 1967; fallout monitoring from the 1960s; early x-ray protection efforts beginning in the 1970s related to diffraction units and mammography; nuclear and energy research and subsequent decommissioning at Quehanna, Shippingport, Saxton, Peach Bottom Unit 1 reactors; the response and recovery with the Three Mile Island Unit-2 reactor accident; the discovery of high radon levels in residential homes in 1984; the low-level radioactive waste disposal site development efforts in the 1990s; the plethora of complex decommissioning and decontamination projects of state and U.S. Nuclear Regulatory Commission (NRC) licensed facilities in the late 1990s to present; and, other prominent radiation protection projects in recent years (e.g., healing arts screening with x-rays, solid waste radiation monitoring, tritium monitoring at landfills and power plants, etc.)

Section 274 of the Atomic Energy Act (42 U.S.C 2021) (AEA) authorizes states to assume certain regulatory functions that would otherwise be the responsibility of the NRC. This originally included the licensing of byproduct material, source material and small quantities of special nuclear material. The mechanism by which a state assumes such responsibilities, is an official "Agreement" between the NRC and the Governor of the state. Before a state can become an "Agreement State," the Governor must certify that the state has a program for the control of radioactive material and respective radiological hazards, and the state's program is adequate to protect the public health and safety. In addition, the NRC must determine that the state's program is in accord with the requirements of Subsection (o) of Section 274; and is in all other respects compatible with the NRC's program for the regulation of the materials covered by the proposed agreement, and is adequate to protect the public health and safety with respect to such materials. In the summer of 2005, the AEA was amended to allow the NRC regulatory authority over naturally occurring and accelerator produced materials (NARM), which the Commonwealth currently regulates. Thus, the Pennsylvania Agreement will cover the continued control of NARM. To become an Agreement State, there must also be state legislation authorizing the Governor to enter into such an Agreement. That authority is contained in the Commonwealth's Radiation Protection Act, Act 1984-147. This Act instructs the Commonwealth to 'enter into agreement with the federal government for the licensing of radioactive materials.' Therefore, Pennsylvania has a statutory obligation to become an Agreement State.

As formally outlined in a 1995 letter from Governor Ridge to the NRC, the Commonwealth of Pennsylvania intends to assume responsibility for regulating

byproduct material, source material, special nuclear material in quantities not sufficient to form a critical mass, and if needed in the future, the licensing of a low-level radioactive waste (LLRW) disposal facility – and thus become an Agreement State (AS). In this application (AKA, Formal Request) the Commonwealth has included the statutes, regulations, a state RP Program description and other information needed to demonstrate that the Pennsylvania satisfies all federal requirements and guidance for becoming an Agreement State, and is prepared and qualified to assume regulatory authority for byproduct material as defined in 42 U.S.C. 2014 (e)(1), any future redefinition of byproduct material to include NARM, source material, special nuclear material in quantities not sufficient to form a critical mass, and any permanent disposal of LLRW containing any of these materials. At this time, there is no intent to license sealed source manufacturers or uranium processing facilities. To that end Pennsylvania does not request authority for the sealed source and device evaluation program and the uranium recovery program. The application consists of the Governor's certification, and copies of all current statutes and regulations under which the Commonwealth will administer its radioactive materials regulatory program. This narrative is intended to satisfy, in part, section 4.1.2 of the Handbook for Processing and Agreement in SA-700. It presents a description of the state RP Program organization, management, current practices, capabilities, procedures, and proposed activities of the Commonwealth relative to a complete radiation protection program and AS activities. It is important to note that the NRC will retain the regulatory authority over all nuclear power plants, research reactors, sealed source and device manufacturers, uranium recovery operations, all federal facilities, and any facilities with special nuclear materials in quantities sufficient to form a critical mass.

## 1.1 Radiation Protection Program Objectives

The Commonwealth's RP Program is mature, and has had full authority over NARM and other equally, if not more, hazardous sources of radiation for decades. For example, the Bureau of Radiation Protection (BRP) has licensed radium-226 and positron emitting (PET) radionuclides since the 1970s, and more recently, has begun licensing high-energy medical and industrial accelerators. For decades these licensing and inspection programs have regulated medical and industrial uses of these radioactive material and x-ray sources (e.g., those used in radiography), and effectively protected the public and environment. As the Agreement State program is implemented, the primary objective of the program will be to continue the high degree of protection for public health, safety and welfare of the citizens of Pennsylvania, as well as the environment. To accomplish these objectives, certain essential features have been built into the regulatory program. As has been the case for decades, BRP has been designated, within the Department of Environmental Protection (DEP or Department), to implement a regulatory program so that radioactive materials are used in a safe and acceptable manner in order to protect the health and safety of the citizens (workers and public) of Pennsylvania from excessive or harmful radiation exposure. In the development of the documentation for an acceptable Agreement State program

BRP reviewed the NRC's Handbook for Processing an Agreement (i.e., SA-700), which considers the following elements to be essential:

1. Necessary Statutory Authority: The Commonwealth must have the statutory authority necessary to fulfill its responsibilities to protect citizens and the environment.
2. Compatible Regulations: Regulations must be developed which describe the requirements necessary to protect public health and safety and be compatible with NRC with respect to radioactive materials.
3. Technically Capable Staff: The quality of any technical program is determined by the capabilities of its staff. The Agreement State program, therefore, must have a well trained and qualified staff of technical and scientific capability, in sufficient numbers to implement the RPP effectively.
4. Technical Resources: The Agreement State program must be able to utilize technical resources available within the DEP, and if needed, external consultants and support agencies. Advisory committees have and will continue to be used to provide guidance to the RPP.
5. Procedures: Technically correct and compatible procedures for licensing, inspection, and enforcement must be in place in order to administer an effective program.
6. Adequate Emergency Response Capabilities: The RPP must be capable of effectively responding to and mitigating any radiological emergencies that may arise.
7. Equipment: The RPP must have the necessary radiation measuring instrumentation and laboratory facilities.
8. Adequate Funding: The Agreement State program must be adequately funded in order implement the RPP, to recruit and retain quality staff, purchase instrumentation and equipment, and administer all aspects of the program effectively.
9. Administrative Support: The Agreement State program must have the necessary administrative support to function effectively and efficiently. In addition, the necessary procedures and equipment to communicate and analyze data must be available, e.g., administrative, accounting, legal, information technology, data processing, word processing capabilities, etc.
10. Consistency and Quality Control: Personnel in the Agreement State program must be adequately trained in Pennsylvania and NRC regulations, guidance, standards and procedures for uniform administration of the licensing and inspection program.
11. Implementation Approach: Although strict enforcement action must be taken when necessary, the RPP must portray a positive and cooperative service attitude to licensees and the general public, be proactive in outreach, and take the necessary steps to assure that the needs of Pennsylvania citizens and licensees are met. BRP has the cooperation of other state and federal organizations involved with radioactive materials to assure effective use of resources and to share information and knowledge.

## 1.2 Statutory Authority

The Pennsylvania General Assembly has enacted a number of laws over the years to enable the Commonwealth to regulate sources of radiation, LLRW, and provide adequate oversight, environmental surveillance and emergency response for the state's nuclear power plants (see RP Program statutes). In 1984, as a result of the TMI accident, a new and comprehensive radiation protection statute was drafted and enacted. This statute, Radiation Protection Act 1984-147, also dictated the Commonwealth enter into an agreement with the federal government to fulfill its responsibilities as an AS. Thus, the state's General Assembly has designated the Pennsylvania DEP as the agency responsible for administering the Commonwealth's radiation protection and enforcement programs for radioactive materials and all other radiation sources. The BRP within DEP has been designated as the bureau to carry out the duties and responsibilities under the Department's AS program. A brief description of the significant statutes governing radiation protection and LLRW disposal programs in the Commonwealth is provided below.

The Radiation Protection Act 1984-147 (Act 147), empowered the Department to establish, implement and maintain a comprehensive statewide radiation protection program. Some of the powers and duties given to the Department under this Act are as follows:

1. Provide for the licensing and regulation, in cooperation with the federal government, of other state agencies and private entities possessing radioactive material and radiation generating equipment / sources.
2. Assume licensing and regulatory responsibility from the federal government for certain radioactive materials.
3. Maintain a comprehensive environmental radiation surveillance and monitoring program around nuclear power plants and at other locations in the Commonwealth.
4. Establish an independent nuclear safety reactor oversight program to evaluate all nuclear power plants in the Commonwealth.
5. Establish and maintain a comprehensive emergency radiation response capability in conjunction with the Pennsylvania Emergency Management Agency.
6. Establish plans and procedures for notification of spent nuclear fuel shipments.

With the exception in the area of low-level radioactive waste, Act 147 provides BRP the full programmatic authority in all needed powers, duties, and enforcement to implement an AS program. This includes the ability to establish regulations, fees and a fiscal Radiation Protection Fund where the self-supporting fees may be obligated for these programs.

Subsequent to the enactment of Act 147, additional legislation affecting some of the state's radiation protection programs has been enacted by the Pennsylvania General Assembly and approved by the Governor. Specifically, in 1985, the General Assembly and the Governor approved the formation of an Appalachian States Low-

Level Radioactive Waste Compact. An Act (Act 1985 – 120, or Act 120) established the Appalachian States Low-Level Radioactive Waste Commission, and provided for Pennsylvania to enter into a compact with the states of Maryland, Delaware and West Virginia. In 1988, the Pennsylvania Low-Level Radioactive Waste Disposal Act, Act 1988-12 (Act 12), was enacted and approved.

Act 12 provides for the management and disposal of low-level radioactive waste (LLRW), siting of a LLRW disposal facility, and for the licensing of its operator. Act 12 further provides for powers and duties of the Department and the Environmental Quality Board (EQB).

Some of the powers and duties given to the Department under this Act 12 are as follows:

1. Develop and implement a comprehensive program for the regulation of the generation, storage, handling, transportation, processing, minimization, separation, management and disposal of low-level radioactive waste to the extent allowable under Federal law or State law, whichever is more stringent.
2. Implement a regulatory, inspection, enforcement and monitoring program consistent with the terms of an Agreement between the United States Nuclear Regulatory Commission (NRC) and the Commonwealth, as provided for in Section 201 of the Act 147, and this Act 12.
3. Enter into a contract with an operator-licensee designate to screen the state to locate potentially suitable sites, to study the sites in detail, and to submit a license application to operate the regional LLRW disposal facility.
4. License a regional facility operator in accordance with Section 308 and regulations promulgated thereunder.
5. Issue permits to generators, brokers and carriers of low-level radioactive waste for access to the regional facility in accordance with provisions of Act 12 and with the specific regulations promulgated under this Act.
6. Implement Pennsylvania's duties and responsibilities arising under the Appalachian States LLRW Compact.

In addition to Act 12, in 1990, the Low-Level Radioactive Waste Regional Facility Act, Act 1990-107 (Act 107), was enacted to create a fee system to cover the costs related to the establishment of an LLRW disposal facility in Pennsylvania. It should also be noted that in 1998, the Commonwealth suspended its activities and process to site a LLRW disposal facility within the state. Nonetheless, BRP actively maintains the administrative and operational aspects of the Compact Commission, the LLRW generator disposal reporting requirements, reporting responsibility to the General Assembly, and stands ready to re-start the LLRW programs if needed in the future. The Commonwealth is committed to providing oversight for safe and effective management of LLRW within the state.

A copy of Acts 1984-147, 1988-12, 1985-120 and 1990-107 are included with this AS application package. Though not applicable to this application, it should be

noted that other statutory and regulatory authority rests with BRP for the certification of radon testers, mitigators and laboratories. The staff involved with this radon certification program provide additional expertise in monitoring of radon, and are an integral part of the emergency response capability of the RP Program. We are very proud of the fact that the Department is a national leader in the area of radon testing, mitigation, research, certification, and related regulatory oversight.

It is the Commonwealth's understanding that the NRC staff have completed their review of all applicable RP Program Acts with respect to radioactive material licensing, radiation protection, LLRW disposal, and have found these statutes comprehensive and sufficient to the needs of a potential AS. And, no amendments to any Acts are needed to implement an AS program.

## 1.3 Regulatory Authority

Act 147 and other related Acts noted above provide the Department authorization to promulgate comprehensive regulations governing its radiation protection programs. These regulations are comprehensive and allow Pennsylvania to implement an Agreement State program in all areas being applied for in this application. The Pennsylvania Act 1984-147, section 201; and Act 1988-12, section 301 [2]; authorizes the Governor of Pennsylvania, on behalf of the Commonwealth, to enter into agreements with the NRC to assume authority to regulate the use and the disposal of certain radioactive materials. In the December 1995 letter to the NRC, former Governor Ridge stated Pennsylvania's formal intent to assume full Agreement State authorization from NRC, including the authority to regulate the disposal of low-level radioactive waste. See the current and any proposed regulations appended to this application. A list of chapters of the Pennsylvania regulations in the Department's Article V on Radiological Health is as follows:

**Commonwealth of Pennsylvania**
**Pennsylvania Code**

**Title 25. Environmental Protection**
**Department of Environmental Protection**

**Article V. Radiological Health**

| **Chapter** | **Title** |
|---|---|
| 215. | General Provisions |
| 216. | Registration of Radiation-Producing Machines and Radiation Producing Machine Service Providers |
| 217. | Licensing of Radioactive Material |
| 218. | Fees |
| 219. | Standards for Protection Against Radiation |

| | |
|---|---|
| 220. | Notices, Instructions and Reports to Workers; Inspections and Investigations |
| 221. | X-rays in the Healing Arts |
| 222. | [Reserved] |
| 223. | Veterinary Medicine |
| 224. | Medical Use of Radioactive Material |
| 225. | Radiation Safety Requirements for Industrial Radiographic Operations |
| 226. | Radiation Safety Requirements for Well Logging |
| 227. | Radiation Safety Requirements for Analytical X-ray Equipment, X-ray Gauging Equipment, Electron Microscopes and X-ray Calibration Systems |
| 228. | Radiation Safety Requirements for Particle Accelerators |
| 229. | [Reserved] |
| 230. | Packaging and Transportation of Radioactive Material |
| 231. | [Reserved] |
| 232 | Licenses And Radiation Safety Requirements For Irradiators |
| 233. | [Reserved] |
| 235. | [Reserved] |
| 236. | Low Level Radioactive Waste Management and Disposal |
| 237. | Rebuttable Presumption of Liability of the Operator of the Regional Low-Level Waste Facility |
| 240. | Radon Certification |

### 1.3.1 Rulemaking Authority

The Department and BRP have the authority to promulgate regulations under Act 147, however, this is done in conjunction with the Environmental Quality Board (EQB) and Independent Regulatory Review Commission (IRRC). The EQB and IRRC are comprised of cabinet-level officials or their alternate, members of the Citizen's Advisory Council, and members of the General Assembly and respective appointees. The EQB is chaired by the Secretary of the Department. Formal policies and procedures for the promulgation of regulations in the Department and BRP are established by the Department's Policy Office. See the enclosed Department guidance for approval and development of regulations.

Briefly, draft regulations are developed by a program area (e.g., Radiation Protection, Air Quality, Waste Management, Water Quality, etc.), concurred upon by the appropriate Deputy Secretary, most often evaluated in conjunction with an Advisory Committee, then presented to the EQB, voted on, and if acceptable, forwarded to IRRC for possible comment and response, returned to the specific Department program (i.e., in the area of Radiation Protection, the BRP), and then published in the Pennsylvania Bulletin for public comment. Once comment period has ended, and all comments are

received and responses developed, the same process is repeated with the ultimate goal of publishing final regulations. These final regulations may or may not be the same as originally proposed. However, when published, there is a full comment and response document included, if any are received. The Department does have the authority to truncate this process, and publish regulations on an emergency basis if needed. It has been the experience of BRP, that the Department, BRP's Advisory Committees, EQB and IRRC have been very supportive in the development of the regulations and fees needed to implement an AS program. Only minor revisions are needed to have all RPP regulations compatible with NRC's for AS status, and this effort should be completed by mid - 2007.

Over the past several years, BRP has continued to provide NRC with copies of draft and final regulations as they relate to the Commonwealth's AS application. A December 2005 NRC letter outlining the NRC staff's tracking of our regulation updates, noted several areas staff required an explanation of our regulations, or the regulations be updated to reflect recent changes made by NRC to their regulations prior to becoming an AS. With minor exception, it is our belief that our Commonwealth regulations are presently fully compatible with NRC's regulations. BRP has incorporated the needed NRC regulations by reference, however due to NRC's renumbering of 10CFR71, a few minor changes are needed in the Department's Article V, e.g., Chapter 230. Specifically, BRP has presented the needed proposed minor changes to the Department's Radiation Protection Advisory Committee, and forwarded them through EQB, IRRC and in the PA Bulletin the summer of 2006. As of March 2007 these changes have been published for public comment and moved through the regulatory review process as planned. The Commonwealth's regulations will be fully compatible with NRC's in Title 10 by October 1, 2007. Again, the NRC staff have formally reviewed all of the applicable regulations as they relate to licensing of radioactive materials and LLRW disposal, and it is BRP's understanding that they are fully compatible with NRC's regulations.

### 1.3.2 EQB Authority and Relationship to the Department

The Environmental Quality Board (EQB), established pursuant to the Commonwealth's Administrative Code, has the power and duty to formulate, adopt and promulgate rules and regulations under the various Acts implemented by the Department. This includes those rules and regulations developed by the Department to carry out the provisions of the Radiation Protection Act and the Low-Level Radioactive Waste Disposal Act as outlined above. They have effectively implemented this authority over the past several years as BRP has moved forward in amending its regulations for AS status.

### 1.3.3 EQB Legislative Authority

Under Section 302 of the Radiation Protection Act, the EQB has the power and duty to adopt and promulgate the rules and regulations of the Department to carry out the provisions of the Radiation Protection Act. Section 302 of the Low-Level Radioactive Waste Disposal Act specifies the powers and duties of the EQB with regard to regulation of low-level radioactive waste. It directs the EQB to adopt and promulgate regulations developed by the Department for the implementation of the Act and any other regulatory requirements the Department finds necessary or appropriate for the protection of public health and the environment from low-level radioactive waste.

### 1.4 Summary

The legislative statutes and regulations summarized above and included with the state's application, provides Pennsylvania with consolidated and complete authority to regulate and enforce a complete radiation protection program as an AS. Provisions of two separate laws (Radiation Protection Act, and the Low Level Radioactive Waste Disposal Act) explicitly authorize the Governor to execute the necessary Agreements with the NRC.

## 2.0 ORGANIZATION AND DUTIES OF THE BUREAU OF RADIATION PROTECTION

The Department is comprised of several Deputates: Waste, Air, and Radiation Management; Field Operations; Administration; Water Management; Mineral Resources Management; Policy and Communications, etc. As noted above, the Department is the sole state agency responsible for the regulation and implementation of Radiation Protection Programs in the Commonwealth. The Bureau of Radiation Protection is within the Department's Deputate for Waste Air, and Radiation Management (WARM), and under the upper management oversight of a Deputy Secretary. BRP is headed by a Bureau Director (BD) in the Department's Central Office (CO). The BD position requires certification by the American Board of Health Physics (ABHP), and for the past several decades has been staffed by individuals with a broad range of operation and applied health physics experience. BRP's Bureau Director is ultimately responsible for the programmatic aspects of the state's radiation protection program. The BRP Bureau Director reports directly to the Deputy Secretary as shown in the attached organization charts. The Deputy Secretary reports to the Secretary of the Department on programmatic issues, but functionally on operational matters, the reporting is through an Executive Deputy Secretary. The Executive Deputy Secretary reports directly to the Department Secretary. As agency head, the Secretary is in the Governor's cabinet.

The Department has a Field Operations organization (Deputate) that, similar to NRC and other federal agencies, operates in a matrix manner, with the six Regional Offices (RO), and as many respective Regional Directors (RD) reporting to a Deputy Secretary for Field Operations. The RP Program personnel in both CO and ROs carry

out the Department's radiation protection program duties and responsibilities as required by the laws of the Commonwealth and applicable internal policies and procedures. RPP staff in the ROs have the primary responsibility to inspect radiation source users.

The BRP has been organized into four divisions to carry out the various radiation protection programs it has been empowered or authorized to perform under various Pennsylvania statutes and regulations. The four divisions are – Decommissioning & Surveillance, Radiation Control, Nuclear Safety, and Radon. Each division is managed by a Division Chief, who reports directly to the BD. The Department and BRP organizational charts are included in this application.

The Radiation Protection Program is currently responsible for implementing the following broad program areas:

1. Licensing and inspection of radioactive materials not regulated by the federal government,
2. Decommissioning oversight of radioactive material licensees,
3. Registration and inspection of medical and industrial x-ray equipment,
4. Nuclear reactor oversight,
5. Environmental surveillance around nuclear power plant sites,
6. Siting and licensing of a regional LLRW disposal facility,
7. Nuclear emergency response, and,
8. Radon monitoring and certification.

A full description of the duties performed by each Division of the BRP is provided below.

## 2.1 Division of Nuclear Safety

The Division of Nuclear Safety (DNS) is comprised of Nuclear Safety, Low-Level Radioactive Waste and Emergency Response sections as shown in the organization chart. The DNS has been assigned the following three major responsibilities:

1. Provide comprehensive Nuclear Reactor Oversight and professional nuclear expertise to the Commonwealth.
2. Site, license and regulate the Appalachian States Low-Level Radioactive Waste (LLRW) disposal facility.
3. Develop and maintain an effective emergency response program, and provide assistance to the Pennsylvania Emergency Management Agency (PEMA) during a nuclear event or emergency.
4. Interface with PEMA and other state agencies on the transport of spent nuclear fuel and other large quantities of radioactive material through the Commonwealth.

### 2.1.1 Nuclear Reactor Oversight Program (Nuclear Safety Section)

The DNS has developed and implemented a comprehensive statewide nuclear reactor oversight review and inspection program as mandated by the Pennsylvania Radiation Protection Act, 1984-147.

The Nuclear Reactor Oversight Program employs several experienced Nuclear Safety Specialists (NSS) who are assigned to various nuclear power plant sites in the Commonwealth. The BRP NSS staff conduct nuclear plant evaluations and participate in inspections with the NRC resident inspectors at these facilities. The NSS staff also review and evaluate all licensee-proposed license amendments and provide input into the NRC review process to determine whether the proposed license amendments constitute a significant safety hazard.

NSS staff are also responsible for conducting periodic inspections of low-level radioactive waste (LLRW) packaging and transportation activities at nuclear power plants. The Department has a Memorandum of Understanding (MOU) with the NRC to conduct such inspections. (Note: enclosed with this application are all BRP inter-agency / organization MOUs.) The purpose of these inspections is to ensure compliance with the applicable federal regulations. Although the NRC retains the ultimate enforcement power under this MOU, the BRP NSS staff also provide support to the NRC during any hearings or meetings pertaining to these inspections.

The Radiation Protection Act 1984-147, also established a fee system which requires the nuclear utilities in Pennsylvania to pay for the costs associated with the implementation of this program. Each nuclear utility pays to the Department an annual fee per reactor site. There are currently nine operating nuclear power plants at five sites in Pennsylvania.

### 2.1.2 Appalachian States LLRW Disposal Program (Emergency Response and Radioactive Waste Section, in part)

The DNS has also established a comprehensive Low-Level Radioactive Waste Disposal Program. This program is mandated by the Pennsylvania Low-Level Radioactive Waste Disposal Act, Act 1988-12, and is responsible for the licensing of the regional LLRW Disposal Facility in Pennsylvania.

In 1980, Congress enacted the federal Low-Level Radioactive Waste Policy Act which made each state responsible for the disposal of LLRW generated within its borders and encouraged the states to enter into compacts. States that belong to compacts must provide for regional management of LLRW and can legally exclude waste from outside their compacts. In 1985, Congress amended the Low-Level Radioactive Waste Policy Act to reaffirm the regional compact concept and set deadlines, along with a series of financial incentives and penalties, to encourage states to meet the deadlines for disposal facility development.

The Pennsylvania General Assembly responded to the federal laws by enacting the Appalachian States Low-Level Waste Compact Act, Act 1985-120. This Act committed Pennsylvania to find a regional LLRW disposal site for the Appalachian States Compact. The member states of this compact are Delaware, Maryland, West Virginia and Pennsylvania. Pennsylvania was selected as the initial host state because it generated the largest amount of the waste within the compact. As noted above, in 1988, the General Assembly enacted the Low-Level Radioactive Waste Disposal Act, Act 1988-12. This Act designated and authorized the Department to select a site operator and to develop a comprehensive program to license and regulate the siting, operation, decommissioning and long-term care of the regional disposal facility. Act 1988-12 also authorized the Department to permit all generators, brokers and carriers that would use the regional facility.

DEP selected a contractor through an open public process to site, develop and operate the regional facility. Further, the General Assembly enacted the Low-Level Radioactive Waste Regional Facility Act in 1990, Act 1990-107, to establish a fee system to cover the costs related to the development of the Appalachian States LLRW disposal facility in Pennsylvania. The nuclear utilities in Pennsylvania and one utility in Maryland have contributed approximately $33 million to this LLRW Fund. During the 1990s, the Department paid contract costs from the LLRW Fund. In 1998, the Department suspended the LLRW siting program in that they were unable to identify a voluntary municipality to host a LLRW disposal site. The Department and BRP stands ready to re-activate that process should it be needed. However, at this time Pennsylvania and Compact generators have access to the LLRW disposal site in Barnwell, SC. Thus, the RPP and DNS have the authority, regulations, procedures and financial resources to implement LLRW disposal licensing if needed.

Required activities related to the licensing of the LLRW Disposal Facility are presented in this application. Note, as stated above, the LLRW siting and licensing programs are currently inactive, and as such, there is limited staff devoted to the maintenance of this program. This staff member currently directly reports to the Emergency Response Section Chief. If needed, this LLRW Section may be re-activated by the BRP Director.

### 2.1.3 Emergency Response Program (Emergency Response and Radioactive Waste Section)

The DNS has developed and implemented an effective nuclear power plant and radiological emergency response program. This program is mandated primarily by the Pennsylvania Radiation Protection Act, Act 1984-147, but Act 1988-12 also has similar provisions with respect to LLRW disposal operations. A fee system has been established which requires the nuclear utilities in Pennsylvania to pay for the costs associated with the implementation of this program, as well as other independent nuclear safety oversight.

Over one half-million individuals live within the Emergency Planning Zone (EPZ) of the five nuclear power plants sites in Pennsylvania. In the event of a nuclear power plant accident, it is essential that effective, timely protective action recommendations (PAR) and decisions are made to protect the public. These decisions depend on the continued viability of a comprehensive radiation emergency plan; up-to-date monitoring techniques; radiation detection equipment; ongoing staff training; coordination with nuclear utilities, federal agencies and other state agencies; and active participation in drills and exercises.

The Division of Nuclear Safety has a major responsibility in providing technical support and assistance to the Pennsylvania Emergency Management Agency (PEMA) during a nuclear event or emergency. Its Nuclear Safety Specialists act as on-site representatives for the Commonwealth during nuclear emergencies. Their information gathering abilities and independent assessment when working in collaboration with RPP management, radiological health physics and other nuclear safety staff are vital to the Commonwealth's decision making process. This collaborative environment has lead to significant lessons learned from the March 1979 accident at Three Mile Island (TMI) Nuclear Unit-2, the 1993 security event at TMI Nuclear Unit 1, October 2001 security threat against TMI Unit-1, and many other classified Unusual Events and Alerts.

Besides the three major activities described above, the Division of Nuclear Safety is also involved in the independent oversight of decommissioning nuclear power plants (e.g., Saxton plant), and for establishing plans, and procedures for notification of spent nuclear fuel shipments and other large quantity shipments of radioactive material (e.g., highway route control) through the Commonwealth. Specifically, these emergency plans and procedures involve potential transportation (e.g., spent nuclear fuel shipments) and other fixed facility (e.g., the Navy's Bettis Atomic Lab) events. Traditionally, the BRP emergency plan has been focused on the nuclear power plant accident scenario, however, since the tragic events of 9/11, this focus has shifted to other homeland security scenarios (e.g., radiological dispersion device or weapon of mass destruction).

The BRP's DNS has been extremely successful in obtaining federal homeland security grant funds for the RPP nuclear / radiological emergency response program. These funds have allowed the acquisition of significant health physics instrumentation (i.e., G-M survey meters, portable sodium iodide, cadmium telluride and germanium radioisotope identifiers, neutron probes, multiple "matrix" satellite linked gamma monitoring probes, etc.), and communications assets (satellite phones, Blackberry e-mail units, etc.) above the routine call-out pagers and cell phones used by the RP Program. See the enclosed listing of instrumentation available to the RP Program staff for emergency response and routine operations, many of which are in dedicated response vehicles.

Lastly, given the new National Response Plan, and the need to be National Incident Management System (NIMS) compliant with all state emergency plans and

procedures, the RPP emergency plan is being re-written to incorporate all the major nuclear installation (i.e., nuclear power plant), radioactive materials licensee or other fixed facility, transportation, and related terrorist type event. Those detailed emergency plans and procedures will be completed by July 2007. Regardless, the RPP routinely responds to transportation accidents involving radioactive materials, and facility (e.g., metal recycling and solid waste) events involving lost or orphan sources. For example, recently two 20 mCi Am-241 static eliminator bars were discovered at a Pennsylvania landfill. A report and catalog of lost or abandoned sources the RP Program has recently responded to is enclosed, and, can be found on the BRP web site.

## 2.2 Division of Radiation Control

The Division of Radiation Control (DRC) is comprised of the radioactive materials licensing section, and the x-ray equipment registration / accelerator licensing section. The Radioactive Materials Licensing Section is responsible for licensing users of naturally occurring and accelerator produced radioactive material in the Commonwealth, and it is this section that will have the lead role in licensing the byproduct, source material and small quantity special nuclear material licensees current under NRC's authority.

The x-ray registration program consists of registering machine type equipment that produce ionizing radiation. Recently the DRC converted about 140 accelerator registrations (with a total of 250 units) to specific accelerator licenses. These license authorizations included general and site-specific conditions related to operation staff qualifications, machine calibration, authorized users, radiation safety officer, etc. Much of this was patterned after the NRC's cobalt-60 teletherapy licensing protocols.

There are six Department Regional Offices (RO) that implement the various programs such as, radiation protection, air, waste, water quality, etc. Given the demographics of the state's population, industry and radiation source users, the RPP has the majority of its staff in the southern three ROs. These ROs primarily carry out the inspection and compliance function of the materials and x-ray portion of the RPP. The three main ROs with RPP staff are located in Harrisburg, Norristown and Pittsburgh, however, once Agreement State status is obtained, the intent is to place new x-ray and materials inspectors in the northern ROs. Programmatic policies and issues relative to the RPP in regional offices fall within the purview of the Bureau Director of BRP. Administrative policies and functions in the ROs are the responsibility of the Regional Director, who reports to the Deputy Secretary for Field Operations, who in turn reports directly to the Secretary and Executive Deputy Secretary of the Department.

### 2.2.1 Licensing of Radioactive Materials

In 1971, the Commonwealth of Pennsylvania began licensing persons to use radioactive materials which were not under the jurisdiction of the federal government, e.g., users of discrete radium sources. Licensing procedures were designed to coincide as closely as possible with the licensing policies and procedures used by the Atomic Energy Commission (predecessor to the NRC) and Agreement States. With the more recent expanded use of accelerator produced positron emission radioactive materials, the DRC's licensing has also greatly expanded into traditional nuclear medicine scanning. Licensing guides and forms, Department policies, application forms, and other administrative tools have been developed in conjunction with other Agreement States and the NRC. Thus current policies and procedures used in licensing naturally occurring and accelerator produced radioactive materials (NARM) are very similar to those used by the NRC in licensing byproduct materials. In fact, where applicable, BRP currently utilizes the NRC's licensing guidance in the 20-volume Consolidated Guidance About Materials Licenses NUREG 1556 series for material license applications. The NUREG 1556 guidance series currently includes for following:

1. Program-Specific Guidance About Portable Gauge Licenses
2. Program-Specific Guidance About Industrial Radiography Licenses
3. Applications for Sealed Source and Device Evaluation and Registration
4. Program-Specific Guidance About Fixed Gauge Licenses
5. Program-Specific Guidance About Self-Shielded Irradiator Licenses
6. Program-Specific Guidance About 10 CFR Part 36 Irradiator Licenses
7. Program-Specific Guidance About Academic, Research and Development, and Other Licenses of Limited Scope Including Gas Chromatographs and X-Ray Fluorescence Analyzers
8. Program-Specific Guidance About Exempt Distribution Licenses
9. Program-Specific Guidance About Medical Use Licenses
10. Program-Specific Guidance About Master Materials Licenses
11. Program-Specific Guidance About Licenses of Broad Scope
12. Program-Specific Guidance About Possession Licenses for Manufacturing and Distribution
13. Program-Specific Guidance About Commercial Radiopharmacy Licenses
14. Program-Specific Guidance About Well Logging, Tracer, and Field Flood Study Licenses
15. Guidance About Changes of Control and About Bankruptcy Involving Byproduct, Source, or Special Nuclear Materials Licenses
16. Program-Specific Guidance About Licenses Authorizing Distribution to General Licensees
17. Program-Specific Guidance About Licenses for Special Nuclear Material of Less than Critical Mass
18. Program-Specific Guidance About Service Provider Licenses
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)
20. Guidance About Administrative Licensing Procedures

The actual license application forms will be Pennsylvania forms, but the informational content will mirror NRC's application. In all current licensing applications (i.e., NARM or accelerator), they are reviewed by the DRC, and when applicable, these reviews are coordinated with the appropriate RO staff. Pre-licensing facility inspections and walk-downs are conducted as necessary. Similar to the NRC and other states, licenses are generally issued and renewed for five year periods. Prior to termination of a license, BRP requires documentation that all radioactive material has been transferred to an authorized recipient. If needed, final close-out radiological surveys are performed by the licensee, and BRP and/or a RO, or third party consult contractor will assess the licensee's transfer of material and/or site / facility(s) clean-up (see Decommissioning and Surveillance section below). Upon verification of the site being cleared of radioactive materials to NRC's decommissioning / license termination criteria, an approval of license termination is made by BRP's DRC. As of 2006, BRP had approximately 460 NARM licenses in force.

As noted above, the inspection and compliance of licensees is performed by the ROs. This is a major portion of the current RP Program, i.e., NARM and accelerator licensees, and x-ray equipment users. The comprehensive inspection and compliance program for these radiation source users falls to ROs. During inspections, RP Program inspectors and other staff evaluate regulatory compliance and examine radiation source user's safety performance. At times when there are only minor findings, staff may assist the licensee with compliance problems and recommend actions that can be performed for a better radiation safety program. Serious health and safety issues are handled immediately onsite by the inspector. Any situation of non-compliance requires a series of steps that are outlined in the RP Program Compliance and Enforcement Policy (enclosed). The inspection of x-ray equipment and NARM users has been performed since the RP Program formally began in early 1960. Informally, the Commonwealth has been involved with x-ray and radium users since the early 1940s. Inspections of state NARM licensees have been conducted since 1971.

The NARM inspection program is very similar to the NRC's materials inspection program. And again, the Commonwealth has utilized the NRC Inspection Manual to tailor Department desk manuals and specific byproduct material and other inspections procedures. Thus, these procedures are very similar to NRC's, but adjusted for Department and state "business" practices. Functionally, at the completion of each inspection, the inspector confers with licensee representatives and verbally reviews the results and findings of the inspection. The inspector submits a comprehensive written report to RPP supervisory staff. The report describes inspection findings and lists all items of noncompliance found during the inspection. Following review by supervisory personnel, a letter is prepared and sent to the licensee's radiation safety officer (RSO) and/or management outlining the facility's compliance status. The licensee is typically required to notify the RPP within 20 days concerning actions proposed to correct deficiencies. Should the licensee not bring the radiation program into compliance with license requirements and regulations, the Department may initiate enforcement procedures (i.e., issue a Notice of Violation (NOV)) and possibly impose a civil penalty,

or issue an immediate Order to abate the violation or radiological hazard. This authority is clearly given in the Radiation Protection Act, Act 1984-147. The BRP has recently updated its Compliance and Enforcement Policy (enclosed with this application), and published it in the Pennsylvania Bulletin (a state government publication analogous to the Federal Register).

Legally, licensees have a right to a hearing before the Environmental Hearing Board unless a situation constitutes an imminent threat to public health. In this case the RP Program may issue an emergency Order summarily requiring the radiation source owner or operator to modify or halt an activity. This Order may carry administrative sanctions. In a scenario that may involve criminal acts, BRP may also direct the Commonwealth's Attorney General (AG) to obtain an injunction against the violator, and pursue criminal action. Also, a person who is found in violation of any of the provisions of the Radiation Protection Act may be found guilty of a misdemeanor by action of the AG. A preliminary notification (PN) and/or press release may also be issued by BRP if deemed appropriate.

Follow-up inspections are conducted routinely in cases involving willful or flagrant violations, repeated poor performance in an area of concern, or serious breakdown in management or radiological controls. Follow-up inspections are usually conducted if more than two significant violations were found during the most recent routine inspection of a licensee. The supervisory personnel review each enforcement action on a case-by-case basis to decide if a follow-up inspection is indicated. All items of non-compliance are given special attention by the inspector during the next inspection of the facility.

BRP also conducts special inspections or investigations as needed to evaluate such items such as allegations, complaints, exposures to personnel in excess of regulatory limits, medical events, reported release of radioactive materials, major failure of safety equipment, and other incidents involving radioactive material. Senior RPP staff supervise such investigations to assure they are conducted promptly, professionally, and thoroughly.

All inspections are recorded in the Department's eFACTS compliance database, and, all special inspections or investigations are also reported to the BRP Bureau Director, Regional Director and Chief of the DRC. The eFACTS database is an administrative tool used by most Department programs for uniform "permitting" (e.g., licensing and registration of radiation sources) of facilities and tracking inspections and compliance. This eFACTS data warehouse allows all information to be shared between the Central Office and Regional staff, and more importantly, allow all Department permitting functions (e.g., RP, air, water, waste, mining, etc.) to be in one database. Enclosed is an overview of the eFACTS database.

### 2.2.2 Regulated Facilities under Division of Radiation Control

As described above, as of 2006, BRP's DRC had approximately 460 NARM licenses. With Agreement State status, the Commonwealth expects to have another

850 byproduct material, source material, and small quantity special nuclear material licenses. There is some overlap among these BRP and NRC licensees, and we anticipate some 1,000 total licenses once Agreement State status is achieved. Licensing, inspections and termination procedures for these facilities are described throughout this application. This division also registered about 11,000 x-ray facilities which included some 30,000 radiation producing systems. The DRC also maintains an annual update of types of x-ray systems used, e.g., dental, panoramic, radiographic, fluoroscopic, CT, cabinet, analytical, etc. The following is a listing of facilities by type that the DRC tracks in the eFACTS database: dentists, medical doctors, osteopathic physicians, chiropractors, podiatrists, hospitals, medical clinics, veterinarians, retirement homes, universities/schools, industries, prisons, other medical and non-medical registrants.

Approximately 140 accelerator facilities with about 250 medical and non-medical high energy accelerators are now licensed by DRC, and tracked in eFACTS. These are complex and potentially very dangerous machines, which have the potential to cause grave harm to operators and patients if safety and/or radiation therapy treatments are not planned and execute without error.

Lastly, over the past several years, the DRC has also assisted the Department's Bureau of Waste Management (BWM) perform "major modifications" to approximately 170 solid waste facility (i.e., landfill, transfer facility, incinerator, etc.) permits, requiring a radiation monitoring Action Plan be put in place. Similar to traditional materials licensing, these permits have proscriptive operational conditions. Effective the beginning of 2001, all such solid waste facilities had to perform active gamma radiation monitoring, and implement a radiation Action Plan for proper surveys and source characterization. BRP actively led and assisted BWM develop their regulations and guidance, and, reviewed all 170 major modifications.

The DRC staff are fully qualified and ready to take over the NRC's licensing aspects.

### 2.2.3 Inspection and Compliance

There is a large inspection and compliance function within the RPP for regulated radiation producing equipment and radioactive materials. At this time, approximately 2,500 radiation producing machines and materials licensees are inspected annually. Over the past several years, hundreds of other decommissioning inspections have been (and continue to be) performed on NARM and NRC licensees, often in conjunction with NRC. These inspections are conducted by the three ROs and Central Office BRP staff. The RP Program staff conduct inspections according to the schedule internally prescribed, but in general, depending on the hazard potential of the sources used, inspection frequencies range from two to four year intervals. With AS status, the RP Program will inspect the material licensees to the same frequency as does NRC based on priority class. During inspections DEP will evaluate the material licensees and

registrants with respect to compliance problems, performance of the radiation protection program, and, management oversight of the program. If minor non-compliance issues are noted, the RP Program staff may note actions that can be implemented immediately, or performed in the future to better the radiation safety program. Inspectors also have the authority to immediately alert the licensee or registrant to a grave hazard that threatens public health and safety. If there are non-radiological hazards noted, they may be referred to the state Department of Labor and Industries. Similar to the radioactive materials program, follow-up letters are prepared and sent to operators of radiation producing machines outlining the facility's compliance status. Should the operator not bring the radiation program into compliance with the regulations, BRP may initiate enforcement actions as described previously in the case of materials license or other facility violations.

The entire inspection and compliance aspect of the program is designed to use the Departments global eFACTS electronic data warehouse system. This use of data processing assures linkages between license application information, license conditions, past compliance history, administrative efficiency, and provides BRP a strong compliance database for determining program effectiveness, trending of violations, and future program direction. A procedure is in place and staff are trained, and presently providing information to the NRC's national materials event database, i.e., NMED. The Commonwealth's RP Program staff are also currently performing joint inspections of NRC licensees, will continue to do so leading up to signing the proposed Agreement. RPP staff are fully qualified, and ready to take over NRC's inspection functions when we become an Agreement State. The inspectors will be documenting past, current, and future training and inspections experience in individual qualification journals. In addition to significant NARM inspection experience, the Commonwealth's inspectors' experience will involve jointly inspecting several NRC licensees of varying degree of complexity. Once Agreement State status is achieved, RP Program supervisors will perform 1 to 3 "Field Audits" annually, and join the inspectors during actual licensee inspections.

### 2.2.4 Special Projects and Professional Activities

Many RPP staff members have pursued various special radiation protection projects and other professional activities. Often these can be characterized as studies, facility / operation walk-downs or surveys to better assess and understand newer equipment, radiation therapy modalities, decontamination techniques, etc. in use by licensees and registrants. Some of these projects have been presented and published in the proceedings of various meetings, such as the National Conference on Radiation Control Program Directors (CRCPD), or committee reports. Additionally, many RPP staff are active on national health physics, emergency response, and nuclear safety committees.

DEP management has supported such involvement by RP Program staff for the advancement of the public perception of the high quality of radiation protection and the

overall protection of the citizens of the Commonwealth. In some instances RP Program management has even taken the lead. For example, the BRP Director and several RP Program Managers and staff are active on national RP committees. They often present and publish on emergency response, environmental surveillance, decommissioning, low-level radioactive waste, reduction of patient x-ray exposure, radioactivity in solid waste and the incidence of radioactive materials in the scrap metal recycling stream.

### 2.2.5 Routine Regional Emergency Response

As noted above, a significant level of effort in the RPP is dedicated to radiological emergency response. This has been the case for decades since the TMI Unit-2 accident and since the events of September 11, 2001, has become much more formalized and expanded to encompass potential terrorist type events. Clearly when any radiological event unfolds, it is the local and state first responders that have to handle the full events that are small in scope, and regardless, will have to manage larger events during the first 24-48 hours. This has been the case in the Commonwealth for decades, and it is a matter of fact that the RPP staff are most often first to respond to offsite events involving NRC licensees within the state. There are several call-out notification systems in place through BRP, the Department, or PEMA, where RPP Central and Regional Office staff are made available for response to radioactive material incidents such as lost or damaged sources, contamination of facilities, or transportation mishaps. RPP personnel respond to an average of 20 to 40 incidents per year. As described in our emergency procedures, the equipment available for response and communication structure is such that it includes personnel pagers, cell phones, Blackberry e-mail, satellite phones, two-way radio communication, the full range of field health physics survey instrumentation (air sampling, gamma spec, alpha/beta/gamma meters, etc.) command and support vehicles. Operational coordination may be performed onsite, or if other agencies support is needed, via the state EOC. However, most events are small in scale, and response is handled at the regional level, with event reporting to Central Office. Depending on the nature and scope of the event, information details may be entered into the NRC's NMED reporting database and eFACTS.

## 2.3 Decommissioning and Surveillance Division

The Environmental Surveillance Section within the Decommissioning and Surveillance Division is responsible for carrying out a comprehensive environmental radiation monitoring program throughout the Commonwealth including five nuclear power stations and certain other nuclear facilities. This section performs the routine monitoring, sampling, and analysis of environmental parameters to determine levels of radiation and radioactivity in the general environment around nuclear power reactors and other fixed facilities that utilize radioactive material. The Section is housed at the

DEP Bureau of Laboratories (BOL) facility, as they operationally feed routine samples and chain-of-custody sample tracking sheets to the Radiochemistry Group within the BOL. They have also interfaced for decades with the U.S. Environmental Protection Agency (EPA), as BRP has had the lead for Commonwealth with our participation in the EPA's Environmental Radiation Ambient Monitoring System (ERAMS) program. This ERAMS program has monitored radioactivity in air, surface water and precipitation via state collection stations, several of which are in Pennsylvania. EPA is in the process of converting these ERAMS stations to active radiation monitoring locations, and this Section has the lead interface role with this new RadNet program. The Environmental Surveillance Section will be responsible for evaluating environmental monitoring around any Commonwealth low-level radioactive waste disposal facility, and would support the preparation of emergency response plans for any such facility.

The Decommissioning Section within the Decommissioning and Surveillance Division is responsible for carrying out a comprehensive decontamination and decommissioning (D&D) oversight program throughout the Commonwealth. The Commonwealth has had numerous sites that required decommissioning over the years. Many of these sites are still undergoing D&D, and the regulatory oversight of these sites will represent a significant commitment for PA as Agreement State. BRP has structured its Decommissioning Section and programmatic oversight to meet this commitment, taking advantage of the expertise and experience of its staff in both Central Office and three Regional Offices. The RPP staff have worked with NRC in close cooperation, in accordance with an official NRC / PA Memorandum of Understanding, effective July 15, 1996. As a consequence of this close cooperation, the RPP are intimately familiar with the status of each of the complex sites and the bases upon which NRC regulatory actions have been taken.

The Commonwealth's decommissioning program has been established to ensure adequate protection of the public health and safety, and is fully compatible with the NRC's Program. Through incorporation of NRC regulations by reference, the requirements for decommissioning established in Title 25 PA Code, Article V, are identical to the NRC regulations and provide highly compatible criteria for license termination. Consistent with NRC practice, decommissioning in the Commonwealth means to safely remove from service a site that is contaminated with radioactive materials and reduce the residual radioactivity to levels that permits termination of the site license. PA follows the NRC usage of the term "site" to include land areas, buildings, equipment and contents, and any other facilities involved in the use of radioactive materials. The overall management of the license termination and decommissioning program for sites in the Commonwealth contaminated with radioactive materials will be the responsibility of BRP in the Central Office, with coordination and concurrence with the respective DEP Region where the site may be located.

These sites include those previously included in the NRC's Site Decommissioning Management Plan (SDMP), or locations identified in the NRC / Oak Ridge National Laboratory reviews of terminated license sites that have been found to

have residual radioactive contamination at levels exceeding regulatory limits for unrestricted access. It may also include any location that have never been licensed by either NRC (or predecessor agencies), nor the Commonwealth, but is contaminated with licensable amounts of residual radioactivity. Additionally, it will include any location licensed by BRP for which license termination is requested in the future, and any licensed locations with residual radioactive contamination found to be abandoned, or activities terminated, without informing BRP.

Table 1 below lists all of the currently identified major sites in categories the above, and provides the status of decommissioning activities. Table 2 provides a listing of major PA sites that have been successfully remediated in the past and applicable licenses have been terminated to allow unrestricted access. In addition to the major sites, each year there are numerous site licensees with small quantities of radioactive materials, such as sealed sources, that request license terminations. On average, there are about six to ten of these each year in the Commonwealth that require regulatory action to confirm that materials have been disposed of, transferred, and D&D meets license termination criteria. Finally, there are major decommissioning sites in the Commonwealth that will not transfer to the Commonwealth when Agreement State status is approved. The sites that will remain under NRC authority are: the TR-2 reactor site; the two Canonsburg and Burrell uranium mill tailings disposal cell sites, they remain DOE responsibility under NRC General License (10 CFR 40.27); and, the BWXT Shallow Land Disposal Area (SLDA), which will remain under NRC License SNM-2001 and is currently being evaluated for D&D by the Army Corps of Engineers (ACOE) under the FUSRAP program. Similarly, any other sites with SNM licenses that are active or inactive, that exceed the "small quantity" SNM limits – will remain with NRC. Lastly, BRP took over the byproduct material license in early 2003 for a site the Commonwealth (i.e., DCNR) owns in the Quehanna Wild Area. We anticipate license termination with this site in early, mid-2007, just prior to becoming an Agreement State. The site has undergone a full 30 million dollar D&D, and a revised Decommissioning Plan has been approved by NRC. Should it be needed to preclude a conflict of interest, the Commonwealth is prepared to request the license be transferred to DCNR.

The organization and responsibilities of the RPP decommissioning program is as follows. The BRP Director has overall regulatory responsibility for the PA Decommissioning Program. Direct support is provided to the BRP Director by the CO management and staff, as well as inspector staff in the three ROs. More specifically, BRP CO has the responsibility for all complex decommissioning projects in the Commonwealth, as currently listed in Table 1 and as may be identified in the future, and for implementing regulatory decisions and actions. Each RO has the responsibility for onsite inspections for regulatory oversight of decommissioning at all licensees within their respective geographical areas. In addition, the ROs provide support to BRP for inspections and surveys at complex decommissioning sites in their areas. However, BRP establishes overall decommissioning policies and generally provides the interface with other agencies (i.e., NRC, ACOE, EPA, etc.), as required. Within BRP, responsibility for policy implementation, routine regulation and oversight of the PA Decommissioning Program has been assigned to the Chief, Decommissioning and

Surveillance Division. This Division is devoted exclusively to the Decommissioning Program and the Environmental Surveillance Program. Relational organization charts between CO and ROs are provided in this application. But to be clear, within the RPP the CO Decommissioning staff in BRP have the lead on oversight, the inspections and site surveys on the more complex sites. Responsibilities within the Decommissioning Program include:

1. Effecting a smooth transfer of responsibility from NRC to the Commonwealth,
2. Ensuring that NRC approved Decommissioning Plans and regulatory requirements are implemented for each of the transferred sites,
3. Coordination as necessary with federal agencies (e.g. NRC, EPA), and other PA organizations,
4. Maintaining cognizance of technical advances in the decommissioning field,
5. As needed, development and implementation of decommissioning regulations, guidance, and procedures for the RPP that are consistent with NRC practices,
6. Review and approval of licensee submitted and technical documents in conjunction with the Materials Licensing Section of the Radiation Control Division,
7. Preparation of any required Safety Evaluation Reports,
8. Posting notices of major regulatory actions in the PA Bulletin,
9. Participation in any public and adjudicatory hearings,
10. Inspection of decommissioning sites,
11. Response to any site incidents or emergencies,
12. Surveys of sites, including confirmatory surveys,
13. Enforcement actions against decommissioning licensees,
14. Recruitment, training, and qualification of required program staff, and
15. Qualification and selection of any contractor support for confirmatory surveys.

Sufficient staff for the PA Decommissioning Program is currently provided for by the full-time personnel in the Division of Decommissioning and Surveillance. This includes a Division Chief, Section Chief for Environmental Surveillance, three RP technical staff in the Environmental Surveillance Section, and two RHP's within the Decommissioning Section, with provisions for an additional Section Chief and RHPs (to be hired just prior or after implementation of the Agreement State Program). Due to the sporadic nature of D&D work and need for independent confirmatory surveys, the staff will be supplemented as necessary by consultant(s) experienced in D&D programs. Additional staff support to BRP for the complex sites will be provided by the full-time RP Managers and RHP's from the ROs. The actual number of staff FTE's assigned to the PA Decommissioning Program has been determined by review of the number of NRC staff that has been assigned to these same complex decommissioning projects. Presently (March 2007) we anticipate one additional technical and one administrative staff person needed to support the CO Decommissioning Division. The final workload analysis assumed that an average of six to ten licensees with small quantities of radioactive material will also request license termination each year. Legal assistance is provided, as necessary, by DEP attorneys. In addition, specialized technical staff, such as hydrologists and geologists, are available from other offices in DEP. Within the

Department's organization there is a dedicated radiochem laboratory in the BOLs that provides analytical support to the Decommissioning Program for sample analyses.

The training and qualification of Decommissioning Program staff followed the procedures outlined in this application. All technical staff assigned to the PA Decommissioning Program have successfully completed training in a program that has been developed to be consistent with the NRC Guidance given in NUREG-1757. Most training is sponsored by NRC for state employees in the Agreement State programs. RP Program staff have taken advantage of such NRC courses, and have completed other related formal training courses (e.g., ANL's RESRAD code course). Job descriptions have been developed and assignees' training is recorded on standardized training forms. Refresher training is scheduled on a periodic basis (e.g., HAZMAT), and management reviews / sign-offs are performed to ensure that each staff member's training is current and appropriate for their assignments. In reviewing Table 1 and 2, it is apparent that perhaps no other state in the U.S.A. has had the variety and number of complex D&D sites. Current BRP staff have experience related to the decommissioning of TMI Unit-2, the Shippingport and Saxton reactors, complete oversight of major radium site cleanups, direct technical and project management for a 30 million dollar D&D of the Quehanna hot cell facility, and the daily involvement of all other NRC complex decommissioning sites in the state. This involvement includes licensing document review, analysis and comments, and most importantly, the hands-on onsite oversight and survey work. The PA D & D staff are qualified and ready to take over D&D regulatory responsibilities from NRC.

The procedures for reviewing Decommissioning Plans, evaluating licensee surveys, and terminating licenses are completely compatible with the NRC's approach to license termination. The Commonwealth will also commit to accepting any licensee's decommissioning plan approved by NRC prior to PA Agreement State status, which has BRP concurrence. The BRP Decommissioning Program will follow the NRC guidance and procedures provided in the three volume NUREG-1757 series, "Consolidated NMSS Decommissioning Guidance." The NRC's NUREG-1575 (rev 1) Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) will also be utilized to perform confirmatory surveys. The MARSSIM approach provides for detailed site investigations through surveys and final status surveys, where one must consider the planning and design, radiological classification of areas, statistics, instruments, field methods, sampling, chain of custody, laboratory methods, data evaluation, etc. These detailed procedures were developed by the Oak Ridge Institute of Science and Education (ORISE) environmental survey and site assessment program staff and have been adopted by NRC, EPA and other federal agencies as an appropriate survey methods manual.

## Table 1. PA Complex Decommissioning Sites

| NAME | LOCATION | LICENSE NUMBER(S)[1] | PRINCIPLE RADIONUCLIDES | STATUS |
|---|---|---|---|---|
| Safety Light Corporation (former US Radium) (SDMP) | 5 mi. East of Bloomsburg, PA | NRC 37-00030-02 NRC 37-00030-08 PA-0166 | Ra-226, Cs-137, Sr-90, Am-241, Co-60, H-3 | Inadequate decommissioning funds; EPA emergency removal action pending. Listed on NPL 5/27/05. |
| Molycorp Washington Site (SDMP) | Outskirts of Washington, PA | NRC SMB-1393 | Uranium, Thorium, Radium and decay products | Active decommissioning underway to permit unrestricted use. |
| Cabot Corp. Reading Site (SDMP) | Within city limits of Reading, PA | NRC SMC-1562 | Uranium, Thorium, Radium and decay products | 1988 Decommissioning Plan and 2005 Supplement submitted for NRC approval and PA review. DP under review. |
| PA DEP (former Permagrain Products) (SDMP) | Quehanna Wild Area, 10 mi. NW of Karthaus, PA | NRC 37-17860-02 | Sr-90, Co-60 | Active decommissioning underway to permit unrestricted use. PA anticipates license termination prior to becoming an Agreement State. |
| Whittaker (SDMP) | 3.7 mi. South of Greenville, PA | NRC SMA-1018 | U, Th, Ra-226 | Decommissioning Plan approved; decommissioning underway. |

[1] PA License Numbers to be assigned when Agreement State status is approved by NRC.

| | | | | |
|---|---|---|---|---|
| Westinghouse Electric – Waltz Mill Site (SDMP) | 3 mi. West of New Stanton, PA | NRC SNM-770 (Not to be terminated, active operating site); NRC TR-2 (possession only) stays with NRC | Transuranics, Cs-137, Co-60, Sr-90 | Soil remediation complete. Ground water pump and treat to continue for at least the next 30 years and SNM-770 license to be maintained. |
| Superbolt (Formerly Superior Steel) (Non-SDMP, ORNL Identified) | Carnegie, PA | NRC License (Terminated 1958) | U | Site conditions under investigation by NRC, DOE and PA. May be added to ACOE FUSRAP list |
| Curtis-Wright Cheswick (Formerly Westinghouse Government Services) | Cheswick, PA | NRC SNM-1120 (possession only) | SNM | Fuel Fabrication ceased in 1970's. Contamination remains in structures of operating facility and potential burials |
| Westinghouse Electric – Churchill Facility | Churchill, PA (8 mi. east of Pittsburgh) | NRC SNM-1460 | Byproduct and SNM | Material used for research and development related to commercial reactors. Westinghouse submitted a D-Plan to NRC in May 2005. |

## Table 2. Major PA Remediated Sites

| NAME | LOCATION | LICENSE NUMBER(S) | PRINCIPLE RADIONUCLIDES |
|---|---|---|---|
| Molycorp York Site (SDMP) | Outskirts of York, PA | NRC SMB-1408 (Terminated) | U, Th |
| Cabot Revere (SDMP) | 0.5 mi. SE Revere, PA | NRC SMC-1562 (Terminated) | U, Th |
| Cabot Boyertown (SDMP) | 1.6 mi. NE of Boyertown Borough, PA | NRC SMB-920 (Active) | U, Th |
| BWXT Parks Fuel and Source Fabrication (SDMP) | Parks Township, PA | NRC SNM-414 (Will be terminated prior to Agreement State approval) | U, Am-241, Pu-241, Co-60, Cs-137 |
| Babcock & Wilcox (SDMP) | Apollo, PA | NRC SNM-145 (Terminated) | U (enriched, natural, depleted), Th |
| Presses / METCOA (SDMP) | 1 mi. N of Pulaski, PA | NRC STB-1254 (Terminated) | Th |
| Schott Glass (SDMP) | Duryea, PA | NRC STB-988 (Terminated) | Th |
| Flannery Building / Parkvale Bank (Non-SDMP) circa 1915 radium production | Pittsburgh, PA | PA-0821 (Terminated) | Ra |
| ICN Radiochemicals (Non-SDMP, ORNL Identified) | West Mifflin, PA | NRC 37-00345-30, SNM-00716 (Terminated 1969) | Cs-137, Co-60 |
| Sellersville Landfill; old c1914 Radium Company of America (non-SDMP) | Sellersville, PA | No PA License (removed from state HSCA list in 1997 | Ra |
| Kiski Valley Water Pollution Control Authority | Leechburg, PA | No NRC or PA Licenses (NRC did an EA) | Enriched U |

| | | | |
|---|---|---|---|
| (Non-SDMP) | | | |
| Royersford Wastewater Treatment Facility (Non-SDMP) | Royersford, PA | No NRC or PA Licenses | Co-60, Cs-137, other mixed fission products |
| Frankford Arsenal (Non-SDMP) | Philadelphia, PA | NRC SUB-459, NRC SUB-1339 (Both terminated 1981) | None above unrestricted release limits |
| Nuclear Laundry (Non-SDMP, ORNL Identified) | Jeanette, PA | NRC (Terminated 1973) | Various |
| Westinghouse Fuel Facility | Blairsville, PA | NRC (Terminated 1961) | U |
| Lansdowne Site (Non-SDMP, non-licensed) | Lansdowne, PA | Deleted from EPA's NPL in 1991 | Ra |

## 2.4 Radon Division

The Radon Division, comprised of the Certification Section and the Radon Monitoring Section, is responsible for providing awareness and education to the public and to certify radon testing, mitigation and laboratory facilities in Pennsylvania. The Certification Section employs RHPs who administer the certification program including policy development, application review, fee collection, enforcement of certification regulations, maintenance of certification lists and associated administrative functions. The Radon Monitoring Section employs RHPs who carry out a comprehensive inspection program of certified testers, mitigators, and laboratories. They also perform specialized studies (i.e., area "hot spot" surveys, mitigation techniques, etc.) In addition, all Radon Division staff participate in public outreach, and often have public lecture engagements, and implement various projects funded by EPA and their State Indoor Radon Grant (SIRG) moneys.

# 3.0 IMPLEMENTATION OF THE AGREEMENT STATE PROGRAM FOR MATERIALS LICENSEES

## 3.1 Overview.

Under Pennsylvania's proposed Agreement State program, the Division of Radiation Control will be the Division that has primary responsibility for licensing byproduct material, source material, and special nuclear material in quantities not sufficient to form a critical mass. The Decommissioning and Surveillance Division will have primary responsibility for D&D related work, including reviews for financial assurance and license terminations. The Division of Nuclear Safety will be responsible for the licensing of LLRW disposal site.

## 3.2 Licensing.

As of March 2007, the NRC had approximately 850 active specific licenses issued to "persons" within Pennsylvania. Therefore, factoring in the approximate 460 existing State NARM specific licenses with about 50 percent overlap, a total workload of about 1000 specific licenses is anticipated. To handle this additional regulatory load, BRP has expanded and enhanced the basic licensing procedures that it has developed for issuing NARM licenses since its inception in 1971. The Department's policies and procedures will continue to be consistent with NRC guidelines, and will utilize NRC's licensing guidance. New BRP inspection procedures recently developed are adapted from those of the NRC. Standards and procedures for license application, review, and approval will continue to be compatible with NRC practice.

The inspection and enforcement aspects of the RPP will be the primary responsibility of the DEP regional offices, who will conduct routine inspections of activities authorized by Agreement State licenses. Inspection schedules will, at a minimum, be modeled after the NRC's inspection priority system. Inspections will be conducted from the three regional offices Pittsburgh, Harrisburg and Norristown. Again, the intent is to place additional RP Program staff in the northern DEP Regions as positions are filled once an Agreement is in place. The purpose of the PA Agreement State program is to provide state control of radioactive materials, and promote and protect the radiological health and safety of the public, employees' health and safety, and the environment by:

1. Ensuring compliance with Department and NRC regulations and license conditions,
2. Obtaining prompt correction of violations and adverse quality conditions which may affect safety,
3. Deterring future violations and occurrences of conditions adverse to quality, and
4. Encouraging improvement of licensee performance, including the prompt identification and reporting of potential safety problems.

Consistent with the purpose of this program, prompt and vigorous enforcement action will be taken when dealing with licensees who do not achieve the necessary

attention to detail and the high standard of compliance which the Department and RP Program expects, and, the regulations require. The specific enforcement action taken will depend on the circumstances of each case. In no case, however, will licensees who cannot achieve and maintain adequate levels of protection be permitted to conduct licensed activities. Following each inspection, the inspector will confer with licensee representatives to inform them of preliminary inspection results. Each inspection report will be reviewed by the Regional RP Program Manager prior to formal transmittal to the licensee. The inspector or manager will send a comprehensive written report describing inspection findings and detailing any apparent violations. In the event that BRP discovers any deficiency(ies) during an inspection, the Department will send the licensee a written notice itemizing the area(s) of deficiency(ies) and will require the licensee to submit within a specified number of days of the date of the notice a written response including:

1. Corrective steps which have been taken by the licensee and the results achieved,
2. Corrective steps which will be taken, and
3. The date when full compliance will be achieved.

If the licensee fails to provide an adequate response to the written notice, the Department will normally hold a management conference with the licensee prior to taking enforcement action. The Department may also elect to hold a conference for other violations. The purpose of these conferences will be to: discuss items of deficiency or noncompliance, their significance and causes, and the licensee's corrective actions; determine whether there are any aggravating or mitigating circumstances; and obtain other information which will help determine the appropriate enforcement action. If compliance cannot be achieved through these informal conferences, the Department's RP Program will take more formal enforcement action. However, for conditions which create an imminent threat to public health and safety, we will take immediate action in accordance with Pennsylvania law. Pennsylvania law (i.e., Radiation Protection Act 1984-147) provides that if the Department finds that a condition exists which constitutes an immediate threat to health due to the violation of any provisions of the Act or any code, rule, regulation or order promulgated under the Act and requiring immediate action to protect the public health or welfare, it may issue an Order asserting the existence of such an immediate threat and the findings of the Department pertaining thereto. The Department may summarily cause the abatement of such violation or may direct the Attorney General to obtain an injunction against such violator. An abatement order will be effective immediately but will include notice of the time and place of a public hearing before the Department to be held within 20 days of the date of such order to assure the justification of such order. Potential remedial actions which can be ordered by BRP include civil penalties, orders to modify, suspend, or revoke a license, or impound a radiation' source. A license may be modified, suspended or revoked in the following instances: to remove a threat to the public health and safety or environment; to stop facility construction when further work could preclude or significantly hinder the identification or correction of an improperly constructed safety-related system or component, or when implementation of the licensee's quality

assurance program is not adequate to provide confidence that construction activities are being properly carried out; when the licensee has not responded adequately to other enforcement action; when the licensee interferes with the conduct of an inspection or investigation; or for any reason not mentioned above for which license revocation is legally authorized; when a licensee is unable or unwilling to comply with BRP's requirements; or, when a licensee refuses to correct a violation. The PA Radiation Protection Act is very well written, and provides the RPP full authority to protect the public health and safety, and provide for material security.

Follow-up inspections will be conducted as necessary by RP Program staff to verify compliance with Department rules and enforcement orders and to determine willful or flagrant violations, repeated poor performance in an area of concern, or serious breakdown in management controls. The Regional RP Program Managers will review each case individually to decide if a follow-up inspection is necessary. All previous areas of deficiency will also be given special attention by the inspector during the next routine inspection of the facility.

The anticipated NRC licenses will be similar to current PA NARM licenses, but some will be technically more complicated in nature. The Division of Radiation Control will be responsible for all NRC licenses transferred to DEP with the exception of the sites noted above. Thus, responsibility for the possession of byproduct, source or special nuclear materials in quantities not sufficient to form a critical mass will be assumed by the Division of Radiation Control. **The Commonwealth of Pennsylvania will not request the authority to perform sealed source and device reviews and approvals, nor will we license uranium recovery operations (of which there are none in the state at this time).**

The RPP staff requirements have been analyzed. Many different skills will be needed to adequately administer an Agreement State regulatory program. For example, in-depth training and experience in health physics is needed, with other areas such as industrial hygiene, nuclear medicine technology, engineering, physics, pharmacy, chemistry, and biology are all necessary to some extent. In addition, expertise in various types of facilities (e.g., hospitals, universities, industries, research institutions, laboratories) is also desirable. BRP, recognizing these needs, evaluated the training and experience of its current staff and have recruited individuals who would supplement and complement the skills already available within BRP. Resumes of current staff positions are included in this application. The job specifications for these individuals are also included. Staff members of the Division of Radiation Control, Decommissioning and Surveillance Division, Division of Nuclear Safety, and Regional Offices all have the technical background needed to administer and support an Agreement State program. This includes administrative staff.

As an indication of the Bureau's practical experience, during the past ten years the Bureau has conducted literally thousands of inspections of NARM licensees and D&D sites. To gain even greater experience in inspection procedures, RO staff have routinely accompanied NRC inspectors on their inspections in 2006 and 2007. All

applicable CO and RO staff will continue to accompany NRC inspectors to gain additional experience on D&D sites. This being the case, the training and experience of staff cited to participate in NRC activities to be transferred to the Commonwealth, the BRP Director has ensured through the RP Program Managers, all staff qualify at this time.

BRP has evaluated NRC's staffing levels in NRC Region I and Headquarters that are involved with PA licensees. The Department believes it has the staff in place, trained and capable to implement an effective AS program. BRP performed a workload analysis, requested, and was recently authorized by the Governor's Office of Administration to increase the RP Program staffing level by 24 positions to cover the additional level of work with the new NRC licensees. These new staff positions will be technical RHP series and administrative, and will be trained to perform the x-ray program related work that existing RP Program staff will not be able to perform, due to their shift to an increased materials licensing and inspection workload. Some new administrative staff will be primarily working on AS tasks, e.g., clerical staff for NRC records integration and organization, compliance specialist, etc. The current staffing of the DEP RP Program for the Agreement State program is adequate in scope and appropriate in depth. See RP Program organization charts for Central Office and Regions, with the anticipated immediate vacancies that will be filled shortly prior to and after signing the Agreement.

## 3.3 Accomplishments towards Agreement State.

BRP has progressed steadily toward accomplishing the Agreement State program objectives described below. The following discussion describes specific steps that have been taken.

a) Technically Capable Staff: Beginning in 1995, the Department has continued to hire additional technical personnel to meet its staffing requirements. The excellent professional credentials of these personnel are described in the resumes provided with this application. Additional training has been provided for appropriate BRP technical staff as detailed in the AS training summaries also provided. Steps have been initiated to enter all appropriate BRP staff training records into qualification journals. When an individual has demonstrated competency in a particular area to management, the journal will be completed and the Department's training database will be updated by management. The routinely updated qualification journal will be used to assure that technical staff maintain the appropriate depth and breadth of training. Competency will be demonstrated to management before an inspector or license reviewer is allowed to independently perform an inspection (or issue a license) at a NRC licensed facility. As noted above, BRP has the necessary statutory authority to administer an effective Agreement State program.

b) Adequate Emergency Response Capabilities: BRP has well over 25 years experience with response to incidents involving loss, theft, fire and/or damage involving radioactive material. The Regions routinely respond to approximately 40 - 50 incidents per year. The command structure is also available for personnel paging, two-way radio communication, supplementary vehicles and survey instruments and administrative coordination. BRP has always worked closely with the NRC in responding to emergencies. The combination of the Department's Regional Offices located in Pittsburgh, Harrisburg and the Norristown will enable the Department to provide prompt on-site emergency response services throughout the State.

c) Necessary Radiation Measuring Instrumentation / Laboratory Support: As described in this application and narrative, BRP has acquired adequate instrumentation and laboratory support for the Agreement State program. The Emergency Response Section has developed an administrative system to ensure that equipment is properly maintained, calibrated, inspected, controlled, and replaced as necessary. In fact, the Commonwealth may be the best equipped state for radiological events.

d) Adequate Funding: BRP has an approximate 6 million dollar annual budget for salaries, training and equipment. Fees are placed in "restricted funds" and provide an adequate financial base for its programs. And, a realistic license fee structure is in place to support Agreement State operations. We anticipate about 2 million dollars a year in additional revenue once we become an Agreement State. Enclosed with this application is a summary showing the broad overview of these RP Program fiscal provisions.

e) The Bureau of Office Systems and Services manages the Department's procurement, Central Office advancement account, contract compliance, warehousing, general fixed asset accountability, surplus property management, fleet management, commercial real estate leasing, commercial property management, Commonwealth-owned land and building inventory, Commonwealth-owned surplus land and building report, voice communications systems, radio-communications systems, new Department headquarters building, records management, publications management, forms management, word processing, DEP Central Office Duplicating, office systems, DEP mail and messenger services, Commonwealth copier program, state insurance fund, Pennsylvania Bulletin control and submission, and DEP Administrative Manual. These services are provided to the BRP on a routine basis by written and verbal request.

f) Clerical Support - DEP provides one clerical support person to each of the three Regions. Central Office BRP employs several administrative support staff. Additional clerical staff will be assigned as necessary to support program workload.

g) Data Processing - All of the personnel in the Bureau of Radiation Protection have personal computers that contain adequate software capabilities including: word processing, spreadsheet, data base management, and telecommunications.

h) Public Information - The Department has dedicated a considerable amount of time and effort to informing the citizens of Pennsylvania about the Commonwealth's radon, low-level radioactive waste, and radiation protection programs, and opportunities for the public to participate at key decision points. DEP also has a web site for public information and press office staff assigned to each Program and Region.

i) Confidential Information - The release of medical or proprietary information related to site personnel is afforded maximum protection consistent with the requirements of 25 Pa. Code § 215.14 (relating to availability of records for public inspection). Unless the Department determines that disclosure is in the public interest, or is necessary for the Department to carry out its duties under the Radiation Protection Act, the following records are not available for public inspection:

(1) Trade secrets or secret industrial processes customarily held in confidence;
(2) A report of investigation or inspection, not pertaining to safety and health in industrial plants, which would disclose the institution, progress or results of an investigation undertaken by the Department;
(3) Personnel, medical and similar files, the disclosure of which would operate to the prejudice or impairment of a person's reputation or personal safety.

## 4.0 LICENSING OF LOW-LEVEL RADIOACTIVE WASTE DISPOSAL FACILITY

The authority for licensing and regulation of the use and disposal of radioactive materials at the federal level is vested in the NRC. However, under the terms of Section 2746 of the Atomic Energy Act of 1954, as amended, a state that can demonstrate a regulatory program that is compatible with the federal program may receive NRC authorization to regulate the use and disposal of radioactive materials within that state.

The Pennsylvania Act 1984-147, Section 201; and Act 1988-12, Section 301(2); authorize the Governor of Pennsylvania, on behalf of the Commonwealth, to enter into agreements with the NRC to assume authority to regulate the use and disposal of certain radioactive materials. In his December 1995 letter to the NRC, Governor Ridge formally announced Pennsylvania's intent to assume full Agreement State authorization from NRC, including the authority to regulate the disposal of low-level radioactive waste. However, we will not license sealed source and device manufacturers, nor will we license uranium mills.

Since Pennsylvania has been selected as the host state for the LLRW Disposal Facility for the Appalachian States LLRW Compact, it has enacted laws, described earlier under Statutory Authority, that authorize it to promulgate and implement a comprehensive program to regulate the LLRW disposal facility. Act 1988-12 in Section 301(2) empowers the Department to implement a regulatory, inspection, enforcement and monitoring program consistent with the terms of an agreement between the United States Nuclear Regulatory Commission and the Commonwealth, as provided for in

Section 201 of Act 1984-147, and this Act (1988-12). Section 301(4) of Act 1988-12, authorizes the Department to license the regional LLRW facility operator in accordance with Section 308 of that Act. Act 1988-12 also authorizes promulgation of appropriate and relevant regulations for licensing the regional facility and its operator.

The required regulations for licensing the LLRW disposal facility are established in Title 25 of the Pennsylvania Code, Chapter 236, Low-Level Radioactive Waste Management and Disposal. The requirements for licensing the regional facility operator and the license review procedures and standards are described in Subchapter C of Chapter 236. Requirements for the content of the license application are specified in Section 236.204 through 236.211. Review procedures and standards are presented in Sections 236.221 through 236.227, and amendments/changes to the license are contained in Sections 236.241 through 236.247. In its February 4, 1993 letter to the Department, NRC found that the Chapter 236 regulations were compatible with the applicable federal regulations.

Details regarding the LLRW disposal facility licensing program is included in with this application.

## 4.1 Appalachian State Low-Level Radioactive Waste Commission

The Appalachian States Low-Level Radioactive Waste Commission (Commission) was created by the Pennsylvania General Assembly in 1985, under a compact entered into by the states of Pennsylvania, Delaware, Maryland and West Virginia. The Congress of the United States consented to the Compact in May 1988. The main purpose for the establishment of the Compact was to provide for the regional management and disposal of LLRW in response to the Federal laws. Pennsylvania has been designated as the initial host state for the regional LLRW disposal facility because it generates much more LLRW than the other three party states. The Commission provides for representation of various states of the Compact, in addition to other duties and powers assigned to it by the Pennsylvania Act 1985-120. A copy of this Act is included in with this application.

The Commission consists of two voting members from each party state, appointed according to the laws of each party state. The host state is entitled to appoint two additional voting members to the Commission, and thus Pennsylvania has four voting members out of ten. An additional voting member shall be appointed to the Commission who shall be a resident of the host county or municipality where the disposal facility is to be located. Alternate members are designated by each party state to vote and act in the member's absence.

The powers and duties of the Commission are listed under Article 2(B) of Act 1985-120. Most of its powers are administrative in nature and forbid it to license, regulate or otherwise develop the regional LLRW disposal facility. Salient features of some of its powers and duties are as follows:

1. Conduct research and establish regulations to promote a reasonable reduction of volume and curie content of LLRW generated in the region. However, the Commission has not established any regulations so far.
2. Assemble and make available, to the party states and to the public, information concerning LLRW management and disposal needs, technologies and problems.
3. Keep current and annual inventories of all generators within the region, based on information provided by the party states.
4. Keep an inventory of all regional facilities and specialized facilities.
5. Shall publish an annual report to the governors of the signatory party states.

## 5.0 LABORATORY SUPPORT

When the BRP is required to independently establish engineering properties of waste and to perform independent environmental monitoring, such studies will be performed by the DEP Bureau of Laboratories (BOL). In the event that the BOL lacks the capability to perform the requisite analyses, DEP is authorized pursuant to Section 501 (relating to coordination of work) and Section 502 (relating to cooperative duties) of the Administrative Code of 1929, as amended, to request such services from other agencies within the Commonwealth. When necessary, the Department will enter into a memorandum of understanding or cooperative agreement with Pennsylvania's Department of Transportation (PennDOT) Materials and Testing Laboratory. Tests performed by PennDOT's Materials and Testing Laboratory include classification tests using gradation, liquid limit, and plastic limit; moisture density; and foundation testing through shear and consolidation testing. The BOL consisting of Analytical and Support Divisions "A" and "B" is a component of the Filed Operations Deputate. These laboratories conduct bacteriological, biological, chemical, microbiological, physical and radiological testing. The BOL provides analytical services to environmental, regulatory, planning and advisory programs including, but not limited to, testing of water, wastewater, milk, air contaminants, fuel, toxic materials and chemicals, soils, aquatic life and insects.

Analytical and Support Division "A" consists of the following four sections: Sample Receiving and Computer Operations Section; Air Chemistry and Gravimetric Chemistry Section, Trace Metals Analyses Section and Automated Analyses Section. The Sample Receiving and Computer Operator section is responsible for the receipt of samples, computer log-on, preparation and tracking of samples. Additional responsibilities of this section include receipt, storage, and inventory control of chemicals, gases and supplies utilized by the BOL. Physical, wet chemistry and gravimetric analyses on high volume air filters, source emission tests and freezing point depression measurements, are representative of the type of analyses performed in the Air Chemistry and Gravimetric Analysis Section of the BOL. The Sections of Trace Metals Analyses and Automated Analyses are responsible for measurement of metals using various automated instrumentation (i.e., atomic absorption and ICP spectrophotometers) and the measurement of ions and other compounds utilizing

automated wet chemistry systems and ion chromatographs, respectively. The Analytical and Support Division "B" of the BOL consists of the following sections: Radiation Measurements; Organic Chemistry; Mobile Analytical Services; Biological Services; and Laboratory Accreditation and Quality Assurance.

The Radiation Measurements Section (RMS) is responsible for the measurement of ionizing radiation and the identification and quantification of radionuclides in such environmental media as water, sediments, wastes, air, milk and vegetation. Methodologies utilized in the RMS include very low-level gamma spectroscopy using intrinsic germanium detectors on an ND 6700 system, soft beta by liquid scintillation, alpha and beta by thin window proportional counting, Strontium 89-90 by ion exchange with beta counting, and Radium-226 by radon emanation. With the exception of Iodine-131 in milk, the analytical sensitivities used equal or exceed the criteria of the former NRC Cooperative Agreement between the Department and the Commission.

BRP and the RMS interact on a day to day basis, with RMS analyzing nearly two thousand samples annually for the BRP. Most of these samples are generated in response to the BRP's program to carry out independent multimedia environmental radiation monitoring and ambient gamma radiation monitoring with thermoluminescent dosimeters (TLDs) at the following NRC licensed sites: Beaver Valley, Peach Bottom, Three Mile Island, Susquehanna and Limerick Nuclear Power Reactor, and selected other NRC licensed sites. The Department's BOL conducts a quality assurance program which will include BOL's participation in the United States Environmental Protection Agency's Environmental Radioactivity Laboratory Intercomparison Studies or an equivalent program. During aberrations in the demand for laboratory analyses, the BRP, following consultation with RMS staff, establishes priority for radioanalytic activities. When necessary, the BRP and the RMS jointly establish scheduling, detection limits and analytical priorities.

The Organic Chemistry Section of the BOL is responsible for the analysis of water, sediments, fuels, wastes, air and fish flesh for organic contaminants. The Mobile Analytical Services Section provides on-site analyses of organic and inorganic parameters for specified projects such as emergency analytical responses to environmental incidents. The Biological Services Section of the BOL is responsible for identification of microbiological indicators of pollution and the conduct of bioassays and chlorophyll analysis. Implementation and monitoring of the BOL's quality assurance program and maintaining laboratory procedures is carried out in the Laboratory Accreditation and Quality Assurance Section of the Department's Bureau of Laboratories.

## 6.0 RADIATION PROTECTION PROGRAM EQUIPMENT

The Central Office and the three Regional Offices maintain an inventory of radiation survey, testing, and analysis equipment. Again, the PA RPP has extensive inventories of equipment, some mounted in vehicles, but mainly, the equipment is

battery operated and portable. Each office has equipment capable of detecting alpha, beta and gamma radiation. Some of the equipment is committed to emergency response kits to be used in response to incidents at nuclear power plants. Each region is responsible for the maintenance and calibration of the equipment. Actual equipment varies by region, and some is still under procurement with DHS grant funds. A detailed list of the equipment maintained by each region is attached to this formal request.

## 7.0 TECHNICAL ASSISTANCE

Technical assistance is available to BRP from a variety of sources; a partial list of which can be found in this narrative.

### 7.1 Intra-agency Technical Assistance

Technical assistance in the review of a license application for the low-level radioactive waste disposal facility is available within DEP. The organizational structure of the Department is such that the Director of the Bureau of Radiation Protection can request technical assistance from any other bureau within DEP. The following areas of expertise within DEP are available to the RP Program, and could be utilized for LLRW disposal program for the licensing and regulation of the regional LLRW disposal facility, or any other licensing activity:

Deputate for Air, Waste and Radiation Management
Biological, chemical, environmental sampling and testing
Deputate for Water Management
Water resources evaluation, flood control, biotic evaluation, erosion
Deputate for Management and Technical Services
Civil engineering, construction management
Deputate for Mineral Resources Management
Mineral resources evaluation
Deputate for Field Operations
Bureau of Laboratories

### 7.2 Interagency Technical Assistance

The Department is authorized under Section 501 (relating to coordination of work) and Section 502 (relating to cooperative duties) of the Administrative Code of 1929, as amended, to request such services from other agencies within the Commonwealth. For example, the Department of Transportation (PennDOT) can provide technical assistance in areas of materials engineering, soils engineering and construction materials testing. Additionally, the Department of Conservation and

Natural Resources (DCNR) can provide support in the areas of geology, seismology, geochemistry, geography and endangered species.

### 7.3 Technical Assistance From Outside Agency

The Pennsylvania LLRW Disposal Program has received considerable technical assistance in development and licensing of LLRW disposal facility from the National Low-Level Waste Management Program at Idaho National Engineering and Environmental Laboratory (INEEL). The National program is funded by the Department of Energy (DOE), and its objective is to provide technical expertise, information, and other resources to states and compacts in developing LLRW facilities. This is a valuable resource that has provided very significant help and information to the Pennsylvania program and will continue to do so if needed in the future.

### 7.4 Acquisition of Contractor Services

Procedures and mechanisms for the timely procurement of contractual assistance are set forth in the Commonwealth's Field Procurement Manual (M215.3, as amended), published by the Governor's Office of the Budget, Bureau of Financial Management pursuant to 4 PA. Code sec. 1.331. This manual approved by the Office of General Counsel and the Office of Attorney General and utilized by all agencies under the Governor's jurisdiction, provides a standard approach to the procurement of contractual services and serves as a comprehensive guide for individuals involved in the contracting process.

Part III, ch. 6 of the Field Procurement Manual authorizes the procurement of services for emergency situations. The emergency purchase of service provision is intended to allow agencies to immediately obtain the required services without following the standard contracting procedures. BRP fully expects to obtain contract services and consultant to assist in implementing certain aspects of the Agreement State program, e.g., final status surveys at D&D sites, physicians and physicists to assist in special investigations of overexposures to radiation, etc.

## 8.0 LEGAL ASSISTANCE & SUPPORT

Section 204 of the Commonwealth Attorney's Act, Act of October 15, 1980 (P.L. 950, No. 164) (71 P S. §732-204), provides that the Attorney General, upon the request of the Governor or head of any Commonwealth Agency, shall furnish legal advice concerning any matter or issue arising in connection with the exercise of powers or the performance of duties of the Governor or agency of the Commonwealth.

As set forth in Section 301 of the Commonwealth Attorney's Act, General Counsel who serves at the pleasure of the Governor, appoints to Executive agencies including the Department of Environmental Protection a chief counsel and the

necessary assistant counsel. In addition, the Office of General Counsel which provides legal services to the Governor, supervises, coordinates and administers legal services provided by the Department's chief counsel.

The Office of Attorney General has delegated to the Office of General Counsel all administrative and civil matters related to the enforcement of the Commonwealth's environmental statutes and regulations. However, criminal matters are referred to the Office of Attorney General's Environmental Crimes Unit.

The Office of Chief Counsel provides legal advice and litigation support to every program in the Department on any matter or issue related to the exercise of the official duties and responsibilities of the Department. Under Section 401 of the Commonwealth's Attorney's Act, the Department's Chief Counsel may request the assistance of the General Counsel, the Attorney General or both in any legal action involving the Department. The Department's Office of Chief Counsel employs eighty (80) attorneys in offices located in Norristown, Harrisburg, Meadville, Pittsburgh and Wilkes-Barre, PA. The Office of Chief Counsel consists of the following bureaus: Legal Services, Litigation (five offices), Superfund, and Regulatory Counsel.

The Bureau of Regulatory Counsel located in Harrisburg serves as counsel to the Department and assigns an attorney to serve as counsel to each principal regulatory program. Within this Bureau, an attorney is assigned to advise the BRP on all regulatory and statutory matters of the Commonwealth's radiation protection program. In addition, counsel assigned to the BRP is required to:

1. Review and comment on proposed legislation.
2. Review and comment on proposed regulations, policies and procedures.
3. Initiate on behalf of the Department or defend against legal actions which involve Department officials or unusual questions of law and policy.
4. Assist the Bureau of Litigation in the development and implementation of the department's overall enforcement strategy.

The Bureau of Litigation has the primary responsibility for initiation of all enforcement action, and supervising Department personnel when conducting investigations pertinent to enforcement actions. In addition, the Bureau of Litigation has primary responsibility for providing counsel to the Regional Offices of the Department on enforcement, inspection, and legal interpretation questions to assure statewide uniformity of action.

## 9.0 DEP ADVISORY COMMITTEES

DEP encourages public participation in implementing its many programs. To that end, DEP under the Radiation Protection Act may establish special advisory committees as may be necessary to assist the department in drafting rules and

regulations and to advise the department regarding implementation of specific portions of the regulations or specific programs of the department . The Secretary appoints advisory committees whose members represent various professional, governmental, academic, business, and other citizen groups that can provide useful advice to the programs. At present, the following advisory committees are actively involved in assisting the BRP in program development.

## 9.1 Radiation Protection Advisory Committee

The Radiation Protection Advisory Committee (RPAC) reviews draft and proposed regulations and provides advice to the Department. The Committee consists of at least 11 members selected by the Secretary of the Department.

## 9.2 Low-Level Waste Advisory Committee

As required under Section 317 of the Low-Level Radioactive Waste Disposal Act, the Secretary of the Department has appointed a Low-Level Waste Advisory Committee (LLWAC) that consists of 23 members, 19 of which represent local government, environmental, health, engineering, business, academic, and other public interest groups. The other four members of the Committee represent the Pennsylvania General Assembly. In addition, the committee also has a representative of the Department who is a nonvoting member. Following receipt of the license application for the regional low-level radioactive waste disposal facility, the potential host municipality and host county will each nominate one additional member to the LLWAC.

The LLWAC reviews and comments on draft regulations necessary for the implementation of the Low-Level Radioactive Waste Disposal Act. The LLWAC may also advise the Department regarding policies and issues related to the implementation of the Act when requested to do so by the Department.

## 9.3 Citizens Advisory Council

The Citizens Advisory Council (CAC) reviews all environmental laws of the Commonwealth and makes appropriate recommendations for revision, modification and codification. The CAC considers, studies and reviews the work of the Department and, upon request makes recommendations for improvement to the Department. The CAC reports annually and on an interim basis (when necessary) to both the Governor and the General Assembly. The CAC includes persons knowledgeable in ecology, toxicology, pharmacology, and industrial technology. The Council is comprised of 19 members, the Secretary of the Department, six members appointed by the Governor, 6 appointments by the President Pro Tempore of the Senate, and 6 members appointed by the Speaker of the House of Representatives.

## 10.0 EMERGENCY RESPONSE MANAGEMENT

### 10.1 Primary Responsibility

The Pennsylvania Emergency Management Agency (PEMA) is primarily responsible for the overall policy and direction of the State-wide civil defense and disaster program in this Commonwealth. In accordance with 35 P.S. §7313, PEMA prepares and maintains a current Pennsylvania Emergency Management Plan for the prevention and minimization of injury and damage caused by disaster, prompt and effective response to disaster and disaster emergency relief and recovery. PEMA is empowered to coordinate Federal, Commonwealth and local disaster emergency management activities and to provide technical advice and assistance to Commonwealth agencies and political subdivisions in the preparation of disaster emergency management plans. PEMA is required to respond to disaster relating to nuclear power operations or radioactive materials or objects or materials possessing a radiation-producing capacity. A Radiological Emergency Response Preparedness, Planning and Recovery Program (REP) is maintained in PEMA consistent with the Commonwealth's Emergency Management Plan, and applicable Federal and State laws. Specific functions of PEMA under the REP include, but are not limited to:

1. Serving as the point of contact for interface between affected facilities and other Commonwealth agencies, departments, counties, municipalities and school districts;
2. Annual review and revision, as necessary, of Annex E, "Radiological Emergency Response to Nuclear Power Plants," of the Commonwealth's Emergency Management plan and annual review of the onsite emergency response plan of each utility to ensure consistency with the annex; and
3. Developing planning and preparedness procedures for emergency response within the ingestion exposure pathway zone. The statewide plan for radiological emergency response to nuclear power plant incidents is found in Annex E of the Commonwealth Emergency Operations Plan.

Note: Many of these plans and procedures are being re-written to conform to the National Response Plan.

### 10.2 Emergency Planning Responsibilities

Under the Commonwealth's Emergency Operations Plan, the Department's Bureau of Radiation Protection is responsible for technical assessment of accident situations and making protective action recommendations, as necessary, to PEMA. PEMA implements the recommendations through county and local government emergency management agencies. BRP regional staff respond to radioactive materials transportation incidents anywhere in the Commonwealth. Additional assistance is also available from regional DEP emergency response staff. BRP participates in biennial exercises scored by NRC and/or the Federal Emergency Management Agency at each

of the five nuclear power stations in the Commonwealth. BRP also participates in many practice drills throughout the year. Staff training for response to incidents and accidents includes several curricula offered by Federal Emergency Management Agency (FEMA) at the Emmitsburg, MD facility, and at Las Vegas. In-house refresher training is provided prior to exercises. The BRP technical staff also participate in dose assessment training offered by nuclear utilities.

## 11.0 SUMMARY

The Commonwealth of Pennsylvania and DEP are committed to administering a high quality Agreement State program that will be effective in protecting the public health, safety, welfare and the environment. The commitment to this goal is evidenced by the achievements described in this document. BRP has the authority and has assumed the initiatives necessary for Agreement State status, including:

- The Department has the necessary statutory authority to assume the responsibilities required of an Agreement State; copies of the applicable statutes are included in this application.
- The State Public Official and Employee Ethics Laws were passed to strengthen the faith and confidence of the people of the Commonwealth in their government. The applicable statues are provided.
- Regulations compatible with those of the NRC have been developed, adapted, or adopted. A set of applicable regulations are included.
- BRP has gained extensive experience in licensing radioactive material. The Licensing and Inspection and Enforcement Programs for NARM have been in place for the past 25+ years.
- Emergency response capabilities have been frequently demonstrated in the past. NRC Region I and BRP have cooperated in responses to materials incidents for many years. Required fiscal support has been provided to fund the Agreement State program. Assuring availability of resources to administer an effective regulatory program.
- Additional professional staff have been hired to both supplement and complement the BRP technical staff who have managed a major NARM regulatory program for 25+ years. The staffing level for the Agreement State program is appropriate for the new NRC licensees, per recommendations in current NRC guidelines for Agreement State programs. Approvals are in place to allow up to an additional 24 positions to back-fill x-ray related workload; that is, as RP Program staff shift to NRC material licensee work.
- Staff members have attended numerous training courses on a variety of topics related to the regulation of radioactive material. A record of training attended by the staff members, or equivalent experience, is included in this application.
- BRP has sufficient instrumentation to detect and measure radiation, including sophisticated fixed and mobile radiochemistry laboratories. A list of various instruments in each RO is available.

- The Commonwealth of Pennsylvania, Department of Environmental Protection and Radiation Protection Program have committed sufficient technical and administrative support to the Agreement State program.
- Pennsylvania has demonstrated its competence in the control of radiation hazards and, during the past ten years, aggressively prepared for Agreement State responsibilities.
- The Commonwealth of Pennsylvania is prepared and qualified to assume regulatory responsibility for byproduct material, source material, special nuclear material in quantities not sufficient to form a critical mass, and the licensing of a low-level radioactive waste disposal facility.

# ENCLOSURE 3

PA Agreement State Program
'To Be'
Staff Needs Analysis

| | A | B | C | D | E | F | G | H | I | J | K | L | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | Licensing | | | | | | | Inspecting | | | | |
| 2 | **License Categories** | **License Fee Category** | **Number of PA NRC Licenses 'to be'** | **Number of Out of State NRC Licenses in PA** | **Unlicensed Sites** | **Licensing Actions / year** | **Avg. Staff Days Per action** | **Licensing Staff Days** (Note 1) | **Priority Class** | **Multiplier for Insp.** | **Inspections Per Year** | **Staff Days / Inspection** | **Inspection Staff Days with multiplier** |
| 3 | Decommissioning, Decon, Restoration** | 14 | 4 | 2 | 3 | 34 | 9.5 | 323 | D | 7.8 | 54.6 | 4.60 | 251.2 |
| 4 | SNM | 1D | 26 | 0 | | 2 | 5 | 10 | 5 | 0.2 | 5.2 | 4.00 | 20.8 |
| 5 | SM for UF6 | 2A | 1 | 0 | | 1 | 5 | 5 | 5 | 0.2 | 0.2 | 4.00 | 0.8 |
| 6 | SM for Shielding | 2B | 55 | 0 | | 1 | 5 | 5 | 1 | 1.0 | 55.0 | 2.50 | 137.5 |
| 7 | All other SM | 2C | 12 | 0 | | 1 | 5 | 5 | 5 | 0.2 | 2.4 | 3.75 | 9.0 |
| 8 | M & D Broadscope | 3A | 2 | | | 1 | 5 | 5 | 2 | 0.5 | 1.0 | 4.00 | 4.0 |
| 9 | Part 30 Manu & Dist | 3B | 7 | 0 | | 2 | 5 | 10 | 5 | 0.2 | 1.4 | 3.00 | 4.2 |
| 10 | Pharmaceutical Manu & Dist | 3C | 22 | 7 | | 12 | 2 | 24 | 2 | 0.5 | 11.0 | 4.50 | 49.5 |
| 11 | Pharmaceutical Distribution | 3D | 1 | 0 | | 1 | 5 | 5 | 5 | 0.2 | 0.2 | 4.50 | 0.9 |
| 12 | Irradiator Shielded Source | 3E | 26 | 0 | | 3 | 5 | 150 | 5 | 0.2 | 5.2 | 5.00 | 26.0 |
| 13 | Irradiator<10K Curies | 3F | 2 | 0 | | 1 | 5 | 30 | 5 | 0.2 | 0.4 | 3.00 | 1.2 |
| 14 | Broad Scope R & D | 3L | 16 | 0 | | 5 | 3 | 15 | 3 | 0.3 | 5.3 | 5.00 | 26.7 |
| 15 | R & D | 3M | 53 | 1 | | 15 | 3 | 45 | 5 | 0.2 | 10.6 | 4.00 | 42.4 |
| 16 | Services other than leak testing, waste disposal, Calibration | 3N | 10 | 1 | | 1 | 3 | 3 | 5 | 0.2 | 2.0 | 2.50 | 5.0 |
| 17 | Industrial Radiography | 3O | 11 | 10 | | 10 | 5 | 50 | 1 | 1.0 | 11.0 | 6.00 | 66.0 |
| 18 | Other Material | 3P | 293 | 24 | | 80 | 2 | 160 | 4 | 0.3 | 73.3 | 4.00 | 293.0 |
| 19 | Waste Receipt for re-packaging | 4B | 1 | 0 | | 1 | 5 | 5 | 2 | 0.5 | 0.5 | 4.00 | 2.0 |
| 20 | Waste receipt of prepackaged for disposal | 4C | 1 | 0 | | 1 | 5 | 5 | 3 | 0.3 | 0.3 | 2.50 | 0.8 |
| 21 | Well logging & Non field flood tracers | 5A | 4 | 2 | | 1 | 5 | 5 | 3 | 0.3 | 1.3 | 2.50 | 3.3 |
| 22 | Nuclear Laundry | 6A | 2 | 0 | | 1 | 5 | 5 | 3 | 0.3 | 0.7 | 2.50 | 1.7 |
| 23 | Human Use Broad Scope -Teletherapy | 7A | 5 | 0 | | 1 | 3 | 3 | 2 | 0.5 | 2.5 | 3.00 | 7.5 |
| 24 | Human Use Broad Scope except Teletherapy | 7B | 13 | 0 | | 1 | 3 | 3 | 2 | 0.5 | 6.5 | 5.00 | 32.5 |
| 25 | Human Use Specific License | 7C | 347 | 4 | | 150 | 3 | 450 | 3 | 0.3 | 115.7 | 4.50 | 520.5 |
| 26 | Calibration Sources, Storage, etc. | 8A | 36 | | | 4 | 2 | 8 | 5 | 0.2 | 7.2 | 2.00 | 14.4 |
| 27 | SUBTOTALS | | 950 | 51 | 3 | 330 | | 1329 | | | 373.5 | | 1520.9 |
| 28 | | | | | | | | | | | | | |
| 29 | **Total Licenses in PA*** | **1001** | | | | | FTE's= | 6.33 | | | | | 7.24 |
| 30 | * Total Number of active licenses in PA. This number takes into account overlap of PA NARM Licenses and NRC Licenses. | | | | | | | | | | | | |
| 31 | ** Inspection for Decommissioning means site visit and not necessarily a documented inspection | | | | | | | | | | | | |
| 32 | 210 work day year = 365 - 104 (weekends) - 11 (holidays) - 20 (leave) - 10 (training) - 10 (meetings) | | | | | | | | | | | | |
| 33 | | | | | | | | | | | | | |
| 34 | Note 1: Licensing staff days includes regional staff time in document review and preparation. | | | | | | | | | | | | |

# ENCLOSURE 4

| | A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Name | Location | License Reviewer Qualified | % LR time | Inspector Qualified | % I time | D&D Qualified | % D&D time (Both LR & I) | % Total AS Time (AKA - FTE) | | |
| 2 | AllardD | CO | N | 0.00 | N | 0.00 | N | 0.00 | 0.00 | | |
| 3 | AngeloD | SWRO | N | 0.00 | Y | 0.10 | N | 0.00 | 0.10 | | |
| 4 | BarnhartJ | CO | N | 0.00 | N | 0.00 | N | 0.00 | 0.00 | | |
| 5 | CraigB | SERO | N | 0.00 | Y | 0.50 | N | 0.00 | 0.50 | | |
| 6 | CrollR | SERO | N | 0.00 | Y | 0.80 | N | 0.00 | 0.80 | | |
| 7 | DerstineT | SERO | N | 0.00 | Y | 0.35 | N | 0.00 | 0.35 | | |
| 8 | DworsakG | SCRO | N | 0.00 | Y | 0.85 | N | 0.00 | 0.85 | | |
| 9 | HammR | CO | Y | 0.90 | N | 0.00 | N | 0.00 | 0.90 | | |
| 10 | JanatiR | CO | N | 0.00 | N | 0.00 | N | 0.00 | 0.00 | | |
| 11 | KitzerR | SCRO | Y | 0.90 | Y | 0.00 | N | 0.00 | 0.90 | | |
| 12 | KoshyJ | SERO | N | 0.00 | Y | 0.50 | N | 0.00 | 0.50 | | |
| 13 | MaiersR | CO | N | 0.00 | N | 0.00 | Y | 0.50 | 0.50 | | |
| 14 | MartinM | SERO | N | 0.00 | Y | 1.00 | N | 0.00 | 1.00 | | |
| 15 | McElwainD | SWRO | N | 0.00 | Y | 0.85 | N | 0.00 | 0.85 | | |
| 16 | PefferF | SCRO | N | 0.00 | Y | 0.40 | N | 0.00 | 0.40 | | |
| 17 | PryberJ | SERO | Y | 0.90 | Y | 0.00 | N | 0.00 | 0.90 | | |
| 18 | RittigerC | SWRO | N | 0.00 | Y | 0.80 | Y | 0.20 | 1.00 | | |
| 19 | RutzmoserK | SERO | N | 0.00 | Y | 1.00 | N | 0.00 | 1.00 | | |
| 20 | ShearerD | SWRO | Y | 0.80 | Y | 0.00 | Y | 0.10 | 0.90 | | |
| 21 | ShuleskiP | SWRO | N | 0.00 | Y | 0.50 | N | 0.00 | 0.50 | | |
| 22 | SmallsC | CO | Y | 0.95 | N | 0.00 | N | 0.00 | 0.95 | | |
| 23 | UrciuoloL | CO | Y | 0.40 | N | 0.00 | N | 0.00 | 0.40 | | |
| 24 | WernerB | CO | N | 0.00 | N | 0.00 | Y | 0.90 | 0.90 | | |
| 25 | WhiteheadJ | CO | N | 0.00 | N | 0.00 | Y | 0.90 | 0.90 | | |
| 26 | WiliamsS | SCRO | N | 0.00 | Y | 0.20 | N | 0.00 | 0.20 | | |
| 27 | WilsonS | SCRO | N | 0.00 | Y | 0.40 | N | 0.00 | 0.40 | | |
| 28 | WoodsR | SWRO | N | 0.00 | Y | 0.80 | Y | 0.20 | 1.00 | | |
| 29 | YuskoJ | SWRO | N | 0.00 | Y | 0.50 | N | 0.00 | 0.50 | | |
| 30 | | | | 4.85 | | 9.55 | | 2.80 | 17.20 | | |
| 31 | | | LR Target | 4.79 | I Target | 6.05 | D&D Target | 2.74 | | | |
| 32 | | | LR Difference | 0.06 | I Difference | 3.50 | D&D Difference | 0.06 | | | |
| 33 | | | | | | | | Total AS FTE= | 17.20 | | |
| 34 | | | | | | | | | | | |
| 35 | | | | | | | | | | | |
| 36 | Vacancy (TBD LR 1) | CO | Y | 0.90 | N | 0.00 | N | 0.00 | 0.90 | 0.10 | 1.00 |
| 37 | Vacancy (TBD LR 2) | CO | Y | 0.50 | N | 0.00 | N | 0.00 | 0.50 | 0.50 | 1.00 |
| 38 | Vacancy - D&ES - CO | CO | N | 0.00 | N | 0.00 | Y | 0.90 | 0.90 | 0.10 | 1.00 |
| 39 | Vacancy - D&ES - Sup - | CO | N | 0.00 | N | 0.00 | Y | 0.80 | 0.80 | 0.20 | 1.00 |
| 40 | Vacancy - RAM 1 - CO | CO | Y | 0.95 | N | 0.00 | N | 0.00 | 0.95 | 0.05 | 1.00 |
| 41 | Vacancy - RAM 2 - CO | CO | Y | 0.95 | N | 0.00 | N | 0.00 | 0.95 | 0.05 | 1.00 |
| 42 | Vacancy - SCRO | SCRO | N | 0.00 | Y | 0.40 | Y | 0.40 | 0.80 | 0.20 | 1.00 |
| 43 | Vacancy - SCRO | SCRO | N | 0.00 | Y | 0.40 | N | 0.00 | 0.50 | 0.60 | 1.00 |
| 44 | Vacancy - SWRO | SWRO | N | 0.00 | Y | 0.80 | N | 0.00 | 0.80 | 0.20 | 1.00 |
| 45 | Vacancy - SWRO | SWRO | N | 0.00 | N | 0.00 | Y | 0.80 | 0.80 | 0.20 | 1.00 |
| 46 | Vacancy - SWRO | SWRO | N | 0.00 | Y | 0.40 | Y | 0.40 | 0.80 | 0.20 | 1.00 |
| 47 | | | | 3.30 | | 2.00 | | 3.30 | 8.70 | 2.40 | 11.00 |

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# ENCLOSURE 5

PA License Reviewer
Qualification Summary

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Type | Requirement | Course Code | HammR | SmallsC | UrciuoloL | KitzerR | PryberJ | ShearerD |
| 2 | | | | CO | CO | CO | SCRO | SERO | SWRO |
| 3 | Core Course | Licensing | G-109 | 10/2/1998 | 9/13/2002 | 6/7/1996 | 2001 | 10/1/1999 | 1998 |
| 4 | Core Course | Health Physics Technology or Applied Health Physics | H-201 or H-109 | 3/2/1998 | | EE | 2001 | 4/2/1999 | EE |
| 5 | Core Course | Diagnostic and Therapeutic Nuclear Medicine | H-304 | EE | 3/7/2003 | EE | 1999 | EE | 1998 |
| 6 | Core Course | Safety Aspects of Industrial Radiography | H-305 | 8/13/1999 | | 5/13/1994 | 2006 | 5/14/1999 | 1998 |
| 7 | Core Course | Transportation of Radioactive Materials | H-308 | 4/30/1999 | | 5/1/1998 | 1998 | 6/29/2001 | 1998 |
| 8 | Core Course | Brachytherapy, Gamma Knife and Emerging Technologies | H-313 | 8/21/1998 | 3/14/2003 | 3/20/1998 | | 8/20/1999 | |
| 9 | Core Course | Safety Aspects of Well Logging | H-314 | | | | | | 2003 |
| 10 | Specialized Course | Irradiator Technology | H-315 | | | | 2003 | | 2003 |
| 11 | OJT | Academic Group 1 | | | | | | | |
| 12 | OJT | Academic Group 2 | | | | | | | |
| 13 | OJT | Medical Group 1 | | | | | | | |
| 14 | OJT | Medical Group 2 | | | | | | | |
| 15 | OJT | Medical Group 3 | | | | | | | |
| 16 | OJT | Medical Group 4 | | | | | | | |
| 17 | OJT | Industrial Group 1 | | | | | | | |
| 18 | OJT | Industrial Group 2 | | | | | | | |
| 19 | OJT | Industrial Group 3 | | | | | | | |
| 20 | | | | | | | | | |
| 21 | | | | | | | | | |
| 22 | EE = Equivilent Experience as documented in Individuals Qualification Journal. | | | | | | | | |

PA Inspector
Qualification Summary

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Type | Requirement | Course Code | AngeloD | CraigB | CrollR | DerstineT | DworsakG | KitzerR | KoshyJ | McElwainD | MartinM | PefferF | PryberJ | RittigerC | RutzmoserK | ShearerD | ShuleskiP | WilliamsS | WilsonS | WoodsR | YuskoJ |
| 2 | Core Course | Fundamentals of Inspection or Inspection Procedures | G-101 or G-108 | 2000 | 9/24/2007 | 9/24/2007 | 7/25/1989 | 9/24/2007 | 1998 | 9/24/2007 | 2004 | 9/24/2007 | 1998 | 3/16/2001 | 1998 | 3/1/1998 | 1998 | 1998 | | | 1998 | EE |
| 3 | Core Course | Root Cause/Incident Investigation | G-205 | 2001 | 5/26/2006 | | 3/18/2002 | | 2002 | | | 5/26/2006 | 2007 | 7/14/2000 | 2000 | | TBD 2007 | 2000 | | | | |
| 4 | Core Course | Inspecting for Performance Course - Materials Version | G-304 | 2000 | | | 5/1/2001 | | 2003 | | | | 2006 | | | 4/23/2002 | 2003 | 2000 | | | | EE |
| 5 | Core Course | Health Physics Technology or Applied Health Physics | H-201 or H-109 | EE | 2/9/2007 | | | EE | 2001 | 4/2/1999 | EE | 10/13/2006 | | 4/2/1999 | EE | | EE | EE | | 2005 | EE | EE |
| 6 | Core Course | Diagnostic and Therapeutic Nuclear Medicine | H-304 | 2000 | | | 3/21/1999 | | 1999 | | EE | | 2000 | | EE | 8/18/2000 | 1998 | 1993 / EE | | | | EE |
| 7 | Core Course | Safety Aspects of Industrial Radiography | H-305 | 2002 | | 8/23/2002 | 6/6/1994 | | 2006 | | | | | 5/14/1999 | 1998 | | 1998 | | | | | 1994 |
| 8 | Core Course | Transportation of Radioactive Materials | H-308 | 1998 | | | 4/23/2001 | | 1998 | | | | | 6/29/2001 | 1998 | | 1998 | 1998 | | | 1998 | 1998 |
| 9 | Core Course | Brachytherapy, Gamma Knife and Emerging Technologies | H-313 | 2000 | | 8/9/2002 | 3/13/2000 | | | | | | | 8/20/1999 | EE | | TBD 2007 | 2000 | | 2006 | | EE |
| 10 | Core Course | Effective Communications or a course with similar content | | EE | | | 1/8/1991 | | | | EE | | | | EE | | EE | EE | | | EE | EE |
| 11 | Core Course | Safety Aspects of Well Logging | H-314 | | | | | | | | | | | | EE | | EE | 1997 | | | EE | 1997 |
| 12 | Specialized Course | Irradiator Technology | H-315 | 2002 | | | 6/4/2001 | | 2003 | | | | | | | 4/15/2002 | 2003 | | | | | |
| 13 | OJT | Academic Group 1 | | | | | | | | | | | | | | | | | | | | |
| 14 | OJT | Academic Group 2 | | | | | | | | | | | | | | | | | | | | |
| 15 | OJT | Medical Group 1 | | | | | | | | | | | | | | | | | | | | |
| 16 | OJT | Medical Group 2 | | | | | | | | | | | | | | | | | | | | |
| 17 | OJT | Medical Group 3 | | | | | | | | | | | | | | | | | | | | |
| 18 | OJT | Medical Group 4 | | | | | | | | | | | | | | | | | | | | |
| 19 | OJT | Industrial Group 1 | | | | | | | | | | | | | | | | | | | | |
| 20 | OJT | Industrial Group 2 | | | | | | | | | | | | | | | | | | | | |
| 21 | OJT | Industrial Group 3 | | | | | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | | | | | |
| 24 | EE = Equivilent Experience as documented in Individuals Qualification Journal. | | | | | | | | | | | | | | | | | | | | | |

PA DECOMMISSIONING MANAGEMENT
TECHNICAL STAFF AND INSPECTORS
Qualification Summary

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Type | Requirement | Course Code | MaiersR | RittigerC | ShearerD | WernerB | WhiteheadJ | WoodsR |
| 2 | Core Course | Inspection Procedures | G-108 | | 1998 | 1998 | 9/24/2007 | 9/24/2007 | 1998 |
| 3 | Core Course | Inspecting for Performance Course - Materials Version | G-304 | | EE | EE | EE | 4/25/2002 | EE |
| 4 | Core Course | Site Access or NMSS Radiation Worker Training | H-100 or H-102 | | EE | EE | EE | 4/18/2002 | EE |
| 5 | Core Course | Environmental Monitoring for Radioactivity or Radialogical / Decommissioning Surveryer Training (ORAU) | H-111 | 6/17/1994 | EE | EE | EE | 11/7/2002 | EE |
| 6 | Core Course | Applied Health Physics or Introductory Health Physics or Basic Health Physics Technology or Health Physics Technology | H-109 or H-117 or H-122 or H-201 | 7/26/1996 | EE | EE | EE | 3/28/2003 | EE |
| 7 | Core Course | MARSSIM | H-121 | 4/20/2000 | 1999 | | EE | 5/9/2002 | 1999 |
| 8 | Core Course | Transportation of Radioactive Materials | H-308 | | 1998 | 1998 | EE | | 1998 |
| 9 | Core Course | RESRAD | H-410 | | Dec-99 | Dec-99 | 2/2/2001 | 3/8/2002 | Dec-99 |
| 10 | Core Course | Hazardous Waste Operations and Emergency Response Standard | HAZWOPER | | 2006 | 2006 | | | 2006 |
| 11 | Specialized Course | Introduction to Risk Assessment in NMSS | P-400 | 12/13/2001 | 2005 | 2005 | 8/29/2002 | 7/18/2002 | 2005 |
| 12 | Specialized Course | Root Cause/Incident Investigation | G-205 | | | | | EE | |
| 13 | Specialized Course | Environmental Remediation Technologies | EPA 165.3 | | EE | EE | EE | 9/18/2003 | EE |
| 14 | Specialized Course | Introduction to Groundwater Investigations or Groundwater Hydrology | EPA 165.7 | 1/8/1998 | | | EE | 8/28/2003 | |
| 15 | Refresher Course | Fundamentals of Inspection Refresher | G-102 | | | | | | |
| 16 | Refresher Course | Health Physics Topical Review | H-401 | | | | | | |
| 17 | | | | | | | | | |
| 18 | | | | | | | | | |
| 19 | EE = Equivilent Experience as documented in Individuals Qualification Journal. | | | | | | | | |

# ENCLOSURE 6

# DEP INSPECTION MANUAL

MANUAL CHAPTER 1246
FORMAL QUALIFICATION PROGRAMS IN THE BUREAU OF RADIATION PROTECTION AGREEMENT STATE PROGRAM AREA

1246-01 PURPOSE

1.01 To define training and qualification requirements for personnel in the Bureau of Radiation Protection (BRP) Agreement State 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, B01, B02, B09, and B10 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

2.01 To ensure that BRP Agreement State program area personnel meet minimum knowledge and qualification standards.

2.02 To provide a standardized methodology for determining that Agreement State program area inspectors, license reviewers, and project manager/technical reviewers have met the established qualification requirements.

1246-03 POLICY

BRP Agreement State 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 Agreement State 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-1757). Type 1 and 2 decommissioning activities (As defined in NUREG-1757) may be performed by individuals qualified as Radioactive Materials Inspectors in accordance with

Section II of Appendices A and B 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 only 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 relevant 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 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, license reviewers, or project manager/technical reviewers in the 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 in accordance with established course provider policy. 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 Radiation Health 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 any requirement, may validate specific courses or requirements through satisfactory review and discussion with their supervisor. Requests for equivalency should be made from the individual's supervisor to the supervisor's supervisor 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.

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.

11.05 Qualification requirements for which there are no exact dates available but the staff member and supervisor agree have occurred are to be entered into the individual staff members qualification journal as 'Completed Prior to Date of Agreement'. This section (11.05) only applies to staff who where on the PA DEP Radiation Protection Program complement prior to the effective date of the Agreement.

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 Journals

# ENCLOSURE 7

# 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. | Reserved |
| XII. | Reserved |
| XIII. | Reserved |
| XIV. | Reserved |
| XV. | Reserved |
| XVI. | Reserved |
| XVII. | Reserved |
| XVIII. | Reserved |
| XIX. | Reserved |
| XX. | Reserved |

# ENCLOSURE 8

## 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) Reserved

(8) DEP and NRC Management Directives

(9) Review of Significant Events at Materials Licensees

(10) Directed Review of Selected Licensing Case Work and On-The-Job Training

(10a) Interim License Group Specific

(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) or Applied Health Physics (H-109)

(2) Diagnostic and Therapeutic Nuclear Medicine Course (H-304)

(3) Safety Aspects of Industrial Radiography Course (H-305)

(4) Brachytherapy, Gamma Knife and Emerging Technologies Course (H-313)

(5) Licensing Practices and Procedures Course (G-109)

(6) Transportation of Radioactive Materials Course (H-308)

(7) Safety Aspects of Well Logging Course (H-314)

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.

Irradiator Technology Course (H-315)

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.

3. Refresher Training. Refresher training will be conducted every three years following initial certification. Refresher training may include courses as determined by management.

# ENCLOSURE 9

## SECTION II

## TRAINING REQUIREMENTS FOR RADIOACTIVE MATERIAL INSPECTOR

### A. Applicability

The training described below is required for all materials Radiation Health Physicist 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 and NRC Management Directives

(10) Review of significant events at materials licensees

(11) Directed Review of Selected Inspection Case Work and On-The-Job Training

(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) or Applied Health Physics (H-109)

(6) Diagnostic and Therapeutic Nuclear Medicine Course (H-304)

(7) Safety Aspects of Industrial Radiography Course (H-305)

(8) Brachytherapy, Gamma Knife and Emerging Technologies Course (H-313)

(9) Transportation of Radioactive Materials Course (H-308)

(10) Safety Aspects of Well Logging Course (H-314)

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.

Irradiator Technology Course (H-315)

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.

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.

# ENCLOSURE 10

## 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) Inspection Procedures (G-108)

(2) Site Access Training (H-100) or NMSS Radiation Worker Training (H-102)
(3) Inspecting for Performance - Materials Version (G-304)
(4) (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
(5) Transportation of Radioactive Materials (H-308)
(6) Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (H-121)
(7) (i) Environmental Monitoring for Radioactivity (H-111),
(ii) Radiological/Decommissioning Surveyor Training (ORAU), or

(iii) equivalent experience
(8) RESRAD (H-410)
(9) OSHA HAZWOPER Training (24 hour or 40 hour)

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. Root Cause/Incident Investigation (G-205)
b. Introduction to Risk Assessment in NMSS (P-400)
c. Groundwater Hydrology
d. Introduction to Groundwater Investigations (EPA course 165.7)
e. 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.

# ENCLOSURE 11

# 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 supervisor's working 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 new and separate qualification journal would be prepared to address the training required in the new area. 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. | Reserved |
| XII. | Reserved |
| XIII. | Reserved |
| XIV. | Reserved |
| XV. | Reserved |
| XVI. | Reserved |
| XVII. | Reserved |
| XVIII. | Reserved |
| XIX. | Reserved |
| XX. | Reserved |

# ENCLOSURE 12

SECTION I

MATERIALS LICENSE REVIEWER
DEP LICENSE REVIEWER QUALIFICATION JOURNAL

## 1.0 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 DEP and 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.

## 2.0 RESPONSIBILITIES

### 2.1 Chief, Radioactive Materials Licensing

The Chief, Radioactive Materials Licensing section is responsible for directing the orientation of new employees in the Radioactive Materials Program and for providing copies of 25 Pa Code Article 5 Radiological Health and BRP Procedures.

The Chief, Radioactive Materials Licensing section shall oversee the maintenance of training records and Technical Qualification Journals.

### 2.2 Radiation Health Physicist License Reviewer

The Radiation Health Physicist License Reviewer qualified in core program categories is responsible for assisting trainees in becoming qualified, as assigned. The Radiation Health Physicist License Reviewers are responsible for participating in a continuing education program and for participating in specialized training and qualification programs, as assigned.

### 2.3 Chief, Radiation Control Division

The Chief, Radiation Control Division is responsible for managing the training and qualification program and for assuring that qualified staff is available to perform the BRP licensing, inspection, and enforcement activities adequately.

### 2.4 Bureau Director

The Bureau Director is responsible for auditing the BRP training and qualification program.

## 3.0 PROCEDURE

Department of Environmental Protection (DEP) and Radioactive Materials Program Orientation may be performed by the Radiation Protection Bureau Director, Radiation Control Division Chief, or Radioactive Material Licensing Section Chief.

### 3.1 Required Initial Training

The self study, core training, and on-the-job training described in this Qualification Journal is required for all Radiation

Health Physicist License Reviewers assigned to the Bureau of Radiation Protection (BRP) to process radioactive material licensing actions. Credit for training may be granted by managers and supervisors for applicable education, training, and/or experience received prior to joining the Pennsylvania Agreement State Program. Furthermore managers and supervisors may grant an exception and/or equivalency for courses based on previous or alternative education and/or training.

3.2 License Reviewer - - Core Program

The trainee becomes qualified as a license reviewer in one of the various license categories by completion of the requirements under tab 10. There are nine categories of qualification for License Reviewers. The nine license categories are listed in the table below. Individuals must qualify in a group 1 license category before becoming qualified in a group 2 license category, and so on.

For an individual to gain interim qualification and independently evaluate licensing for each category, the individual must complete a minimum number and variety of license type On-the-Job-Training (OJT) in each category and successfully demonstrate proficiency. This is accomplished through completion of qualification card ten as prescribed by qualification guide ten of this document. Proficiency should be measured by the review and completion of the required number of new applications, renewals or substantive amendments for a variety of license types.

Assuming that tabs 1 - 9, 11 have been completed and signed off in the trainee's Qualifications Journal, a trainee becomes interim qualified as a license reviewer as listed in the table below.

## License Category Qualification Table

| License Category Name | Examples of License Types within the License Category | Formal Training Requirements | Number of Reviews Required for Qualification |
|---|---|---|---|
| Academic Group 1 | R&D other, Academic Broadscope Type C, Self Shielded Irradiators | HP Technology (H-201) or (H-109), Licensing Procedures (G-109) and Transportation of Radioactive Material (H-308) | 3 |
| Academic Group 2 | Academic Broadscope Type A and B | Same as Academic Group 1 | 2 |
| Medical Group 1 | Uptake/Dilution (35.100), Imaging/Localization Studies (35.200), | Same as Academic Group 1 plus Diagnostic & Therapeutic Nuclear Medicine (H-304) | 2 |
| Medical Group 2 | Unsealed Material requiring Written Directive (35.300), Manual Brachytherapy (35.400), Nuclear Pharmacy, Veterinary | Same as Medical Group 1 plus: Brachytherapy, Gamma Knife and Emerging Technologies (H-313) | 3 |
| Medical Group 3 | High Dose Rate Afterloaders (HDRs), Stereotactic Radiosurgery (Gamma Knife), Emerging Technologies (35.1000) | Same as Medical Group 2 | 3 |
| Medical Group 4 | Medical Broadscope | Same as Medical Group 2 | 2 |
| Industrial Group 1 | Gauges, Leak Test and Calibration Services, Measuring Systems, Manufacturing and Distribution Other, General License Distribution, DU Shielding | Same as Academic Group 1 plus Manufacturer Gauge training | 4 |
| Industrial Group 2 | Industrial Radiography, Well Logging, Nuclear Laundry, Manufacturing and Industrial Broadscopes, Waste Disposal, Decontamination Services, Source Material | Same as Industrial Group 1 plus: Safety Aspects of Industrial Radiography (H-305) and Well Logging (H-314) | 3 |
| Industrial Group 3 [a] | Part 36 Irradiators | Same as Industrial Group 2 plus Irradiator Technology (H-315) | (b) |

a: This license category not needed for full qualification
b: As determined by Licensing Supervisor

## 3.3 Specialized Training

This specialized training and qualification is above and beyond core training qualification and is not required for full License Reviewer qualification. The ninth license category, Industrial Group 3, is Part 36 Irradiators. Prior to gaining qualification in this license category interim qualification in Industrial Group 2 must be achieved. There are very few licensees within this license category in the Commonwealth. Therefore, training and qualification for this specialty license category will be limited to a few select number of License Reviewers. Furthermore, qualification in this license category will not be required for full qualification as a License Reviewer. For an individual to gain interim qualification and independently inspect or evaluate licensing for this type the individual must complete a number of On-the-Job-Training (OJT) events as determined by the Licensing Supervisor and successfully demonstrate proficiency.

## 3.4 Continuing Education and Training

Opportunities for enhancement of professional abilities such as accompaniment on inspections, member of an IMPEP team, attending preparation class for NRRPT exam, attaining Certified Health Physicist (CHP) status, a Radiological Emergency Response Operations (RERO) or Health Physics courses shall be considered on an individual basis.

LICENSE REVIEWER QUALIFICATION JOURNAL - Materials License Reviewer

_____ _____ _____ _____

(Name) (Title) (Organization Unit) (Section)

To complete this 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. Management shall maintain these cards in supervisory working files along with any background or written material required by the program.

| | | 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 | _____ |
| 5. | DEP Inspection Manual | _____ Supervisor | _____ |
| 6. | Industry Codes and Standards | _____ Supervisor | _____ |
| 7. | Reserved | | |
| 8. | DEP & NRC Management Directives | _____ Supervisor | _____ |

9. Review of Significant events at Materials Licensees _____ _____
Supervisor

10. Directed Review of Selected Licensing Case Work and On-the-Job Training (OJT) _____ _____
Supervisor

10a. Interim License Group Specific

Academic Group 1

_____ _____
Supervisor

Academic Group 2

_____ _____
Supervisor

Medical Group 1

_____ _____
Supervisor

Medical Group 2

_____ _____
Supervisor

Medical Group 3

_____ _____
Supervisor

Medical Group 4

_____ _____
Supervisor

Industrial Group 1

_____ _____
Supervisor

Industrial Group 2

_____ _____
Supervisor

Industrial Group 3

_____ _____
Supervisor

11. Formal NRC Training _____ _____
Supervisor

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 | _____ Supervisor | _____ |
| 2. Facility tour and introduction | _____ Supervisor | _____ |

B. DEP Organization

| | | |
|---|---|---|
| 1. Review of DEP headquarters and regional organization | _____ Supervisor | _____ |
| 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 Employee | _____ | _____ |
| B. | Discussion completed on 25 PA Code Article V and CFR Parts related to the materials license review program Supervisor | _____ | _____ |

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 | _____ |
| 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

Reserved

Qualification Card 8
DEP & NRC Management Directives

| | Initials | Date |
|---|---|---|
| B. Review of selected portions of The DEP & NRC Management Directives completed | _____ Employee | _____ |
| B. Discussion of the application of the DEP & NRCManagement 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 | | |
| **Academic Group 1** | | |
| 1. _____ Case Study / Type | _____ Employee | _____ Date |
| 2. _____ Case Study / Type | _____ Employee | _____ Date |
| 3. _____ Case Study / Type | _____ Employee | _____ Date |
| **Academic Group 2** | | |
| 1. _____ Case Study / Type | _____ Employee | _____ Date |
| 2. _____ Case Study / Type | _____ Employee | _____ Date |
| **Medical Group 1** | | |
| 1. _____ Case Study / Type | _____ Employee | _____ Date |
| 2. _____ Case Study / Type | _____ Employee | _____ Date |
| **Medical Group 2** | | |
| 1. _____ Case Study / Type | _____ Employee | _____ Date |
| 2. _____ Case Study / Type | _____ Employee | _____ Date |
| 3. _____ Case Study / Type | _____ Employee | _____ Date |

Medical Group 3

1. _____ _____ _____
Case Study / Type Employee Date

2. _____ _____ _____
Case Study / Type Employee Date

3. _____ _____ _____
Case Study / Type Employee Date

Medical Group 4

1. _____ _____ _____
Case Study / Type Employee Date

2. _____ _____ _____
Case Study / Type Employee Date

Industrial Group 1

1. _____ _____ _____
Case Study / Type Employee Date

2. _____ _____ _____
Case Study / Type Employee Date

3. _____ _____ _____
Case Study / Type Employee Date

4. _____ _____ _____
Case Study / Type Employee Date

Industrial Group 2

1. _____ _____ _____
Case Study / Type Employee Date

2. _____ _____ _____
Case Study / Type Employee Date

3. _____ _____ _____
Case Study / Type Employee Date

Industrial Group 3

| Case Study / Type | Employee | Date |
|---|---|---|
| Case Study / Type | Employee | Date |

Attached listing of additional sites as needed.

B. Discussion by first line supervisor of directed review of the selected casework and its relation to the materials license review program.

Academic Group 1

| | Case Study / Type | Supervisor | Date |
|---|---|---|---|
| 1. | Case Study / Type | Supervisor | Date |
| 2. | Case Study / Type | Supervisor | Date |
| 3. | Case Study / Type | Supervisor | Date |

Academic Group 2

| | Case Study / Type | Supervisor | Date |
|---|---|---|---|
| 1. | Case Study / Type | Supervisor | Date |
| 2. | Case Study / Type | Supervisor | Date |
| 3. | Case Study / Type | Supervisor | Date |

Medical Group 1

| | Case Study / Type | Supervisor | Date |
|---|---|---|---|
| 1. | Case Study / Type | Supervisor | Date |
| 2. | Case Study / Type | Supervisor | Date |

Medical Group 2

1. _____ _____ _____
Case Study / Type Supervisor Date

2. _____ _____ _____
Case Study / Type Supervisor Date

3. _____ _____ _____
Case Study / Type Supervisor Date

Medical Group 3

1. _____ _____ _____
Case Study / Type Supervisor Date

2. _____ _____ _____
Case Study / Type Supervisor Date

3. _____ _____ _____
Case Study / Type Supervisor Date

Medical Group 4

1. _____ _____ _____
Case Study / Type Supervisor Date

2. _____ _____ _____
Case Study / Type Supervisor Date

Industrial Group 1

1. _____ _____ _____
Case Study / Type Supervisor Date

2. _____ _____ _____
Case Study / Type Supervisor Date

3. _____ _____ _____
Case Study / Type Supervisor Date

4. _____ _____ _____
Case Study / Type Supervisor Date

Industrial Group 2

| | | | |
|---|---|---|---|
| 1. | _____ | _____ | _____ |
| | Case Study / Type | Supervisor | Date |
| 2. | _____ | _____ | _____ |
| | Case Study / Type | Supervisor | Date |
| 3. | _____ | _____ | _____ |
| | Case Study / Type | Supervisor | Date |

Industrial Group 3

| | | |
|---|---|---|
| _____ | _____ | _____ |
| Case Study / Type | Supervisor | Date |
| _____ | _____ | _____ |
| Case Study / Type | Supervisor | Date |

Attached listing of additional sites as needed.

Qualification Card 11
Formal NRC Training

| A. CORE TRAINING: | Initials | Date |
|---|---|---|
| 1. Health Physics Technology Course (H-201) or Applied Health Physics (H-109) | _____ 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. Brachytherapy, Gamma Knife and Emerging Technologies 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 | _____ |
| 7. Safety Aspects of Well Logging (H-314) | _____ 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 |
|---|---|---|---|---|
| Irradiator Technology (H-315) | | Supervisor | Training Coord | |
| | | Supervisor | Training Coord | |
| | | Supervisor | Training Coord | |
| | | Supervisor | Training Coord | |
| | | Supervisor | Training Coord | |
| | | Supervisor | Training Coord | |
| | | 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. mySAP (Human Resources Time and Pay system)

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, 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 Transportation through 180

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, 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, UPS, 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
o. Electronic Correspondence
p. Document retention and storage
q. eFACTS

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, 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. NRC 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

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 Misadminstrations 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 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 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. 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,or interviews.

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

BRP-ER-6.10 Radiological Incident Response

BRP-RM-03 NMED Procedure

SA-300 NRC Reporting Material Events

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][1]

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

[1] Required for non-sealed source licensees.

Radioactive Materials

IP 87103 Inspection of Material Licensees Involved in an Incident or Bankruptcy Filing

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 Radiosurgury 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, or interviews 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, 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 Health Physics Computer Codes (RASCAL, etc.)

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, or interviews.

reserved

Qualification Guide 8
Management Directives

A. A selection of currently applicable DEP & NRC 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, 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. Employee Performance Review

7. Employee Grievances

B. Application of the selected DEP & NRC 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
And On-the-Job Training (OJT)

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.

C. On-the-job training licensing activities shall be conducted in concert with a license reviewer at a specific category licensee(s) facility or on a specific category license action. Licensing shall be completed for each of the principal categories of licensees and license actions. The individual actions shall be on different license actions within the following categories:

| License Category Name | Examples of License Types within the License Category | Formal Training Requirements | Number of Reviews Required for Qualification |
|---|---|---|---|
| Academic Group 1 | R&D other, Academic Broadscope Type C, Self Shielded Irradiators | HP Technology (H-201) or (H-109), Licensing Procedures (G-109) and Transportation of Radioactive Material (H-308) | 3 |
| Academic Group 2 | Academic Broadscope Type A and B | Same as Academic Group 1 | 2 |
| Medical Group 1 | Uptake/Dilution (35.100), Imaging/Localization Studies (35.200), | Same as Academic Group 1 plus Diagnostic & Therapeutic Nuclear Medicine (H-304) | 2 |
| Medical Group 2 | Unsealed Material requiring Written Directive (35.300), Manual Brachytherapy (35.400), Nuclear Pharmacy, Veterinary | Same as Medical Group 1 plus: Brachytherapy, Gamma Knife and Emerging Technologies (H-313) | 3 |
| Medical Group 3 | High Dose Rate Afterloaders (HDRs), Stereotactic Radiosurgery (Gamma Knife), Emerging Technologies (35.1000) | Same as Medical Group 2 | 3 |
| Medical Group 4 | Medical Broadscope | Same as Medical Group 2 | 2 |
| Industrial Group 1 | Gauges, Leak Test and Calibration Services, Measuring Systems, Manufacturing and Distribution Other, General License Distribution, DU Shielding | Same as Academic Group 1 plus Manufacturer Gauge training | 4 |
| Industrial Group 2 | Industrial Radiography, Well Logging, Nuclear Laundry, Manufacturing and Industrial Broadscopes, Waste Disposal, Decontamination Services, Source Material | Same as Industrial Group 1 plus: Safety Aspects of Industrial Radiography (H-305) and Well Logging (H-314) | 3 |
| Industrial Group 3 [a] | Part 36 Irradiators | Same as Industrial Group 2 plus Irradiator Technology (H-315) | (b) |

a: This license category not needed for full qualification
b: As determined by Licensing Supervisor

The trainee shall process above categories of license actions as follows:

a) The trainee is provided copies of Standard License Conditions, Standard Form Letters, Standard Deficiency Paragraphs, Reviewer Checklists, and Standard License Formats and assigned directed review of selected licensing casework. The trainee observes the reviewer processing an application for a license or a license renewal in entirety. The trainee shall be assigned processing of selected license amendments under the supervision of a reviewer.

b) Under the supervision of a reviewer, the trainee processes a license application or a license renewal in entirety, including preparing the license, tying-down all license conditions and recommending the license for signature, to the license reviewer. This step should be conducted twice with different reviewers and licensing actions. Upon successful completion this constitutes the first of the required OJT reviews.

c) Under the observation of the Radioactive Material Licensing Section Chief or assignee, the trainee processes an application for license or an application for license renewal in entirety, including preparing the license, tying down all license conditions and recommending the license to the Chief, Radioactive Material Licensing or assignee, for signature. This step is repeated as necessary to meet the remaining number of reviews required for qualification. If problems are identified this step may be repeated further.

## 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.

# ENCLOSURE 13

SECTION II

RADIOACTIVE MATERIAL
INSPECTOR QUALIFICATION JOURNAL

## 1.0 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 inspection activities at materials facilities. 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 tabs. 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's regional office. Copies of each Qualification Journal will be forwarded to the DEP Central Office Bureau of Radiation Protection and Bureau of Human Resources annually or as new information is added. In addition formal training courses for all Program personnel are to be entered into the DEP training tracking system, i.e., Ingenium.

## 2.0 RESPONSIBILITIES

### 2.1 Regional Radiation Protection Program Manager

The Regional Radiation Protection Program Manager is responsible for assisting in the orientation of new employees in the Radioactive Materials Program and for providing copies of 25 Pa Code Article 5 Radiological Health and BRP Procedures.

The Regional Radiation Protection Program Manager shall oversee the maintenance of training records and Technical Qualification Journals.

## 2.2 Radiation Health Physicist

The Radiation Health Physicist inspector qualified in core program categories is responsible for assisting trainees in becoming qualified, as assigned. The Radiation Health Physicists are responsible for participating in a continuing education program and for participating in specialized training and qualification programs, as assigned.

## 2.3 Chief, Radiation Control Division

The Chief, Radiation Control Division is responsible for managing the training and qualification program and for assuring that a qualified staff is available to perform the BRP licensing, inspections, and enforcement activities adequately.

## 2.4 Bureau Director

The Bureau Director is responsible for auditing the BRP training and qualification program.

# 3.0 PROCEDURE

Department of Environmental Protection (DEP) and Radioactive Materials Program Orientation may be performed by the Radiation Protection Bureau Director, Regional Radiation Protection Program Manager, Radiation Control Division Chief, or Radioactive Material Licensing Section Chief.

## 3.1 Required Initial Training

The self study, core training, and on-the-job training described in this Qualification Journal is required for all Radiation Health Physicist inspectors assigned to the Radiation Protection Program to inspect radioactive material licensees and uses. Credit for training may be granted by managers and supervisors for applicable education, training, and/or experience received prior to joining the Pennsylvania Agreement State Program. Furthermore managers and supervisors may grant an exception and/or equivalency for courses based on previous or alternative education and/or training.

## 3.2 Inspector - - Core Program

The trainee becomes qualified as an inspector in one of the various license categories by completion of the requirements under tab 11. Assuming that tabs 1 – 9, and 12 have been completed and signed-off in the trainee's Qualifications Journal, a trainee becomes interim qualified as an inspector. There are nine categories of qualification for inspectors. The nine license categories are listed in the table below. Individuals must qualify in a group 1 license category before becoming qualified in a group 2 license category, and so on.

For an individual to gain interim qualification and independently inspect or evaluate licensing for each category, the individual must complete a minimum number and variety of license types On-the-Job-Training (OJT) in each category and successfully demonstrate

proficiency. This is accomplished through completion of qualification card eleven as prescribed by qualification guide eleven of this document. Proficiency should be measured by successfully leading the required number of inspections and completing the documentation for a variety of license types.

Assuming that tabs 1 – 9, 11 have been completed and signed-off in the trainee's Qualifications Journal, a trainee becomes interim qualified as an inspector as listed in the table below.

License Category Qualification Table

| License Category Name | Examples of License Types within the License Category | Formal Training Requirements | Number of Inspections Required for Qualification |
|---|---|---|---|
| Academic Group 1 | R&D other, Academic Broadscope Type C, Self Shielded Irradiators | HP Technology (H-201) or (H-109), Licensing Procedures (G-109) and Transportation of Radioactive Material (H-308) | 3 |
| Academic Group 2 | Academic Broadscope Type A and B | Same as Academic Group 1 | 2 |
| Medical Group 1 | Uptake/Dilution (35.100), Imaging/Localization Studies (35.200), | Same as Academic Group 1 plus Diagnostic & Therapeutic Nuclear Medicine (H-304) | 2 |
| Medical Group 2 | Unsealed Material requiring Written Directive (35.300), Manual Brachytherapy (35.400), Nuclear Pharmacy, Veterinary | Same as Medical Group 1 plus: Brachytherapy, Gamma Knife and Emerging Technologies (H-313) | 3 |
| Medical Group 3 | High Dose Rate Afterloaders (HDRs), Stereotactic Radiosurgery (Gamma Knife), Emerging Technologies (35.1000) | Same as Medical Group 2 | 3 |
| Medical Group 4 | Medical Broadscope | Same as Medical Group 2 | 2 |
| Industrial Group 1 | Gauges, Leak Test and Calibration Services, Measuring Systems, Manufacturing and Distribution Other, General License Distribution, DU Shielding | Same as Academic Group 1 plus Manufacturer Gauge training | 4 |
| Industrial Group 2 | Industrial Radiography, Well Logging, Nuclear Laundry, Manufacturing and Industrial Broadscopes, Waste Disposal, Decontamination Services, Source Material | Same as Industrial Group 1 plus: Safety Aspects of Industrial Radiography (H-305) and Well Logging (H-314) | 3 |
| Industrial Group 3 [a] | Part 36 Irradiators | Same as Industrial Group 2 plus Irradiator Technology (H-315) | (b) |

a: This license category not needed for full qualification
b: As determined by Regional Radiation Protection Program Manager

## 3.3 Specialized Training

This specialized training and qualification is above and beyond core training qualification and is not required for full inspector qualification. The ninth license category is Part 36 Irradiators (i.e., unshielded, pool, etc.). Prior to gaining qualification in this license type interim qualification in Industrial Group 2 must be achieved. There are very few licensees within this license category in the Commonwealth. Therefore, training and qualification for this specialty license category will be limited to a few select number of inspectors. Furthermore, qualification in this license category will not be required for full qualification as an inspector. For an individual to gain interim qualification and independently inspect or evaluate licensing for this type the individual must complete a number of On-the-Job-Training (OJT) events as determined by the Licensing Supervisor and successfully demonstrate proficiency.

## 3.4 Continuing Education and Training

Opportunities for enhancement of professional abilities such as accompaniment on NRC inspections, member of an IMPEP team, attending preparation class for NRRPT exam, attaining Certified Health Physicist (CHP) status, Radiological Emergency Response Operations (RERO) or Health Physics courses shall be considered on an individual basis.

# INSPECTOR QUALIFICATION JOURNAL
## Radioactive Material Inspector

| Name | Title | Regional Office |
|---|---|---|
| | | |

To complete this 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. Management shall maintain these cards in supervisory working files along with any background or written material required by the program.

| | | Signature When Complete | Date |
|---|---|---|---|
| 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 & NRC Inspection Manual | First Line Supervisor | |
| 7. | Industry Codes and Standards | First Line Supervisor | |
| 8. | Reserved | | |
| 9. | DEP & NRC Management Directives | First Line Supervisor | |
| 10. | Review of significant events at materials licensees | First Line Supervisor | |
| 11. | Directed review of selected inspection casework and On-The-Job Training | First Line Supervisor | |

11a. Interim License Group Specific

Academic Group 1

_____ _____
Supervisor

Academic Group 2

_____ _____
Supervisor

Medical Group 1

_____ _____
Supervisor

Medical Group 2

_____ _____
Supervisor

Medical Group 3

_____ _____
Supervisor

Medical Group 4

_____ _____
Supervisor

Industrial Group 1

_____ _____
Supervisor

Industrial Group 2

_____ _____
Supervisor

Industrial Group 3

_____ _____
Supervisor

12. Formal Training

_____ _____
First Line Supervisor

Recommended as a qualified inspector

_____ _____
Regional Manager

Certification Memo Issued

_____ _____
Regional Manager

Qualification Tab 1
DEP Orientation

| | Initials | Date |
|---|---|---|
| A. Site Orientation | | |
| 1. New employee processing package completed | _____ Employee | _____ |
| 2. Facility tour and introduction | _____ First Line Supervisor | _____ |
| B. DEP Organization | | |
| 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)

| | | Initials | Date |
|---|---|---|---|
| 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

| | | Initials | Date |
|---|---|---|---|
| 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

| | | Initials | Date |
|---|---|---|---|
| A. | Review of regulatory guidance | | |
| 1. | NRC 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 | _____ |
| 9. | DEP BRP Technical Guidance | _____ Employee | _____ |
| B. | Discussion of regulatory guidance with application to the materials inspection program | _____ First Line Supervisor | _____ |

Qualification Tab 5
DEP & NRC Inspection Manual Chapters (MC) forms / procedures

| | | Initials | Date |
|---|---|---|---|
| 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
DEP Inspection Manual Chapters (MC)

| | | Initials | Date |
|---|---|---|---|
| A. | Review of appropriate MCs completed | _____ Employee | _____ |
| B. | Discussion of 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

Reserved

Qualification Tab 9
DEP & NRC Management Directives

| | | Initials | Date |
|---|---|---|---|
| A. | Review of selected portions of the Management Directives completed | _____ Employee | _____ |
| B. | Discussion of the application of the Management Directives to the materials inspection program | _____ First Line Supervisor | _____ |

Qualification Tab 10
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 | _____ First Line Supervisor | _____ |

Qualification Tab 11
Directed Review of Selected Inspection Casework
and On-The-Job Training

| | | Initials | Date |
|---|---|---|---|
| A. | Review of selected Inspection casework | | |

Academic Group 1

| | | | |
|---|---|---|---|
| 1. | _____ Case Study / Type | _____ Employee | _____ Date |
| 2. | _____ Case Study / Type | _____ Employee | _____ Date |
| 3. | _____ Case Study / Type | _____ Employee | _____ Date |

Academic Group 2

| | | | |
|---|---|---|---|
| 1. | _____ Case Study / Type | _____ Employee | _____ Date |
| 2. | _____ Case Study / Type | _____ Employee | _____ Date |

Medical Group 1

| | | | |
|---|---|---|---|
| 1. | _____ Case Study / Type | _____ Employee | _____ Date |
| 2. | _____ Case Study / Type | _____ Employee | _____ Date |

Medical Group 2

| | | | |
|---|---|---|---|
| 1. | _____ Case Study / Type | _____ Employee | _____ Date |
| 2. | _____ Case Study / Type | _____ Employee | _____ Date |
| 3. | _____ Case Study / Type | _____ Employee | _____ Date |

Medical Group 3

| | | | |
|---|---|---|---|
| 1. | _____ Case Study / Type | _____ Employee | _____ Date |

2. _____ _____ _____
Case Study / Type Employee Date

3. _____ _____ _____
Case Study / Type Employee Date

Medical Group 4

1. _____ _____ _____
Case Study / Type Employee Date

2. _____ _____ _____
Case Study / Type Employee Date

Industrial Group 1

1. _____ _____ _____
Case Study / Type Employee Date

2. _____ _____ _____
Case Study / Type Employee Date

3. _____ _____ _____
Case Study / Type Employee Date

4. _____ _____ _____
Case Study / Type Employee Date

Industrial Group 2

1. _____ _____ _____
Case Study / Type Employee Date

2. _____ _____ _____
Case Study / Type Employee Date

3. _____ _____ _____
Case Study / Type Employee Date

B. Discussion by first line supervisor of directed review of the selected casework and its relation to the materials inspection program

Academic Group 1

1. _____ _____ _____
Case Study / Type Supervisor Date

2. _____ _____ _____
Case Study / Type Supervisor Date

3. _____ _____ _____
Case Study / Type Supervisor Date

Academic Group 2

1. _____ _____ _____
Case Study / Type Supervisor Date

2. _____ _____ _____
Case Study / Type Supervisor Date

Medical Group 1

1. _____ _____ _____
Case Study / Type Supervisor Date

2. _____ _____ _____
Case Study / Type Supervisor Date

Medical Group 2

1. _____ _____ _____
Case Study / Type Supervisor Date

2. _____ _____ _____
Case Study / Type Supervisor Date

3. _____ _____ _____
Case Study / Type Supervisor Date

Medical Group 3

1. _____ _____ _____
Case Study / Type Supervisor Date

2. _____ _____ _____
Case Study / Type Supervisor Date

3. _____ _____ _____
Case Study / Type Supervisor Date

Medical Group 4

1. _____ _____ _____
Case Study / Type Supervisor Date

2. _____ _____ _____
Case Study / Type Supervisor Date

Industrial Group 1

1. _____ _____ _____
Case Study / Type Supervisor Date

2. _____ _____ _____
Case Study / Type Supervisor Date

3. _____ _____ _____
Case Study / Type Supervisor Date

4. _____ _____ _____
Case Study / Type Supervisor Date

Industrial Group 2

1. _____ _____ _____
Case Study / Type Supervisor Date

2. _____ _____ _____
Case Study / Type Supervisor Date

3. _____ _____ _____
Case Study / Type Supervisor Date

Industrial Group 3

| Case Study / Type | Supervisor | Date |
|---|---|---|
| Case Study / Type | Supervisor | Date |

Attached listing of additional sites as needed.

Qualification Tab 12
Formal Training

| A. | CORE TRAINING: | Initials | Date |
|---|---|---|---|
| 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) or Applied Health Physics(H-109) | _____ 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), aka Brachytherapy, Gamma Knife and Emerging Technologies | _____ Training Coordinator | _____ |
| 9. | Transportation of Radioactive Materials Course (H-308) | _____ Training Coordinator | _____ |

10. Safety Aspects of Well Logging (H-314)

Training Coordinator

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.

| Course Title<br>Date | Course # | Initials | Initials |
|---|---|---|---|
| Irradiator Technology | H-315 | Supervisor | Training Coordinator |
| | | Supervisor | Training Coordinator |
| | | Supervisor | Training Coordinator |
| | | Supervisor | Training Coordinator |
| | | Supervisor | Training Coordinator |

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: [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 or 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 Guide 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, 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 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, 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 Guide 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
   e. Use of government equipment, including computers
   f. Leave and absences; office closings;
   g. Union activities
   h. Communications outside DEP
   i. Policies on outside employment and acceptance of gifts
   j. Participation in political activities
   k. Routing of mail and procedures for sending mail and materials (via U.S. Mail, Federal Express, etc.), including Management Directive 3.23, Mail Management
   l. Ordering of documents
   m. Emergency and evacuation procedures
   n. Employee appraisal system; Employee Performance Reviews
   o. 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 Guide 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, 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. NRC 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. NRC 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 Iodine-131 |
| 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 Cobalt-60 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. NRC 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/CR 4884 | Interpretation of Bioassay Measurements |
| NUREG/CR 5849 | Manual for Conducting Radiological Surveys in Support of License Termination |
| NUREG 1757 | Consolidated Decommissioning Guidance |

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, or interviews.

Qualification Guide 6
DEP 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)

IP 92701 Follow-up

3. INTERACTIONS WITH OTHER FEDERAL AGENCIES

IP 87102 Maintaining Effluents from Materials Facilities As Low As Is Reasonably Achievable (ALARA) [EPA][1]

4. INCIDENT RESPONSE

E-Plan Incident Response Actions - Responsibility and Authority
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

[1] 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, or interviews, to test the qualifying individual's knowledge and understanding of the application of the selected references to the materials inspection program.

Qualification Guide 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, 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. Accepted Health Physics Computer Codes

   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,

   Technical Report Series No. 120, 133

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, or interviews.

## Qualification Guide 8

Reserved

Qualification Guide 9
DEP and NRC Management Directives

A. A selection of currently applicable DEP and NRC 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, 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. Employee Performance Reviews
7. Employee Grievances
8. DEP/RP Compliance & Enforcement Policy (291-4100-001)

B. Application of the selected DEP and NRC 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 Guide 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 Guide 11
Directed Review of Selected Inspection Case Work
And On-the-Job Training (OJT)

A. The following is a guide for material that should be studied and discussed with the inspector in charge during inspection accompaniments and OJT. 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 Complaint Processing Procedure (BRP-ALL-01)

B. 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. There shall be one review from each of the eight core license categories listed in the table below. The selection should be documented. The First Line Supervisor will discuss in detail with the qualifying individual the selected documents and their relation to the overall material inspection program. Upon successful completion this constitutes the first of the required OJT inspections. Such documents would include:

1. Initial license application and facility description
2. Associated licensing correspondence
3. License renewal applications and associated correspondence
4. License amendment applications and associated correspondence (as appropriate)
5. Copy of the license
6. Inspection reports related to that licensee's activities

C. On-the-job training inspection activities shall be conducted in concert with an inspector at a specific category licensee(s) facility or on a specific category inspection action. Inspections shall be completed for each of the principal categories of licensees and license actions. The individual actions shall be on different inspection actions within the following categories:

| License Category Name | Examples of License Types within the License Category | Formal Training Requirements | Number of Inspections Required for Qualification |
|---|---|---|---|
| Academic Group 1 | R&D other, Academic Broadscope Type C, Self Shielded Irradiators | HP Technology (H-201) or (H-109), Licensing Procedures (G-109) and Transportation of Radioactive Material (H-308) | 3 |
| Academic Group 2 | Academic Broadscope Type A and B | Same as Academic Group 1 | 2 |
| Medical Group 1 | Uptake/Dilution (35.100), Imaging/Localization Studies (35.200), | Same as Academic Group 1 plus Diagnostic & Therapeutic Nuclear Medicine (H-304) | 2 |
| Medical Group 2 | Unsealed Material requiring Written Directive (35.300), Manual Brachytherapy (35.400), Nuclear Pharmacy, Veterinary | Same as Medical Group 1 plus: Brachytherapy, Gamma Knife and Emerging Technologies (H-313) | 3 |
| Medical Group 3 | High Dose Rate Afterloaders (HDRs), Stereotactic Radiosurgery (Gamma Knife), Emerging Technologies (35.1000) | Same as Medical Group 2 | 3 |
| Medical Group 4 | Medical Broadscope | Same as Medical Group 2 | 2 |
| Industrial Group 1 | Gauges, Leak Test and Calibration Services, Measuring Systems, Manufacturing and Distribution Other, General License Distribution, DU Shielding | Same as Academic Group 1 plus Manufacturer Gauge training | 4 |
| Industrial Group 2 | Industrial Radiography, Well Logging, Nuclear Laundry, Manufacturing and Industrial Broadscopes, Waste Disposal, Decontamination Services, Source Material | Same as Industrial Group 1 plus: Safety Aspects of Industrial Radiography (H-305) and Well Logging (H-314) | 3 |
| Industrial Group 3 [a] | Part 36 Irradiators | Same as Industrial Group 2 plus Irradiator Technology (H-315) | (b) |

a: This license category not needed for full qualification

b: As determined by Regional Radiation Protection Program Manager

The trainee shall process above categories of inspection actions as follows:

a) The trainee is provided copies of Standard License Conditions, Standard Form Letters, Standard Deficiency Paragraphs, Inspection Checklists, and Standard License Formats and assigned directed review of selected licensing casework. There shall be one review from each of the eight core license categories listed in the table above. Upon successful completion this constitutes the first of the required OJT inspections.

b) Under the supervision of a qualified inspector, the trainee The trainee observes the inspector performing an inspection. This step should be conducted once for each of the eight core license categories listed above. Upon successful completion this constitutes the first of the required OJT inspections. When performing accompaniments, staff are encouraged to ask questions of the lead or senior inspector, as appropriate, before and following the inspection, in order to maximize the overall experience.

c) Under the observation of the Regional Radiation Protection Program Manager or assignee, the trainee processes an inspection in entirety for signature. This step is to be repeated as necessary to meet the remaining number of inspections required for qualification. If problems are identified this step may be repeated.

## Qualification Guide 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.

# ENCLOSURE 14

## 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 IX & X for decommissioning management personnel, technical staff and inspectors.

A Qualification Journal consists of signature cards and a series of qualification guides. 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.

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 Bureaus of Radiation Protection and Bureau of Human Resources annually as new information is added. In addition formal training courses for all Program personnel are to be entered into the DEP training tracking system, i.e., Ingenium.

| 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 |
|---|---|---|
| ❑ Inspection Procedures (G-108) | | |
| ❑ Site Access Training (H-100), or<br>❑ NMSS Radiation Worker Training (H-102) | | |
| ❑ Inspecting for Performance- Materials Version (G-304) | | |
| ❑ Introductory Health Physics (H-117)<br>❑ Basic Health Physics (H-122)<br>❑ Health Physics Technology (H-201)<br>❑ Applied Health Physics (H-109), or<br>❑ Equivalent formal health physics training/education | | |
| ❑ Transportation of Radioactive Materials (H-308) | | |
| ❑ Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (H-121) | | |

**Core Training Worksheet - Check completed course(s) (cont.)**

| | | |
|---|---|---|
| ❑ Environmental Monitoring for Radioactivity (H-111),<br>❑ Radiological/Decommissioning Surveyor Training (ORAU), or<br>❑ Equivalent experience | | |
| ❑ RESRAD (H-410) | | |
| ❑ OSHA HAZWOPER Training<br>( ❑24 hour or ❑40 hour) | | |

**Supplemental and Refresher Training Worksheet**

| Item | Supervisor's Signature | Date Completed |
|---|---|---|
| Root Cause/Incident Investigation (G-205) | | |
| Introduction to Risk Assessment in NMSS (P-400) | | |
| ❑ Groundwater Hydrology<br>❑ 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, 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-1757 Consolidated Decommissioning Guidance
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, or interviews 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, 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, or interviews.

## 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, 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, 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**
**Clarification of Core Training Requirements**
**Core Training: Formal**

There are two segments of the core training requirements that allow for more than one method of completion. Details on acceptable variations follow below.

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). 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.

B. 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). 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.
4. Activity conversion calculations including MDA / MDC determinations.
5. Performance of building surface scans and direct measurements.
6. Performance of walkover scans and direct measurement in outdoor areas.
7. 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.

# ENCLOSURE 15

# COMMONWEALTH OF PENNSYLVANIA
# DEPARTMENT OF
# ENVIRONMENTAL PROTECTION

## Bureau of Radiation Protection

### Administrative Licensing Procedures:
### Review of an Initial Application for License, Amendment Request, or Termination of a License.

**Prepared By:**_____ **Date**_____

**Reviewed By:**_____ **Date**_____

**Approved By:**_____ **Date**_____

**Effective Date:** _____

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**Section**

## 1.0 PURPOSE

### 1.1 Applicability

The purpose of this procedure is to define the process for reviewing all types of specific license requests., Standard review plans, checklists and policies that shall be used during the review process will be identified.

The process for issuing a specific license or an amendment to a license and standard license conditions are also provided.

The process for denying (State's initiative) or abandoning (applicant's or State's initiative) a request for licensing action shall be defined.

The Pennsylvania Agreement State Program will follow the NUREG 1556 procedure for Technical Evaluation of Proposed Uses of Radioactive Material.

The Pennsylvania Decommissioning program will follow NUREG 1757.

In as much as the Commonwealth of Pennsylvania has "incorporated by reference" regulations contained in 10 CFR 19 through 150, the Commonwealth will also utilize the Guidance listed on the "Medical Use Toolkit" including:
"Procedures for Recognizing Certification Process of Specialty Boards"
"Complying with 10 CFR 35.400(a), 35.500(a), and 35.600(a) requirements for licensees to only use sources and devices "as approved in the Sealed Sources and Devices Registry and Sealed Source and Device Registry: Supplement for 10 CFR 35 Users."

"Licensing Guidance for 10 CFR 35.1000 sealed sources and devices included:
Thera spheres and SIRSpheres Yttrium 90 microspheres;
I-125 Iotrex Liquid Brachytherapy Source in Cytyc GliaSite Radiation Therapy System;
Best Vascular, Inc. Beta-Cath Intravascular Brachytherapy (IVB) System;
Nucletron seedSelectron® System, Isotron Brachytherapy Sources and Nucletron FIRST™ System;
Iodine-125 and Palladium 103 Low Dose Rate Brachytherapy Seeds Used for Localization of Non-Palpable Lesions.

## 1.2 References

1.2.1 10 CFR 19-150
1.2.2 NUREG-1556,"Consolidated Guidance About Materials Licenses".
1.2.3 25 Pa Code 215-232
1.2.4 NUREG-1757
1.2.5 NUREG-1520
1.2.6 NRC Regulatory Guide 4.20
1.2.7 Medical-Use Toolkit
1.2.8 NRC Regulatory Guide 3.67

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1.4.4 License Transmittal Letter

## 1.5 Definitions

Application request means a request for an application for a license from a prospective applicant.

Licensing action means a request or application received from an applicant or a licensee as follows:

a) an application for a license to receive, possess and use licensed radioactive material;
b) an application for renewal of a license;
c) an application for an amendment to a license, e.g., change in administration, authorized use and/or user(s), RSO, quantity of material, add isotopes, facilities, and etc.; and,
d) a request for termination of a license(s).

Processing means reviewing the application for license or amendment, requesting additional information, if appropriate, and either issuing or denying with or without prejudice, the requested license or amendment.

Denying without prejudice means that the application for license was deficient and denied, but that the applicant may reapply after correcting the deficiencies.

Denying with prejudice means that the applicant for license is not qualified and shall not reapply for a license, e.g., a minor applying for a license to possess and use radioactive material or a non medical qualified individual applying for a license to use radioactive material in the diagnosis and/or treatment of humans.

Regulatory Guide means guidance published by the NRC, in which each guide defines an acceptable program or part of a program, for the possession and specific use of radioactive materials. An applicant is not obligated to follow one of these guidance documents when developing their program and applying for a license or amendment; however, if not followed, the applicant must demonstrate that the proposed program is at least equivalent to the one described in the guidance document.

Consolidated Guidance About Materials License means guidance published by the NRC in NUREG-1556 in which each volume defines an acceptable program for a specific type of use of radioactive material.

Licensing checklist report developed to ascertain the completeness of the license application or amendment request.

Deficiency Letter means a letter that in an itemized fashion documents additional information needed to process a licensing request. The problem with the submission, rule or regulatory guidance that is applicable, and the specific action requested of the licensee or applicant is clearly stated.

## 2.0 RESPONSIBILITIES

### 2.1 Licensing Clerk

**The Licensing Clerk is responsible for receiving and acknowledging receipt of a licensing action request. Acknowledgement can be in the form of surface mail or electronic acknowledgement.**
**The Licensing Clerk is responsible to assign or verify a client tracking number in the Commonwealth's eFACTS System. The system assigns deadlines for licensing actions**
**The Licensing Clerk is then responsible for forwarding the request for licensing action to the Licensing Radiation Health Physicist** whether in the Central Office or Region **for evaluation.**

## 2.1 Licensing Radiation Health Physicist

The Licensing Radiation Health Physicist whether in the Central Office or Region is responsible for receiving the application for a licensing action from the licensing clerk.

All Materials License Reviewers (aka. Licensing Radiation Health Physicists) shall be authorized to review all radioactive material license types.

The Licensing Radiation Health Physicist in the Central Office is responsible for maintaining the computer based and hardcopy files and for tracking the applications for license or amendment during processing.

The Licensing Radiation Health Physicist is responsible for responding to requests for license applications by transmitting an application, order form and Internet address of the regulations, and a copy of or reference to specific guidance.

The Licensing Radiation Health Physicist whether in the Central Office or Region is responsible for reviewing the assigned application, determining if it is complete, requesting additional information as appropriate, and if appropriate, preparing the license or amendment for review and signature by the Chief, Radioactive Materials Licensing.

The Licensing Radiation Health Physicist whether in the Central Office or Region is responsible for recommending whether an application is deficient and should be denied either with or without prejudice.

The Licensing Radiation Health Physicist will forward a copy of the closeout survey and disposition certificate to the Bureaus's regional office for their evaluation of these records for all licensee's request for license termination or the deletion of a previously licensed site on that specific license. Furthermore, a Decommissioning Project Manager or Technical Reviewer will be involved in all complex license terminations.

All licenses will be reviewed by a second Licensing Radiation Health Physicist in the Central Office prior to being sent to the Chief, Radioactive Material Licensing or in his/her absence, the Chief, Radiation Control for final evaluation and signature.

### 2.3 Chief, Radioactive Materials Licensing

The Chief, Radioactive Materials Licensing is responsible for assigning a licensing action for processing to a Licensing Radiation Health Physicist.

The Chief, Radioactive Materials Licensing is responsible for final review, approval, and signing licensing actions..

The Chief, Radioactive Materials Licensing following consultation with and concurrence by the department's Office of Legal Counsel is responsible for denying, with or without prejudice, an application for license or for license amendment.

### 2.4 Radiation Control Division Chief

The Radioactive Control Division Chief is responsible for final review and signing licensing requests in the absence of the Chief, Radioactive Materials Licensing.

## 3.0 PROCEDURE

### 3.1 Receipt of an Application or Request

Upon the receipt of an application for license or a request for a license amendment the following shall be performed:

#### 3.1.1 Priority

An action priority shall be assigned to the application or request in accordance with the following order: New, Amendment, Termination, Renewal and concurred with by the Chief, Radioactive Materials Licensing.

#### 3.1.2 Assignment of Reviewer

The Chief, Radioactive Materials Licensing shall assign a Licensing Radiation Health Physicist to process the application or request. The review of an application or request shall be conducted by a Licensing Radiation Health Physicist qualified to conduct such a review.

## 3.2 Processing an Application for License

The application and, all appended and referenced material shall be reviewed using Pennsylvania specific regulations Consolidated Guidance, Regulatory Guides, Standard Review Plans, Reviewers Evaluation Forms, Licensing Checklists and Technical Assistance Requests as appropriate, by the reviewer to evaluate the applicant and the application.

Significant portions of the PA review criteria, guides, and other material have been incorporated by reference, adapted, or adopted from NRC material. This being the case, use of NRC material, e.g., NUREG 1556 and NUREG 1757, may be appropriate.

If additional information is needed, a meeting with the applicant and/or a visit to the proposed facility(s) may be requested by the reviewer. If the applicant is licensed to possess and use radioactive materials, appropriate information may be included by reference.

If only NRC guidance is used in the evaluation of the application then Pennsylvania specific rule and policies must be consulted. For example, uses of radioactive materials in medicine are subject to specific Pennsylvania Rule.

The reviewer shall assure that the review of the application includes the following commonly missed items:

a) Application signed by upper management - RSO, only if appropriate,
b) Facility diagrams or sketches, including but not limited to, hoods, shielding, ventilation, work areas, storage areas, location of nearest occupied area, and physical security of radioactive material,
c) Number, type and range of survey instruments including procedures for calibration, checks for operability and maintenance,
d) Training and experience records, preceptor statement for all authorized users,
e) Training and experience records, preceptor statement, delegation of authority and the duties, responsibilities, and if appropriate, the availability of the RSO,
f) Training and experience records for the Radiation Safety Committee Chair if appropriate,
g) Records to be retained and responsibility for records retention assigned. Frequently missed records include training for new employees, annual refresher training, survey instrument calibrations and source checks, and dose calibrator constancy, accuracy, linearity, and geometric variation checks for medical licenses.

h) Procedures for receipt of radioactive material, specifically off-hours and week-ends.

Following the completion of the review of the application by 2 reviewers,and any supplemental material requested by the reviewers, a recommendation to issue a license or deny the application shall be made to the Chief, Radioactive Materials Licensing.

If the recommendation is to issue the license and the Chief, Radioactive Materials Licensing concurs, the reviewer shall prepare the license for the Chief, Radioactive Materials Licensing's signature. A tie-down license condition is used for procedures, radiation detection equipment, use locations, possession limits etc., that are not already specifically identified on the license. For renewal of existing licenses, previous tie-down conditions can be deleted from the license if they are stated in the current application.

If the recommendation is to deny the application and the Department's Office of Legal Counsel and the Chief, Radioactive Materials Licensing concur, the reviewer in concert with legal shall prepare a notification to the applicant. The notification shall state the reason for denial and if a new application would be accepted from the applicant.

## 3.3 Processing a Request for License Amendment

A request for an amendment to a specific license need not and probably will not be on a department form. The request may be a letter plus attachments or a formal application. The request shall be signed by the individual in the position, or higher, that signed the application for license or the request shall be returned for proper signature. Alternatively, the licensing action request may be signed by an individual delegated by the person who signed the application or higher.

The initial review of the request for amendment shall determine if the request is so broad that it should be processed as a rewrite of the current license or as a new license. If it's determined that either a rewrite or a new license is appropriate and the Chief, Radioactive Materials Licensing concurs, the request shall be returned to the licensee and an appropriate application shall be requested.

A request from a medical licensee to add a qualified user to their license shall be accompanied by records of the individuals training and qualifications. Records of training shall be signed by the preceptor and shall not be just a letter stating that these procedures had been performed at another licensed facility.
Where appropriate, material previously received for the license may be incorporated by reference.

A request to add an authorized user to a license shall be accompanied by records of the individuals training and qualifications and preceptor statement unless the authorized user has been listed on another radioactive material license. Recentness of training will also be reviewed.

A request to add or replace a Radiation Safety Officer (RSO) or Chair of the Radiation Safety Committee (RSC) shall include training and experience records and duties, responsibilities, and if appropriate, availability when the RSO is a consultant.

A request to add isotopes, quantities, physical form, use, facilities, instrumentation, or the authorized place of use shall be reviewed in the same way as a request for a specific license for that activity. Requests for sealed sources must include Manufacturer's Name and Model Number of the source/device.

An amendment to a license is normally amended in entirety and includes new tie-down license conditions as appropriate. If approved, the Chief, Radioactive Materials Licensing shall sign the amendment.

### 3.4 Writing the License, Second Review, and Documentation

The Licensing Radiation Health Physicist shall write the license using the templates to develop or modify the license. It is important to specify the type of license, i.e. fee code, so that the appropriate template is selected for a new license. The initial license will have an Amendment Number of "NEW".

The license reviewer shall document the licensing activity on a licensing checklist and submit the file with the license, transmittal letter and checklist to the Chief, Radioactive Material Licensing or designee for the second review.

The second reviewer shall perform a selective review of the licensing request and license. Comments may be documented on the licensing checklist. The second reviewer should discuss issues of concern with the initial license reviewer. When all issues are satisfactorily resolved, the second reviewer documents his/her agreement with the proposed licensing action by signing the licensing checklist and modifying the licensing checklist comments accordingly.

### 3.5 Signing the License and File Documentation

The license can then be signed by the Chief, Radioactive Material Licensing, or by the Radiation Control Chief, if the Chief, Radioactive Material Licensing is not available. If the Radiation Control Chief is signing the license, then both the license reviewer and second reviewer should be qualified license reviewers.

The license file should then be logged documenting the completion of the licensing activity, and inserting the licensing request, deficiency documentation, response(s), transmittal letter, licensing checklist, and license into the PA license file. This information shall be entered into eFACTS as appropriate. A complete copy of the current licensing action will be forwarded to the appropriate regional office for their records.

All tie-downs should be flagged and should remain in the licensing section of the file. Training documentation and/or other ancillary information that is not considered part of the license may be placed in the back section of the file.

For renewals: the previous licensing information and licenses, and all but the most recent inspection report, can be culled from the file and archived. Training documentation should be maintained for the current authorized users.

## 4.0 RECORDS

### 4.1 Paper

**4.1.1** Hardcopy applications for licenses plus attachments are kept in the license file. The entire application package including supporting documentation will be kept, per Commonwealth Records Retention Policy, in the Bureau's file room for future reference.

**4.1.2** Requests for amendments are maintained in the appropriate specific license file.

4.1.3 Requests for Terminations are stored in the "Terminated File".

## 4.2 Computer Based

### 4.2.1 Microsoft Excel Radioactive Material License Database

Spreadsheet contains the following information: License number, licensee name, address, city, state, zip code, fee category, material licensed, county, RCTTF, issue date, expiration date, amendment number, date of current amendment, RSO, Authorized Users, number of sites, priority class.

### 4.2.2 Bureau's Shared Folder

Spreadsheet containing the above information is available electronically to the regional Bureau offices for reference. The shared network folders is backed-up per Commonwealth Information Technology Policy.

### 4.2.3 eFACTS Database

The Commonwealth eFACTS computer system will serve as the license tracking system to track licenses from receipt to completion. This system provides a review process and provides licensing and inspection management reports. The system-assigned client number will serve as the docket number on radiation control correspondence to the licensee. This unique number will remain with the licensee for tracking purposes. Each licensing action is tracked in the eFACTS system. Information includes sites of use, responsible party, radiation safety officer and specific amendments to the license.

# 5.0 Review Documents

## 5.1 NUREGs

The Pennsylvania Agreement State Program will follow the NUREG 1556 procedure for Technical Evaluation of Proposed Uses of Radioactive Material.

The Pennsylvania Decommissioning program will follow NUREG 1757.

## 5.2 10 CFR

The Pennsylvania Agreement State Program has adopted by reference much of 10 CFR.