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PENNSYLVANIA

STATE INFORMATION HANDBOOK

FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM

December 31, 1980

PREPARED FOR

U.S. DEPARTMENT OF ENERGY

OAK RIDGE OPERATIONS OFFICE

CONTRACT NO. DE-AC05-800R20769

BY

POLITECH CORPORATION

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CONTENTS OF APPENDIX

The Appendix to this handbook contains the pertinent sections of all statutes, regulations and bills cited in the handbook. The contents of the Appendix, in the order contained, are:

Department of Environmental Resources

Radiological Health Rules and Regulations

Chapters: 221, 223, 225, 227, 229, 231, 233 and 235

Act of the General Assembly No. 480 of 1959

Department of Transportation

Title 67, Chapter 20: Regulations Governing the Highway Transportation of Hazardous Material

Title 35 Health and Safety

§ 841 - Hazardous Substance Transportation Act of 1965

§ 958 - Radioactive Materials, Burial Under Permit

Title 71 State Government

Article XIX-A

§ 510-1 Powers and Duties of the Department of Environmental Resources

§ 510-103 Functions Transferred to the Department of Environmental Resources

Title 73 Trade and Commerce

Article I

The Atomic Energy Development and Radiation Control Act

Turnpike Commission

Application and Order Blank for Hazardous Materials Transportation Permit

Amendment to the Hazardous Substance Transportation Act

Environmental Radiation Protection Act

House Bill 1840 - Solid Waste Management Act

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(12/31/80)

PENNSYLVANIA
STATE INFORMATION HANDBOOK
TABLE OF CONTENTS

INTRODUCTION PAGE I-1

EXECUTIVE BRANCH

Overview	PAGE 1-1
Executive Board	PAGE 1-2
Office of the Governor	PAGE 1-2
Lieutenant Governor	PAGE 1-3
Executive Agencies	PAGE 1-4
Department of Environmental Resources	PAGE 1-4
Department of Transportation	PAGE 1-5
Hazardous Substance Transportation Board	PAGE 1-6

RELEVANT STATUTES AND REGULATIONS

Administrative Code of 1929, as amended	PAGE 2-1
Act 480 of 1959	PAGE 2-1
Title 71 § 510.1 Pennsylvania Statutes	PAGE 2-1
Hazardous Substance Transportation Act	PAGE 2-2
Advisory Councils and Boards	PAGE 2-2
Radiological Health Regulations	PAGE 2-3
Regulations Governing the Highway	
Transportation of Hazardous Materials	PAGE 2-3
Hazardous Materials Transportation Permit Card	PAGE 2-5

LEGISLATURE

General Assembly	PAGE 3-1
Senate	PAGE 3-1
Membership	PAGE 3-1
Officers	PAGE 3-1
Committees	PAGE 3-2
Affected District	PAGE 3-3
House	PAGE 3-3
Membership	PAGE 3-3
Officers	PAGE 3-4
Committees	PAGE 3-4
Affected District	PAGE 3-5
Recent Legislative Activity	PAGE 3-6

INTRODUCTION

Pursuant to the First War Powers Act of 1941 and the Atomic Energy Acts of 1946 and 1954, as amended, the Corps of Engineers' Manhattan Engineer District (MED) and its successor, the Atomic Energy Commission (AEC), conducted during the 1940's and 1950's a program involving research, development, processing, and production of uranium and thorium. This program also included the storage of radioactive ores and processing residues, e.g. mill tailings. Virtually all of this work was performed by private contractors for the Government on land that was either federally, privately, or institutionally owned. Due to the urgency and magnitude of the early nuclear materials programs and the limited knowledge available regarding the radioactive characteristics of uranium ore and residual material from its processing, many of these sites became contaminated with radioactivity as a result of work done for the Government. At the conclusion of MED/AEC activities, contaminated sites were decontaminated in accordance with existing guidelines for contamination and exposure levels. Since that time, the guidelines for radioactivity contamination have become much more stringent.

In early 1974, the AEC initiated a survey program to identify all formerly utilized sites involved with nuclear materials and to determine their radiological status. All divisions and field offices of the AEC were required to search their files to identify any such former Government-owned or leased sites and facilities that had been used in the research or production activities of the MED and the AEC. In addition, the files were searched for records identifying the radiological conditions at the termination of the MED/AEC activities and the current radiological condition of the sites. This effort identified many sites for which pertinent information was lacking or was insufficient to determine their radiological conditions.

On January 19, 1975, the AEC was abolished and its programmatic responsibilities transferred to the Energy Research and Development Administration (ERDA) which continued the activities of the survey program. Contacts were made with former and current owners and site visits were conducted under the direction of ERDA field offices to determine the need for radiological surveys. Subsequent survey results were published in radiological survey reports that analyzed the significance of the findings with respect to the potential risks to the public health.

Pursuant to the Department of Energy Organization Act of 1977, the functions and authority of ERDA were transferred to the Department Of Energy (DOE). In the DOE, the Assistant Secretary

for the Environment (ASEV) was assigned the responsibility for the site-survey program. The results of several site surveys clearly indicated that some remedial action would be needed, not only on the former sites, but also on adjacent or remote properties that had become contaminated from the original processing site. Due to the importance of this effort, the ASEV initiated the Formerly Utilized Sites Remedial Action Program (FUSRAP) and drafted a generic plan to identify all formerly utilized sites and to resolve any site radiological problems. The objectives of the FUSRAP are to:

- o Identify former MED/AEC sites;
- o Characterize their radiological conditions;
- o Decontaminate sites as required and pursuant to authorization and appropriation by Congress;
- o Develop acceptable disposal and stabilization sites in consultation with the affected states;
- o Certify the acceptability of the sites for future use.

Using the generic plan as a guide, in mid-1979 responsibility for the FUSRAP activities was divided between the ASEV and the Assistant Secretary for Energy Technology (now Assistant Secretary for Nuclear Energy [ASNE]). The ASEV is responsible for identifying the sites, characterizing the radiological conditions, determining the need for remedial action at the sites, and ultimately for certifying the post-remedial action radiological condition of the FUSRAP sites. The ASNE is responsible for implementing the required remedial actions, including suitable disposal or stabilization of residual material. The Oak Ridge Operations Office has been delegated with the responsibility for field implementation and program management of the ASNE FUSRAP responsibilities. The Environmental Protection Agency (EPA) is responsible for the promulgation of health and environmental standards which will apply to all residual radioactive materials at the formerly utilized sites. As of this time, 31 sites in 13 states have been identified that require or may require some form of remedial action.

This volume is one of a series produced under contract with the DOE, by POLITECH CORPORATION to develop a legislative and regulatory data base to assist the FUSRAP management in addressing the institutional and socioeconomic issues involved in carrying out the Formerly Utilized Sites Remedial Action Program. This Information Handbook series contains information about all relevant government agencies at the Federal and state levels, the pertinent programs they administer, each affected state legislature, and

current Federal and state legislative and regulatory initiatives. This volume is a compilation of information about the State of Pennsylvania. It contains:

- o A description of the state executive branch structure;
- o A summary of relevant state statutes and regulations;
- o A description of the structure of the state legislature, identification of the officers and committee chairmen, and a summary of recent relevant legislative action;
- o The full text of relevant statutes and regulations.

The loose-leaf format used in these volumes will allow the material to be updated periodically as the Remedial Action Program progresses.

EXECUTIVE BRANCH
OVERVIEW

The Executive branch of the Pennsylvania State government implements and administers the Constitution and laws of the Commonwealth. The authority of the Executive branch is derived from the Constitution. While the Constitution provides the broad powers of the Executive branch, its organization, specific powers and duties are set out in statutes. The Administrative Code of 1929, as amended, defines the powers and duties of the departments and many administrative boards and commissions. The Constitution provides for the election of the Governor, Lieutenant Governor, Attorney General, Auditor General and State Treasurer. The Administrative Code describes the criteria for department and agency heads; the code defines the general powers and duties common to state agencies.

The administration and enforcement of the laws of Pennsylvania is carried out by the Executive Board, the departments, and by independent boards and commissions. All executive agencies derive their power from the Governor. The chief executive officer of most administrative agencies, the Secretary, is appointed by the Governor with Senate confirmation. Each Secretary serves at the Governor's pleasure and is a member of his cabinet.

The members of the Cabinet are listed below.

Walter Baran	Secretary of General Services
Harvey Bartle III*	Attorney General
Al Benedict	Auditor General
Gorham L. Black, Jr.	Secretary of Aging
Michael L. Browne	Insurance Commissioner
Robert E. Casey	State Treasurer
William R. Davis	Secretary of the Commonwealth
Daniel F. Dunn	State Police Commissioner
Penrose Hallowell	Secretary of Agriculture
Clifford L. Jones	Secretary of Environmental Resources
Thomas D. Larson	Secretary of Transportation
Ben McEnteer	Secretary of Banking
Helen Bohlen O'Bannon	Secretary of Public Welfare
Robert G. Scanlon	Secretary of Education
Geoffrey Stengel, Jr.	Secretary of Commerce
Robert C. Wilburn	Secretary of Budget & Administration

* In November 1980, due to a Constitutional Amendment, the post of Attorney General became an elective position. The first elected Attorney General of Pennsylvania is Leroy Zimmerman. Mr. Zimmerman will be sworn in January 1981.

Executive Board

The Administrative Code prescribes the membership, duties and powers of the Executive Board. The Board is empowered to standardize qualifications for state employment, authorize bonding of state officials, and establish bureaus and divisions within administrative departments. The Board consists of the Governor, who is Chairman, and the heads of 6 administrative agencies designated by the Governor.

The members of the Board are listed below.

William R. Davis	Secretary of Commonwealth
Penrose Hallowell	Secretary of Agriculture
Walter A. Baran	Secretary of General Services
Clifford L. Jones	Secretary of Environmental Resources
Gorham L. Black, Jr.	Secretary of Aging
Michael L. Browne	Insurance Commissioner
Robert C. Wilburn	Secretary of Budget & Administration

Mr. Wilburn is the Secretary of the Board.

Office of the Governor

The Governor is the chief executive officer of the Commonwealth, the powers of all executive agencies are derived from the Governor. Richard (Dick) L. Thornburg was elected Governor in November 1978, his term of office will expire in January 1983. The Constitution allows the Governor to succeed himself for one additional term.

Mr. Thornburg, a Republican from Pittsburg, held his first elective post in 1967-68 as a delegate to Pennsylvania's Constitutional Convention. From 1969 through 1975 Mr. Thornburg served as United States Attorney for Western Pennsylvania. In 1975 President Ford named Mr. Thornburg Assistant United States Attorney General. Upon returning to Pittsburg in 1977, Mr. Thornburg rejoined the law firm of Kirkpatrick, Lockhart, Johnson and Hutchinson.

With the exception of the elective positions of Attorney General, Auditor General and Treasurer, the Governor, with the Senate's approval, appoints the heads of all departments. In the same manner the Governor appoints the members of many independent boards and commissions, departmental and advisory boards, and various other State boards. Although there are some exceptions, the majority of appointed civil officers may be removed at the pleasure of the power by which they have been appointed.

The Governor's power to convene the General Assembly is limited by the Constitution to "extraordinary occasions." However, the Governor may convene the Senate at any time by proclamation for the

transaction of executive business. At anytime during a session the Governor may address the General Assembly and recommend measures for their consideration.

All bills and concurrent resolutions of the General Assembly must be submitted to the Governor for his approval. The Governor has 10 days to approve or veto a bill. If the Governor either signs the bill or takes no action, the bill becomes law. However, if the bill comes to the Governor with less than 10 days left in the legislative session, the Governor may kill the bill by filing it, with his objections, in the office of the Secretary of the Commonwealth and giving public notice of his action within 30 days of the General Assembly's adjournment.

The Governor's Executive Cabinet, consisting of the heads of the major departments, acts as an advisory board. It provides the Governor with ready access to the expertise of the executive departments. The Governor also uses the Cabinet to implement his policies. At any time, the Governor may order the head of a department to submit an operating budget to him. If the Governor disapproves the budget, the Governor may bar that department from drawing funds of the State Treasury.

The Governor's office address and his principal aides are:

Governor Richard L. Thornburg
225 Main Capitol Building
Harrisburg, PA 17120
717-783-1116

Executive Assistant:	Jay C. Waldman
Administrative Assistant:	James M. Seif
Press Secretary:	Paul W. Critchlow
Personal Secretary:	Barbra K. Brown

Lieutenant Governor

William W. Scranton III was elected concurrently with Governor Thornburg. The Lieutenant Governor is President of the Senate and Chairman of the Board of Pardons. If the Governor is unable to fulfill his term of office, the Lieutenant Governor succeeds him.

The Lieutenant Governor's office address and his principal aides are:

Lieutenant Governor William W. Scranton III
200 Main Capitol Building
Harrisburg, PA 17120
717-787-3300

Executive Assistant: Mark S. Knouse
Special Assistant: A. Nathaniel Goldhaber
Personal Secretary: Brenda Weikert

EXECUTIVE AGENCIES

The major departments of the Pennsylvania state government which may affect the Formerly Utilized Sites Remedial Action Program are described in this section.

Department of Environmental Resources

The Department of Environmental Resources is responsible for the State's land and waste management programs, all aspects of environmental control and the regulation of the mining industry. The chief executive officer of the Department is Secretary Clifford L. Jones. The general objective of the Department of Environmental Resources is to provide for and encourage the development of a balanced ecological system, taking into account the social, cultural and economic needs of the Commonwealth.

The "radiation control agency" for the State is the Department of Environmental Resources. The Bureau of Radiological Health, under the Deputy Secretary for Environmental Protection, is the program-level agency which regulates, monitors and controls the possession, transfer and disposal of radioactive material. Mr. Thomas M. Gerusky, the Director of the Bureau, is Secretary Jones' representative to the Hazardous Substance Transportation Board.

Figure 1-1, at the end of this section is an organizational chart of the Bureau of Radiological Health.

Mr. Clifford L. Jones
Secretary of Environment Resources
9th Floor, Fulton Building
Harrisburg, PA 17120
717-787-2814

Mr. Thomas M. Gerusky
Director, Bureau of Radiological Health
5th Floor, Fulton Building
Harrisburg, PA 17120
717-787-3720

The Environmental Quality Board, under the Deputy Secretary for Legislation and Boards, formulates, adopts and promulgates rules and regulations for the performance of the Department. The Board reviews reports from the Department of Environmental Resources and the Secretary on matters of policy. The 21 member Board consists

of the Secretaries of Environmental Resources, Health, Commerce, Transportation, Agriculture, Labor and Industry, and Community Affairs; Executive Directors of the Fish Commission, Game Commission State Planning Board, and the Historical and Museum Commission; the Chairman of the Public Utilities Commission; five members of the Citizens Advisory Council; four members of the General Assembly.

Mrs. Lydia C. Rados, Executive Secretary
Environmental Quality Board
Room 203 Evangelical Press Building
Harrisburg, PA 17120
717-787-4526

Department of Transportation

The Department of Transportation, commonly referred to as PennDOT, is responsible for the development of safe, adequate and efficient transportation services at the lowest reasonable cost to the citizens of the Commonwealth. The chief executive officer of PennDOT is Secretary Thomas E. Larson, P.E.

Within PennDOT is the Hazardous Substance Transportation Board which prescribes regulations for the transportation of hazardous substances, including radioactive materials. The Board is also responsible for the investigation of accidents and incidents involving hazardous substance haulers.

There are 15 members on the Hazardous Substance Transportation Board. Eight members are ex-officio: the Secretaries of Transportation (Chairman), Environmental Resources, Commerce, Labor and Industry, the Commissioner of State Police, and a member of the Public Utility Commission who is designated by the Governor. The remaining 7 members are appointed by the Governor. The following page lists the members names.

Hazardous Substances Transportation Board

Ex Officio Members:

Thomas D. Larson, P.E.
Secretary of Transportation
787-5574

John A. Pachuta (Proxy)
Director, Safety Programing
& Analysis 787-7350

Harvey Bartle III
Attorney General
787-5574

Ronald H. Skubecz (Proxy)
Deputy Attorney General
783-1466

Geoffery Stengel, Jr.
Secretary of Commerce
787-3003

Charles J. Leiberth
Secretary of Labor and Industry
787-3157

Charles A. Henry (Proxy)
State Fire Commissioner
787-1325

H. Arnold Muller, M.D.
Secretary of Health
787-6436

William C. Dethlefs (Proxy)
Director, Division of Emergency
Health Services 787-8741

Clifford L. Jones
Secretary of Environmental Resources
787-2814

Thomas M. Gerusky (Proxy)
Director, Radiation Protection
787-2480

Daniel F. Dunn
Commissioner of State Police
783-5558

Major Bernard Stanalonis (Proxy)
Bureau of Patrol
783-5517

Susan M. Shanaman
Chairman, Public Utility Commission
783-3601

George C. Hogan (Proxy)
Public Utility Commission
215-2386960

Appointed Members:

George Mahwhinney
Representing the General Public
412-391-3540

Robert T. Hindle
Representing Common Carriers
215-259-9800

Edwin A. Robb
Representing Fire Services
215-543-2908

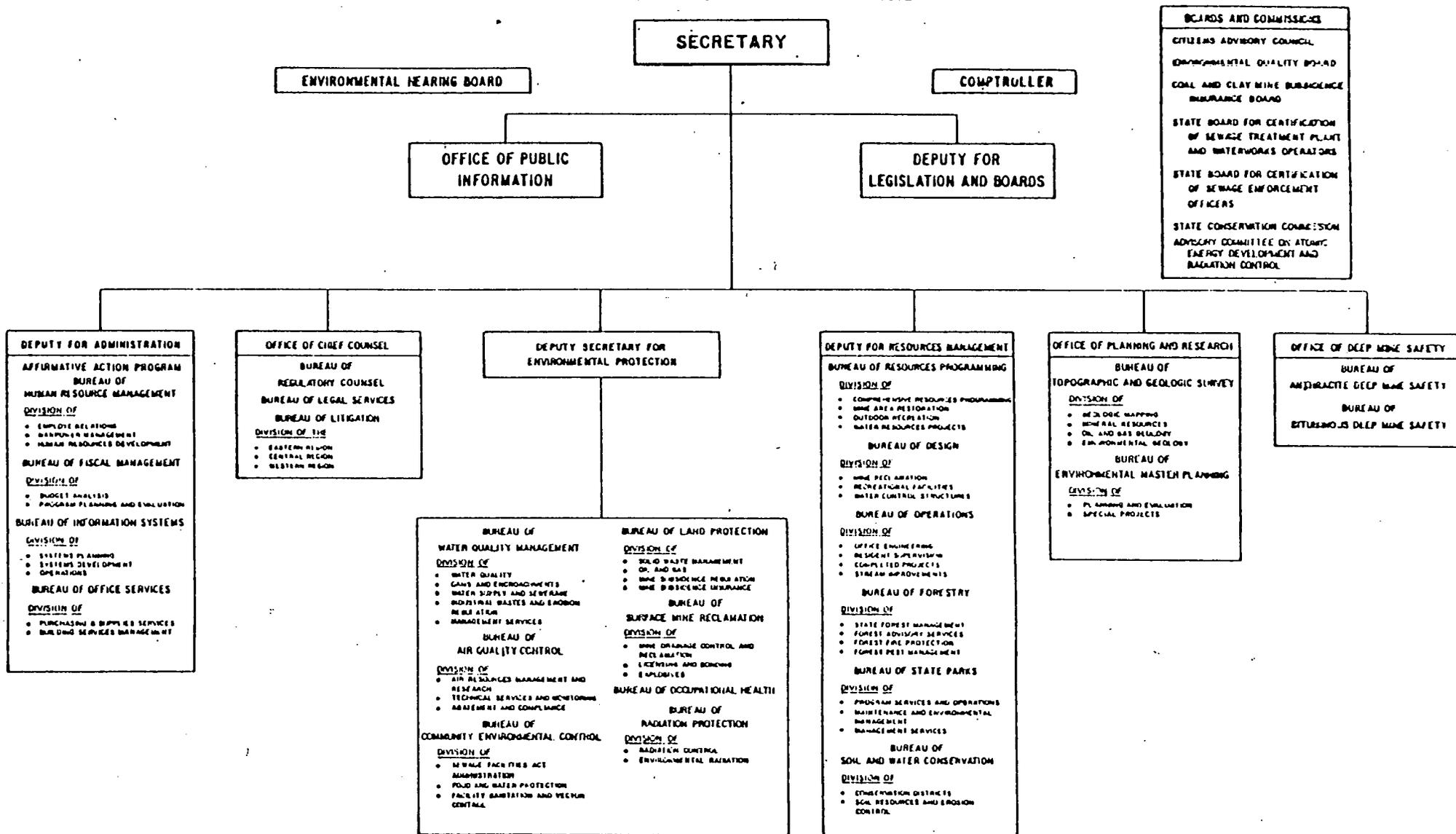
Robert F. Varner
Representing Highway Safety
717-755-1506

George L. Griffith
Representing Manufacturer or Shipper
215-867-2487

Gerald F. Hagerty
Representing Private Carriers
814-454-6231

FIGURE 1

DEPARTMENT OF ENVIRONMENTAL RESOURCES



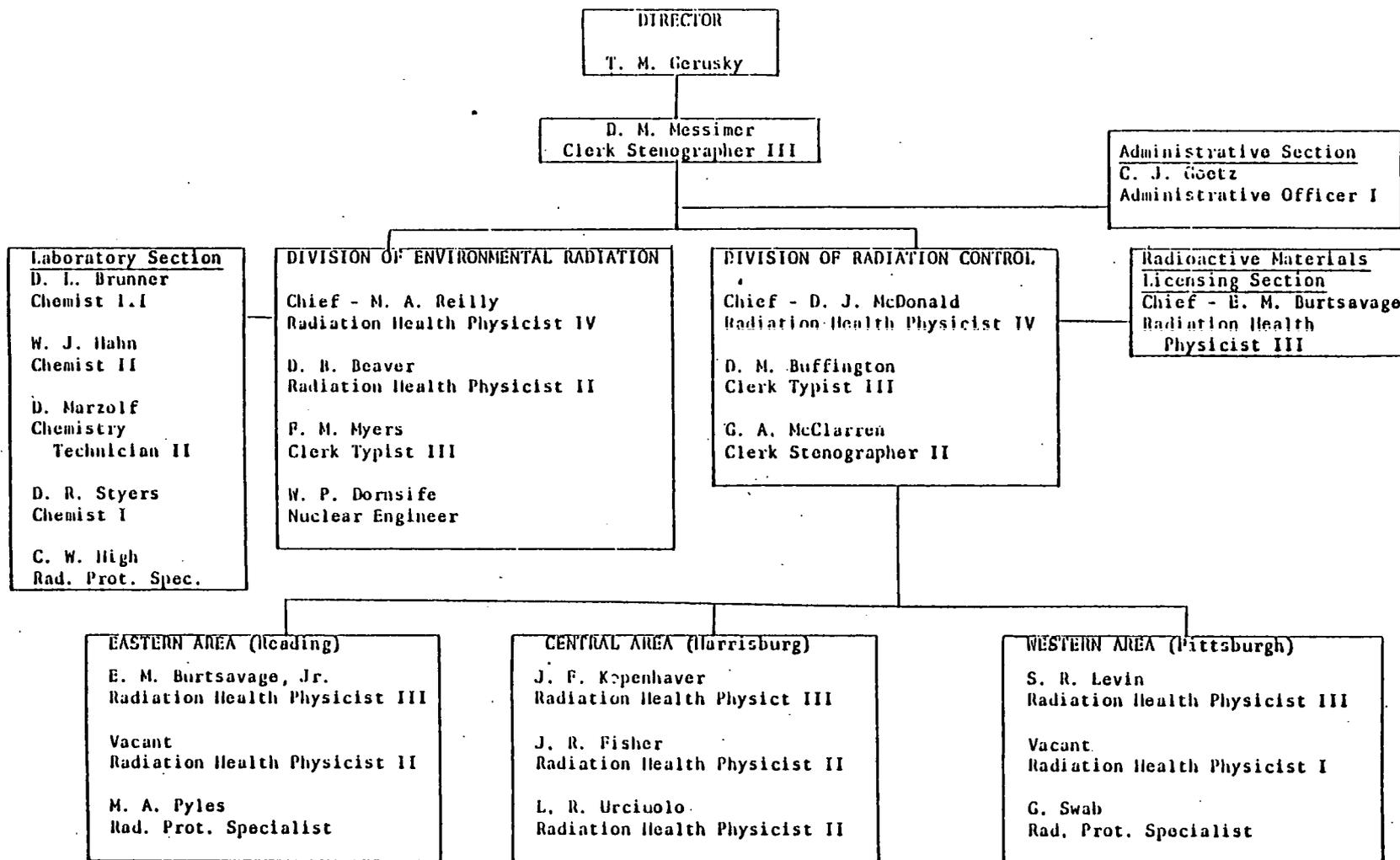


FIGURE 2

STATUTES

The Constitution of Pennsylvania provides for an "Executive Department" of the state government, and assigns it broad powers and duties, vesting ultimate executive authority in the Governor. Executive agencies derive their authority through him.

The Administrative Code of 1929, as amended, contains the structure, powers and duties of some executive branch departments, boards and commissions. The legislature has authorized addition powers and duties for some agencies and created other agencies by statute.

The Pennsylvania General Assembly, in Act 480 of 1959, gave the Commonwealth the power to acquire land for the purpose of establishing burial grounds for the disposal of radioactive materials. The Department of Health was empowered to operate the burial grounds, issue permits for the disposal of radioactive materials by burial, and provide penalties for failure to comply with regulations promulgated for radioactive waste management. This authority is in Title 35 § 958.1 through 959.3 Pennsylvania Statutes, under the title of "Radioactive Materials, Burial Under Permit."

All the powers and duties of the Department of Health relating to radioactive materials were transferred to the Department of Environmental Resources by Title 71 § 510.1, Pennsylvania Statutes. Within the Department of Environmental Resources is the Bureau of Radiological Health which derives its powers from the Department's statutory authority.

The Bureau has the power and duty to:

- Evaluate hazards associated with radiation sources;
- Control and regulate radiation sources pursuant to the Agreement under the Atomic Energy Act of 1954, as amended;
- Formulate and adopt regulations for the control of ionizing radiation;
- Work with other states, local and federal agencies, political subdivisions, and interest groups concerned with the control of radiation sources;
- Collect and disseminate information relating to radiation sources;
- Advise the Governor and the General Assembly about the status of radiation control projects and problems.

Hazardous Substances Transportation Board

The Department of Environmental Resources, and through it, the Bureau of Radiological Health, has authority over all aspects of the possession, use, transfer, and disposal of radioactive materials except transportation. In the "Hazardous Substances Transportation Act" the General Assembly vested authority for regulating the transportation of hazardous substances, including radioactive materials, in the Department of Transportation. Within the Department of Transportation, the Act created the Hazardous Substance Transportation Board. The Board is empowered to:

- Classify hazardous substances according to the nature and degree of risk involved in their transportation;
- Promulgate separate regulations to each class of substance;
- Prescribe regulations pertaining to methods of packing, loading, and unloading of hazardous materials;
- Prescribe regulations covering the specifications, marking, inspection, condition and equipment of vehicles used for transporting hazardous substances;
- Prescribe regulations pertaining to other aspects of the operations of shippers and carriers of hazardous substances.

The members of the Hazardous Substances Transportation Board are identified in Section 1 of this volume.

Advisory Councils and Boards

Several statutory advisory and policy-directing boards, in addition to the Hazardous Substances Transportation Board, have an impact on the regulation of radioactive materials. Within the Department of Environmental Resources are three bodies which participate in controlling radiation sources. The Advisory Committee on Atomic Energy Development and Radiation Control, the Citizens Advisory Council, and the Environmental Quality Board.

The Advisory Committee on Atomic Energy Development and Radiation Control is required by law to review all proposed rules and regulations pertaining to the control of radioactive materials. The Advisory Committee is a nine-member body. Seven of the members are appointed by the Governor and the Secretaries of Environmental Resources and Commerce serve ex-officio.

The Citizens Advisory Council is charged with reviewing all environmental laws of the Commonwealth and making suggestions for their modification or revision. The Council also reviews the work of the Department and makes suggestions for its improvement.

The Environmental Quality Board formulates and adopts rules and regulations for the performance of the Department of Environmental Resources. The Board receives and reviews reports from the Department and provides advice to the Secretary on matters of policy.

Radiological Health Regulations

The Department of Environmental Resources has promulgated regulations for the control of radiation. In preparing these regulations the Department was guided by the Suggested State Regulations for the Control of Radiation prepared by the Conference of Radiation Control Program Directors. A brief synopsis of relevant parts of the regulations is provided below and the full text is located in the Appendix of this volume.

- Chapter 221, General Provisions: This section defines terms used in the regulations. The powers and duties of the Department regarding inspections, tests and records are enumerated. Exemptions, exempt quantities and exempt concentrations are also provided in this chapter.
- Chapter 225, Licensing of Radioactive Material: This chapter details the procedure for obtaining a license to process or dispose of radioactive material.
- Chapter 227, Standards for the Control of Radiation Exposure: This chapter sets maximum exposure limits in restricted and unrestricted areas, and provides a table of concentrations. Safety measures and services are prescribed which mandate personnel monitoring devices, caution signs, labels and warnings.

Sections 227.81 through 227.85 are the waste disposal regulations. Each application for a disposal permit must provide a description of the material and the proposed manner and conditions of disposal. The Department may also require an analysis and evaluation of the environment at the proposed disposal site and the impact that disposal would have at that site. Conditions for disposal by burial in soil are included in this chapter.

Hazardous Substance Transportation Board

The Hazardous Substance Transportation Board is required to formulate and adopt regulations controlling the highway transportation of hazardous substances including radioactive material. On November 1979 the Board issued new regulations to supersede all previous transportation regulations. The Regulations Governing the Highway Transportation of Hazardous Materials adopted the Code of Federal Regulations Title 49, Parts 171 through 173, 177, 178 and 390 through 397.

These regulations apply to all shippers and carriers of hazardous substances. The general scope of the adopted regulations is presented below.

- ° 49 CFR 171 General Information, Regulations and Definitions for Hazardous Waste. CFR 40 Part 20 - This part prescribes the U.S. Department of Transportation (DOT) requirements governing the transportation of hazardous materials in commerce. Any unintentional release of hazardous materials must be reported to the Associate Director for Hazardous Materials Regulation, DOT.
- ° 49 CFR 172 Hazardous Materials Table and Communications Regulations. This part lists and classifies those materials which DOT has designated as hazardous materials for the purposes of transportation. Requirements for shipping papers, package marking, and placarding of transport vehicles are prescribed in this part.
- ° 49 CFR 173 Requirements for Shipments and Packagings. This part defines hazardous materials and prescribes preparation and packaging requirements for all modes of transportation.
- ° 49 CFR 177 Carriage by Public Highway. The purpose of this part is to minimize dangers to life and property incident to the transportation of hazardous materials by motor vehicle. Covered under this part are: shipping papers, placarding of vehicles, loading, unloading and stowage, container specifications, and procedures in response to accidents.
- ° 49 CFR 178 Shipping Container Specifications. This part prescribes manufacturing and testing specifications packaging and containers used for the transportation of hazardous materials.
- ° 49 CFR 390 General. This part defines the terms used in this subchapter (Parts 390-397).
- ° 49 CFR 391 Qualifications of Drivers. This part establishes minimum qualifications for persons drive motor carrier vehicles. Provides for background investigations, tests, exemptions and disqualification of drivers.
- ° 49 CFR 392 Driving of Motor Vehicles. This part prescribes standards for motor carriers in the operation and maintenance of their vehicles. Physical requirements for drivers of motor vehicles and duties of the drivers are outlined. This is a general section applicable to motor vehicle transportaion of any material.

- 49 CFR 393 Parts and Accessories Necessary for Safe Operation. This part details necessary electrical equipment, brakes, coupling devices and other miscellaneous equipment.
- 49 CFR 394 Reporting of Accidents. This part establishes duties of motor carriers to make reports and keep records of accidents which occur during their operations. These are general rules with no specific provisions for accidents involving radioactive material. Procedures for accident reports involving radioactive material are set out in 49 CFR 177.
- 49 CFR 395 Hours of Service of Drivers. This part establishes maximum driving and on-duty time. Requirements to maintain driver's logs and retain records are included in this part.
- 49 CFR 396 Inspection, Repair, and Maintenance. This part requires motor carriers to systematically inspect, repair and maintain their vehicles. Maintenance records are also required.
- 49 CFR 397 Transportation of Hazardous Materials; Driving and Parking Rules. This part establishes requirements for surveillance, routing, fueling and parking.

Additionally, the regulations issued by the Hazardous Substance Board have a part entitled "Supplemental Rules and Regulations." These supplementary rules provide the Board or its agents the authority to inspect hazardous material carriers. These rules empower the Board to declare vehicles out-of-service for defects not covered by the Code of Federal Regulations.

Pennsylvania Turnpike Commission

The Turnpike Commission requires carriers travelling on the Turnpike to comply with the U.S. Department of Transportation Code of Federal Regulations Title 49, Parts 170 through 179 and Federal Motor Carrier Safety Regulations, 49 CFR 390 through 397.

Every vehicle transporting hazardous material over the Turnpike system must carry a "Hazardous Materials Transportation Permit Card." These are obtained by applying to the office of the Secretary-Treasurer of the Turnpike Commission. A copy of the application form and order blank is in the Appendix to this volume.

LEGISLATURE

GENERAL ASSEMBLY

The General Assembly of Pennsylvania consists of a Senate and a House of Representatives. The General Assembly convenes annually on the first Tuesday of January. The legislature remains in session until November. The State is apportioned into 50 Senatorial and 203 Representative districts, with each district electing one legislator. Senators and Representatives receive a salary of \$18,720 per annum and receive funds for clerical support.

To become law a bill must be passed in both the Senate and the House. If a bill is first introduced and read in the House, the Speaker refers the bill to the appropriate committee. The committee then reports the bill, and any suggested amendments, to the House. After the third reading the bill is voted on. If the bill passes, it is sent on to the Senate. The bill is introduced in the Senate. The Senate follows the same procedure as the House in considering a measure. If the Senate passes the bill in the identical form as the House version, the bill is sent to the Governor. If the bill is passed in a different form, it is returned to the House. A compromise committee of Senate and House members is formed if the House rejects the Senate's version. The members of the compromise committee return to their respective Houses with the reworked bill. Both Houses must accept the compromise bill or it fails. Once a bill is submitted to the Governor, he has 10 days to act or it automatically becomes law. A gubernatorial veto may be overridden by a two-thirds vote in each House.

SENATE

Membership

The Senate in the 1980 legislative session was composed of 28 Democrats and 22 Republicans. Each Senator is elected by popular vote to serve a 4 year term. One-half of the Senate is up for reelection every 2 years.

Senate Officers

As provided in the Constitution, the Lieutenant Governor is the President of the Senate. As President, the Lieutenant Governor presides over the Senate, refers legislation to committees and decides questions of order. The President votes only when there is a tie.

The President Pro Tempore, Secretary, Chief Clerk and Librarian are elected by the membership on the first day of each session. The President Pro Tempore appoints the Chairmen, Vice-Chairmen and members of the standing committees. A complete list of the membership of the Senate is at the end of this section.

President:	William W. Scranton III 787-3300
President Pro Tempore:	Martin L. Murray 787-7105
Majority Floor Leader:	Edward P. Zemprelli 787-5580
Majority Policy Committee Chairman:	Henry C. Messinger 787-1349
Minority Floor Leader:	Henry G. Hager 787-3280
Chief Clerk:	Thomas J. Kalman 787-7163

Committees

The Senate has 22 standing committees, the members and chairmen of which are selected by the President Pro Tempore. When a bill is referred to a committee, that committee has full power over that bill, except that it may not change the title or the subject matter of the bill. There are 3 committees which may have jurisdiction relevant to the Formerly Utilized Sites Remedial Action Program. The members of these committees are listed below.

Environmental Resources

Robert J. Mellow, Chairman 787-6481
Paul McKinney, Vice-Chairman 787-5970

Jeanette Reibman	J. Barry Stout
Patrick Stapleton	Leonard Bodack
Franklin Kury	Edwin Holl
James Ross	Clarence Manbeck
Quentin Orlando	R. Budd Dwyer
H. Craig Lewis	Robert Kusse
Edward Early	Stewart Greenleaf
Joseph Gurzenda	Frank O'Connell

Public Health and Welfare

W. Louis Coppersmith, Chairman 787-5400
Dr. Quentin R. Orlando, Vice-Chairman 787-8927

Herbert Arlene	James R. Lloyd
J. Doyle Corman	Francis Lynch
Freeman Hankins	Paul McKinney
Ralph W. Hess	Philip Price, Jr.
John D. Hopper	Micheal Schaefer
Robert J Kusse	Richard Snyder
H. Craig Lewis	Edward Early
J. William Lincoln	

Transportation

Francis J. Lynch, Chairman 787-1141
James A. Romanelli, Vice-Chairman 787-7683

Edward Zemprelli
Patrick Stapleton
Joseph Smith
Robert Mellow
James Ross
James Kelley
Eugene Scanlon
Joseph Gurzenda

J. Barry Stout
Vincent Fumo
Clarence Manbeck
Clarence Bell
Edwin Holl
John Stauffer
Robert Kusse
Robert Jubelirer

Senatorial District 47

The formerly utilized site addressed by the remedial action program is a warehouse in the Borough of Aliquippa, Beaver County. All of Beaver County is in the 47th district. Mr. James E. Ross of 588 Third Street, Beaver, PA 15009, is the Senator for the 47th district. Mr. Ross, a Democrat, has been a member of the Senate since 1973 and is the current Majority Caucus Chairman. Senator Ross is the Vice-Chairman of the Local Governments Committee and a member of the following committees: Agriculture and Rural Affairs, Appropriations, Environmental Resources, Rules and Executive Nominations, Transportation, and Urban Affairs and Housing.

The Capitol mailing address for all Senators is :

Senate of Pennsylvania
Senate Post Office
Harrisburg, PA 17120

Senator Ross' office is room 177 of the Capitol Building. His office phone number is 787-3076.

HOUSE OF REPRESENTATIVES

Membership

There are 203 Representative districts in Pennsylvania. The 1980 House of Representative was composed of 104 Republicans and 99 Democrats. Representative Raphael Musto (R) of Lackawanna County resigned on April 9, 1980. That vacancy remained for the duration of the session. A full list of the membership of the House of Representatives is provided at the end of this section.

House Officers

The Speaker of the House is elected by the membership when the House convenes at the beginning of the session. The Speaker presides over the House, sets the order of business, recognizes members to speak, refers bills to committee, and appoints the chairmen and members of committees.

Speaker of the House:	H. Jack Seltzer
Majority Floor Leader: Chairman, Republican Policy Committee:	Matthew J. Ryan
Minority Floor Leader: Chairman, Democratic Policy Committee:	Richard J. Cessar K. Leroy Irvis
Chief Clerk:	David C. DiCarlo Charles F. Mebus

Committees

Each committee is to assist the House in appraising the administration of laws and in developing legislation related to subject matter within its jurisdiction. The committees also review the implementation of laws by administrative agencies. Once a bill is referred to a committee that committee has full control over that bill, except to change the title or the subject matter.

There are 24 standing House Committees. Four committees which may have jurisdiction in matters related to the Formerly Utilized Sites Remedial action Program are listed below.

Federal-State Relations

David S. Hayes, Chairman
Jeffrey E. Piccola, Vice-Chairman

Gregg Cunningham	Robb Austin
Kathyann Durham	Brian Clark
Arthur Earley	Harry Cochran
George Kanuck	Nicolas Pucciarelli
William Klingiman, Sr.	James Ritter
James Knepper, Jr.	John Rodgers
Charles Nahill	Steve Seventy
Vern Pyles	Fred Shupack
Albert Rasco	William Stewart
Lee Taddonia	Kurt Zwinkl
Joseph Zord	

Health and Welfare

Joseph V. Zord, Chairman
John Peterson, Secretary

Mary Ann Arty
James Burd
R. Rita Clark
Thomas Gannon
Joseph Gladeck, Jr.
Leonard Gruppo
Joseph Lashinger, Jr.
George Pott, Jr.
Elinor Z. Taylor

James Barber
Leland Beloff
Kenneth Cole
David DiCarlo
Joseph Hoeffel
James Jones, Jr.
Emil Mrkonic
Frank Oliver
Stephen Reed
David Richardson, Jr.

Transportation

Rudolph Diminni, Chairman
Nicolas A. Micozzie, Secretary

John Davies
William Foster
Richard Geist
Kenneth Halverson
Joseph Levi II
Marilyn Lewis
Joseph Pitts
Lee Taddonio
Ray Wilt

Robert Borski, Jr.
Camille Georgwe
Joseph Kotter
Charles Laughlin
Thomas Murphy, Jr.
Bernard O'Brien
Joseph Petracca
James Ritter
Fred Trello
John White, Jr.

Representative District 16

The Borough of Aliquippa is in Representative district 16. Mr. Charles P. Laughlin, a Democratic legislator since 1973, is the Representative for district 16. Mr. Laughlin's home mailing address is: 1305 Sampson Street, Conway, PA 15027. Mr. Laughlin is a member of the Appropriations, Business and Commerce, and Transportation Committees. Mr. Laughlin's office in the Capitol Building is in room 617, his phone number is 787-3504.

The Capitol mailing address for all Representatives is:

House of Representatives
House Post Office
Harrisburg, PA 17120

Recent Legislative Activity

The bills discussed in this section were considered during the 1978, 1979, or 1980 sessions. The members of the Pennsylvania General Assembly have expressed a continuing interest in matters related to radioactive materials and hazardous waste issues. The following bills indicate some areas of concern to the General Assembly.

The legislature is currently out of session and legislators do not pre-file bills in advance of a session.

H.B. 1840

"Solid Waste Management Act"

This bill was enacted during the 1980 session. The Act provides for the planning and regulation of solid waste storage, collection, transportation, processing, treatment and disposal. This Act empowers the Environmental Quality Board and the Department of Environmental Resources to adopt rules and regulations concerning hazardous waste management. Radioactive materials are exempted from the provisions of this act.

H.B. 53

"Environmental Radiation Protection Act"

This bill was enacted during the 1979 session. The Department of Environmental Resources is ordered to upgrade the present radiation monitoring and emergency radiation response programs. The Act specifically addresses radiation from nuclear power reactor sites and the transportation of spent fuel. The monitoring is not to be confined to these areas but shall encompass any other sites with a potential for radioactive contamination. The Department of Environmental Resources is to assist the Emergency Management Agency in preparing an emergency response plan to protect the public from exposure to radiation in the event of an accident at a nuclear power plant, a transportation accident involving radioactive materials, or any occurrence which necessitates radiation emergency assistance. The Department of Environmental Resources is also to submit a report to the Speaker of the House, on an annual basis, of actions taken under the direction of this Act.

S.B. 704

Amendment to the "Hazardous Substances Transportation Act" of November 9, 1965 (P.L. 657, No. 323).

The Hazardous Substances Transportation Act created within the Department of Transportation the Hazardous Substances

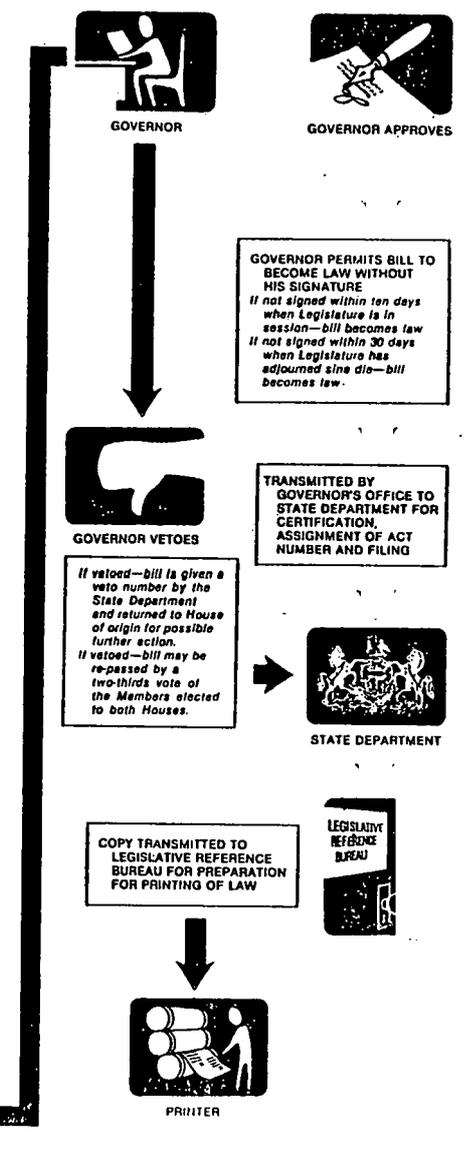
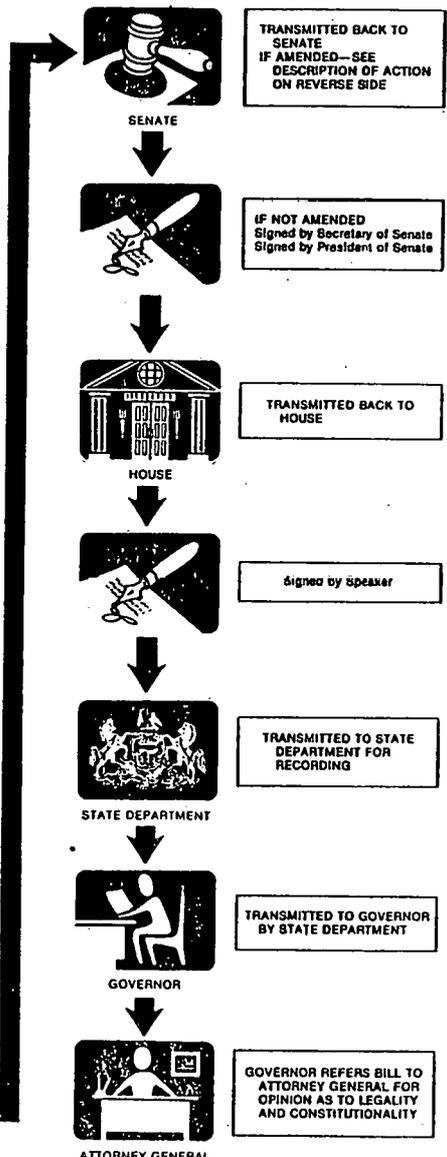
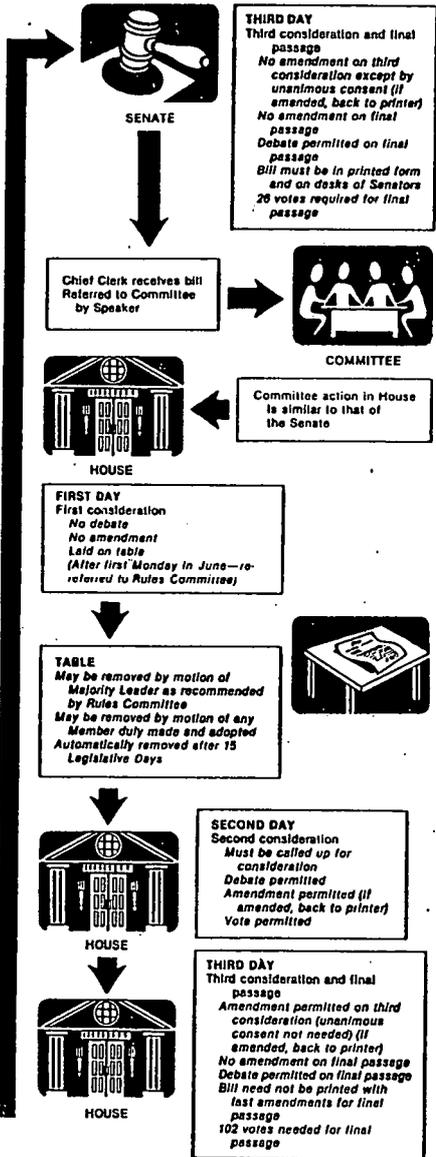
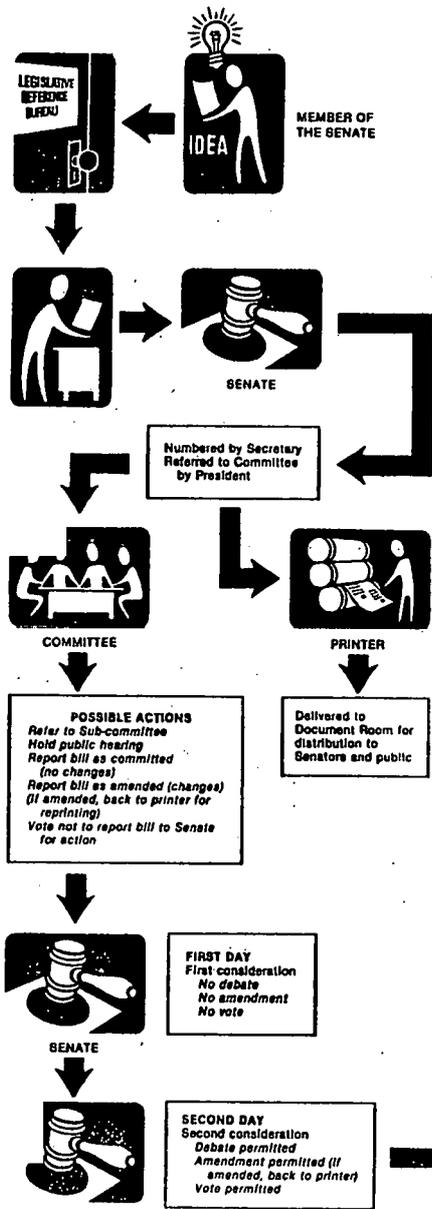
Transportation Board composed of eight ex officio members and seven appointed members. (The members of the Board are identified in Section 1 of this volume.) The original Act empowered the Board to prescribe regulations for the transportation of hazardous substances, including radioactive materials not regulated by the federal government.

The amendment of 1980 is designed to assure compliance with regulations promulgated by the Board. Certain penalties for violations are increased, and the Attorney General within any Commonwealth Court which has jurisdiction in the area of the violation. The Board is empowered, but not required, to adopt regulations similar or identical to federal regulations pertaining to the transportation of hazardous substances.

The full texts of the legislation discussed in this chapter are contained in the appendix of this volume.

TABLE 3-1
LEGISLATIVE INFORMATION SOURCES

<u>Type of Information</u>	<u>Source</u>	<u>Phone Number</u>
General Information	Central Exchange	717-787-2121
Previous session activities and laws	Legislative Reference Bureau	787-2342
Current status of bills, Senate and House	Legislative Reference Bureau	787-2342
Bills pending before the Governor	Governor's office	787-2500
To obtain copies of bills or laws Senate and House	Legislative Reference Bureau	787-7385
Chief Clerk Senate House	Thomas J. Kalman Charles F. Mebus	787-7163 787-2372



ROSTER OF SENATORS
1979/1980 Legislature

This roster provides the Senator's names, political affiliation, home county and Capitol telephone numbers (telephone numbers are within the 717 area code).

W. Thomas Andrews	(R) New Castle	787-9684
Herbert Arlene	(R) Philadelphia	787-6735
Clarence D. Bell	(R) Media	787-4712
Leonard J. Bodack	(R) Pittsburgh	787-6123
Coppersmith W. Louis	(R) Johnstown	787-5400
Corman, J. Doyle, Jr.	(R) Bellefonte	787-1377
Dwyer, R. Budd	(R) Meadville	
Early, Edward M.	(R) Pittsburgh	787-6538
Fumo, Vincent J.	(R) Philadelphia	787-5662
Gekas, George W.	(R) Harrisburg	787-6801
Greenleaf, Stewart J.	(R) Willow Grove	787-6599
Gurzenda, Joseph E.	(R) McAdoo	787-2637
Hager, Henry	(R) Williamsport	787-3280
Hankins, Freeman	(R) Philadelphia	787-7112
Ralph W. Hess	(R) Spring Grove	787-3817
Edwin G. Holl	(R) Lansdale	787-3110
John D. Hopper	(R) Camp Hill	787-8524
Edward L. Howard	(R) Doylestown	787-7305
Robert C. Jubelirer	(R) Altoona	787-5490
James R. Kelley	(R) Greensburg	787-6063
Franklin L. Kury	(R) Sunbury	787-8928
Robert J. Kusse	(R) Warren	787-7084

Craig H. Lewis	(R) Trevese	787-5072
William J. Lincoln	(R) Hopwood	787-7175
James R. Lloyd, Jr.	(R) Philadelphia	787-9608
Joseph F. Loeper, Jr.	(R) Drexel	787-1350
Francis J. Lynch	(R) Philadelphia	787-1141
Clarence F. Manbeck	(R) Fredericksburg	787-5708
Paul McKinney	(R) Philadelphia	787-5970
Robert J. Mellow	(R) Scranton	787-6481
Henry C. Messinger	(R) Allentown	787-1349
William J. Moore	(R) Bloomfield	787-4651
Martin I. Murray	(R) Wilkes-Barre	787-7105
Frank J. O'Connell	(R) Kingston	787-7428
Michael A. O'Pake	(R) Reading	787-8925
Quentin R. Orlando, Dr.	(R) Erie	787-8927
Frank A. Pecora	(R) Pittsburgh	787-1398
Philip Price, Jr.	(R) Philadelphia	787-4420
Jeanette F. Reibman	(R) Easton	787-4236
James A. Romanelli	(R) Pittsburgh	787-7683
James E. Ross	(R) Beaver	787-3076
Eugene F. Scanlon	(R) Pittsburgh	787-5300
Michael P. Schaefer	(R) Pittsburgh	787-5839
Joseph F. Smith	(R) Philadelphia	787-1427
Richard A. Snyder	(R) Lancaster	787-6535
Patrick J. Stapleton	(R) Indiana	787-8724
John Stauffer	(R) Harrisburg	787-5709
Barry J. Stout	(R) Bentleyville	787-1463

Richard A. Tilghman

(R) Byrn Mawr

787-5544

Edward P. Zemprelli

(R) Clairton

787-5580

ROSTER OF REPRESENTATIVES
1979-1980 LEGISLATURE

This roster provides the Delegate's names, political affiliation, home counties and Capitol telephone numbers (telephone numbers are within the 717 area code).

John Alden	(R) Delaware	787-3830
John Hope Anderson	(R) York	787-2581
Gibson E. Armstrong	(R) Lancaster	787-7647
Mary Ann Arty	(R) Delaware	787-5564
Robb Austin	(D) Allegheny-Westmoreland	787-4819
James D. Barber	(D) Philadelphia	783-8060
Fred Belardi	(R) Lackawanna	787-6908
Leland M. Beloff	(D) Philadelphia	787-3540
Reid L. Bennett	(D) Mercer	783-8692
Norman S. Berson	(D) Philadelphia	787-8944
Harry R. Bittle	(R) Cumberland-Franklin	783-1520
Robert A. Borski, Jr.	(D) Philadelphia	787-3542
Harry E. Bowser	(R) Erie-Warren	787-1369
Kenneth E. Brandt	(R) Lancaster	783-2014
Harold L. Brown	(D) Berks	783-1267
John L. Brunner	(D) Beaver-Washington	
James M. Burd	(R) Butler	787-2932
Edward F. Burns, Jr.	(R) Bucks	783-2520
Thomas R. Caltagirone	(D) Berks	787-3565
Italo Cappabianca	(D) Erie	787-5608
Richard J. Cessar	(R) Allegheny	783-8655
Richard B. Chess	(D) Allegheny	783-1017

Matthew Cianciulli, Jr.	(D) Philadelphia	
Anthony J. Cimini	(R) Lycoming	787-6815
Brian D. Clark	(D) Allegheny	783-2867
Rita Clark	(R) Cambria	783-8640
Harry Young Cochran	(D) Fayette	787-4793
Mark B. Cohen	(D) Philadelphia	787-4117
Kenneth J. Cole	(D) Adams-York	787-2005
Roy W. Cornell	(R) Bucks-Montgomery	787-6886
Franklin Coslett	(R) Luzerne	787-6572
Gregg I. Cunningham	(R) Centre	787-6410
John S. Davies	(R) Berks	783-8783
Michael M. Dawida	(D) Alleghany	783-1010
A.J. DeMedio	(D) Washington	783-8320
Walter F. DeVerter	(R) Centre-Mifflin	783-2910
William H. DeWeese	(D) Fayette-Greene	783-3797
David C. DiCarlo	(D) Erie	783-1593
Clarence E. Dietz	(R) Bedford-Fulton-Huntingdon	787-5075
Rudolph Dininni	(R) Dauphin	783-8759
Bernard J. Dombrowski	(D) Erie	783-1359
Ronald R. Donatucci	(D) Delaware-Philadelphia	787-5780
Donald W. Dorr	(R) York	783-8875
Roger F. Duffy	(D) Alleghany	783-1011
Aljia Dumas	(D) Philadelphia	787-3566
Kathrynann Durham	(R) Delaware	787-4331
Arthur F. Earley	(R) Delaware	787-4344
Thomas J. Fee	(D) Lawrence	787-6069

Roger Raymond Fischer	(R) Washington	787-2322
D. Michael Fisher	(R) Alleghany	787-4699
A. Carville Foster, Jr.	(R) York	783-8685
William W. Foster	(R) Monroe-Pike-Wayne	787-4646
Stephen F. Freind	(R) Delaware	787-3564
Lester K. Fryer	(D) Berks	787-8956
James J.A. Gallagher	(D) Bucks	787-7044
James J. Gallen	(R) Berks	787-2651
Ronald Gamble	(D) Alleghany	787-6926
Thomas P. Gannon	(R) Delaware	787-4145
Ronald Gatski	(D) Luzerne	783-3815
Eugene R. Geesey	(R) Cuberland-York	787-6000
Richard A. Geist	(R) Blair	787-6419
Camille George	(D) Centre-Clearfield	787-7316
Margaret H. George	(D) Bucks	783-8514
Henry J. Giammarco	(D) Philadelphia	787-3532
Joseph M. Gladeck, Jr.	(R) Montgomery	787-2801
Ronald P. Goebel	(R) Alleghany	787-4693
James A. Goodman	(D) Schuycill	783-1490
Stephen S. Grabowski	(D) Alleghany	783-1012
Clifford Gray, Jr.	(D) Philadelphia	787-1188
Roland Greenfield	(D) Philadelphia	783-1630
Joseph V. Grieco	(R) Lycoming-Northumberland	787-8943
Leonardo Q. Gruppo	(R) Northampton	783-8389
Kenneth S. Halverson	(R) Somerset	787-5499
Ruth B. Harper	(D) Philadelphia	787-3541

George C. Hasay	(R) Luzerne	787-1117
David S. Hayes	(R) Crawford-Erie	
Samuel E. Hayes, Jr.	(R) Blair-Centre-Huntingdon	787-5860
Edward W. Helfrick	(R) Northumberland-Schuylkill	787-3809
June N. Honaman	(R) Lancaster	787-5451
Hutchinson, Amos K.	(D) Westmoreland	787-8985
William D. Hutchinson	(R) Schuylkill	787-2885
Irvis K. Leroy	(D) Allegheny	783-8677
Itkin Ivan	(D) Allegheny	783-1905
Edwin G. Johnson	(R) Blair	787-6478
Joel J. Johnson	(D) Philadelphia	783-8792
James F. Jones, Jr.	(D) Philadelphia	787-3530
George J. Kanuck	(R) Lehigh	787-2686
Phyllis T. Kernick	(D) Allegheny	
William K. Klingaman, Sr.	(R) Lehigh-Schuylkill	783-1077
James W. Knepper, Jr.	(R) Allegheny	787-5649
William W. Knight	(D) Allegheny	783-1020
Joseph P. Kolter	(D) Beaver	787-8980
Russell Kowalyshyn	(D) Monroe-Northampton	787-8988
Allen G. Kukovich	(D) Westmorland	787-1157
Joseph A. Lashinger	(R) Montgomery	787-4379
Charles P. Laughlin	(D) Beaver	787-3504
Stanford I. Lehr	(R) York	787-8523
Russell P. Letterman	(D) Centre-Clinton	787-5470
Joseph Levi, II	(R) Butler-Venango	787-8550
Stephen E. Levin	(D) Philadelphia	787-1751

Marilyn S. Lewis	(R) Montgomery	787-2853
Henry Livengood	(D) Armstrong	787-6920
Raymond E. Lynch	(R) Chester	787-6909
Frank J. Lynch	(R) Delaware	
William D. Mackowski	(R) Cameron-McKean	787-1857
Roger Allen Madigan	(R) Bradford	783-8238
James J. Manderino	(D) Westmoreland	787-9834
Joseph C. Manmiller	(R) Dauphin-Lebanon	787-4889
Thomas J. McCall	(D) Carbon-Luzerne	787-3525
Richard A. McClatchy, Jr.	(R) Montgomery	787-1711
James McIntyre	(D) Philadelphia	787-3531
Gerald J. McKelvey	(R) Philadelphia	787-2353
Gerald F. McMonagle	(D) Philadelphia	787-3555
Terrence F. McVerry	(R) Allegheny	787-1868
Thomas A. Michlovic	(D) Allegheny-Westmoreland	783-1018
Nicholas A. Micozzie	(R) Delaware	787-4371
Fred R. Milanovich	(D) Beaver	787-7044
Marvin E. Miller, Jr.	(R) Lancaster	787-2083
Nicholas B. Moehlmann	(R) Berks-Lancaster-Lebanon	787-1071
Harold F. Mowery, Jr.	(R) Cumberland	783-2063
Emil Mrkonic	(D) Allegheny	783-2580
Martin P. Mullen	(D) Philadelphia	787-4082
Thomas J. Murphy, Jr.	(D) Allegheny	783-8724
Raphael Musto	(D) Lackawanna-Luzerne-Monroe	
Charles F. Nahill, Jr.	(R) Montgomery	787-2757

Bernard R. Novak	(D) Allegheny	783-3034
Fred C. Noye	(R) Cumberland-Juanita-Perry	787-3651
Bernard F. O'Brien	(D) Luzerne	787-3002
Dennis M. O'Brien	(R) Philadelphia	787-5689
Robert W. O'Donnell	(D) Philadelphia	783-1102
Frank Louis Oliver	(D) Philadelphia	787-3480
John M. Perzel	(R) Philadelphia	787-2016
John E. Peterson	(R) Forest-Venango-Warren	783-2036
Joseph A. Petrarca	(D) Westmoreland	787-5142
Jeffrey E. Piccola	(R) Dauphin	787-4751
Max Pievsky	(D) Philadelphia	783-1540
Frank J. Pistella	(D) Allegheny	783-1023
Joseph R. Pitts	(R) Chester	783-2910
Roosevelt I. Polite	(R) Montgomery	783-8899
George F. Pott, Jr.	(R) Allegheny	787-7049
Pratt, Ralph D.	(D) Lawrence-Mercer	787-5475
Nicholas A. Pucciarelli	(D) Philadelphia	783-8634
Terry L. Punt	(R) Franklin-Fulton	787-3335
Vern Pyles	(R) Montgomery	787-8987
Samuel Rappaport	(D) Philadelphia	787-3557
Stephen R. Reed	(D) Dauphin	783-1819
Joseph Rhodes, Jr.	(D) Allegheny	787-3533
David P. Richardson, Jr.	(D) Philadelphia	787-3181
William W. Rieger	(D) Philadelphia	787-4358
James P. Ritter	(D) Lehigh	783-8338
M. Joseph Rocks	(R) Philadelphia	787-2798

John M. Rodgers	(D) Bucks	787-7686
Matthew J. Ryan	(R) Delaware	783-5360
Frank A. Salvatore	(R) Philadelphia	787-6126
John E. Scheaffer	(R) Cumberland	787-1804
C.L. Schmitt	(D) Armstrong-Butler- Westmoreland	787-4444
J. Michael Schweder	(D) Northampton	787-7083
Anthony J. Scirica	(R) Montgomery	
Jack H. Seltzer	(R) Lebanon	787-4610
Frank A. Serafini	(R) Lackawanna-Susquehanna	783-8777
Steve Seventy	(D) Allegheny	783-1021
David L. Shadding	(D) Philadelphia	787-3244
Fred J. Shupnik	(D) Luzerne	787-6618
Edmund J. Sieminski	(R) Northampton	787-5998
Carmel Sirianni	(R) Sullivan-Susquehanna- Wyoming	783-8683
Earl H. Smith	(R) Chester-Lancaster	787-6651
Eugene L. Smith	(R) Indiana-Jefferson	787-3313
Warren H. Spencer	(R) McKean-Potter-Tioga	787-8989
Gerald J. Spitz	(R) Delaware	787-5935
Jess M. Stairs	(R) Fayette-Westmoreland	787-6919
Joseph A. Steighner	(D) Butler	787-6526
William J. Stewart	(D) Cambria-Westmoreland	787-4456
Milton T. Street	(D) Philadelphia	787-9024
Ted Stuban	(D) Columbia-Montour	783-8515
David W. Sweet	(D) Washington	787-3569
Tom Swift	(R) Crawford	783-8573
Elinor Z. Taylor	(R) Chester	783-3737

Fred Taylor	(D) Fayette	787-7855
William Telek	(R) Cambria-Somerset	787-2559
Reno H. Thomas	(R) Snyder-Union	787-2516
Fred A. Trello	(D) Allegheny	783-3780
Peter R. Vroon	(R) Chester	787-7332
William Wachob	(D) Clearfield-Elk	787-8995
George O. Wagner	(R) Montour-Northumberland	
Joseph G. Wargo	(D) Lackawanna	783-1613
Paul Wass	(R) Indiana	787-2684
Marvin D. Weidner	(R) Bucks	
Noah W. Wenger	(R) Lancaster	787-1838
John F. White, Jr.	(D) Philadelphia	787-5243
Hardy Williams	(D) Philadelphia	783-1976
Benjamin H. Wilson	(R) Bucks	787-6415
Roy W. Wilt	(R) Mercer	783-1560
David R. Wright	(D) Armstrong-Clarion- Jefferson-Venango	787-6225
James L. Wright, Jr.	(R) Bucks	787-8581
Paul J. Yahner	(D) Cambria	787-6089
William H. Yohn, Jr.	(R) Montgomery	787-2534
Joseph R. Zeller	(D) Lehigh	787-5898
Frank J. Zitterman	(D) Lackawanna	787-7682
Joseph V. Zord, Jr.	(R) Allegheny	787-8110
Kurt D. Zwinkl	(D) Lehigh	787-3524

TITLE 25. RULES AND REGULATIONS
 PART I. DEPARTMENT OF ENVIRONMENTAL RESOURCES
 Subpart D. ENVIRONMENTAL HEALTH AND SAFETY
 ARTICLE V. RADIOLOGICAL HEALTH

CHAPTER 221. GENERAL PROVISIONS

Authority

The provisions of this Chapter 221 issued under act of January 28, 1966, P.L. 1625 § 301 (73 P.S. § 1301).

Source

The provisions of this Chapter 221 adopted February 1, 1972, effective March 1, 1972, 2 Pa. B. 212.

MISCELLANEOUS

§ 221.1. Definitions.

The following words and terms, when used in this Article, shall have the following meanings, unless the context clearly indicates otherwise:

(1) *Acr* - The Atomic Energy Development and Radiation Control Act (73 P.S. § 1001 *et seq.*).

(2) *Activity* - The number of nuclear disintegrations occurring in a given quantity of material per unit time.

(i) Curie (Ci) is the special unit of activity. One curie equals 3.7×10^{10} disintegrations per second exactly, except as provided in subparagraph (iii) of this paragraph.

(ii) The daughter activity concentration in the following table are considered equivalent to 10^{-7} microcuries of Radon-222 per milliliter of air in equilibrium with the daughters RaA, RaB, RaC, and RaC', and are equivalent to one "working level:"

Lapsed Time Between Collection And Measurement (Hours)*	Observed Alpha-Emitting Daughter Activity Collected Per Milliliter of Air	
	microcuries per ml	total alpha disintegrations per minute per ml
0.5	7.2×10^{-8}	0.16
1.0	4.5×10^{-8}	0.10
2.0	1.3×10^{-8}	0.028
3.0	0.3×10^{-8}	0.0072

* The duration of sample collection and the duration of measurement shall be sufficiently short compared to the time between collection and measurement, so as not to have a statistically significant effect upon the results.

(iii) Natural uranium and natural thorium. One curie of natural uranium means the sum of 3.7×10^{10} disintegrations per second from U-238 plus 3.7×10^{10} dps from U-234 plus 9×10^8 dps from U-235. One curie of natural thorium means the sum of 3.7×10^{10} dps from Th-232 plus 3.7×10^{10} dps from Th-228. For the purpose of this Chapter, one curie of natural uranium is equivalent to 3,000 kilograms, or 6,615 pounds of natural uranium; and one curie of natural thorium is equivalent to 9,000 kilograms or 19,850 pounds of natural thorium.

(3) *Agreement state* - Any state which has entered into an agreement with the United States Atomic Energy Commission under § 274b of the Atomic Energy Act of 1954, as amended (73 Stat. 689).

(4) *Airborne radioactive material* - Any radioactive material dispersed in the air in the form of dusts, fumes, mists, vapors or gases.

(5) *Byproduct material* - Any radioactive material, except special nuclear material, yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material.

(6) *Calendar quarter* - A period not less than 12 and not more than 14 consecutive weeks, with the periods so arranged that no day in any year is omitted from inclusion within a calendar quarter. No person shall change the method observed by him of determining calendar quarters for the purpose of this Article except at the beginning of the calendar year.

(7) *Department* - The Department of Environmental Resources of the Commonwealth.

(8) *Exposure* - A measure of the ionization produced in air by x or gamma radiation. The special unit of exposure is the roentgen. One roentgen (R) is the exposure required to produce in air 2.58×10^{-4} Coulomb of ions of either sign per kilogram of air.

(9) *High radiation area* - Any area, accessible to individuals, in which there exists radiation at such levels that an individual could receive in any one hour a dose to a major portion of the body in excess of 100 millirems.

(10) *Human use* - The internal or external administration of radiation or radioactive materials to human beings.

(11) *Individual* - Any human being.

(12) *Ionizing radiation* - Any radiation consisting of directly ionizing charged particles (electrons, protons, alpha particles and the like), having sufficient kinetic energy to produce ionization by collision or consisting of indirectly ionizing uncharged particles (neutrons, photons, and the like) which can liberate directly ionizing particles or can initiate a nuclear transformation.

(13) *License* - A license issued pursuant to the provisions of Chapter 225 of this Title (relating to licensing of radioactive material), except where otherwise specified.

(14) *Occupational dose* - A radiation dose received by an individual either in a restricted area or in the course of employment in which the individual's duties involve exposure to radiation. The term shall not be deemed to include any exposure of an individual to radiation for the purpose of medical diagnosis or medical therapy of such individual.

(15) *Person* - Any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, political subdivision of this Commonwealth, any other state or political subdivision or agency thereof, and any legal successor, representative, agent or agency of the foregoing, other than the U.S. Atomic Energy Commission, or any successor thereto, and other than Federal government agencies licensed by the U.S. Atomic Energy Commission or any successor thereto.

(16) *Personnel monitoring device* - A device worn or carried by an individual for the purpose of monitoring his radiation environment. (For example, film badges, pocket dosimeters, film rings).

(17) *Qualified expert* - With reference to radiation protection, a person having the knowledge, training and experience to measure ionizing radiation, to evaluate safety techniques and to advise regarding radiation protection needs, (for example, relevant certification by the American Board of Radiology, the American Board of Health Physics or the American Board of Industrial Hygiene). With reference to the calibration of radiation therapy equipment, a person having, in addition to the above qualifications, training and experience in the applications of radiation physics to radiation therapy, (for example, relevant certification in Radiological Physics or X-ray and Radium Physics by the American Board of Radiology).

(18) *Radiation* - Ionizing radiation.

(19) *Radiation area* - Any area, accessible to individuals, in which there exists radiation at such levels that a major portion of the body could receive in any one hour

a dose in excess of five millirems, or in any five consecutive days a dose in excess of 100 millirems.

(20) *Radiation dose* - Dose equivalent is the product of absorbed dose in rads and certain modifying factors to express on a common scale, for all ionizing radiation, the irradiation incurred by exposed persons. The special unit of dose equivalent is the rem.

(i) Absorbed dose is the energy imparted to matter in a volume element by ionizing radiation divided by the mass of irradiated material in that volume element. The rad is the special unit of absorbed dose. One rad equals 100 ergs/gram.

(ii) For radiation protection purposes, the following shall be considered to be the equivalent of one rem:

- (A) One roentgen due to x or gamma radiation.
- (B) One rad due to x, gamma, or beta radiation.
- (C) One-tenth rad due to neutrons or high energy protons.
- (D) Five one-hundredth rad due to particles heavier than protons

and with sufficient energy to reach the lens of the eye.

(E) If it is more convenient to measure the neutron flux or equivalent than to determine the neutron dose in rads, one rem of neutron radiation may be assumed to be equivalent to 14 million neutrons per square centimeter incident upon the body, or if there exists sufficient information to estimate the approximate distribution in energy of the neutrons, the incident number of neutrons per square centimeter equivalent to one rem may be estimated from the following table:

Neutron Energy (Mev)	Number Of Neutrons Per Square Centimeter Equivalent To A Dose Of One Rem (n/cm ²)	Average Flux Density To Delivery 100 Millirem In 40 Hours (n/cm ² per second)
2.5 x 10 ⁻⁸ (thermal)	980 x 10 ⁶	680
1 x 10 ⁻⁷	980 x 10 ⁶	680
1 x 10 ⁻⁶	810 x 10 ⁶	560
1 x 10 ⁻⁵	810 x 10 ⁶	560
1 x 10 ⁻⁴	840 x 10 ⁶	580
1 x 10 ⁻³	980 x 10 ⁶	680
1 x 10 ⁻²	1000 x 10 ⁶	700
1 x 10 ⁻¹	165 x 10 ⁶	115
5 x 10 ⁻¹	39 x 10 ⁶	27
1	27 x 10 ⁶	19
2.5	29 x 10 ⁶	20
5	23 x 10 ⁶	16
7	24 x 10 ⁶	17
10	24 x 10 ⁶	17
14	17 x 10 ⁶	12
20	16 x 10 ⁶	11
40	14 x 10 ⁶	10
60	16 x 10 ⁶	11
1 x 10 ²	20 x 10 ⁶	14
2 x 10 ²	19 x 10 ⁶	13
3 x 10 ²	16 x 10 ⁶	11
4 x 10 ²	14 x 10 ⁶	10

(21) *Radiation producing machines or equipment* - Any apparatus capable of producing ionizing radiation, except devices which produce ionizing radiation only from radioactive material.

(22) *Radiation source* - Any apparatus or a material emitting or capable of emitting ionizing radiation.

(23) *Radioactive material* - Any material (solid, liquid or gas) of which one or more constituents exhibits radioactivity.

(24) *Restricted area* - Any area which is controlled by a licensee or registrant for purposes of protecting individuals from exposure to radiation or radioactive materials. The term shall not include any areas used for residential quarters except upon authorization by the Department.

(25) *Sealed source* - A radioactive source sealed in a container or having a bonded cover where the container or cover has sufficient mechanical strength to prevent contact with and dispersion of the radioactive material under the conditions of use and wear for which it was designed.

(26) *Source material* - Uranium or thorium or any combination thereof, in any physical or chemical form or ore which contains by weight 0.05% or more of either uranium, thorium or any combination of uranium and thorium. The term shall not include special nuclear material.

(27) *Special nuclear material in quantities not sufficient to form a critical mass* - Uranium enriched in the isotope U-235 in quantities not exceeding 350 grams of contained U-235; U-233 in quantities not exceeding 200 grams; plutonium in quantities not exceeding 200 grams; or any combination of them in accordance with the following formula: For each kind of special nuclear material, determine the ratio between the quantity of that special nuclear material and the quantity specified above for the same kind of special nuclear material. The sum of such ratios for all of the kinds of special nuclear material in combination shall not exceed one (unity). For example, the following quantities in combination would not exceed the limitation and are within the formula, as follows:

$$\frac{175 \text{ (grams contained U-235)}}{350} + \frac{50 \text{ (grams U-233)}}{200} + \frac{50 \text{ (grams Pu)}}{200} = 1$$

(28) *Survey* - An evaluation of the hazard potential associated with a specified set of conditions incident to the production, use, release, storage or presence of radiation sources.

(29) *Unrefined and unprocessed ore* - Ore in its natural form prior to any processing, such as grinding, roasting, beneficiating or refining.

(30) *Unrestricted area* - Any area to which access is not controlled by the licensee or registrant for purposes of protecting individuals from exposure to radiation or radioactive materials, and any area used for residential quarters.

(31) *Whole body* - The whole body, or head and trunk, or active blood forming organs, or lens of eye, or gonads.

(32) *Working level* - Defined in 41 CFR Part 50-204.36 (Radiation Standards for Mining) as any combination of radon daughters in one liter of air which will result in the ultimate emission of 1.3×10^5 million electron volts of potential alpha energy. The numerical value of the "working level" is derived from the alpha energy released by the total decay of short-lived radon daughter products in equilibrium with 100 picocuries of Radon-222 per liter of air.

§ 221.2. Purpose.

The provisions of this Article shall establish the requirements for the protection of public health and safety as related to radiation sources.

§ 221.3. Scope.

(a) The provisions of this Article, except as otherwise specifically provided herein or in the act, shall apply to all persons who use, manufacture, produce, transport, transfer, receive, acquire, possess or dispose of any radiation source.

(b) The failure of a person to obtain a license for or to register, when required, radiation sources in his possession or control, shall not relieve that person of responsibility for compliance with the act or with this Article.

RIGHTS AND RESPONSIBILITIES OF THE DEPARTMENT

§ 221.11. Inspections.

The Department or its duly authorized representatives shall have the power to enter at all reasonable times upon any private or public property for the purpose of determining whether or not there is compliance with or violation of the provisions of this Article.

§ 221.12. Tests.

Each person shall perform, upon instruction from the Department, and shall permit a Department representative to perform, whatever reasonable tests as the Department may deem appropriate or necessary.

§ 221.13. Availability of records.

The following Department records shall generally not be available for public inspection, unless their disclosure is in the public interest and is necessary for the Department to carry out its duties under the act:

(1) Trade secrets, secret industrial processes, or commercial or financial information customarily held in confidence.

(2) Personnel and medical files, and similar files, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

(3) Files containing the names of individuals who have received exposure to radiation.

(4) Any proprietary data identified as such by the person submitting it, until the person submitting it has been notified of its proposed disclosure and has been afforded a period of at least one week to take any appropriate action to protect it.

§ 221.14. Additional requirements.

The Department may impose upon any person any requirements in addition to those established in this Article which it may deem reasonable and necessary to protect the public health and safety.

PROHIBITIONS AND RESTRICTIONS

§ 221.21. Sale or installation of radiation sources.

No person shall sell or install within this Commonwealth any radiation source which does not meet the requirements of this Article.

§ 221.22. Penalties.

Section 401 of the act (73 P.S. § 1401) provides that any person who violates any of the provisions of this Article shall be guilty of a misdemeanor and shall on conviction thereof be subject to a fine of not more than \$500; and for a second or subsequent offense shall be subjected to a fine of not more than \$5,000 or imprisonment for a period of not more than one year, or both.

§ 221.23. Prohibited use.

No person shall operate or maintain within this Commonwealth any fitting devices or machines which use fluoroscopic, X-ray or radiation principles for the purpose of selling footwear through commercial outlets.

§ 221.24. Human use.

No human use of radiation sources shall be permitted except in accordance with the provision of this Article, and the following:

- (1) Medical Practice Act, Act of June 3, 1911, P.L. 639, as amended (63 P.S. § 401 *et seq.*).
- (2) Act of February 2, 1956, P.L. (1955) 997, as amended (63 P.S. § 265 *et seq.*).
- (3) Chiropractic Registration Act, Act of August 10, 1951, P.L. 1182, as amended (63 P.S. § 601 *et seq.*).
- (4) Dental Law, Act of May 1, 1933, P.L. 216, as amended (63 P.S. § 120 *et seq.*).
- (5) Podiatry Act, Act of March 2, 1956, P.L. (1955) 1206, as amended (63 P.S. § 42.1 *et seq.*).

EXEMPTIONS

§ 221.31. Granting exemptions.

The Department may, upon application therefor or upon its own initiative, grant exemptions or exceptions from the requirements of this Article when it determines they are authorized by law and the results will not constitute a significant risk to the health and safety of the public.

§ 221.32. Transportation.

Common and contract carriers shall be exempt from the provisions of this Article to the extent that they transport sources of radiation in the regular course of their carriage for another or storage incident thereto, provided they comply with applicable regulations of the Hazardous Substances Transportation Board of the Commonwealth and the U.S. Department of Transportation.

§ 221.33. Exemption qualifications.

The following sources, uses, types of sources and types of users shall be exempt from the provisions of Chapters 223, 225, 227, 229, 231, 233 and 235 of this Title (relating to specific radiological health requirements):

(1) Any U.S. Atomic Energy Commission contractor or subcontractor of the following categories operating within this Commonwealth to the extent that such contractor or subcontractor under this contract receives, possesses, uses, transfers, owns or acquires sources of radiation:

(i) Prime contractors performing work for the AEC at U.S. Government owned or controlled sites.

(ii) Prime contractors performing research in, or development, manufacture, storage, testing or transportation of atomic weapons or components thereof.

(iii) Prime contractors using or operating nuclear reactors or other nuclear devices in a U.S. Government owned vehicle or vessel.

(iv) Any other prime contractor or subcontractor when the Commonwealth and the AEC jointly determine that, under the terms of the contract or subcontract, there is adequate assurance that the work thereunder can be accomplished without undue risk to the public health and safety and that the exemption of such contractor or subcontractor is otherwise appropriate.

(2) Federal government agencies.

(3) Electrical equipment that produces radiation incidental to its operation for other purposes if the dose rate at five centimeters from any surface is less than 0.5 mrem per hour when averaged over an area of ten square centimeters. Such equipment shall not be exempt when operated without adequate shielding during testing and servicing if radiation levels exceed those specified. Electron beam welders and electron microscopes shall not be exempt.

(4) Radiation producing machines or equipment in transit or in storage incident thereto.

(5) Any material, product or use specifically exempted from licensing requirements by the U.S. Atomic Energy Commission or authorized for distribution to persons exempt from license requirements.

(6) The receipt, acquisition, possession, use and transfer of not more than 15 pounds of source material at any one time and not more than a total of 150 pounds of source material in one calendar year by persons in the following categories:

- (i) Pharmacists using source material for pharmaceutical purposes.
- (ii) Physicians using source material for medicinal purposes.
- (iii) Persons receiving possession of source material from pharmacists and physicians in the form of medicinals or drugs.
- (iv) Commercial, industrial, educational, research and medical institutions or firms, for research, educational, development or commercial purposes.

(7) The receipt, acquisition, possession, use and transfer of radioactive material in individual quantities each of which does not exceed the applicable quantity set forth in § 221.34 of this Title (relating to exempt quantities) if the person does not:

- (i) produce, package, repackage or import the radioactive material for purposes of commercial distribution; and does not
- (ii) incorporate the radioactive material into products intended for commercial distribution.

(8) The receipt, acquisition, possession, use and transfer of products or material containing radioactive material in concentrations not in excess of those listed in § 221.35 of this Title (relating to exempt concentrations), provided that no person may introduce radioactive material into a product or material knowing or having reason to believe that it will be transferred to an unlicensed person.

(9) Timepieces or timepiece hands or dials containing radium which were obtained prior to February 9, 1970.

(10) Timepieces or timepiece hands or dials, except pocket watches, obtained on or after February 9, 1970 and manufactured under a license issued by the Department or any other state, and containing not more than the radium activities shown in the following table:

Timepiece Unit	Radium Activity (in microcuries)
Each watch	0.15
Each watch hand	0.03
Each watch dial	0.09
Each clock	0.20
Each clock hand	0.04
Each clock dial	0.12

§ 221.34. Exempt quantities.

Radioactive materials, certain quantities of which shall be exempt from the provisions of Chapters 223, 225, 227, 229, 231, 233 and 235 of this Title (relating to specific radiological health requirements), are shown in the following table:

Radioactive Material	Column 1 Not As A Sealed Source (microcuries)	Column 2 As A Sealed Source (microcuries)
Antimony 124 (Sb 124)	1	10
Arsenic 76 (As 76)	10	10

Radioactive Material	Column 1 Not As A Sealed Source (microcuries)	Column 2 As A Sealed Source (microcuries)
Arsenic 77 (As 77)	10	10
Barium 140 - Lanthanum 140 (BaLa 140)	1	10
Beryllium 7 (Be 7)	50	50
Cadmium 109 - Silver 109 (CdAg 109)	10	10
Calcium 45 (Ca 45)	10	10
Carbon 14 (C 14)	50	50
Cerium 144 - Praseodymium 144 (CePr 144)	1	10
Cesium 137 - Barium 137 (CsBa 137)	1	10
Chlorine 36 (Cl 36)	1	10
Chromium 51 (Cr 51)	50	50
Cobalt 60 (Co 60)	1	10
Copper 64 (Cu 64)	50	50
Europium 154 (Eu 154)	1	10
Fluorine 18 (F 18)	50	50
Gallium 72 (Ga 72)	10	10
Germanium 71 (Ge 71)	50	50
Gold 198 (Au 198)	10	10
Gold 199 (Au 199)	10	10
Hydrogen 3 (Tritium) (H 3)	250	250
Indium 114 (In 114)	1	10
Iodine 131 (I 131)	10	10
Iridium 192 (Ir 192)	10	10
Iron 55 (Fe 55)	50	50
Iron 59 (Fe 59)	1	10
Lanthanum 140 (La 140)	10	10
Manganese 52 (Mn 52)	1	10
Manganese 56 (Mn 56)	50	50
Molybdenum 99 (Mo 99)	10	10
Nickel 59 (Ni 59)	1	10
Nickel 63 (Ni 63)	1	10
Niobium 95 (Nb 95)	10	10
Palladium 109 (Pd 109)	10	10
Palladium 103 - Rhodium 103 (PdRh 103)	50	50
Phosphorus 32 (P 32)	10	10
Polonium 210 (Po 210)	0.1	1
Potassium 42 (K 42)	10	10
Praseodymium 143 (Pr 143)	10	10
Promethium 147 (Pm 147)	10	10
Radium 226 (Ra 226)	0.1	1
Rhenium 186 (Re 186)	10	10
Rhodium 105 (Rh 105)	10	10
Rubidium 86 (Rb 86)	10	10
Ruthenium 106 - Rhodium 106 (RuRh 106)	1	10
Samarium 153 (Sm 153)	10	10
Scandium 46 (Sc 46)	1	10
Silver 105 (Ag 105)	1	10
Silver 111 (Ag 111)	10	10
Sodium 22 (Na 22)	10	10
Sodium 24 (Na 24)	10	10
Strontium 89 (Sr 89)	1	10
Strontium 90 - Yttrium 90 (Sr Y 90)	0.1	1
Sulfur 35 (S 35)	50	50
Tantalum 182 (Ta 182)	10	10
Technetium 96 (Tc 96)	1	10
Technetium 99 (Tc 99)	1	10

Radioactive Material	Column 1 Not As A Sealed Source (microcuries)	Column 2 As A Sealed Source (microcuries)
Tellurium 127 (Te 127)	10	10
Tellurium 129 (Te 129)	1	10
Thallium 204 (Tl 204)	50	50
Tin 113 (Sn 113)	10	10
Tungsten 181 (W 181)	10	100
Tungsten 185 (W 185)	10	10
Vanadium 48 (V 48)	1	10
Yttrium 90 (Y 90)	1	10
Yttrium 91 (y 91)	1	10
Zinc 65 (Zn 65)	10	10

Alpha-emitting radioactive material,
other than special nuclear material,
not listed above

0.1 1

Beta and/or gamma-emitting radioactive
material not listed above

1 10

§ 221.35. Exempt concentration.

(a) Elements, certain concentrations of which shall be exempt from the provisions of Chapters 223, 225, 227, 229, 231, 233 and 235 of this Title, (relating to specific radiological health requirements) are shown in the following table:

Element (Atomic Number)	Isotope	Column I Gas Concentration uCi/ml	Column II Liquid and Solid Concentration uCi/ml uCi/gram for solids
Antimony (51)	Sb 122		3 x 10 ⁻⁴
	Sb 124		2 x 10 ⁻⁴
	Sb 125		1 x 10 ⁻³
Argon (18)	A 37	1 x 10 ⁻³	
	A 41	4 x 10 ⁻⁷	
Arsenic (33)	As 73		5 x 10 ⁻³
	As 74		5 x 10 ⁻⁴
	As 76		2 x 10 ⁻⁴
	As 77		8 x 10 ⁻⁴
Barium (56)	Ba 131		2 x 10 ⁻³
	Ba 140		3 x 10 ⁻⁴
Beryllium (4)	Be 7		2 x 10 ⁻²
Bismuth (83)	Bi 206		4 x 10 ⁻⁴
Bromine (35)	Br 82	4 x 10 ⁻⁷	3 x 10 ⁻³
	Cadmium (48)	Cd 109	
Calcium (20)	Cd 115m		3 x 10 ⁻⁴
	Cd 115		3 x 10 ⁻⁴
	Ca 45		9 x 10 ⁻⁵
Carbon (6)	Ca 47		5 x 10 ⁻⁴
	C 14	1 x 10 ⁻⁶	8 x 10 ⁻³
Cerium (58)	Ce 141		9 x 10 ⁻⁴
	Ce 143		4 x 10 ⁻⁴

Element (Atomic Number)	Isotope	Column I Gas Concentration $\mu\text{Ci/ml}$	Column II Liquid and Solid Concentration $\mu\text{Ci/ml}$ $\mu\text{Ci/gram for solids}$
Cesium (55)	Ce 144		1×10^{-4}
	Cs 131		2×10^{-2}
	Cs 134m		6×10^{-2}
	Cs 134		9×10^{-5}
Chlorine (17)	Cl 38	9×10^{-7}	4×10^{-3}
Chromium (24)	Cr 51		2×10^{-2}
Cobalt (27)	Co 57		5×10^{-3}
	Co 58		1×10^{-3}
Copper (29)	Co 60		5×10^{-4}
	Cu 64		3×10^{-3}
Dysprosium (66)	Dy 165		4×10^{-3}
	Dy 166		4×10^{-4}
Erbium (68)	Er 169		9×10^{-4}
	Er 171		1×10^{-3}
Europium (63)	Eu 152 (9.2 h)		6×10^{-4}
	Eu 155		2×10^{-3}
Fluorine (9)	F 18	2×10^{-6}	8×10^{-3}
Gadolinium (64)	Gd 153		2×10^{-3}
	Gd 159		8×10^{-4}
Gallium (31)	Ga 72		4×10^{-4}
Germanium (32)	Ge 71		2×10^{-2}
Gold (79)	Au 196		2×10^{-3}
	Au 198		5×10^{-4}
	Au 199		2×10^{-3}
Hafnium (72)	Hf 181		7×10^{-4}
Hydrogen (1)	H 3	5×10^{-6}	3×10^{-2}
Indium (49)	In 113m		1×10^{-2}
	In 114m		2×10^{-4}
Iodine (53)	I 126	3×10^{-9}	2×10^{-5}
	I 131	3×10^{-9}	2×10^{-5}
	I 132	8×10^{-8}	6×10^{-4}
	I 133	1×10^{-8}	7×10^{-5}
	I 134	2×10^{-7}	1×10^{-3}
Iridium (77)	Ir 190		2×10^{-3}
	Ir 192		4×10^{-4}
	Ir 194		3×10^{-4}
Iron (26)	Fe 55		8×10^{-3}
	Fe 59		6×10^{-4}
Krypton (36)	Kr 85m	1×10^{-6}	
	Kr 85	3×10^{-6}	
Lanthanum (57)	La 140		2×10^{-4}
Lead (82)	Pb 203		4×10^{-3}
Lutetium (71)	Lu 177		1×10^{-3}
Manganese (25)	Mn 52		3×10^{-4}
	Mn 54		1×10^{-3}
	Mn 56		1×10^{-3}
	Mn 56		1×10^{-3}
Mercury (80)	Hg 197m		2×10^{-3}
	Hg 197		3×10^{-3}
	Hg 203		2×10^{-4}
Molybdenum (42)	Mo 99		2×10^{-3}
Neodymium (60)	Nd 147		6×10^{-4}
	Nd 149		3×10^{-3}
Nickel (28)	Ni 65		1×10^{-3}

Element (Atomic Number)	Isotope	Column I Gas Concentration $\mu\text{Ci/ml}$	Column II Liquid and Solid Concentration $\mu\text{Ci/ml}$ $\mu\text{Ci/gram for solids}$
Niobium (Columbium) (41)	Nb 95		1×10^{-3}
	Nb 97		9×10^{-3}
Osmium (76)	Os 185		7×10^{-4}
	Os 191m		3×10^{-2}
	Os 191		2×10^{-3}
	Os 193		6×10^{-4}
Palladium (46)	Pd 103		3×10^{-3}
	Pd 109		9×10^{-4}
Phosphorus (15)	P 32		2×10^{-4}
Platinum (78)	Pt 191		1×10^{-3}
	Pt 193m		1×10^{-2}
	Pt 197m		1×10^{-2}
	Pt 197		1×10^{-3}
Polonium (84)	Po 210	2×10^{-10}	7×10^{-6}
Potassium (19)	K 42		3×10^{-3}
Praseodymium (59)	Pr 142		3×10^{-4}
	Pr 143		5×10^{-4}
Promethium (61)	Pm 147		2×10^{-3}
	Pm 149		4×10^{-4}
Radium (88)	Ra 226	1×10^{-11}	1×10^{-7}
	Ra 228	2×10^{-11}	3×10^{-7}
Rhenium (75)	Re 183		6×10^{-3}
	Re 186		9×10^{-4}
	Re 188		6×10^{-4}
Rhodium (45)	Rh 103m		1×10^{-1}
	Rh 105		1×10^{-3}
Rubidium (37)	Rb 86		7×10^{-4}
Ruthenium (44)	Ru 97		4×10^{-3}
	Ru 103		8×10^{-4}
	Ru 105		1×10^{-3}
	Ru 106		1×10^{-4}
Samarium (62)	Sm 153		8×10^{-4}
Scandium (21)	Sc 46		4×10^{-4}
	Sc 47		9×10^{-4}
	Sc 48		3×10^{-4}
Selenium (34)	Se 75		3×10^{-3}
Silicon (14)	Si 31		9×10^{-3}
Silver (47)	Ag 105		1×10^{-3}
	Ag 110m		3×10^{-4}
	Ag 111		4×10^{-4}
Sodium (11)	Na 24		2×10^{-3}
Strontium (38)	Sr 89		1×10^{-4}
	Sr 91		7×10^{-4}
	Sr 92		7×10^{-4}
Sulfur (16)	S 35	9×10^{-8}	6×10^{-4}
Tantalum (73)	Ta 182		4×10^{-4}
Technetium (43)	Tc 96m		1×10^{-1}
	Tc 96		1×10^{-3}
Tellurium (52)	Te 125m		2×10^{-3}
	Te 127m		6×10^{-4}
	Te 127		3×10^{-3}
	Te 129m		3×10^{-4}
	Te 131m		6×10^{-4}
	Te 132		3×10^{-4}

Element (Atomic Number)	Isotope	Column I Gas Concentration uCi/ml	Column II Liquid and Solid Concentration uCi/ml uCi/gram for solids
Terbium (65)	Tb 160		4 x 10 ⁻⁴
	Thallium (81)	Tl 200	4 x 10 ⁻³
Thulium (69)	Tl 201		3 x 10 ⁻³
	Tl 202		1 x 10 ⁻³
	Tl 204		1 x 10 ⁻³
	Tm 170		5 x 10 ⁻⁴
	Tm 171		5 x 10 ⁻³
Tin (50)	Sn 113		9 x 10 ⁻⁴
	Sn 125		2 x 10 ⁻⁴
Tungsten (Wolfram) (74)	W 181		4 x 10 ⁻³
	W 187		7 x 10 ⁻⁴
Vanadium (23)	V 48		3 x 10 ⁻⁴
	Xenon (54)	Xe 131m	4 x 10 ⁻⁶
Xe 133		3 x 10 ⁻⁶	
Xe 135		1 x 10 ⁻⁶	
Ytterbium (70)	Yb 175		1 x 10 ⁻³
Yttrium (39)	Y 90		2 x 10 ⁻⁴
	Y 91m		3 x 10 ⁻²
	Y 91		3 x 10 ⁻⁴
	Y 92		6 x 10 ⁻⁴
	Y 93		3 x 10 ⁻⁴
	Zinc (30)	Zn 65	
Zn 69m			7 x 10 ⁻⁴
Zn 69			2 x 10 ⁻²
Zirconium (40)	Zr 95		6 x 10 ⁻⁴
	Zr 97		2 x 10 ⁻⁴
Beta and/or gamma emitting radioactive material not listed above with half-life less than 3 years		1 x 10 ⁻¹⁰	1 x 10 ⁻⁶

(b) Many radioisotopes disintegrate into isotopes which are also radioactive. In expressing the concentrations listed in subsection (a) of this section, the activity stated shall be that of the parent isotope, and shall take into account the daughter isotopes.

(c) For purposes of the provisions of § 221.33 (8) of this Title (relating to exemption qualifications), where there is involved a combination of isotopes, the limit for the combination shall be derived in the following manner: Determine for each isotope in the product the ratio between the concentration present in the product and the exempt concentration, established in the table of subsection (a) of this section, for the specific isotope when not in combination. The sum of such ratios shall not exceed one (unity):

$$\frac{\text{Concentration of Isotope A in Product} + \text{Concentration of Isotope B in Product}}{\text{Exempt concentration of Isotope A} + \text{Exempt concentration of Isotope B}} = 1$$

COMMUNICATIONS

§ 221.41. Address.

All communications and reports concerning the provisions of this Article and applications filed thereunder shall be addressed to the Office of Radiological Health, Pennsylvania Department of Environmental Resources, P.O. Box 2351, Harrisburg, Pennsylvania 17120.

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TITLE 25. RULES AND REGULATIONS
PART I. DEPARTMENT OF ENVIRONMENTAL RESOURCES
Subpart D. ENVIRONMENTAL HEALTH AND SAFETY
ARTICLE V. RADIOLOGICAL HEALTH

CHAPTER 223. REGISTRATION OF RADIATION-PRODUCING
MACHINES OR EQUIPMENT

Authority

The provisions of this Chapter 223 issued under act of January 28, 1966, P.L. 1625 § 301 (73 P.S. § 1301).

Source

The provisions of this Chapter 223 adopted February 1, 1972, effective March 1, 1972, 2 Pa. B. 212.

§ 223.1. Scope.

The provisions of this Chapter shall provide for the registration of radiation producing machines or equipment.

§ 223.2. Registration and renewal.

(a) All radiation-producing machines and equipment, except those specifically exempted in § 223.3 of this Title (relating to exemptions from registration), or in § 221.31 - 221.33 of this Title (relating to exemptions in general) shall be registered with the Department within 30 days after acquisition, and each four years thereafter. Registration shall be completed on forms supplied by the Department.

(b) A copy of the registration shall be provided by the Department to the registrant and it shall be retained by him for the registration period.

(c) The registrant shall notify the Department in writing within ten days of any change which renders the registered information no longer accurate. A change in the ownership or possession shall terminate the registration.

(d) No person in any advertisement shall refer to the fact that radiation-producing machines or equipment are registered with the Department and no person shall state or imply that any activity under such registration has been approved by the Department.

§ 223.3. Exemptions from registration.

Vendors, manufacturers, installers or persons engaged in servicing or repairing radiation-producing machines or equipment shall be exempt from the provisions of § 223.2 (a)-(c) of this Title (relating to registration and renewal), provided such persons register their activities with the Department.

§ 223.4. Transfer or disposal of machines or equipment.

Whenever radiation-producing machines or equipment are transferred or disposed of, the Department shall be notified in writing by the registrant within ten days of the date of such transfer or disposal, including the name and address of the person to whom it was transferred or its final disposition.

§ 223.5. Vendor obligation.

Each distributor, retailer or other agent who sells, leases, transfers or lends radiation-producing machines or equipment to persons in this Commonwealth shall notify

the Department within 30 days after the end of each calendar quarter of the following:

- (1) Name and address of persons who have received these machines or equipment.
- (2) Manufacturer and model of each machine or equipment transferred.
- (3) Date of transfer of each machine or equipment.

§ 223.6. Cut-of-state machines or equipment.

Whenever any radiation-producing machine or equipment is brought into this Commonwealth for any temporary use, the person proposing to do so, or his authorized agent, shall give written notice to the Department at least two days before such machine enters this Commonwealth. The notice shall include the type of machine, the nature, duration and scope of use, and the exact location where the machine is to be used. If for a specific case the two-day period would impose an undue hardship on the person, he may, upon application to the Department, receive a waiver of this requirement. In addition, such person shall:

- (1) comply with all applicable regulations of the Department; and
- (2) supply the Department with such other information as the Department may reasonably request.

TITLE 25. RULES AND REGULATIONS
PART I. DEPARTMENT OF ENVIRONMENTAL RESOURCES
Subpart D. ENVIRONMENTAL HEALTH AND SAFETY
ARTICLE V. RADIOLOGICAL HEALTH

CHAPTER 225. LICENSING OF RADIOACTIVE MATERIAL

Authority

The provisions of this Chapter 225 issued under act of January 28, 1966, P.L. 1625 § 301 (73 P.S. § 1301).

Source

The provisions of this Chapter 225 adopted February 1, 1972, effective March 1, 1972, 2 Pa. B. 212.

LICENSES

§ 225.1. General requirement.

No person shall use, manufacture, produce, transport, transfer, receive, acquire, possess or dispose of any radioactive material except as authorized in a license issued pursuant to the provisions of this Chapter, unless specifically exempted.

§ 225.2. Filing of application.

(a) Applications for licenses shall be filed on a form prescribed by the Department. Such application shall contain all pertinent information required to permit the Department to evaluate the requirements specified in this Chapter.

(b) The Department may at any time require further information to enable it to determine whether to grant, modify, deny or revoke a license.

(c) Each application shall be signed by the applicant or a person authorized by the applicant.

(d) Applications and other documents submitted to the Department may be made available for public inspection, except that the Department may withhold any document or part thereof from public inspection if requested by the applicant and if disclosure of its contents is not required in the public interest and would adversely affect the interest of a person concerned. If the Department denies the specific request of an applicant to withhold information from public inspection, the Department shall give the applicant the opportunity to withdraw his application.

§ 225.3. Approval.

A license application shall be approved if the Department determines that the following conditions are met:

(1) The applicant is qualified by training and experience to use the material in question for the purposes requested in accordance with the provisions of this Article.

(2) The proposed equipment, facilities and procedures are adequate.

(3) The issuance of the license shall not constitute a significant risk to the health and safety of the public.

(4) The applicant satisfies all applicable requirements in this Chapter.

§ 225.4. Issuance.

Upon a determination that an applicant meets the requirements of this Article, a license shall be issued containing such conditions and limitations as are needed to protect the public health and safety as determined by the Department.

§ 225.5. Terms and conditions.

(a) Each license issued pursuant to this Chapter shall be subject to all the provisions of the act and to all rules, regulations and orders of the Department.

(b) Neither the license nor any right under the license shall be assigned or otherwise transferred without the approval of the Department.

§ 225.6. Expiration.

Except as provided in § 225.7 of this Title (relating to renewal), each license shall expire on the day, month and year stated therein.

§ 225.7. Renewal.

(a) Applications for renewal of licenses shall be filed in accordance with § 225.2 of this Title (relating to filing of applications).

(b) If a renewal application is filed prior to 30 days before the expiration of a license, the existing license shall not expire until definitive notice has been given by the Department of its action on the renewal license. Similar provisions shall apply to new license applications incorporating other licenses.

§ 225.8. Amendment at request of licensee.

Applications for amendment of a license shall be filed in accordance with § 225.2 of this Title (relating to filing of applications).

§ 225.9. Modification, revocation and termination.

(a) The terms and conditions of all licenses shall be subject to amendment, revision or modification, or the license may be suspended or revoked by reason of amendments to the act, or by reason of rules, regulations and orders issued by the Department.

(b) Any license may be revoked, suspended, or modified, in whole or in part, for any material false statement in the application or any statement of fact required under provisions of the act, or because of conditions revealed by the application or statement of fact or any report, record or inspection or other means which would warrant the Department to refuse to grant a license on an original application, or for violation of or failure to observe any of the terms and conditions of the act, or the license, or of any rule, regulation or order of the Department.

(c) Except in cases of willful violation of these regulations or those cases in which the public health, interest, or safety requires otherwise, no license shall be modified, suspended, or revoked unless, prior to the institution of proceedings thereto, facts or conduct which may warrant the action shall have been called to the attention of the licensee in writing and the licensee shall have been accorded an opportunity to demonstrate or achieve compliance with all lawful requirements.

(d) The Department may terminate a license upon request submitted by the licensee to the Department in writing.

RESPONSIBILITIES OF LICENSEES

§ 225.21. Records.

Each licensee shall keep records relating to the receipt, storage, transfer and disposal of licensed radioactive materials.

§ 225.22. Transfer of material.

No licensee may transfer radioactive material except to:

- (1) a person licensed or otherwise authorized to receive such material by the

Department, the U.S. Atomic Energy Commission or any agreement state;
(2) the U.S. Atomic Energy Commission;
(3) the Department, with the specific approval of the Department; and
(4) a person exempt from this Chapter to the extent permitted under such exception.

§ 225.23. Reciprocal recognition of licenses.

(a) Subject to the provisions of this Chapter, any out-of-State person who possesses a license issued by the U.S. Atomic Energy Commission or any agreement state, other than the Commonwealth, may conduct the activities authorized in the license within this Commonwealth for a period not in excess of 20 days in any period of 12 consecutive months without obtaining a license from the Department, provided that the following conditions are met;

(1) The license shall not limit the activity to specified installations or locations.

(2) The out-of-State licensee shall notify the Department in writing at least two days prior to engaging in such activity. Such notification shall indicate the location, period and type of proposed possessions and use within this Commonwealth, and shall be accompanied by a copy of the license. If, for a specific case, the two day period would impose an undue hardship on the out-of-State licensee, he may, upon application to the Department, obtain permission to proceed sooner.

(3) The out-of-State licensee shall comply with all applicable regulations of the Department and with all the terms and conditions of his license, except any such terms and conditions which may be inconsistent with applicable regulations of the Department.

(4) The out-of-State licensee shall supply such other information as the Department may request.

(b) Notwithstanding the provisions of subsection (a) of this section any person who holds a license issued by the U.S. Atomic Energy Commission or an agreement state authorizing the manufacture, transfer, installation or servicing of devices described in § 225.64 of this Title (relating to other devices), may transfer, install and service such devices in this Commonwealth subject to the following conditions:

(1) Licensees shall file a report with the Department within 30 days after the end of each calendar quarter in which any device is transferred to, installed or relocated in this Commonwealth. The report shall identify each recipient by name and address, the type of device transferred or installed and the quantity and type of radioactive material contained in the device.

(2) The device shall have been manufactured, labeled, installed and serviced in accordance with applicable provisions of the specific license or equivalent licensing document issued to such person by the U.S. Atomic Energy Commission or an agreement state.

(3) Licensees shall assure that any labels required to be affixed to the device under regulations of the authority which licensed manufacture of the device bear the statement: "Removal of this label is prohibited."

(4) Licensees shall furnish to each person to whom they transfer a device or on whose premises they install a device a copy of the requirements contained in § 225.64 of this Title (relating to other devices).

(c) The Department may withdraw, limit, or qualify its acceptance of any license issued by another agency, or any product distributed pursuant to a license, upon determining that the action is necessary in order to prevent undue hazard to public health and safety or property.

SPECIAL LICENSE REQUIREMENTS

§ 225.31. Human use.

(a) *Individual physician license.* In addition to the requirements set forth in § 225.3 of this Title (relating to license approval), this license shall be issued only if the applicant has access to a hospital possessing adequate facilities to hospitalize and monitor the applicant's radioactive patients whenever it is advisable. The applicant shall have

experience in the handling and administration of radioactive materials and, where applicable, in the clinical management of patients to whom radioactive materials have been administered.

(b) *Institutional license.* In addition to the requirements set forth in § 225.3 of this Title (relating to licensed approval), a license shall be issued to an institution only if the following conditions are met:

(1) The applicant institution shall have appointed a human use committee of at least three members to evaluate all proposals for research, diagnostic and therapeutic use of radioactive materials within that institution.

(2) The applicant institution shall possess adequate facilities for handling of radioactive materials and for clinical care of patients to whom radioactive materials have been administered.

(3) The physician designated on the application as the individual user shall have substantial experience in the handling and administration of radioactive materials and, where applicable, the clinical management of patients.

(4) If the application is for a license to use unspecified quantities or multiple types of radioactive material, the applicant's staff shall have substantial experience with a variety of radioactive materials for a variety of human uses.

§ 225.32. Distribution of devices.

In addition to the requirements set forth in § 225.3 of this Title (relating to license approval), a license to distribute certain devices of the types enumerated in § 225.64 of this Title (relating to other devices) to persons exempt from licensing, shall be issued only if the following conditions are met:

(1) The applicant shall submit sufficient information relating to the design, manufacture, prototype testing, quality control procedures, labeling, proposed uses and potential hazards of the device to provide reasonable assurance that:

- (i) the radioactive material contained in the device shall not be lost;
- (ii) no individual shall receive a radiation exposure to a major portion of his body in excess of 0.5 rem in a year under ordinary circumstances of use;
- (iii) the device may be safely operated by individuals not having training in radiation protection; and
- (iv) the radioactive material within the device shall not be accessible to unauthorized individuals.

(2) The applicant shall indicate those instructions and precautions which may be necessary to assure safe operations of the device. Such instructions and precautions shall be contained on labels bearing the statement: "Removal of this label is prohibited."

(3) If the applicant desires that the device be tested for proper operation of the on-off mechanism and indicator, if any, and for leakage of radioactive material, subsequent to the initial tests required by § 225.64 (a)(6)(ii) of this Title (relating to other devices), at intervals longer than six months but not exceeding three years, he shall include in his application sufficient information to demonstrate that such longer interval is justified by performance characteristics of the device or similar devices, and by design features which have a significant bearing on the probability or consequences of leakage of radioactive material from the device.

(4) The applicant shall agree to report to the Department all transfers within thirty (30) days after the end of each calendar quarter. Transfer reports shall identify each person by name and address, the type of device transferred and the quantity and type of radioactive material involved.

(5) The applicant shall agree to furnish to each person in this Commonwealth to whom he transfers a device a copy of the requirements contained in § 225.64 of this Title (relating to other devices).

§ 225.33. Industrial radiography.

In addition to the requirements set forth in § 225.3 of this Title (relating to license approval), a license for the use of sealed sources in industrial radiography shall be issued only if the following conditions exist:

(1) The applicant has an adequate program for training radiographers and radiographers' assistants and submits to the Department for approval a schedule or description of such program which specifies the:

- (i) Initial, periodic and on-the-job training;
- (ii) Means used by the licensee to determine the radiographer's knowledge and understanding of and ability to comply with the Department's regulations and the operating and emergency procedures of the applicant; and
- (ii) Means to be used by the licensee to determine the radiographers' assistant's knowledge and understanding of and ability to comply with the operating and emergency procedures of the applicant.

(2) The applicant submits to the Department a description of his overall organization structure pertaining to the radiography program, including specific delegations of authority and responsibility for operation of the program.

(3) The applicant has established and submits to the Department satisfactory written operating and emergency procedures covering the requirements of § 233.42 of this Title (relating to operating and emergency procedures).

(4) The applicant has an adequate internal inspection or other control system to assure that license provisions, regulations and operating and emergency procedures are followed.

(5) The applicant who desires to conduct his own sealed source leak tests has established adequate procedures to be followed and submits to the Department a description of such procedures, including:

- (i) instrumentation to be used;
- (ii) method of performing tests, such as, points on equipment to be smeared and method of taking smear; and
- (iii) pertinent experience of the person who will perform the tests.

§ 225.34. Radioactive materials for use in processing.

(a) In addition to the requirements set forth in § 225.3 of this Title (relating to license approval), a license for radioactive material for use in processing for distribution to other authorized persons shall be issued only if the following conditions are met:

(1) The applicant's staff had adequate experience in the use of radionuclides for processing and distribution.

(2) The applicant has appointed a radiation safety officer who shall administer the radiation safety program.

(b) Authority to transfer possession or control by the manufacturer, processor or producer of any equipment, device, commodity or other product containing source, by-product or special nuclear material intended for use by persons exempt from licensing requirements may be obtained only from the U.S. Atomic Energy Commission, Division of Licensing and Regulation, Washington, D.C. 20545.

§ 225.35. Introduction into exempt products.

(a) In addition to the requirements set forth in § 225.3 of this Title (relating to license approval), a license authorizing the introduction of radioactive material into a product or material owned by, or in possession of, the licensee or another, to be transferred to persons exempt under the provisions of § 221.33 (8) of this Title (relating to exemption qualifications), shall be issued only if the following conditions are met:

- (1) The applicant shall submit to the Department:
 - (i) a description of the product or material into which the radioactive material will be introduced;
 - (ii) the intended use of the radioactive material and of the product or material into which it is introduced;
 - (iii) the method of introduction;
 - (iv) the initial concentration of the radioactive material in the product or material;
 - (v) the control methods used to assure that no more than the specified concentration is introduced into the product or material;

(vi) the estimated time interval between introduction and transfer of the product or material; and

(vii) the estimated concentration or quantity of radioactive material in the product or material at the time of transfer.

(2) The applicant shall provide reasonable assurance to the Department that the concentration of the radioactive material at the time of transfer shall not exceed the limits in § 221.35 of this Title (relating to exempt concentrations); that such limits are not likely to be exceeded; that the product or material is not likely to be inhaled by, ingested by, or applied to, humans; and that the use of lower concentrations or quantities is not feasible.

(b) Each person licensed under the provisions of this section shall file an annual report with the Department, describing the type and quantity of radioactive material introduced into each product or material, and the name and address of the owner of such product and material.

§ 225.36. Radium in timepieces or timepiece hands or dials.

(a) In addition to the requirements set forth in § 225.3 of this Title (relating to license approval), a license to apply radium to timepieces or timepiece hands or dials in quantities not exceeding those listed in § 221.33 (10) of this Title (relating to timepieces or timepiece hands or dials) except pocket watches, shall be issued only if the following conditions are met:

(1) The applicant shall submit sufficient information regarding the product pertinent to evaluation of the potential radiation exposure, including:

(i) chemical and physical form and maximum quantity of radium in each product;

(ii) details of construction and design of each product;

(iii) details of the method of incorporation and binding of the radium in the product;

(iv) procedures for and results of prototype testing to demonstrate that the material shall not become detached from the product and that the radium shall not be released to the environment under the most severe conditions likely to be encountered in normal use of the product;

(v) quality control procedures to be followed in the fabrication of production lots of the product to demonstrate that the product will meet the specifications established by the Department for such product; and

(vi) any additional information, including experimental studies and tests, required by the Department to facilitate determination of the safety of the product.

(2) The Department shall determine that:

(i) the method of incorporation and binding of the radium in the product is such that the radioactive material shall not be released or be removed from the product under the most severe conditions which are likely to be encountered in normal use and handling; and

(ii) the product has been subjected to and meets the requirements of the prototype tests.

(b) Each person licensed under the provisions of subsection (a) of this section shall:

(1) maintain quality control in the manufacture of the part or product, or the installation of the part into the product;

(2) subject production lots to such quality control tests as may be required as a condition of the license issued under this section; and

(3) visually inspect each device in production lots and reject any device which has an observable physical defect that may affect containment of radium.

LICENSES OF BROAD SCOPE

§ 225.41. Type A license.

Type A licenses shall authorize receipt, acquisition, possession, use and transfer of any chemical or physical form of the radioactive material specified in the license, but

not exceeding quantities specified in the license, for any authorized purpose. The quantities specified shall usually be in the multicurie range.

§ 225.42. Type B license.

Type B licenses shall authorize receipt, acquisition, possession, use and transfer of any chemical or physical form of radioactive material specified in Table I in § 225.55 of this Title (relating to quantities of radioactive materials) for any authorized purpose. The possession limit for a Type B broad license, if only one radionuclide is possessed thereunder, shall be the quantity specified for that radionuclide in Column I of such Table I. If two or more radionuclides are possessed under a Type B license, the possession limit for each shall be determined as follows:

(1) For each radionuclide, determine the ratio of the quantity possessed to the applicable quantity specified in Column I of Table I for that radionuclide.

(2) The sum of the ratios for all radionuclides possessed under the license shall not exceed unity.

§ 225.43. Type C license.

Type C licenses shall authorize receipt, acquisition, possession, use and transfer of any chemical or physical form of radioactive material specified in Table I in § 225.55 of this Title (relating to quantities of radioactive materials), for any authorized purpose. The possession limit, if only one radionuclide is possessed, shall be the quantity specified for that radionuclide in Column II of such Table I. If two or more radionuclides are possessed, the possession limit shall be determined as follows:

(1) For each radionuclide, determine the ratio of the quantity possessed to the applicable quantity specified in Column II of such Table I for that radionuclide.

(2) The sum of the ratios for all radionuclides possessed under the license shall not exceed unity.

BROAD LICENSE APPLICATIONS AND RESTRICTIONS

§ 225.51. Type A application.

An application for a Type A license of broad scope shall be approved if the following conditions are met:

(1) The applicant shall satisfy the general requirements specified in § 225.3 of this Title (relating to license approval).

(2) The applicant shall have engaged in a reasonable number of activities involving the use of radioactive material.

(3) The applicant shall have established administrative controls and provisions relating to organization and management, procedures, record keeping, material control and accounting and management review that are necessary to assure safe operations, including:

(i) the establishment of a radiation safety committee composed of such persons as a radiation safety officer, a representative of management, and persons trained and experienced in the safe use of radioactive materials;

(ii) the appointment of a radiation safety officer who is qualified by training and experience in radiation protection and who is available for service and assistance on radiation safety matters; and

(iii) the establishment of appropriate administrative procedures to assure control of procurement and use of radioactive material; completion of safety evaluations of proposed uses of radioactive material which takes into consideration matters such as the adequacy of facilities and equipment, training and experience of the user, and the operating or handling procedures; and review, approval and recording by the radiation safety committee of safety evaluation of proposed uses prior to use of the radioactive material.

§ 225.52. Type B application.

An application for a Type B license of broad scope shall be approved if the following conditions are met:

(1) The applicant shall satisfy the general requirements specified in § 225.3 of this Title (relating to license approval).

(2) The applicant shall have established administrative controls and provisions relating to organization and management, procedures, record keeping, material control and accounting and management review that is necessary to assure safe operations, including:

(i) the appointment of a radiation safety officer who is qualified by training and experience in radiation protection and who is available for advice and assistance on radiation safety matters; and

(ii) the establishment of appropriate administrative procedures to assure control of procurement and use of radioactive material; completion of safety evaluations of proposed uses of radioactive material which take into consideration such matters as the adequacy of facilities and equipment, training and experience of the user, and the operating or handling procedures; and review, approval, and recording by the radiological safety officer of safety evaluations of proposed uses prior to use of the radioactive material.

§ 225.53. Type C application.

An application for a Type C license of broad scope shall be approved if the following conditions are met:

(1) The applicant shall satisfy the general requirements specified in § 225.3 of this Title (relating to license approval).

(2) The applicant shall submit a statement that radioactive material shall be used only by, or under the direct supervision of, individuals who have received:

(i) a college degree at the Bachelor level, or equivalent training in the physical or biological sciences, or in engineering;

(ii) at least 40 hours of training and experience in the safe handling of radioactive materials, and in the characteristics of ionizing radiation, units of radiation, dose and quantities, radiation detection instrumentation, and biological hazards of exposure to radiation, and biological hazards of exposure to radiation appropriate to the type and forms of radioactive material to be used.

(3) The applicant shall have established administrative controls and provisions relating to procurement of radioactive material, procedures, recordkeeping, material control and accounting, and management review necessary to assure safe operations.

§ 225.54. License restriction.

Licenses of broad scope shall be subject to the following conditions:

(1) Persons holding broad scope licenses shall not:

(i) conduct tracer studies in the environment involving direct release of radioactive material;

(ii) receive, acquire, own, possess, use or transfer devices containing 100,000 curies or more of radioactive material in sealed sources used for irradiation of materials;

(iii) conduct activities for which a specific license issued by the Department under § 225.3 of this Title (relating to license approval) is required; or

(iv) add or cause the addition of radioactive material to any food, beverage, cosmetic, drug, or other product designed for ingestion or inhalation by, or application to, a human being.

(2) Each Type A license of broad scope issued under this Chapter shall be subject to the condition that radioactive material possessed under the license may only be used by, or under the direct supervision of, individuals approved by the licensee's radiation safety committee.

(3) Each Type B license of broad scope issued under this Chapter shall be

subject to the condition that radioactive material possessed under the license may only be used by, or under the direct supervision of, individuals approved by the licensee's radiological safety officer.

(4) Each Type C license of broad scope issued under this Chapter shall be subject to the condition that radioactive material possessed under the license may only be used by, or under the direct supervision of, individuals who satisfy the requirements of § 225.53 of this Title (relating to Type C applications).

§ 225.55. Quantities of radioactive materials.

For the purpose of determining certain permissible quantities of radioactive materials, the following table shall be used:

Table I

Radioactive material	column I - curies	column II - curies
Antimony-122	1	0.01
Antimony-124	1	0.01
Antimony-125	1	0.01
Arsenic-73	10	0.1
Arsenic-74	1	0.01
Arsenic-76	1	0.01
Arsenic-77	10	0.1
Barium-131	10	0.1
Barium-140	1	0.01
Beryllium-7	10	0.1
Bismuth-210	0.1	0.001
Bromine-82	10	0.1
Cadmium-109	1	0.01
Cadmium-115m	1	0.01
Cadmium-115	10	0.1
Calcium-45	1	0.01
Calcium-47	10	0.1
Carbon-14	100	1.0
Cerium-141	10	0.1
Cerium-143	10	0.1
Cerium-144	0.1	0.001
Cesium-131	100	1.0
Cesium-134m	100	1.0
Cesium-134	0.1	0.001
Cesium-135	1	0.01
Cesium-136	10	0.1
Cesium-137	0.1	0.001
Chlorine-36	1	0.01
Chlorine-38	100	1.0
Chromium-51	100	1.0
Cobalt-57	10	0.1
Cobalt-58m	100	1.0
Cobalt-58	1	0.01
Cobalt-60	0.1	0.001
Copper-64	10	0.1
Dysprosium-165	100	1.0
Dysprosium-166	10	0.1
Erbium-169	10	0.1
Erbium-171	10	0.1
Europium-152 9.2 h	10	0.1
Europium-152 13 y	0.1	0.001

Table I

Radioactive material	column I - curies	column II - curies
Europium-154	0.1	0.001
Europium-155	1	0.01
Fluorine-18	100	1.0
Gadolinium-153	1	0.01
Gadolinium-159	10	0.1
Gallium-72	10	0.1
Germanium-71	100	1.0
Gold-198	10	0.1
Gold-199	10	0.1
Hafnium-181	1	0.01
Holmium-166	10	0.1
Hydrogen-3	100	1.0
Indium-113m	100	1.0
Indium-114m	1	0.01
Indium-115m	100	1.0
Indium-115	1	0.01
Iodine-125	0.1	0.001
Iodine-126	0.1	0.001
Iodine-129	0.1	0.001
Iodine-131	0.1	0.001
Iodine-132	10	0.1
Iodine-133	1	0.01
Iodine-134	10	0.1
Iodine-135	1	0.01
Iridium-192	1	0.01
Iridium-194	10	0.1
Iron-55	10	0.1
Iron-59	1	0.01
Krypton-85	100	1.0
Krypton-87	10	0.1
Lanthanum-140	1	0.01
Lutetium-177	10	0.1
Manganese-52	1	0.01
Manganese-54	1	0.01
Manganese-56	10	0.1
Mercury-197m	10	0.1
Mercury-197	10	0.1
Mercury-203	1	0.01
Molybdenum-99	10	0.1
Neodymium-147	10	0.1
Neodymium-149	10	0.1
Nickel-59	10	0.1
Nickel-63	1	0.01
Nickel-65	10	0.1
Niobium-93m	1	0.01
Niobium-95	1	0.01
Niobium-97	100	1.0
Osmium-185	1	0.01
Osmium-191m	100	1.0
Osmium-191	10	0.1
Osmium-193	10	0.1
Palladium-103	10	0.1
Palladium-109	10	0.1
Phosphorus-32	1	0.01
Platinum-191	10	0.1
Platinum-193m	100	1.0

Table I

Radioactive material	column I - curies	column II - curies
Platinum-193	10	0.1
Platinum-197m	100	1.0
Platinum-197	10	0.1
Polonium-210	0.01	0.0001
Potassium-42	1	0.01
Praseodymium-142	10	0.1
Praseodymium-143	10	0.1
Promethium-147	1	0.01
Promethium-149	10	0.1
Rhenium-186	10	0.1
Rhenium-188	10	0.1
Rhodium-103m	1,000	10.0
Rhodium-105	10	0.1
Rubidium-86	1	0.01
Rubidium-87	1	0.01
Ruthenium-97	100	1.0
Ruthenium-103	1	0.01
Ruthenium-105	10	0.1
Ruthenium-106	0.1	0.001
Samarium-151	1	0.01
Samarium-153	10	0.1
Scandium-46	1	0.01
Scandium-47	10	0.1
Scandium-48	1	0.01
Selenium-75	1	0.01
Silicon-31	10	0.1
Silver-105	1	0.01
Silver-110m	0.1	0.001
Silver-111	10	0.1
Sodium-22	0.1	0.001
Sodium-24	1	0.01
Strontium-85m	1,000	10.0
Strontium-85	1	0.01
Strontium-89	1	0.01
Strontium-90	0.01	0.0001
Strontium-91	10	0.1
Strontium-92	10	0.1
Sulphur-35	10	0.1
Tantalum-182	1	0.01
Technetium-96	10	0.1
Technetium-97m	10	0.1
Technetium-97	10	0.1
Technetium-99m	100	1.0
Technetium-99	1	0.01
Tellurium-125m	1	0.01
Tellurium-127m	1	0.01
Tellurium-127	10	0.1
Tellurium-129m	1	0.01
Tellurium-129	100	1.0
Tellurium-131m	10	0.1
Tellurium-132	1	0.01
Terbium-160	1	0.01
Thallium-200	10	0.1
Thallium-201	10	0.1
Thallium-202	10	0.1
Thallium-204	1	0.01
Thulium-170	1	0.01

Table I

Radioactive material	column I - curies	column II - curies
Thulium-171	1	0.01
Tin-113	1	0.01
Tin-125	1	0.01
Tungsten-181	1	0.01
Tungsten-185	1	0.01
Tungsten-187	10	0.1
Vanadium-48	1	0.01
Xenon-131m	1,000	10.0
Xenon-133	100	1.0
Xenon-135	100	1.0
Ytterbium-175	10	0.1
Yttrium-90	1	0.01
Yttrium-91	1	0.01
Yttrium-92	10	0.1
Yttrium-93	1	0.01
Zinc-65	1	0.01
Zinc-69m	10	0.1
Zinc-69	100	1.0
Zirconium-93	1	0.01
Zirconium-95	1	0.01
Zirconium-97	1	0.01
Any radioactive material not listed above except special nuclear materials and alpha emitters.	0.1	0.001

EXEMPTIONS FROM LICENSING

§ 225.61. General.

(a) The use of radioactive material in this Commonwealth pursuant to a license issued by the U.S. Atomic Energy Commission shall be exempt from the licensing requirements of this Chapter.

(b) The sources, uses, kinds of sources, or kinds of users set forth in the provisions of § § 225.62 - 225.65 of this Title (relating to exemptions) shall be exempt from the requirements of a license under this Chapter, provided the persons using those devices comply with the specific requirements for each particular source. The manufacturing or assembly, however, of such devices shall not be exempt from licensing.

§ 225.62. Aircraft devices.

The receipt, acquisition, possession and use of tritium in instrument dials and other safety devices for use in aircraft and promethium-147 in safety devices other than instrument dials for use in aircraft shall be exempt, if the following conditions are met:

(1) Each device shall contain not more than ten curies of tritium or 300 millicuries of promethium-147.

(2) Each device shall have been manufactured, assembled or imported in accordance with a license issued in accordance with § 225.3 of this Title (relating to license approval), or an equivalent document issued by the U.S. Atomic Energy Commission or an agreement state.

(3) There shall have been no disassembly or repair of the device.

(4) Each person who receives, acquires, possesses or uses the device shall report losses or incidents as required by § § 227.92 and 227.93 of this Title (relating to reports of loss and notification of incidents).

§ 225.63. Ice detection devices.

The receipt, acquisition, possession, use and transfer of strontium-90 contained in ice detection devices shall be exempt, if the following conditions are met:

(1) Each device shall contain not more than 50 microcuries of strontium-90.
(2) Each device shall have been manufactured or imported under a license issued in accordance with § 225.3 of this Title (relating to license approval), or an equivalent document issued by the U.S. Atomic Energy Commission or an agreement state.

(3) Each person who receives, acquires, possesses, uses or transfers strontium-90 in ice detection devices shall:

(i) Upon occurrence of observable damage, such as a bend or crack or discoloration from overheating to the device, discontinue use or withhold transfer of the device until it has been inspected, tested for leakage and repaired by a person holding a license to manufacture or service such devices; or shall dispose of the device pursuant to the provisions of § § 227.81 - 227.85 of this Title (relating to waste disposal).

(ii) assure that all labels affixed to the device at the time of receipt, and which bear a statement which prohibits removal of the labels, shall be maintained thereon;

(iii) report loss and incidents as required by § § 227.92 and 227.93 of this Title (relating to reports of loss and notification of incidents); and

(iv) not manufacture, assemble, disassemble or repair ice detection devices containing strontium-90.

§ 225.64. Other devices.

(a) The acquisition, receipt, possession and use of radioactive material when contained in devices designed and manufactured for the purpose of detecting, measuring, gauging or controlling thickness, density, level, interface location, radiation leakage, qualitative or quantitative chemical composition, or for producing light or an ionized atmosphere, when such devices are manufactured in accordance with the specifications contained in a specific license issued in accordance with § 225.3 of this Title (relating to license approval), or an equivalent document issued by the U.S. Atomic Energy Commission or an agreement state authorizing distribution, if the following conditions are met:

(1) Such devices are labeled in accordance with the provisions of the license.
(2) Such devices bear a label containing the following or a substantially similar statement:

"The receipt, possession, use, and transfer of this device, Model _____, Serial No. _____, are subject to a general license or the equivalent and the regulations of the United States Atomic Energy Commission or of a state with which the Atomic Energy Commission has entered into an agreement for the exercise of regulatory authority. Removal of this label is prohibited.

CAUTION - RADIOACTIVE MATERIAL

(Name of Supplier)"

(3) The model, serial number, and name of supplier may be omitted from the label if they are elsewhere specified in the labeling affixed to the device.

(4) If required by the label such devices shall be installed on the premises by a person authorized to install such devices under a license. This requirement shall not apply while the devices are held in storage in the original shipping container pending installation by a specific licensee.

(5) All labels affixed to the device at the time of receipt and bearing the

statement, "Removal of this label is prohibited," shall be maintained thereon and compliance with all instructions on such labels shall be assured.

(6) Persons who receive, acquire, possess or use a device pursuant to this section shall be subject to the following additional restrictions:

(i) Devices shall not be transferred, abandoned, relocated or disposed of, except by transfer to a person duly authorized to receive such device by a license.

(ii) The device shall be tested for leakage of radioactive material and proper operation of the on-off mechanism and indicator, if any, at the time of installation of the device or replacement of the radioactive material on the premises of the person. Thereafter tests shall be made at no longer than six month intervals or at such longer intervals as specified by the manufacturer on the label, but not to exceed three years. Devices containing only tritium need not be tested for any purpose, and devices containing only krypton need not be tested for leakage.

(iii) All required tests and all other required services involving the radioactive material, its shielding and containment, shall be performed by the supplier or other person duly licensed by the Department, the U.S. Atomic Energy Commission or any agreement state, to manufacture, install or service such devices.

(iv) Records shall be maintained of all tests performed on the device as required under this section, including the dates and results of the tests and the names and addresses of the persons conducting the tests.

(v) Upon the occurrence of a failure of or damage to, or any indication of a possible failure of or damage to, the shielding or containment of the radioactive material or the on-off mechanism or indicator, operation of the device shall be immediately suspended until it has been repaired by a person holding a license issued by the Department, the U.S. Atomic Energy Commission, or any agreement state to manufacture, install or service such devices, or dispose of by transfer to a person holding a license to receive the radioactive material contained in the device.

(vi) Loss and incidents shall be reported as required by §§ 227.92 and 227.93 of this Title (relating to reports of loss and incidents).

(b) The acquisition, receipt, possession, use and transfer of radioactive material incorporated in the following devices or equipment which have been manufactured, tested and labeled by the manufacturer in accordance with a license issued by the Department, the U.S. Atomic Energy Commission, or any agreement state, and authorizing distribution under the requirements of this paragraph or its equivalent shall be exempt:

(1) *Static elimination device.* Devices designed for use as static eliminators which contain, as a sealed source or sources, radioactive material consisting of a total of not more than 500 microcuries of polonium-210 per device.

(2) *Light meter.* Devices designed for use in measuring or determining light intensity which contain, as a sealed source or sources, radioactive material consisting of a total of not more than 200 microcuries of strontium-90 per device.

(3) *Ion generating tube.* Devices designed for ionization of air which contain, as a sealed source or sources, radioactive material consisting of a total of not more than 500 microcuries of polonium-210 per device or consisting of a total of not more than 50 millicuries of hydrogen-3 (tritium) per device.

TITLE 25. RULES AND REGULATIONS
PART I. DEPARTMENT OF ENVIRONMENTAL RESOURCES
Subpart D. ENVIRONMENTAL HEALTH AND SAFETY
ARTICLE V. RADIOLOGICAL HEALTH

CHAPTER 227. STANDARDS FOR CONTROL OF RADIATION EXPOSURE

Authority

The provisions of this Chapter 227 issued under act of January 28, 1966, P.L. 1625 § 301 (73 P.S. § 1301).

Source

The provisions of this Chapter 227 adopted February 1, 1972, effective March 1, 1972, 2 Pa. B. 212.

GENERAL PROVISIONS

§ 227.1. Scope.

The provisions of this Chapter shall apply to all persons who use, manufacture, produce, transport, transfer, receive, acquire, possess or dispose of any radiation source, unless specifically exempted in §§ 221.31 - 221.35 of this Title (relating to exemptions in general).

§ 227.2. Responsibilities of licensees and registrants.

- (a) Each licensee or registrant shall have a radiation safety program.
- (b) Each licensee or registrant shall designate an individual as radiation safety officer to head the radiation safety program.
- (c) The radiation safety program shall include at least the following:
 - (1) Informing individuals working in or frequenting any portion of a restricted area of the occurrence of radiation or radiation sources in those portions of the restricted area.
 - (2) Instruction of such individuals concerning the attendant radiation and contamination hazards and safe working practices.
 - (3) Provision of necessary auxiliary devices as may be necessary for such individuals and the adequate instruction in their use.
 - (4) Informing such individuals in the applicable provisions of these regulations for the protection of personnel from exposure to radiation or radioactive materials.
 - (5) Notification of appropriate officials of the existence of any conditions or situations that may become a hazard under special or unusual circumstances, for instance, during a fire.
- (d) Each licensee or registrant shall make available a current copy of this Article and a copy of the current license or registration for examination by employees upon request.
- (e) Each licensee or registrant shall conspicuously post the Department's "Notice to Employees" in a sufficient number of places in every establishment where employees are employed in activities licensed or registered, pursuant to Chapters 223 and 225 of this Title (relating to registration and licensing) by the Department, to permit employees working in or frequenting any portion of a restricted area to observe a copy on the way to or from their place of employment.
- (f) Copies of "Notice to Employees" may be obtained from the Department upon written request.

EXPOSURE TO RADIATION IN RESTRICTED AREAS

§ 227.11. Maximum exposure limits.

Except as provided in § 227.12 of this Title (relating to exceptions to limits), no licensee or registrant shall possess, use, receive or transfer sources of radiation in such a manner as to cause any individual in a restricted area to receive, from all sources of radiation in the licensee's or registrant's possession, a dose in excess of the limits specified in the following table:

Part of Body	Rems per Calendar Quarter	Rems per Year
Whole body; head and trunk; active blood-forming organs; lens of eyes; or gonads.	3	5
Hands and forearms; feet and ankles.	25	75
Skin of whole body.	10	30

§ 227.12. Exceptions to limits.

A licensee or registrant may permit an individual in a restricted area to receive a dose to the whole body greater than that permitted under § 227.11 of this Title (relating to maximum exposure limits), if the following conditions are met:

(1) During any calendar quarter the dose of the whole body from sources of radiation in the licensee's or registrant's possession shall not exceed three rems.

(2) The dose of the whole body, when added to the accumulated occupational dose to the whole body, shall not exceed five (N-18) rems where "N" equals the individual's age in years at his last birthday.

(3) The licensee or registrant shall have determined the individual's accumulated occupational dose to the whole body on Department Form H 702.002 or on a clear and legible record containing all the information required in that form and has otherwise complied with the requirements of § 227.13 of this Title (relating to Form H 702.002). "Dose to the whole body" shall include any dose to the whole body, gonads, active blood-forming organs, head and trunk, or lens of eye.

§ 227.13. Form H 702.002.

Before permitting any individual in a restricted area to receive exposure to radiation in excess of the limits specified in § 227.11 of this Title (relating to maximum exposure limits) each licensee or registrant shall do the following:

(1) Obtain a certificate on Department Form H 702.002 or on a clear and legible record containing all the information required on that form, signed by the individual, showing each period of time the individual received an occupational dose of radiation.

(2) Calculate on Department Form H 702.002, in accordance with the instructions appearing therein, or on a clear and legible record containing all the information required on that form, the previously accumulated occupational dose received by the individual and the additional dose allowed for that individual under § 227.12 (2) of this Title (relating to exceptions to limits).

(3) Make a reasonable effort to obtain reports of the individual's previously accumulated occupational dose. For each period for which the licensee obtains such reports, he shall use the dose shown in the report in preparing the form.

(4) In any case where a licensee is unable to obtain reports of the individual's occupational dose for a previous complete calendar quarter, it shall be assumed that the

individual has received the occupational dose specified in whichever of the following columns apply:

Part of Body	Column I - Assumed Dose in Rems for Calendar Quarters Prior to January 1, 1961	Column II - Assumed Dose in Rems for Calendar Quarters Beginning on or After January 1, 1961
Whole body, gonads, active blood-forming organs, head and trunk, lens of eye	3.75	1.25

(5) The licensee or registrant shall retain and preserve records used in preparing Department Form H 702.002. If calculation of the individual's accumulated occupational dose for all periods prior to January 1, 1961, yields a result higher than the applicable accumulated dose value for the individual as of that date, as specified in § 227.12 of this Title (relating to exceptions to limits), the excess may be disregarded.

EXPOSURE TO CONCENTRATIONS OF RADIOACTIVE MATERIAL IN RESTRICTED AREAS

§ 227.21. General.

(a) No licensee shall possess, use, receive, or transfer radioactive material in such a manner as to cause an individual in a restricted area to be exposed to airborne radioactive material in an average concentration in excess of the limits specified in Table A of § 227.25 of this Title (relating to table of concentrations). As used in this Chapter, exposed shall mean that an individual is present in an airborne concentration.

(b) No allowance shall be made for the use of protective clothing or equipment, or particle size, except as authorized by the Department, pursuant to § 227.23 of this Title (relating to protective clothing).

§ 227.22. Use of table.

(a) The limits given in Table A in § 227.25 of this Title (relating to table of concentrations) shall be based upon exposure to the concentrations specified for 40 hours in any period of seven consecutive days.

(b) In any such period where the number of hours of exposure is less than 40, the limits specified in the table may be increased proportionately.

(c) In any such period where the number of hours of exposure is greater than 40, the limits specified in the table shall be decreased proportionately.

§ 227.23. Protective clothing.

(a) Except as authorized by the Department pursuant to this section, no allowance shall be made for particle size or the use of protective clothing or equipment in determining whether an individual is exposed to an airborne concentration in excess of the limits specified in Table A of § 227.25 of this Title (relating to table of concentrations).

(b) The Department may authorize a licensee to expose an individual in a restricted area to airborne concentrations in excess of the limits specified in Table A upon receipt by the Department of an application demonstrating that the concentration is composed in whole or in part of particles of such size that the particles are not respirable and that the individual will not inhale the concentrations in excess of the limits established in Table A. Each application under this Chapter shall include an analysis of particle sizes in the concentrations and a description of the methods used in determining the particle sizes.

(c) The Department may authorize a licensee to expose an individual in a restricted area to airborne concentrations in excess of the limits specified in Table A upon receipt of an application demonstrating that the individual will wear appropriate protective equipment and that the individual will not inhale, ingest, or absorb quantities of radioactive material in excess of those which might otherwise be permitted under this Chapter for individuals in restricted areas during a 40 hour week. Each application under this Chapter shall contain the following information:

- (1) A description of the protective equipment to be employed, including the efficiency of the equipment for the material involved.
- (2) Procedures for the fitting, maintenance and cleaning of the protective equipment.
- (3) Procedures governing the use of the protective equipment, including supervisory procedures and length of time the equipment shall be used by the individuals in each work week. The proposed periods for use of the equipment by any individual shall not be of such duration as would discourage observance by the individual of the proposed procedure.
- (4) The average concentrations present in the areas occupied by individuals.

§ 227.24. Exposure of minors.

(a) No licensee or registrant shall possess, use or transfer sources of radiation in such a manner as to cause any individual within a restricted area, who is under 18 years of age, to receive in any period of one calendar quarter from all sources of radiation in such licensee's or registrant's possession a dose in excess of 10% of the limits specified in § 227.11 of this Title (relating to maximum exposure limits).

(b) No licensee shall possess, use or transfer radioactive material in such a manner as to cause any individual within a restricted area, who is under 18 years of age, to be exposed to airborne radioactive material in an average concentration in excess of the limits specified in Table B in § 227.25 of this Title (relating to table of concentrations). For purposes of this subsection, concentrations may be averaged over periods not greater than a week.

(c) The provisions of § 227.23 of this Title (relating to protective clothing), shall apply to exposures subject to subsection (b).

§ 227.25. Table of concentrations.

(a) For the purpose of this Chapter, the following table of concentrations in air and water above natural background shall be used:

Element (atomic number)	Isotope soluble (S) insoluble (I)		TABLE A		TABLE B	
			Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)
Actinium (89)	Ac	227 S	2×10^{-12}	6×10^{-5}	8×10^{-14}	2×10^{-6}
		I	3×10^{-11}	9×10^{-3}	9×10^{-13}	3×10^{-4}
	Ac	228 S	8×10^{-8}	3×10^{-3}	3×10^{-9}	9×10^{-5}
		I	2×10^{-8}	3×10^{-3}	6×10^{-10}	9×10^{-5}
Americium (95)	Am	241 S	6×10^{-12}	1×10^{-4}	2×10^{-13}	4×10^{-6}
		I	1×10^{-10}	8×10^{-4}	4×10^{-12}	2×10^{-5}
	Am	242 m S	6×10^{-12}	1×10^{-4}	2×10^{-13}	4×10^{-6}
		I	3×10^{-10}	3×10^{-3}	9×10^{-12}	9×10^{-5}
	Am	242 S	4×10^{-8}	4×10^{-3}	1×10^{-9}	1×10^{-4}
		I	5×10^{-8}	4×10^{-3}	2×10^{-9}	1×10^{-4}
	Am	243 S	6×10^{-12}	1×10^{-4}	2×10^{-13}	4×10^{-6}
		I	1×10^{-10}	8×10^{-4}	4×10^{-12}	3×10^{-5}
Am	244 S	4×10^{-6}	1×10^{-1}	1×10^{-7}	5×10^{-3}	
	I	2×10^{-5}	1×10^{-1}	8×10^{-7}	5×10^{-3}	

Element (atomic number)	Isotope		TABLE A		TABLE B		
	soluble (S)	insoluble (I)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	
Antimony (51)	Sb	122	S	2×10^{-7}	8×10^{-4}	6×10^{-9}	3×10^{-5}
			I	1×10^{-7}	8×10^{-4}	5×10^{-9}	3×10^{-5}
	Sb	124	S	2×10^{-7}	7×10^{-4}	5×10^{-9}	2×10^{-5}
Argon (18)	A	37	Sub	6×10^{-3}	—	1×10^{-4}	—
		41	Sub	2×10^{-6}	—	4×10^{-8}	—
	As	73	S	2×10^{-6}	1×10^{-2}	7×10^{-8}	5×10^{-4}
Arsenic (33)	As	74	S	3×10^{-7}	2×10^{-3}	1×10^{-8}	5×10^{-4}
			I	1×10^{-7}	2×10^{-3}	1×10^{-8}	5×10^{-5}
	As	76	S	1×10^{-7}	6×10^{-4}	4×10^{-9}	2×10^{-5}
		I	1×10^{-7}	6×10^{-4}	3×10^{-9}	2×10^{-5}	
	As	77	S	5×10^{-7}	2×10^{-3}	2×10^{-8}	8×10^{-5}
		I	4×10^{-7}	2×10^{-3}	1×10^{-8}	8×10^{-5}	
Astatine (85)	At	211	S	7×10^{-9}	5×10^{-5}	2×10^{-10}	2×10^{-6}
Barium (56)	Ba	131	S	1×10^{-6}	5×10^{-3}	1×10^{-9}	7×10^{-5}
			I	4×10^{-7}	5×10^{-3}	4×10^{-8}	2×10^{-4}
Berkelium (97)	Bk	249	S	9×10^{-10}	2×10^{-2}	1×10^{-9}	2×10^{-5}
			I	1×10^{-7}	2×10^{-2}	3×10^{-11}	6×10^{-4}
	Bk	250	S	1×10^{-7}	6×10^{-3}	4×10^{-9}	6×10^{-4}
Beryllium (4)	Be	7	S	6×10^{-6}	5×10^{-2}	5×10^{-9}	2×10^{-4}
			I	1×10^{-6}	5×10^{-2}	4×10^{-8}	2×10^{-4}
Bismuth (83)	Bi	206	S	2×10^{-7}	1×10^{-3}	2×10^{-7}	2×10^{-3}
			I	1×10^{-7}	1×10^{-3}	4×10^{-8}	2×10^{-3}
	Bi	207	S	2×10^{-7}	2×10^{-3}	6×10^{-9}	4×10^{-5}
		I	1×10^{-8}	2×10^{-3}	5×10^{-9}	4×10^{-5}	
	Bi	210	S	6×10^{-9}	1×10^{-3}	6×10^{-9}	6×10^{-5}
		I	6×10^{-9}	1×10^{-3}	5×10^{-10}	6×10^{-5}	
Bromine (35)	Br	82	S	1×10^{-6}	1×10^{-2}	2×10^{-10}	4×10^{-5}
			I	2×10^{-7}	1×10^{-2}	3×10^{-9}	4×10^{-4}
Cadmium (48)	Cd	109	S	5×10^{-8}	5×10^{-3}	7×10^{-9}	4×10^{-4}
			I	7×10^{-8}	5×10^{-3}	6×10^{-9}	3×10^{-5}
	Cd	115 m	S	4×10^{-8}	7×10^{-4}	2×10^{-9}	2×10^{-4}
		I	4×10^{-8}	7×10^{-4}	1×10^{-9}	3×10^{-5}	
Calcium (20)	Ca	45	S	2×10^{-7}	1×10^{-3}	1×10^{-9}	3×10^{-5}
			I	2×10^{-7}	1×10^{-3}	8×10^{-9}	3×10^{-5}
	Ca	47	S	3×10^{-8}	3×10^{-4}	6×10^{-9}	4×10^{-5}
Californium (98)	Cf	249	S	1×10^{-7}	5×10^{-3}	4×10^{-9}	2×10^{-4}
			I	2×10^{-7}	1×10^{-3}	6×10^{-9}	5×10^{-5}
	Cf	250	S	2×10^{-12}	1×10^{-4}	6×10^{-9}	3×10^{-5}
		I	1×10^{-10}	7×10^{-4}	6×10^{-9}	3×10^{-5}	
	Cf	251	S	5×10^{-12}	4×10^{-4}	6×10^{-9}	5×10^{-5}
		I	1×10^{-10}	7×10^{-4}	6×10^{-14}	4×10^{-6}	
	Cf	252	S	2×10^{-12}	1×10^{-4}	3×10^{-12}	2×10^{-5}
			I	1×10^{-10}	8×10^{-4}	3×10^{-12}	3×10^{-5}
			S	2×10^{-11}	7×10^{-4}	7×10^{-13}	2×10^{-5}

Element (atomic number)	Isotope		TABLE A		TABLE B		
	soluble	(S) insoluble (I)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	
Carbon (6)	C (CO ₂)	14	I	1×10^{-10}	7×10^{-4}	4×10^{-12}	2×10^{-5}
			S	8×10^{-10}	4×10^{-3}	3×10^{-11}	1×10^{-4}
		254	I	8×10^{-10}	4×10^{-3}	3×10^{-11}	1×10^{-4}
			S	5×10^{-12}	4×10^{-6}	2×10^{-13}	1×10^{-7}
			I	5×10^{-12}	4×10^{-6}	2×10^{-13}	1×10^{-7}
			S	4×10^{-6}	2×10^{-2}	1×10^{-7}	8×10^{-4}
Cerium (58)	Ce	141	S	5×10^{-5}	—	1×10^{-6}	—
			I	4×10^{-7}	3×10^{-3}	2×10^{-8}	9×10^{-5}
		143	I	2×10^{-7}	3×10^{-3}	5×10^{-9}	9×10^{-5}
			S	3×10^{-7}	1×10^{-3}	9×10^{-9}	4×10^{-5}
		144	I	2×10^{-7}	1×10^{-3}	7×10^{-9}	4×10^{-5}
			S	1×10^{-8}	3×10^{-4}	3×10^{-10}	1×10^{-5}
Cesium (55)	Cs	131	I	6×10^{-9}	3×10^{-4}	2×10^{-10}	1×10^{-5}
			S	1×10^{-5}	7×10^{-2}	4×10^{-7}	2×10^{-3}
		134 m	I	3×10^{-6}	3×10^{-2}	1×10^{-7}	9×10^{-4}
			S	4×10^{-5}	2×10^{-1}	1×10^{-6}	6×10^{-3}
		134	I	6×10^{-6}	3×10^{-2}	2×10^{-7}	1×10^{-3}
			S	4×10^{-8}	3×10^{-4}	1×10^{-9}	9×10^{-6}
		135	I	1×10^{-8}	1×10^{-3}	4×10^{-10}	4×10^{-5}
			S	5×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}
		136	I	9×10^{-8}	7×10^{-3}	3×10^{-9}	2×10^{-4}
			S	4×10^{-7}	2×10^{-3}	1×10^{-8}	9×10^{-5}
		137	I	2×10^{-7}	2×10^{-3}	6×10^{-9}	6×10^{-5}
			S	6×10^{-8}	4×10^{-4}	2×10^{-9}	2×10^{-5}
Chlorine (17)	Cl	36	I	1×10^{-8}	1×10^{-3}	5×10^{-10}	4×10^{-5}
			S	4×10^{-7}	2×10^{-3}	1×10^{-8}	8×10^{-5}
		38	I	2×10^{-8}	2×10^{-3}	8×10^{-10}	6×10^{-5}
			S	3×10^{-6}	1×10^{-2}	9×10^{-8}	4×10^{-4}
Chromium (24)	Cr	51	I	2×10^{-6}	1×10^{-2}	7×10^{-8}	4×10^{-4}
			S	1×10^{-5}	5×10^{-2}	4×10^{-7}	2×10^{-3}
		57	I	2×10^{-6}	5×10^{-2}	8×10^{-8}	2×10^{-3}
			S	3×10^{-6}	2×10^{-2}	1×10^{-7}	5×10^{-4}
Cobalt (27)	Co	58 m	I	2×10^{-7}	1×10^{-2}	6×10^{-9}	4×10^{-4}
			S	2×10^{-5}	8×10^{-2}	6×10^{-7}	3×10^{-3}
		58	I	9×10^{-6}	6×10^{-2}	3×10^{-7}	2×10^{-3}
			S	8×10^{-7}	4×10^{-3}	3×10^{-8}	1×10^{-4}
Copper (29)	Cu	60	I	5×10^{-8}	3×10^{-3}	2×10^{-9}	9×10^{-5}
			S	3×10^{-7}	1×10^{-3}	1×10^{-8}	5×10^{-5}
		64	I	9×10^{-9}	1×10^{-3}	3×10^{-10}	3×10^{-5}
			S	2×10^{-6}	1×10^{-2}	7×10^{-8}	3×10^{-4}
Curium (96)	Cm	242	I	1×10^{-6}	6×10^{-3}	4×10^{-8}	2×10^{-4}
			S	1×10^{-10}	7×10^{-4}	4×10^{-12}	2×10^{-5}
		243	I	2×10^{-10}	7×10^{-4}	6×10^{-12}	3×10^{-5}
			S	6×10^{-12}	1×10^{-4}	2×10^{-13}	5×10^{-6}
		244	I	1×10^{-10}	7×10^{-4}	3×10^{-12}	2×10^{-5}
			S	9×10^{-12}	2×10^{-4}	3×10^{-13}	7×10^{-6}
		245	I	1×10^{-10}	8×10^{-4}	3×10^{-12}	3×10^{-5}
			S	5×10^{-12}	1×10^{-4}	2×10^{-13}	4×10^{-6}
		246	I	1×10^{-10}	8×10^{-4}	4×10^{-12}	3×10^{-5}
			S	5×10^{-12}	1×10^{-4}	2×10^{-13}	4×10^{-6}
		247	I	1×10^{-10}	8×10^{-4}	4×10^{-12}	3×10^{-5}
			S	5×10^{-12}	1×10^{-4}	2×10^{-13}	4×10^{-6}
248	I	1×10^{-10}	6×10^{-4}	4×10^{-12}	2×10^{-5}		
	S	6×10^{-13}	1×10^{-5}	2×10^{-14}	4×10^{-7}		
249	I	1×10^{-11}	4×10^{-5}	4×10^{-13}	1×10^{-6}		
	S	1×10^{-5}	6×10^{-2}	4×10^{-7}	2×10^{-3}		

Element (atomic number)	Isotope soluble (S) insoluble (I)	TABLE A		TABLE B			
		Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)		
Dysprosium (66)	Dy 165	I	1×10^{-5}	6×10^{-2}	4×10^{-7}	2×10^{-3}	
		S	3×10^{-6}	1×10^{-2}	9×10^{-8}	4×10^{-4}	
	Dy 166	I	2×10^{-6}	1×10^{-2}	7×10^{-8}	4×10^{-4}	
		S	2×10^{-7}	1×10^{-3}	8×10^{-9}	4×10^{-5}	
Einsteinium (99)	Es 253	I	2×10^{-7}	1×10^{-3}	7×10^{-9}	4×10^{-5}	
		S	8×10^{-10}	7×10^{-4}	3×10^{-11}	2×10^{-5}	
	Es 254 m	I	6×10^{-10}	7×10^{-4}	2×10^{-11}	2×10^{-5}	
		S	5×10^{-9}	5×10^{-4}	2×10^{-10}	2×10^{-5}	
Es 254	I	6×10^{-9}	5×10^{-4}	2×10^{-10}	2×10^{-5}		
	S	2×10^{-11}	4×10^{-4}	6×10^{-13}	1×10^{-5}		
Es 255		I	1×10^{-10}	4×10^{-4}	4×10^{-12}	1×10^{-5}	
		S	5×10^{-10}	8×10^{-4}	2×10^{-11}	3×10^{-5}	
Erbium (68)	Er 169	I	4×10^{-10}	8×10^{-4}	1×10^{-11}	3×10^{-5}	
		S	6×10^{-7}	3×10^{-3}	2×10^{-8}	9×10^{-5}	
	Er 171	I	4×10^{-7}	3×10^{-3}	1×10^{-8}	9×10^{-5}	
		S	7×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}	
Europium (63)	Eu 152 (T/2=9.2 hrs)	I	6×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}	
		S	4×10^{-7}	2×10^{-3}	1×10^{-8}	6×10^{-5}	
	Eu 152 (T/2=13 yrs)	I	3×10^{-7}	2×10^{-3}	1×10^{-8}	6×10^{-5}	
		S	1×10^{-8}	2×10^{-3}	4×10^{-10}	8×10^{-5}	
Eu 154		I	2×10^{-8}	2×10^{-3}	6×10^{-10}	8×10^{-5}	
		S	4×10^{-9}	6×10^{-4}	1×10^{-10}	2×10^{-5}	
Eu 155		I	7×10^{-9}	6×10^{-4}	2×10^{-10}	2×10^{-5}	
		S	9×10^{-8}	6×10^{-3}	3×10^{-9}	2×10^{-4}	
Fermium (100)	Fm 254	I	7×10^{-8}	6×10^{-3}	3×10^{-9}	2×10^{-4}	
		S	6×10^{-8}	4×10^{-3}	2×10^{-9}	1×10^{-4}	
	Fm 255		I	7×10^{-8}	4×10^{-3}	2×10^{-9}	1×10^{-4}
			S	2×10^{-8}	1×10^{-3}	6×10^{-10}	3×10^{-5}
Fm 256		I	1×10^{-8}	1×10^{-3}	4×10^{-10}	3×10^{-5}	
		S	3×10^{-9}	3×10^{-5}	1×10^{-10}	9×10^{-7}	
Fluorine (9)	F 18	I	2×10^{-9}	3×10^{-5}	6×10^{-11}	9×10^{-7}	
		S	5×10^{-6}	2×10^{-2}	2×10^{-7}	8×10^{-4}	
Gadolinium (64)	Gd 153	I	3×10^{-6}	1×10^{-2}	9×10^{-8}	5×10^{-4}	
		S	2×10^{-7}	6×10^{-3}	8×10^{-9}	2×10^{-4}	
	Gd 159	I	9×10^{-8}	6×10^{-3}	3×10^{-9}	2×10^{-4}	
		S	5×10^{-7}	2×10^{-3}	2×10^{-8}	8×10^{-5}	
Gallium (31)	Ga 72	I	4×10^{-7}	2×10^{-3}	1×10^{-8}	8×10^{-5}	
		S	2×10^{-7}	1×10^{-3}	8×10^{-9}	4×10^{-5}	
Germanium (32)	Ge 71	I	2×10^{-7}	1×10^{-3}	6×10^{-9}	4×10^{-5}	
		S	1×10^{-5}	5×10^{-2}	4×10^{-7}	2×10^{-3}	
Gold (79)	Au 196	I	6×10^{-6}	5×10^{-2}	2×10^{-7}	2×10^{-3}	
		S	1×10^{-6}	5×10^{-3}	4×10^{-8}	2×10^{-4}	
	Au 198	I	6×10^{-7}	4×10^{-3}	2×10^{-8}	1×10^{-4}	
		S	3×10^{-7}	2×10^{-3}	1×10^{-8}	5×10^{-5}	
	Au 199	I	2×10^{-7}	1×10^{-3}	8×10^{-9}	5×10^{-5}	
		S	1×10^{-6}	5×10^{-3}	4×10^{-8}	2×10^{-4}	
Hafnium (72)	Hf 181	I	8×10^{-7}	4×10^{-3}	3×10^{-8}	2×10^{-4}	
		S	4×10^{-8}	2×10^{-3}	1×10^{-9}	7×10^{-5}	
Holmium (67)	Ho 166	I	7×10^{-8}	2×10^{-3}	3×10^{-9}	7×10^{-5}	
		S	2×10^{-7}	9×10^{-4}	7×10^{-9}	3×10^{-5}	
Hydrogen (1)	H 3	I	2×10^{-7}	9×10^{-4}	6×10^{-9}	3×10^{-5}	
		S	5×10^{-6}	1×10^{-1}	2×10^{-7}	3×10^{-3}	
Indium (49)	In 113 m	I	5×10^{-6}	1×10^{-1}	2×10^{-7}	3×10^{-3}	
		Sub	2×10^{-3}	—	4×10^{-5}	—	
		S	8×10^{-6}	4×10^{-2}	3×10^{-7}	1×10^{-3}	

Element (atomic number)	Isotope			TABLE A		TABLE B		
	soluble	(S)	insoluble (I)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	
Iodine (53)	In	114	m	I	7×10^{-6}	4×10^{-2}	2×10^{-7}	1×10^{-3}
				S	1×10^{-7}	5×10^{-4}	4×10^{-9}	2×10^{-5}
	In	115	m	I	2×10^{-8}	5×10^{-4}	7×10^{-10}	2×10^{-5}
				S	2×10^{-6}	1×10^{-2}	8×10^{-8}	4×10^{-4}
	In	115		I	2×10^{-6}	1×10^{-2}	6×10^{-8}	4×10^{-4}
				S	2×10^{-7}	3×10^{-3}	9×10^{-9}	9×10^{-5}
	I	125		I	3×10^{-8}	3×10^{-3}	1×10^{-9}	9×10^{-5}
				S	5×10^{-9}	4×10^{-5}	8×10^{-11}	2×10^{-7}
	I	126		I	2×10^{-7}	6×10^{-3}	6×10^{-9}	2×10^{-4}
				S	8×10^{-9}	5×10^{-5}	9×10^{-11}	3×10^{-7}
	I	129		I	3×10^{-7}	3×10^{-3}	1×10^{-8}	9×10^{-5}
				S	2×10^{-9}	1×10^{-5}	2×10^{-11}	6×10^{-8}
	I	131		I	7×10^{-8}	6×10^{-3}	2×10^{-9}	2×10^{-4}
				S	9×10^{-9}	6×10^{-5}	1×10^{-10}	3×10^{-7}
	I	132		I	3×10^{-7}	2×10^{-3}	1×10^{-8}	6×10^{-5}
				S	2×10^{-7}	2×10^{-3}	3×10^{-9}	8×10^{-6}
	I	133		I	9×10^{-7}	5×10^{-3}	3×10^{-8}	2×10^{-4}
S				3×10^{-8}	2×10^{-4}	4×10^{-10}	1×10^{-6}	
I	134		I	2×10^{-7}	1×10^{-3}	7×10^{-9}	4×10^{-5}	
			S	5×10^{-7}	4×10^{-3}	6×10^{-9}	2×10^{-5}	
I	135		I	3×10^{-6}	2×10^{-2}	1×10^{-7}	6×10^{-4}	
			S	1×10^{-7}	7×10^{-4}	1×10^{-9}	4×10^{-6}	
Iridium (77)	Ir	190		I	4×10^{-7}	2×10^{-3}	1×10^{-8}	7×10^{-5}
				S	1×10^{-6}	6×10^{-3}	4×10^{-8}	2×10^{-4}
	Ir	192		I	4×10^{-7}	5×10^{-3}	1×10^{-8}	2×10^{-4}
				S	1×10^{-7}	1×10^{-3}	4×10^{-9}	4×10^{-5}
Ir	194		I	3×10^{-8}	1×10^{-3}	9×10^{-10}	4×10^{-5}	
			S	2×10^{-7}	1×10^{-3}	8×10^{-9}	3×10^{-5}	
Iron (26)	Fe	55		I	2×10^{-7}	9×10^{-4}	5×10^{-9}	3×10^{-5}
				S	9×10^{-7}	2×10^{-2}	3×10^{-8}	8×10^{-4}
	Fe	59		I	1×10^{-6}	7×10^{-2}	3×10^{-8}	2×10^{-3}
				S	1×10^{-7}	2×10^{-3}	5×10^{-9}	6×10^{-5}
Krypton (36)	Kr	85	m	Sub	5×10^{-8}	2×10^{-3}	2×10^{-9}	5×10^{-5}
				I	6×10^{-6}	—	1×10^{-7}	—
	Kr	87		Sub	1×10^{-5}	—	3×10^{-7}	—
				I	1×10^{-6}	—	2×10^{-8}	—
Kr	88		Sub	1×10^{-6}	—	2×10^{-8}	—	
			I	1×10^{-6}	—	2×10^{-8}	—	
Lanthanum (57)	La	140		S	2×10^{-7}	7×10^{-4}	5×10^{-9}	2×10^{-5}
				I	1×10^{-7}	7×10^{-4}	4×10^{-9}	2×10^{-5}
Lead (82)	Pb	203		S	3×10^{-6}	1×10^{-2}	9×10^{-8}	4×10^{-4}
				I	2×10^{-6}	1×10^{-2}	6×10^{-8}	4×10^{-4}
	Pb	210		S	1×10^{-10}	4×10^{-6}	4×10^{-12}	1×10^{-7}
				I	2×10^{-10}	5×10^{-3}	8×10^{-12}	2×10^{-4}
Pb	212		S	2×10^{-8}	6×10^{-4}	6×10^{-10}	2×10^{-5}	
			I	2×10^{-8}	5×10^{-4}	7×10^{-10}	2×10^{-5}	
Lutetium (71)	Lu	177		S	6×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}
				I	5×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}
Manganese (25)	Mn	52		S	2×10^{-7}	1×10^{-3}	7×10^{-9}	3×10^{-5}
				I	1×10^{-7}	9×10^{-4}	5×10^{-9}	3×10^{-5}
	Mn	54		S	4×10^{-7}	4×10^{-3}	1×10^{-9}	1×10^{-4}
				I	4×10^{-8}	3×10^{-3}	1×10^{-9}	1×10^{-4}
Mn	56		S	8×10^{-7}	4×10^{-3}	3×10^{-8}	1×10^{-4}	
			I	5×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}	
Mercury (80)	Hg	197	m	S	7×10^{-7}	6×10^{-3}	3×10^{-8}	2×10^{-4}
				I	8×10^{-7}	5×10^{-3}	3×10^{-8}	2×10^{-4}
	Hg	197		S	1×10^{-6}	9×10^{-3}	4×10^{-8}	3×10^{-4}

Element (atomic number)	Isotope (S) insoluble (I)	soluble	TABLE A		TABLE B			
			Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)		
Molybdenum (42)	203	I		3×10^{-6}	1×10^{-2}	9×10^{-8}	5×10^{-4}	
			S		7×10^{-8}	5×10^{-4}	2×10^{-9}	2×10^{-5}
			I		1×10^{-7}	3×10^{-3}	4×10^{-9}	1×10^{-4}
Neodymium (60)	99	S		7×10^{-7}	5×10^{-3}	3×10^{-8}	2×10^{-4}	
			I		2×10^{-7}	1×10^{-3}	7×10^{-9}	4×10^{-5}
Neptunium (93)	144	S		8×10^{-11}	2×10^{-3}	3×10^{-12}	7×10^{-5}	
		I		3×10^{-10}	2×10^{-3}	1×10^{-11}	8×10^{-5}	
	147	S		4×10^{-7}	2×10^{-3}	1×10^{-8}	6×10^{-5}	
		I		2×10^{-7}	2×10^{-3}	8×10^{-9}	6×10^{-5}	
Nickel (28)	59	S		2×10^{-6}	8×10^{-3}	6×10^{-8}	3×10^{-4}	
		I		1×10^{-6}	8×10^{-3}	5×10^{-8}	3×10^{-4}	
		S		4×10^{-12}	9×10^{-5}	1×10^{-13}	3×10^{-6}	
Niobium (Columbium) (41)	237	S		1×10^{-10}	9×10^{-4}	4×10^{-12}	3×10^{-5}	
		I		8×10^{-7}	4×10^{-3}	3×10^{-8}	1×10^{-4}	
	239	S		7×10^{-7}	4×10^{-3}	2×10^{-8}	1×10^{-4}	
		I		5×10^{-7}	6×10^{-3}	2×10^{-8}	2×10^{-4}	
Osmium (76)	63	S		8×10^{-7}	6×10^{-2}	3×10^{-8}	2×10^{-3}	
		I		6×10^{-8}	8×10^{-4}	2×10^{-9}	3×10^{-5}	
	65	S		3×10^{-7}	2×10^{-2}	1×10^{-8}	7×10^{-4}	
		I		9×10^{-7}	4×10^{-3}	3×10^{-8}	1×10^{-4}	
Platinum (78)	93 m	S		5×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}	
		I		1×10^{-7}	1×10^{-2}	4×10^{-9}	4×10^{-4}	
	95	S		2×10^{-7}	1×10^{-2}	5×10^{-9}	4×10^{-4}	
		I		5×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}	
	97	S		1×10^{-7}	3×10^{-3}	3×10^{-9}	1×10^{-4}	
		I		6×10^{-6}	3×10^{-2}	2×10^{-7}	9×10^{-4}	
Plutonium (94)	185	S		5×10^{-6}	3×10^{-2}	2×10^{-7}	9×10^{-4}	
		I		5×10^{-7}	2×10^{-3}	2×10^{-8}	7×10^{-5}	
	191 m	S		5×10^{-8}	2×10^{-3}	2×10^{-9}	7×10^{-5}	
		I		2×10^{-5}	7×10^{-2}	6×10^{-7}	3×10^{-3}	
Radium (88)	191	S		9×10^{-6}	7×10^{-2}	3×10^{-7}	2×10^{-3}	
		I		1×10^{-6}	5×10^{-3}	4×10^{-8}	2×10^{-4}	
	193	S		4×10^{-7}	2×10^{-3}	1×10^{-8}	2×10^{-4}	
		I		4×10^{-7}	2×10^{-3}	1×10^{-8}	6×10^{-5}	
Radium (88)	103	S		3×10^{-7}	2×10^{-3}	9×10^{-9}	5×10^{-5}	
		I		1×10^{-6}	1×10^{-2}	5×10^{-8}	3×10^{-4}	
	109	S		7×10^{-7}	8×10^{-3}	3×10^{-8}	3×10^{-4}	
		I		6×10^{-7}	3×10^{-3}	2×10^{-8}	9×10^{-5}	
Phosphorus (15)	32	S		4×10^{-7}	2×10^{-3}	1×10^{-8}	7×10^{-5}	
		I		7×10^{-8}	5×10^{-4}	2×10^{-9}	2×10^{-5}	
Platinum (78)	191	S		8×10^{-8}	7×10^{-4}	3×10^{-9}	2×10^{-5}	
		I		8×10^{-7}	4×10^{-3}	3×10^{-8}	1×10^{-4}	
	193 m	S		6×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}	
		I		7×10^{-6}	3×10^{-2}	2×10^{-7}	1×10^{-3}	
Plutonium (94)	197 m	S		5×10^{-6}	3×10^{-2}	2×10^{-7}	1×10^{-3}	
		I		6×10^{-6}	3×10^{-2}	2×10^{-7}	1×10^{-3}	
	197	S		5×10^{-6}	3×10^{-2}	2×10^{-7}	1×10^{-3}	
		I		8×10^{-7}	4×10^{-3}	3×10^{-8}	1×10^{-4}	
Plutonium (94)	238	S		6×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}	
		I		2×10^{-12}	1×10^{-4}	7×10^{-14}	5×10^{-6}	
	239	S		3×10^{-11}	8×10^{-4}	1×10^{-12}	3×10^{-5}	
		I		2×10^{-12}	1×10^{-4}	6×10^{-14}	5×10^{-6}	
240	S		4×10^{-11}	8×10^{-4}	1×10^{-12}	3×10^{-5}		
	I		2×10^{-12}	1×10^{-4}	6×10^{-14}	5×10^{-6}		
				4×10^{-11}	8×10^{-4}	1×10^{-12}	3×10^{-5}	

Element (atomic number)	Isotope		TABLE A		TABLE B		
	soluble (S)	insoluble (I)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	
	Pu	241	S	9×10^{-11}	7×10^{-3}	3×10^{-12}	2×10^{-4}
			I	4×10^{-8}	4×10^{-2}	1×10^{-9}	1×10^{-3}
	Pu	242	S	2×10^{-12}	1×10^{-4}	6×10^{-14}	5×10^{-6}
			I	4×10^{-11}	9×10^{-4}	1×10^{-12}	3×10^{-5}
	Pu	243	S	2×10^{-6}	1×10^{-2}	6×10^{-8}	3×10^{-4}
			I	2×10^{-6}	1×10^{-2}	8×10^{-8}	3×10^{-4}
	Pu	244	S	2×10^{-12}	1×10^{-4}	6×10^{-14}	4×10^{-6}
			I	3×10^{-11}	3×10^{-4}	1×10^{-12}	1×10^{-5}
Polonium (84)	Po	210	S	5×10^{-10}	2×10^{-5}	2×10^{-11}	7×10^{-7}
			I	2×10^{-10}	8×10^{-4}	7×10^{-12}	3×10^{-5}
			K	42	S	2×10^{-6}	9×10^{-3}
Potassium (19)			I	1×10^{-7}	6×10^{-4}	4×10^{-9}	2×10^{-5}
Praseodymium (59)			Pr	142	S	2×10^{-7}	9×10^{-4}
	I	2×10^{-7}			9×10^{-4}	5×10^{-9}	3×10^{-5}
	Pr	143	S	3×10^{-7}	1×10^{-3}	1×10^{-8}	5×10^{-5}
			I	2×10^{-7}	1×10^{-3}	6×10^{-9}	5×10^{-5}
Promethium (61)	Pm	147	S	6×10^{-8}	6×10^{-3}	2×10^{-9}	2×10^{-4}
	Pm	149	I	1×10^{-7}	6×10^{-3}	3×10^{-9}	2×10^{-4}
			S	3×10^{-7}	1×10^{-3}	1×10^{-8}	4×10^{-5}
Protoactinium (91)	Pa	230	S	2×10^{-9}	7×10^{-3}	8×10^{-9}	4×10^{-5}
			I	8×10^{-10}	7×10^{-3}	6×10^{-11}	2×10^{-4}
	Pa	231	S	1×10^{-12}	3×10^{-5}	3×10^{-11}	2×10^{-4}
			I	1×10^{-10}	8×10^{-4}	4×10^{-14}	9×10^{-7}
	Pa	233	S	6×10^{-7}	4×10^{-3}	4×10^{-12}	2×10^{-5}
			I	2×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}
Radium (88)	Ra	223	S	2×10^{-9}	2×10^{-5}	6×10^{-11}	7×10^{-7}
	Ra	224	I	2×10^{-10}	1×10^{-4}	8×10^{-12}	4×10^{-6}
			S	5×10^{-9}	7×10^{-5}	2×10^{-10}	2×10^{-6}
	Ra	226	I	7×10^{-10}	2×10^{-4}	2×10^{-11}	5×10^{-6}
			S	3×10^{-11}	4×10^{-7}	3×10^{-12}	3×10^{-8}
	Ra	228	I	5×10^{-11}	9×10^{-4}	2×10^{-12}	3×10^{-5}
			S	7×10^{-11}	8×10^{-7}	2×10^{-12}	3×10^{-8}
Radon (86)	Rn	220	I	4×10^{-11}	7×10^{-4}	1×10^{-12}	3×10^{-5}
			S	3×10^{-7}	—	1×10^{-8}	—
Rhenium (75)	Re	183	S	1×10^{-7}	—	3×10^{-9}	—
			I	3×10^{-6}	2×10^{-2}	9×10^{-8}	6×10^{-4}
	Re	186	S	2×10^{-7}	8×10^{-3}	5×10^{-9}	3×10^{-4}
			I	6×10^{-7}	3×10^{-3}	2×10^{-8}	9×10^{-5}
	Re	187	S	2×10^{-7}	1×10^{-3}	8×10^{-9}	5×10^{-5}
			I	3×10^{-6}	7×10^{-2}	3×10^{-7}	3×10^{-3}
	Re	188	S	5×10^{-7}	4×10^{-2}	2×10^{-8}	2×10^{-3}
			I	4×10^{-7}	2×10^{-3}	1×10^{-8}	6×10^{-5}
Rhodium (45)	Rh	103 m	S	2×10^{-7}	9×10^{-4}	6×10^{-9}	3×10^{-5}
			I	8×10^{-5}	4×10^{-1}	3×10^{-6}	1×10^{-2}
	Rh	105	S	6×10^{-5}	3×10^{-1}	2×10^{-6}	1×10^{-2}
			I	8×10^{-7}	4×10^{-3}	3×10^{-8}	1×10^{-4}
Rubidium (37)	Rb	86	S	5×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}
			I	3×10^{-7}	2×10^{-3}	1×10^{-8}	7×10^{-5}
	Rb	87	S	7×10^{-8}	7×10^{-4}	2×10^{-9}	2×10^{-5}
			I	5×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}
Ruthenium (44)	Ru	97	S	7×10^{-8}	5×10^{-3}	2×10^{-9}	2×10^{-4}
			I	2×10^{-6}	1×10^{-2}	8×10^{-8}	4×10^{-4}
			I	2×10^{-6}	1×10^{-2}	6×10^{-8}	3×10^{-4}

Element (atomic number)	Isotope		TABLE A		TABLE B	
	soluble (S)	insoluble (I)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)
Samarium (62)	Ru 103	S	5×10^{-7}	2×10^{-3}	2×10^{-8}	8×10^{-5}
		I	8×10^{-8}	2×10^{-3}	3×10^{-9}	8×10^{-5}
	Ru 105	S	7×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}
		I	5×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}
	Ru 106	S	8×10^{-8}	4×10^{-4}	3×10^{-9}	1×10^{-5}
		I	6×10^{-9}	3×10^{-4}	2×10^{-10}	1×10^{-5}
Sm 147	S	7×10^{-11}	2×10^{-3}	2×10^{-12}	6×10^{-5}	
	I	3×10^{-10}	2×10^{-3}	9×10^{-12}	7×10^{-5}	
Sm 151	S	6×10^{-8}	1×10^{-2}	2×10^{-9}	4×10^{-4}	
	I	1×10^{-7}	1×10^{-2}	5×10^{-9}	4×10^{-4}	
Sm 153	S	5×10^{-7}	2×10^{-3}	2×10^{-8}	8×10^{-5}	
	I	4×10^{-7}	2×10^{-3}	1×10^{-8}	8×10^{-5}	
Scandium (21)	Sc 46	S	2×10^{-7}	1×10^{-3}	8×10^{-9}	4×10^{-5}
		I	2×10^{-8}	1×10^{-3}	8×10^{-10}	4×10^{-5}
	Sc 47	S	6×10^{-7}	3×10^{-3}	2×10^{-8}	9×10^{-5}
		I	5×10^{-7}	3×10^{-3}	2×10^{-8}	9×10^{-5}
	Sc 48	S	2×10^{-7}	8×10^{-4}	6×10^{-9}	3×10^{-5}
		I	1×10^{-7}	8×10^{-4}	5×10^{-9}	3×10^{-5}
Selenium (34)	Se 75	S	1×10^{-6}	9×10^{-3}	4×10^{-8}	3×10^{-4}
Silicon (14)	Si 31	I	1×10^{-7}	8×10^{-3}	4×10^{-9}	3×10^{-4}
		S	6×10^{-6}	3×10^{-2}	2×10^{-7}	9×10^{-4}
Silver (47)	Ag 105	I	1×10^{-6}	6×10^{-3}	3×10^{-8}	2×10^{-4}
		S	6×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}
	Ag 110 m	S	8×10^{-8}	3×10^{-3}	3×10^{-9}	1×10^{-4}
		I	2×10^{-7}	9×10^{-4}	7×10^{-9}	3×10^{-5}
	Ag 111	S	1×10^{-8}	9×10^{-4}	3×10^{-10}	3×10^{-5}
		I	3×10^{-7}	1×10^{-3}	1×10^{-8}	4×10^{-5}
Sodium (11)	Na 22	S	2×10^{-7}	1×10^{-3}	8×10^{-9}	4×10^{-5}
		I	9×10^{-9}	9×10^{-4}	3×10^{-10}	3×10^{-5}
	Na 24	S	1×10^{-6}	6×10^{-3}	4×10^{-8}	2×10^{-4}
		I	1×10^{-7}	8×10^{-4}	5×10^{-9}	3×10^{-5}
Strontium (38)	Sr 85 m	S	4×10^{-5}	2×10^{-1}	1×10^{-6}	7×10^{-3}
		I	3×10^{-5}	2×10^{-1}	1×10^{-6}	7×10^{-3}
	Sr 85	S	2×10^{-7}	3×10^{-3}	8×10^{-9}	1×10^{-4}
		I	1×10^{-7}	5×10^{-3}	4×10^{-9}	2×10^{-4}
	Sr 89	S	3×10^{-8}	3×10^{-4}	3×10^{-10}	3×10^{-6}
		I	4×10^{-8}	8×10^{-4}	1×10^{-9}	3×10^{-5}
	Sr 90	S	1×10^{-9}	1×10^{-5}	3×10^{-11}	3×10^{-7}
		I	5×10^{-9}	1×10^{-3}	2×10^{-10}	4×10^{-5}
	Sr 91	S	4×10^{-7}	2×10^{-3}	2×10^{-8}	7×10^{-5}
		I	3×10^{-7}	1×10^{-3}	9×10^{-9}	5×10^{-5}
	Sr 92	S	4×10^{-7}	2×10^{-3}	2×10^{-8}	7×10^{-5}
		I	3×10^{-7}	2×10^{-3}	1×10^{-8}	6×10^{-5}
Sulfur (16)	S 35	S	3×10^{-7}	2×10^{-3}	9×10^{-9}	6×10^{-5}
Tantalum (73)	Ta 182	I	3×10^{-7}	8×10^{-3}	9×10^{-9}	3×10^{-4}
		S	4×10^{-8}	1×10^{-3}	1×10^{-9}	4×10^{-5}
Technetium (43)	Tc 96 m	S	2×10^{-8}	1×10^{-3}	7×10^{-10}	4×10^{-5}
		I	8×10^{-5}	4×10^{-1}	3×10^{-6}	1×10^{-2}
	Tc 96	S	3×10^{-5}	3×10^{-1}	1×10^{-6}	1×10^{-2}
		I	6×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}
	Tc 97 m	S	2×10^{-7}	1×10^{-3}	8×10^{-9}	5×10^{-5}
		I	2×10^{-6}	1×10^{-2}	8×10^{-8}	4×10^{-4}
		I	2×10^{-7}	5×10^{-3}	5×10^{-9}	2×10^{-4}

Element (atomic number)	soluble	Isotope		TABLE A		TABLE B	
		(S)	insoluble (I)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)
Tellurium (52)	Tc	97	S	1×10^{-5}	5×10^{-2}	4×10^{-7}	2×10^{-3}
			I	3×10^{-7}	2×10^{-2}	1×10^{-8}	8×10^{-4}
	Tc	99 m	S	4×10^{-5}	2×10^{-1}	1×10^{-6}	6×10^{-3}
			I	1×10^{-5}	8×10^{-2}	5×10^{-7}	3×10^{-3}
	Tc	99	S	2×10^{-6}	1×10^{-2}	7×10^{-8}	3×10^{-4}
			I	6×10^{-8}	5×10^{-3}	2×10^{-9}	2×10^{-4}
	Te	125 m	S	4×10^{-7}	5×10^{-3}	1×10^{-8}	2×10^{-4}
			I	1×10^{-7}	3×10^{-3}	4×10^{-9}	1×10^{-4}
	Te	127 m	S	1×10^{-7}	2×10^{-3}	5×10^{-9}	6×10^{-5}
			I	4×10^{-8}	2×10^{-3}	1×10^{-9}	5×10^{-5}
	Te	127	S	2×10^{-6}	8×10^{-3}	6×10^{-8}	3×10^{-4}
			I	9×10^{-7}	5×10^{-3}	3×10^{-8}	2×10^{-4}
	Te	129 m	S	8×10^{-8}	1×10^{-3}	3×10^{-9}	3×10^{-5}
			I	3×10^{-8}	6×10^{-4}	1×10^{-9}	2×10^{-5}
Te	129	S	5×10^{-6}	2×10^{-2}	2×10^{-7}	8×10^{-4}	
		I	4×10^{-6}	2×10^{-2}	1×10^{-7}	8×10^{-4}	
Te	131 m	S	4×10^{-7}	2×10^{-3}	1×10^{-8}	6×10^{-5}	
		I	2×10^{-7}	1×10^{-3}	6×10^{-9}	4×10^{-5}	
Te	132	S	2×10^{-7}	9×10^{-4}	7×10^{-9}	3×10^{-5}	
		I	1×10^{-7}	6×10^{-4}	4×10^{-9}	2×10^{-5}	
Terbium (65)	Tb	160	S	1×10^{-7}	1×10^{-3}	3×10^{-9}	4×10^{-5}
		I	3×10^{-8}	1×10^{-3}	1×10^{-9}	4×10^{-5}	
Thallium (81)	Tl	200	S	3×10^{-6}	1×10^{-2}	9×10^{-8}	4×10^{-4}
		I	1×10^{-6}	7×10^{-3}	4×10^{-8}	2×10^{-4}	
	Tl	201	S	2×10^{-6}	9×10^{-3}	7×10^{-8}	3×10^{-4}
		I	9×10^{-7}	5×10^{-3}	3×10^{-8}	2×10^{-4}	
	Tl	202	S	8×10^{-7}	4×10^{-3}	3×10^{-8}	1×10^{-4}
		I	2×10^{-7}	2×10^{-3}	8×10^{-9}	7×10^{-5}	
	Tl	204	S	6×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}
		I	3×10^{-8}	2×10^{-3}	9×10^{-10}	6×10^{-5}	
Thorium (90)	Th	228	S	9×10^{-12}	2×10^{-4}	3×10^{-13}	7×10^{-6}
		I	6×10^{-12}	4×10^{-4}	2×10^{-13}	1×10^{-5}	
	Th	230	S	2×10^{-12}	5×10^{-5}	8×10^{-14}	2×10^{-6}
		I	1×10^{-11}	9×10^{-4}	3×10^{-13}	3×10^{-5}	
	Th	232	S	3×10^{-11}	5×10^{-5}	1×10^{-12}	2×10^{-6}
		I	3×10^{-11}	1×10^{-3}	1×10^{-12}	4×10^{-5}	
	Th	natural	S	3×10^{-11}	3×10^{-5}	1×10^{-12}	1×10^{-6}
		I	3×10^{-11}	3×10^{-4}	1×10^{-12}	1×10^{-5}	
	Th	234	S	6×10^{-8}	5×10^{-4}	2×10^{-9}	2×10^{-5}
		I	3×10^{-8}	5×10^{-4}	1×10^{-9}	2×10^{-5}	
Thulium (69)	Tm	170	S	4×10^{-8}	1×10^{-3}	1×10^{-9}	5×10^{-5}
		I	3×10^{-8}	1×10^{-3}	1×10^{-9}	5×10^{-5}	
	Tm	171	S	1×10^{-7}	1×10^{-2}	4×10^{-9}	5×10^{-4}
		I	2×10^{-7}	1×10^{-2}	8×10^{-9}	5×10^{-4}	
Tin (50)	Sn	113	S	4×10^{-7}	2×10^{-3}	1×10^{-8}	9×10^{-5}
		I	5×10^{-8}	2×10^{-3}	2×10^{-9}	8×10^{-5}	
	Sn	125	S	1×10^{-7}	5×10^{-4}	4×10^{-9}	2×10^{-5}
		I	8×10^{-8}	5×10^{-4}	3×10^{-9}	2×10^{-5}	
Tungsten (Wolfram) (74)	W	181	S	2×10^{-6}	1×10^{-2}	8×10^{-8}	4×10^{-4}
		I	1×10^{-7}	1×10^{-2}	4×10^{-9}	3×10^{-4}	
	W	185	S	8×10^{-7}	4×10^{-3}	3×10^{-8}	1×10^{-4}
		I	1×10^{-7}	3×10^{-3}	4×10^{-9}	1×10^{-4}	
	W	187	S	4×10^{-7}	2×10^{-3}	2×10^{-8}	7×10^{-5}
		I	3×10^{-7}	2×10^{-3}	1×10^{-8}	6×10^{-5}	

Element (atomic number)	Isotope			TABLE A		TABLE B	
	soluble	(S)	insoluble (I)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)
Uranium (92)	U	230	S	3×10^{-10}	1×10^{-4}	1×10^{-11}	5×10^{-6}
			I	1×10^{-10}	1×10^{-4}	4×10^{-12}	5×10^{-6}
	U	232	S	1×10^{-10}	8×10^{-4}	3×10^{-12}	3×10^{-5}
			I	3×10^{-11}	8×10^{-4}	9×10^{-13}	3×10^{-5}
	U	233	S	5×10^{-10}	9×10^{-4}	2×10^{-11}	3×10^{-5}
			I	1×10^{-10}	9×10^{-4}	4×10^{-12}	3×10^{-5}
	U	234	S	6×10^{-10}	9×10^{-4}	2×10^{-11}	3×10^{-5}
			I	1×10^{-10}	9×10^{-4}	4×10^{-12}	3×10^{-5}
	U	235	S	5×10^{-10}	8×10^{-4}	2×10^{-11}	3×10^{-5}
			I	1×10^{-10}	8×10^{-4}	4×10^{-12}	3×10^{-5}
	U	236	S	6×10^{-10}	1×10^{-3}	2×10^{-11}	3×10^{-5}
			I	1×10^{-10}	1×10^{-3}	4×10^{-12}	3×10^{-5}
	U	238	S	7×10^{-11}	1×10^{-3}	3×10^{-12}	4×10^{-5}
			I	1×10^{-10}	1×10^{-3}	5×10^{-12}	4×10^{-5}
U	240	S	2×10^{-7}	1×10^{-3}	8×10^{-9}	3×10^{-5}	
		I	2×10^{-7}	1×10^{-3}	6×10^{-9}	3×10^{-5}	
U	natural	S	7×10^{-11}	5×10^{-4}	3×10^{-12}	2×10^{-5}	
		I	6×10^{-11}	5×10^{-4}	2×10^{-12}	2×10^{-5}	
Vanadium (23)	V	48	S	2×10^{-7}	9×10^{-4}	6×10^{-9}	3×10^{-5}
			I	6×10^{-8}	8×10^{-4}	2×10^{-9}	3×10^{-5}
Xenon (54)	Xe	131 m	Sub	2×10^{-5}	—	4×10^{-7}	—
			Sub	1×10^{-5}	—	3×10^{-7}	—
			Sub	1×10^{-5}	—	3×10^{-7}	—
			Sub	4×10^{-6}	—	1×10^{-7}	—
Ytterbium (70)	Yb	175	S	7×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}
			I	6×10^{-7}	3×10^{-3}	2×10^{-8}	1×10^{-4}
Yttrium (39)	Y	90	S	1×10^{-7}	6×10^{-4}	4×10^{-9}	2×10^{-5}
			I	1×10^{-7}	6×10^{-4}	3×10^{-9}	2×10^{-5}
	Y	91 m	S	2×10^{-5}	1×10^{-1}	8×10^{-7}	3×10^{-3}
			I	2×10^{-5}	1×10^{-1}	6×10^{-7}	3×10^{-3}
	Y	91	S	4×10^{-8}	8×10^{-4}	1×10^{-9}	3×10^{-5}
			I	3×10^{-8}	8×10^{-4}	1×10^{-9}	3×10^{-5}
	Y	92	S	4×10^{-7}	2×10^{-3}	1×10^{-8}	6×10^{-5}
			I	3×10^{-7}	2×10^{-3}	1×10^{-8}	6×10^{-5}
	Y	93	S	2×10^{-7}	8×10^{-4}	6×10^{-9}	3×10^{-5}
			I	1×10^{-7}	8×10^{-4}	5×10^{-9}	3×10^{-5}
Zinc (30)	Zn	65	S	1×10^{-7}	3×10^{-3}	4×10^{-9}	1×10^{-4}
			I	6×10^{-8}	5×10^{-3}	2×10^{-9}	2×10^{-4}
	Zn	69 m	S	4×10^{-7}	2×10^{-3}	1×10^{-8}	7×10^{-5}
			I	3×10^{-7}	2×10^{-3}	1×10^{-8}	6×10^{-5}
	Zn	69	S	7×10^{-6}	5×10^{-2}	2×10^{-7}	2×10^{-3}
			I	9×10^{-6}	5×10^{-2}	3×10^{-7}	2×10^{-3}
Zirconium (40)	Zr	93	S	1×10^{-7}	2×10^{-2}	4×10^{-9}	8×10^{-4}
			I	3×10^{-7}	2×10^{-2}	1×10^{-8}	8×10^{-4}
	Zr	95	S	1×10^{-7}	2×10^{-3}	4×10^{-9}	6×10^{-5}
			I	3×10^{-8}	2×10^{-3}	1×10^{-9}	6×10^{-5}
	Zr	97	S	1×10^{-7}	5×10^{-4}	4×10^{-9}	2×10^{-5}
			I	9×10^{-8}	5×10^{-4}	3×10^{-9}	2×10^{-5}
Any single radionuclide not listed above with decay mode other than alpha emission or spontaneous fission and with radioactive half-life less than two hours.			Sub	1×10^{-6}	—	3×10^{-8}	—

Element (atomic number)	Isotope soluble (S) insoluble (I)	TABLE A		TABLE B	
		Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)

Any single radionuclide not listed above with decay mode other than alpha emission or spontaneous fission and with radioactive half-life greater than two hours.

3×10^{-9} 9×10^{-5} 1×10^{-10} 3×10^{-6}

Any single radionuclide not listed above, which decays by alpha emission or spontaneous fission.

6×10^{-13} 4×10^{-7} 2×10^{-14} 3×10^{-8}

(b) The term "Sub," in the table shall mean that values given are for submersion in a semi-spherical infinite cloud of airborne material.

(c) In any case where there is a mixture in air or water of more than one radionuclide, the limiting values for purposes of this section shall be determined as follows:

(1) If the identity and concentration of each radionuclide in the mixture are known, the limiting values shall be derived as follows: Determine, for each radionuclide in the mixture, the ratio between the quantity present in the mixture and the limit otherwise established in subsection (a) for the specific radionuclide when not in a mixture. The sum of such ratios for all the radionuclides in the mixture may not exceed one (unity), as in the following example:

If radionuclides a, b, and c are present in concentrations C_a , C_b , and C_c , and if the applicable MPC's are MPC_a , MPC_b , and MPC_c , respectively, then the concentrations shall be limited so that following relationship exists:

$$\frac{C_a}{MPC_a} + \frac{C_b}{MPC_b} + \frac{C_c}{MPC_c} \leq 1$$

(2) If either the identity or the concentration of any radionuclide in the mixture is not known, the limiting values for purposes of subsection (a) shall be the following:

- (i) For purposes of Column 1, Table A - 6×10^{-13} Ci/ml.
- (ii) For purposes of Column 2, Table A - 4×10^{-7} Ci/ml.
- (iii) For purposes of Column 1, Table B - 2×10^{-14} Ci/ml.
- (iv) For purposes of Column 2, Table B - 3×10^{-8} Ci/ml.

(3) If any of the following conditions are met the corresponding values specified may be used in lieu of those specified in paragraph (2) of this subsection:

(i) If the identity of each radionuclide in the mixture is known but the concentration of one or more of the radionuclides in the mixture is not known, the concentration limit for the mixture shall be the limit specified in subsection (a) for the radionuclide in the mixture having the lowest concentration limit.

(ii) If the identity of each radionuclide in the mixture is not known but it is known that certain radionuclides specified in subsection (a) are not present in the mixture, the concentration limit for the mixture is the lowest concentration limit specified in subsection (a) for any radionuclide which is not known to be absent from the mixture.

(iii) The following table may be used for determining MCP's for mixtures for the purposes of this paragraph:

Element and Isotope	TABLE A		TABLE B	
	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)	Column 1 Air ($\mu\text{Ci/ml}$)	Column 2 Water ($\mu\text{Ci/ml}$)
If it is known that Sr-90, I-125, I-126, I-129, I-131, (I-133, Table B only), Pb-210, Po-210, At-211, Ra-223, Ra-224, Ra-226, Ac-227, Ra-228, Th-230, Pa-231, Th-232, Th-nat, Cm-248, Cf-254, and Fm-256 are not present	—	9×10^{-5}	—	3×10^{-6}
If it is known that Sr-90, I-125, I-126, I-129, (I-131, I-133, Table B only), Pb-210, Po-210, Ra-223, Ra-226, Ra-228, Pa-231, Th-nat, Pa-228, Cm-248, Cf-254 and Fm-256 are not present	—	6×10^{-5}	—	2×10^{-6}
If it is known that Sr-90, I-129, (I-125, I-126, I-131, Table B only), Pb-210, Ra-226, Ra-228, Cm-248, and Cf-254 are not present	—	2×10^{-5}	—	6×10^{-7}
If it is known that (I-129, Table B only), Ra-226, and Ra-228 are not present	—	3×10^{-6}	—	1×10^{-7}
If it is known that alpha-emitters and Sr-90, I-129, Pb-210, Ac-227, Ra-228, Pa-230, Pu-241 and Bk-249 are not present	3×10^{-9}	—	1×10^{-10}	—
If it is known that alpha-emitters and Pb-210, Ac-227, Ra-228, and Pu-241 are not present	3×10^{-10}	—	1×10^{-11}	—
If it is known that alpha-emitters and Ac-227 are not present	3×10^{-11}	—	1×10^{-12}	—
If it is known that Ac-227, Th-230, Pa-231, Pu-238, Pu-239, Pu-240, Pu-242, Pu-244, Cm-248, Cf-249, and Cf-251 are not present	3×10^{-12}	—	1×10^{-13}	—

(4) If the mixture of radionuclides consists of uranium and its daughter products in ore dust prior to chemical processing of the uranium ore, the following values may be used in lieu of those determined in accordance with paragraph (1) of this subsection, or those specified in paragraphs (2) and (3) of this subsection:

(i) For purposes of Column 1, Table A of subsection (a) of this section, 1×10^{-10} $\mu\text{Ci/ml}$ gross alpha activity; or 2.5×10^{-11} $\mu\text{Ci/ml}$ natural uranium; or 75 micrograms per cubic meter of air natural uranium.

(ii) For purposes of Column 1, Table B of subsection (a) of this section, 3×10^{-12} $\mu\text{Ci/ml}$ gross alpha activity; or 8×10^{-13} $\mu\text{Ci/ml}$ natural uranium; or three micrograms per cubic meter of air natural uranium.

(5) For purposes of this subsection, a radionuclide may be considered as not present in a mixture if the following conditions are met:

(i) The ratio of the concentration of that radionuclide in the mixture (C_a) to the concentration limit for that radionuclide specified in Table B of subsection (a) of this section (MPC_a) does not exceed 1/10,

$$\frac{C_a}{MPC_a} \leq \frac{1}{10}$$

(ii) The sum of such ratios for all radionuclides considered as not present in the mixture does not exceed 1/4,

$$\frac{C_a}{MPC_a} + \frac{C_b}{MPC_b} + \dots = \frac{1}{4}$$

PERMISSIBLE LEVELS FROM EXTERNAL SOURCES IN UNRESTRICTED AREAS

§ 227.31. General.

No licensee or registrant shall possess, use or transfer sources of radiation in such a manner as to create the following conditions in any unrestricted area from such sources of radiation in his possession:

(1) Radiation levels which, if an individual were continuously present in the area, could result in his receiving a dose in excess of two millirems in any one hour.

(2) Radiation levels which, if an individual were continuously present in the area, could result in his receiving a dose in excess of 100 millirems in any seven consecutive days.

(3) Radiation levels which could result in an individual receiving a dose in excess of 0.5 rem in any period of one calendar year.

§ 227.32. Application for exceptions.

(a) Any person may apply to the Department for proposed limits of levels of radiation in unrestricted areas in excess of those specified in § 227.31 (1) and (2) of this Title (relating to permissible levels) resulting from the applicant's possession or use of sources of radiation. Such applications shall include information as to anticipated average radiation levels and anticipated occupancy times for each unrestricted area involved.

(b) The Department shall approve the proposed limits if the applicant demonstrates to the satisfaction of the Department that the proposed limits are not likely to cause any individual to receive a dose to the whole body in any period of one calendar year in excess of 0.5 rem.

CONCENTRATION IN EFFLUENTS TO UNRESTRICTED AREAS

§ 227.41. General restriction.

(a) No person shall possess, use or transfer radioactive material so as to release to an unrestricted area radioactive material in concentrations which exceed the limits specified in Table B in § 227.25 of this Title (relating to table of concentrations), except as authorized pursuant to §§ 227.42 and 227.82 of this Title (relating to application for higher limits and approval of proposed procedures).

(b) For purposes of this section, concentrations may be averaged over a period not greater than one year.

§ 227.42. Application for higher limits.

An application to the Department for a license or amendment may include proposed limits higher than those specified in § 227.41 of this Title (relating to general restriction on effluents). The Department shall approve the proposed limits if the applicant demonstrates the following:

(1) That the applicant has made a reasonable effort to minimize the radioactivity contained in effluents to unrestricted areas.

(2) That it is not likely that radioactive material discharged in the effluent would result in the exposure of an individual to concentrations of radioactive material in air or water exceeding the limits specified in Table B of § 227.25 of this Title (relating to table of concentrations).

§ 227.43. Application information.

An application pursuant to § 227.42 of this Title (relating to applications for higher limits) shall include information demonstrating that the applicant has made a reasonable effort to minimize the radioactivity discharged in effluents to unrestricted areas. Such application shall conform with the following requirements:

- (1) *Liquid effluents.* The application shall include the following information:
 - (i) Information as to flow rates, total volume of effluent, peak concentration of each nuclide in the effluent, and concentration of each radionuclide in the effluent averaged over a period of one year at the point of discharge.
 - (ii) A description of the properties of the effluent, including chemical composition, suspended solids content, and hydrogen ion concentration (pH) of the effluent and receiving stream.
 - (iii) A description of water uses downstream from the point of release of the effluent.
 - (iv) Information as to the highest concentration of each radionuclide in the water at points of use downstream from the point of release, including anticipated concentrations averaged over a period of one year.
 - (v) The background concentration of radionuclides in the receiving body of water prior to release of the liquid effluent.
 - (vi) A description of effluent monitoring equipment, and procedures and calculations to determine concentrations of radionuclides in the stream.
 - (vii) A description of the waste treatment facilities and procedures used to reduce the concentration of radionuclides in effluents prior to their release.
- (2) *Atmospheric effluents.* The application shall include the following information:
 - (i) Information as to discharge rates, total volume of effluent, peak concentration of each radionuclide in the effluent, and concentration of each radionuclide in the effluent averaged over a period of one year at the point where the effluent is vented to the atmosphere.
 - (ii) A description of the properties of the emissions, including chemical composition, nature of the gas or aerosol, and size range of particulate emissions.
 - (iii) A description of the anticipated human occupancy in the unrestricted area where the highest concentration of radioactive material from the effluent is expected.
 - (iv) Information as to the highest concentration of each radionuclide in the unrestricted area in the air at any point of human occupancy, including anticipated concentrations averaged over one year.
 - (v) A description of stack monitoring and environmental monitoring equipment including system sensitivity, and procedures and calculations to determine concentrations of radionuclides in the unrestricted area, and possible reconcentrations of radionuclides.
 - (vi) A description of treatment facilities for airborne radioactivity and procedures used to reduce the concentration of radionuclides in effluents prior to release.

§ 227.44. Emission of effluents.

(a) For the purpose of this section, the concentration limits in Table B of § 227.25 of this Title (relating to table of concentrations), shall apply at the boundary of the restricted area. The concentration of radioactive material discharged through a stack, pipe or similar conduit may be determined with respect to the point where the material leaves the conduit. If the conduit discharges within the restricted area, the concentration at the boundary may be determined by applying appropriate factors for dilution, dispersion or decay between the point of discharge and the boundary.

(b) In addition to limiting concentrations in effluents, the Department may limit quantities of radioactive materials released in air or water during a specified period of time if it appears that the daily intake of radioactive material from air, water or food by a suitable sample of an exposed population group, averaged over a period not exceeding one year, would otherwise exceed the daily intake resulting from continuous exposure

to air or water containing one-third the concentration of radioactive materials specified in Table B of § 227.25 of this Title (relating to table of concentrations).

(c) The provisions of this Section shall not apply to disposal of radioactive material into sanitary sewerage systems, which is governed by § § 227.81 - 227.85 of this Title (relating to waste disposal).

SAFETY MEASURES AND SERVICES

§ 227.51. Bioassay, medical and expert services.

(a) Where necessary or desirable in order to aid in determining the extent of an individual's radiation exposure, the Department may incorporate license provisions or otherwise require a person to furnish appropriate bioassay services, medical services and the services of a qualified expert.

(b) A copy of the reports of such services shall be made available to the Department.

§ 227.52. Personnel monitoring devices.

Each licensee or registrant shall supply suitable personnel monitoring devices to the following individuals, and such individuals shall be required to use such devices:

(1) Each individual who entered a restricted area under such circumstances that he receives, or is likely to receive, a dose in any calendar quarter in excess of 25% of the applicable value specified in § 227.11 of this Title (relating to maximum exposure limits).

(2) Each individual under 18 years of age who enters a restricted area under such circumstances that he receives, or is likely to receive, a dose in any calendar quarter in excess of 5% of the applicable value specified in § 227.11 of this Title (relating to maximum exposure limits).

(3) Any individual who enters a high radiation area.

§ 227.53. Surveys.

Each licensee or registrant shall make or cause to be made such surveys as may be necessary to insure that all activities are being conducted in compliance with this Article.

CAUTION SIGNS, LABELS AND SIGNALS

§ 227.61. Radiation symbol.

(a) Except as otherwise authorized by the Department, symbols prescribed by this section shall use the American National Standards Institute radiation colors (purple on yellow background). The symbol prescribed by this section is the American National Standards Institute symbol with the conventional three-bladed design:



(1) Black area shall be purple.

(2) Background shall be yellow.

(b) In addition to the contents of signs and labels prescribed in this section, a person may provide any additional information which may be appropriate in aiding individuals to minimize exposure to radiation.

§ 227.62. Radiation areas.

Each radiation area shall be conspicuously posted with a sign or signs bearing the radiation symbol and the following words:

**CAUTION
RADIATION AREA**

§ 227.63. High radiation areas.

(a) Each high radiation area shall be conspicuously posted with a sign or signs bearing the radiation symbol and the following words:

**CAUTION
HIGH RADIATION AREA**

(b) Except as exempted in Chapter 229 of this Article (relating to human use of radiation-producing machines or equipment), each high radiation area shall be equipped with a control device which shall either cause the level of radiation to be reduced below that at which an individual might receive a dose of 100 millirem in one hour upon entry into the area, or shall energize a conspicuous visible or audible alarm signal in such a manner that the individual entering and the supervisor of the activity are made aware of the entry. In the case of a high radiation area established for a period of 30 days or less, such control device is not required, but the user shall prohibit unauthorized entry.

§ 227.64. Airborne radioactivity areas.

(a) As used in this Chapter, "Airborne Radioactivity Area" shall be either of the following:

(1) Any room, enclosure or operating area in which airborne radioactive material exists in concentrations in excess of those specified in Column 1, Table A of § 227.25 of this Title (relating to table of concentrations).

(2) Any room, enclosure or operating area in which airborne radioactive material exists in concentrations which, averaged over the number of hours in any week during which individuals are in the area, exceed 25% of those specified in Column 1, Table A of § 227.25 of this Title (relating to table of concentrations).

(b) Each airborne radioactivity area shall be conspicuously posted with a sign or signs bearing the radiation symbol and the following words:

**CAUTION
AIRBORNE RADIOACTIVITY AREA**

§ 227.65. Radioactive material.

Each area or room in which any radioactive material is used or stored in an amount ten times the quantity of radioactive material specified in § 227.71 of this Title (relating to table of quantities) shall be conspicuously posted with a sign or signs bearing the radiation symbol and the following words:

**CAUTION
RADIOACTIVE MATERIAL**

§ 227.66. Containers.

(a) Except as provided in subsection (c) of this section, each container of radioactive

material shall bear a durable, clearly visible label identifying the radioactive contents.

(b) (1) A label required pursuant to subsection (a) of this section shall bear the radiation caution symbol and the following words:

**CAUTION
RADIOACTIVE MATERIAL**

(2) Such labels shall also provide sufficient information to permit individuals handling or using the containers, or working in the vicinity thereof, to take precautions to avoid or minimize exposures.

(c) Notwithstanding the provisions of subsection (a) of this section, labeling shall not be required in the following situations:

(1) For containers which do not contain radioactive materials in quantities greater than the applicable quantities listed in § 227.71 of this Title (relating to table of quantities).

(2) For containers containing only natural uranium or thorium in quantities no greater than ten times the applicable quantities listed in § 227.71 of this Title (relating to table of quantities).

(3) For containers which do not contain radioactive materials in concentrations greater than the applicable concentrations listed in Column 2, Table A of § 227.25 of this Title (relating to table of concentrations).

(4) For containers when they are attended by an individual who takes the precautions necessary to prevent the exposure of any individual to radiation or radioactive materials in excess of the limits established by the provisions in this Chapter.

(5) For containers when they are in transport and packaged and labeled in accordance with regulations published by the U.S. Department of Transportation or the Hazardous Substances Transportation Board of the Commonwealth.

(6) For containers which are accessible only to individuals authorized to handle or use them, or to work in the vicinity thereof, provided that the contents are identified to such individuals by a readily available written record.

(7) For manufacturing and processing equipment such as piping and tanks.

§ 227.67. Radiation-producing machines or equipment.

All radiation-producing machines or equipment shall be clearly labeled as follows:

**CAUTION-RADIATION
THIS EQUIPMENT PRODUCES RADIATION WHEN ENERGIZED**

§ 227.68. Removal of labels.

All radiation-hazard labels posted shall be removed when the source of radiation is no longer present.

§ 227.69. Storage of sources.

Radiation sources shall be secured against unauthorized removal from the place of storage.

§ 227.70. Exceptions to labeling requirements.

(a) A room or area shall not be required to be posted with a caution sign because of the presence of a sealed source, if the radiation level 12 inches from the surface of the source container or housing does not exceed five millirem per hour.

(b) Rooms or other areas in hospitals which contain only therapeutic X-ray machines operated at potentials of 150 kVp and below, diagnostic X-ray machines, or patients containing radioactive material, shall not be required to be posted with caution signs,

if there are personnel in attendance who shall take the precautions necessary to prevent the exposure of any individual to radiation or radioactive material in excess of the limits established in this Chapter.

(c) Caution signs shall not be required to be posted at areas or rooms containing radioactive materials for a period of less than eight hours provided that the following conditions are met:

(1) The materials shall be constantly attended by an individual who shall take the precautions necessary to prevent the exposure of any individual to radiation or radioactive materials in excess of the limits established in this Chapter.

(2) The area or room shall be subject to the user's control.

§ 227.71. Table of quantities.

For the purposes of this Chapter, the following table shall be used to determine permissible quantities of various radioisotopes.

Material	Microcuries
Ag 105	1
Ag 111	10
As 76, As 77	10
Au 198	10
Au 199	10
Ba 140 + La 140	1
Be 7	50
C 14	50
Ca 45	10
Cd 109 + Ag 109	10
Ce 144 + Pr 144	1
Cl 36	1
Co 60	1
Cr 51	50
Cs 137 + Ba 137	1
Cu 64	50
Eu 154	1
F 18	50
Fe 55	50
Fe 59	1
Ga 72	10
Ge 71	50
H 3 (HTO or T ₂ O)	250
I 131	10
In 114	1
Ir 192	10
K 42	10
La 140	10
Mn 52	1
Mn 56	50
Mo 99	10
Na 22	10
Na 24	10
Nb 95	10
Ni 59	1
Ni 63	1
P 32	10
Pd 103 + Rh 103	50
Pd 109	10
Pm 147	10
Po 210	0.1

Material	Microcuries
Pr 143	10
Pu 239	1
Ra 226	0.1
Rb 86	10
Re 186	10
Rh 105	10
Ru 106 + Rh 106	1
S 35	50
Sb 124	1
Sc 46	1
Sm 153	10
Sn 113	10
Sr 89	1
Sr 90 + Y 90	0.1
Ta 182	10
Tc 96	1
Tc 99	1
Te 127	10
Te 129	1
Th (natural)	50
Tl 204	50
Tritium (see H 3)	250
U (natural)	50
U 233	1
U 234 - U 235	50
V 48	1
W 185	10
Y 90	1
Y 91	1
Zn 65	10
Unidentified radioactive materials or any of the above in unknown mixtures	0.1

WASTE DISPOSAL

§ 227.81. General.

No person shall dispose of any radioactive material except by:

- (1) transfer to an authorized recipient as provided in Chapter 225 of this Title (relating to licensing of radioactive material); or
- (2) authorization pursuant to § § 227.41 - 227.44 of this Title (relating to concentration of effluents) or § § 227.82 - 227.84 of this Title (relating to waste disposal).

§ 227.82. Approval of proposed procedures.

- (a) Any person may apply to the Department for approval of proposed procedures to dispose of radioactive material in a manner not otherwise authorized in this Chapter.
- (b) Each application shall include a description of the radioactive material, including the quantities and kinds of radioactive material and the levels of radioactivity involved, and the proposed manner and conditions of disposal.
- (c) The application, where appropriate, shall also include:
 - (1) an analysis and evaluation of pertinent information as to the nature of the environment, including topographical, geological, meteorological and hydrological characteristics; use of ground and surface waters in the general area;
 - (2) the nature and location of other potentially affected facilities; and

(3) procedures to be observed to minimize the risk of unexpected hazardous exposures.

(d) The Department shall not approve any application for a license to receive radioactive material from other persons for disposal on land not owned by the Commonwealth or the Federal Government.

§ 227.83. Sanitary sewerage systems.

No person shall discharge radioactive material into a sanitary sewerage system unless the following conditions are met:

(1) The material shall be readily soluble or dispersible in water.

(2) The quantity of any radioactive material released into the system by the licensee in any one day shall not exceed whichever of the following is larger:

(i) The quantity which, if diluted by the average daily quantity of sewage released into the sewer by the licensee, shall result in an average concentration not greater than the limits specified in Column 2, Table A, of § 227.25 of this Title (relating to table of concentrations):

(ii) Ten times the quantity of such material specified in § 227.71 of this Title (relating to table of quantities).

(3) The quantity of any radioactive material released in any one month, if diluted by the average monthly quantity of water released by the licensee, shall not result in an average concentration exceeding the limits specified in Column 2, Table A, of § 227.25 of this Title (relating to table of concentrations).

(4) The gross quantity of radioactive material released into the sewerage system by the licensee shall not exceed one curie per year. Excreta from individuals undergoing medical diagnosis or therapy with radioactive material shall be exempt from any limitations contained in this section.

§ 227.84. Burial in soil.

No licensee shall dispose of radioactive material by burial in soil unless the following conditions are met:

(1) The burial shall take place on his property.

(2) The total quantity of radioactive materials buried at any one location and time shall not exceed, at the time of burial, 1,000 times the amount specified in § 227.71 of this Title (relating to table of quantities).

(3) Burial shall be at a minimum depth of four feet.

(4) Successive burials shall be separated by distances of at least six feet and not more than 12 burials shall be made in any year.

(5) The Department shall be notified in writing prior to such burial of the intent and location of proposed burial sites.

§ 227.85. Incineration.

No person shall incinerate radioactive material for the purpose of disposal or preparation for disposal except as specifically approved by the Department.

RECORDS, REPORTS AND NOTIFICATIONS

§ 227.91. Required records.

(a) Each licensee or registrant shall maintain personnel monitoring records for all individuals for whom personnel monitoring is required under §§ 227.51 - 227.52 of this Title (relating to safety measures and services). Such information shall be kept on clear and legible records containing all the information required on Department Form H 702.003. The values entered on the forms or records shall be for periods of time not exceeding one calendar quarter.

(b) Each licensee or registrant shall maintain sufficient records in the same units used in this Chapter to demonstrate compliance with this Chapter and records of disposals

made under § § 227.81 - 227.85 of this Title (relating to waste disposal).

(c) Each registrant or licensee shall maintain records of the receipt, storage, transfer or disposal of all sources of radiation. In the case of receipts, initial registration shall be acceptable as proof of receipt of radiation-producing equipment received prior to February 9, 1970.

(d) Personnel monitoring records which shall be maintained pursuant to the provisions of subsection (a) of this section shall be retained for at least five years. At the end of five years, the registrant or licensee may summarize these records. The original records, except those involving overexposure investigations and reports, may be discarded upon Department approval of the summarization. The summarization may be retained by the registrant or licensee in lieu of the original records.

(e) The discontinuance of, or curtailment of activities, shall not relieve the licensee or registrant of responsibility for retaining all records required by these regulations. In this case, a licensee or registrant may, however, request the Department to accept such records. The acceptance of the records by the Department relieves the licensee or registrant of subsequent responsibility only in respect to their preservation as required by this section.

§ 227.92. Reports of theft.

Each licensee or registrant shall report by telephone and telegraph to the Department the theft or loss of any radioactive source immediately after such occurrence becomes known.

§ 227.93. Notification of incidents.

(a) *Immediate notification.* Each licensee or registrant shall immediately notify the Department by telephone and telegraph of any incident involving any radiation source possessed by him which may have caused or may cause any of the following:

(1) Exposure to the whole body of any individual to 25 rems or more of radiation; exposure of the skin of the whole body of any individual of 150 rems or more of radiation; or exposure of the feet, ankles, hands or forearms of any individual to 375 rems or more of radiation.

(2) The release of radioactive material in concentrations which, if averaged over a period of 24 hours, would exceed 5,000 times the limits specified for such materials in Table B of § 227.25 of this Title (relating to concentrations).

(3) A loss of one working week or more of the operation of any facilities affected.

(4) Damage to property in excess of \$100,000.

(b) *Twenty-four hour notification.* Each licensee or registrant shall within 24 hours, notify the Department by telephone and telegraph of any incident involving any source of radiation possessed by him and which may have caused or may cause any of the following:

(1) Exposure of the whole body of any individual to five rems or more of radiation; exposure of the skin of the whole body of any individual to 30 rems or more of radiation; or exposure of the feet, ankles, hands, or forearms to 75 rems or more of radiation.

(2) The release of radioactive material in concentrations which, if averaged over a period of 24 hours, would exceed 500 times the limits specified for such materials in Table B of § 227.25 of this Title (relating to table of concentrations).

(3) A loss of one day or more of the operation of any facility affected.

(c) *Names of individuals.* Any report filed with the Department pursuant to this section shall be prepared in such a manner that names of individuals who have received exposure to radiation will be stated in a separate part of the report.

(d) *Detailed report.* The notifications outlined in subsections (a) and (b) of this section shall be followed within 30 days by a detailed report in writing to be submitted to the Department.

§ 227.94. Summary report to former employees.

(a) A licensee or registrant, at the written request of any individual formerly employed or associated with him, shall furnish to such individual a summary report of

his personnel monitoring record as maintained pursuant to § 227.91 of this Title (relating to required reports). The report shall be furnished within 30 days from the time the request is made in writing and shall cover each year of the individual's employment or association involving exposure to radiation, except for the current year which shall be reported by quarter. The report shall also include the results of any calculations and analyses of radioactive material deposited in the body of the individual. The report shall be in writing and contain the following statement:

"This report is furnished to you under the provisions of 25 Pa. Code, Chapter 227 (relating to radiation exposure)."

(b) The individual's request shall include appropriate identifying data, such as social security number, dates and locations of employment or association.

§ 227.95. Thirty-day reports.

(a) In addition to any notification required by § 227.93 of this Title (relating to notification of incidents), each licensee or registrant shall make a report in writing within 30 days to the Department of the following incidents:

(1) Each exposure of an individual to radiation or concentrations of radioactive material in excess of any applicable limit as set forth in this Chapter or as otherwise approved by the Department.

(2) Any incident for which notification is required by § 227.92 of this Title (relating to reports of theft).

(3) Levels of radiation or concentrations of radioactive material (not involving excessive exposure of any individual) in an unrestricted area in excess of ten times any applicable limit as set forth in this Chapter or as otherwise approved by the Department.

(b) Each report required under subsection (a) of this section shall describe:

(1) the extent of exposure of individuals to radiation or radioactive material;

(2) levels of radiation and concentration of radioactive material involved;

(3) the cause of the exposure, levels or concentrations; and

(4) corrective steps taken or planned to assure against a recurrence.

(c) In any case where a licensee or registrant is required pursuant to the provisions of this section to report to the Department any exposure of an individual to radiation or to concentrations or radioactive material, the licensee or registrant shall, not later than the making of such report to the Department, also notify such individual of the nature and extent of exposure. Such notice shall be in writing and shall contain the following statement:

"This report is furnished to you under the provisions of 25 Pa. Code, Chapter 227 (relating to radiation exposure)."

(d) Any report filed with the Department pursuant to this section shall be prepared in such a manner that names of individuals who have received exposure to radiation shall be stated in a separate part of the report.

§ 227.96. Notice to employes and others.

Each licensee or registrant, at the request of any individual employed or associated with him, shall advise the individual in writing both annually and upon termination of employment of the personnel monitoring results for that individual as shown in records maintained by the licensee or registrant pursuant to § 227.91 of this Title (relating to required records).

§ 227.97. Notice of vacated premises.

(a) Each licensee shall, no less than 30 days before vacating or relinquishing possession or control of premises which may be contaminated with radioactive material, notify the Department in writing of intent to vacate.

(b) The Department may require that the licensee decontaminate or have decontaminated the location to a degree consistent with subsequent use as an unrestricted area, the details to be specified in each case by the Department.

(c) This section shall not apply to the burial of radioactive material carried out under the terms of § 227.84 of this Title (relating to burial of radioactive material for disposal).

TITLE 25. RULES AND REGULATIONS
PART I. DEPARTMENT OF ENVIRONMENTAL RESOURCES
Subpart D. ENVIRONMENTAL HEALTH AND SAFETY
ARTICLE V. RADIOLOGICAL HEALTH

CHAPTER 229. HUMAN USE OF RADIATION-PRODUCING
MACHINES OR EQUIPMENT

Authority

The provisions of this Chapter 229 issued under act of January 28, 1966, P.L. 1625 § 301 (73 P.S. § 1301).

Source

The provisions of this Chapter 229 adopted February 1, 1972, effective March 1, 1972, 2 Pa. B. 212.

GENERAL PROVISIONS

§ 229.1. Definitions.

The following words and terms, when used in this Chapter, shall have the following meanings, unless the context clearly indicates otherwise:

Aluminum equivalent - The thickness of aluminum affording the same attenuation, under specified conditions, as the material in question.

Attenuation - The reduction of exposure rate upon passage of radiation through matter.

Collimator - A device or mechanism by which the radiation beam is restricted in size.

Contact therapy apparatus - Radiation producing equipment for therapy designed for very short distances (target to skin distance of five cm or less) usually employing tube potentials in the range of 20 to 50 kVp.

Dead-man switch - A switch so constructed that a circuit-closing contact can be maintained only by continuous pressure on the switch.

Diagnostic-type protective tube housing - An X-ray housing so constructed that the leakage radiation measured at a distance of one meter from the source does not exceed 100 mR in one hour when the tube is operated at its maximum continuous rated current for the maximum rated tube potential.

Filter - Material in the useful beam which usually absorbs preferentially the less penetrating radiation.

Half-value layer (hvl) - The thickness of a specified substance which when introduced into the path of a given beam of radiation reduces the exposure rate by one-half.

Inherent filtration - The filtration permanently in the useful beam, which includes the window of the X-ray tube and any permanent tube or source enclosure.

Interlock - A device for precluding access to a high radiation area by automatically reducing the exposure rate upon entry by personnel or by energizing a conspicuous visible or audible alarm signal in such a manner that the individual entering is made aware of the entry.

Kilovolts peak (kVp) - The value in kilovolts of the peak potential of a pulsating potential generator. When only one-half of the wave is used, the value refers to the useful half of the wave.

Lead equivalent - The thickness of lead affording the same attenuation, under specified conditions, as the material in question.

Leakage radiation - All radiation coming from within the tube housing except the useful beam.

Primary protective barrier - A barrier providing shielding against the useful beam.

Protective apron - Apron made of radiation absorbing materials, used to reduce radiation exposure.

Protective barrier - A barrier of radiation absorbing material used to reduce radiation exposure.

Protective gloves - Gloves made of radiation absorbing material used to reduce radiation exposure.

Scattered radiation - Radiation that, during passage through matter, has been deviated in direction.

Secondary protective barrier - A barrier providing shielding against stray radiation.

Stray radiation - The sum of leakage and scattered radiation.

Therapeutic-type protective tube housing -

(i) For radiation therapy equipment not capable of operating at 500 kVp or above, a source housing so constructed that the leakage radiation at a distance of one meter from the source does not exceed one roentgen or equivalent in an hour when the equipment is operated at its maximum rating.

(ii) For radiation therapy equipment capable of operating at 500 kVp or above, a source housing so constructed that leakage radiation at a distance of one meter from the source does not exceed either one roentgen or equivalent in an hour or 0.1% of the useful beam dose rate at one meter from the source, whichever is greater, when the machine is operated at its maximum rated continuous current for the maximum rated accelerating potential.

(iii) In either case, small areas of reduced protection shall be acceptable providing the average reading over any 100 cm² area at one meter distance from the source does not exceed the values given.

Licensed practitioner of the healing arts - An individual licensed by the Commonwealth of Pennsylvania to practice the healing arts, which for the purposes of this Chapter shall be limited to medicine, surgery, dentistry, osteopathy, podiatry, and chiropractic.

Specific prescription - A written or oral directive to an x-ray facility authorizing examination of specified individuals.

Source

The provisions of this section 229.1 added February 19, 1976, effective March 15, 1976, 6 Pa. B. 391.

§ 229.2. Scope.

The provisions of this Chapter shall establish design and performance standards relevant to and requirements for the human use of radiation-producing machines or equipment. The provisions of this Chapter shall be in addition to, and not in substitution for, other applicable provisions of this Article.

§ 229.3. Sale and installation.

No person shall sell or install any radiation-producing machines or equipment which does not meet the provisions of this Article.

§ 229.4. Registration and requirements.

(a) Radiation-producing machines or equipment shall be registered with the Department within 30 days after acquisition of such equipment, and each four years thereafter.

(b) The registrant shall assure that all radiation-producing machines or equipment under his control are operated only by individuals adequately instructed in safe operating procedures and competent in safe use of the equipment.

(c) The registrant shall provide safety rules to each individual operating the

radiation-producing machines or equipment under his control, including any restrictions of the operating technique required for the safe operation of the particular apparatus, and require that the operator demonstrate familiarity with these rules.

§ 229.5. Protective barriers.

Each installation shall be provided with such primary and secondary protective barriers as are necessary to assure compliance with § § 227.11 - 227.13 of this Title (relating to exposures to radiation), § 227.24 of this Title (relating to exposure of minors), and § § 227.31 - 227.32 of this Title (relating to permissible levels from external sources).

§ 229.6. Other prohibited uses.

(a) No person shall operate or permit the operation of radiation-producing machines or equipment unless the equipment and installation meet the applicable requirements of this Article.

(b) Individuals shall not be exposed to the useful beam except for healing arts purposes, each exposure of which has been authorized by a licensed practitioner of the healing arts. This provision specifically prohibits deliberate exposure for the following purposes:

(1) Exposure of an individual for training, demonstration or other purposes unless there are also healing arts requirements and proper prescription has been provided.

(2) Exposure of an individual for the purpose of healing arts screening without prior written approval of the Department in consultation with the Secretary of Health. Diagnostic radiation exposure of an individual without specific prescription by a licensed practitioner constitutes healing arts screening.

Source

The provisions of this section 229.6(b) amended February 19, 1976, effective March 15, 1976, 6 Pa. B. 391.

FLUOROSCOPIC INSTALLATIONS

§ 229.11. Equipment.

(a) A diagnostic-type protective tube housing shall be used.

(b) The target-to-panel or target-to-table top distance shall be at least 12 inches.

(c) The total filtration permanently in the useful beam, including the table top or panel top, shall be at least two and one-half millimeters aluminum equivalent.

§ 229.12. Protective barriers and collimators.

(a) The equipment shall be so constructed that, under conditions of normal use, the entire cross-section of the useful beam shall be attenuated by a primary protective barrier permanently incorporated into the equipment.

(b) Collimators shall be provided to restrict the size of the useful beam to less than the area of the primary protective barrier. For conventional equipment, this shall be assumed to be met when the adjustable diaphragm is opened to its fullest extent, an unilluminated margin shall exist at all edges of the fluorescent screen when the screen is 14 inches (35 cm) from the panel surface or table top, or at the fixed screen position in equipment such as an orthodiascope. For conventional fluoroscopes, the X-ray tube and collimating system shall be linked with the fluorescent screen assembly. Collimators shall provide the same degree of attenuation as is required of the tube housing.

§ 229.13. Switches and timers.

(a) The fluoroscopic exposure switch shall be of the dead-man type.

(b) A cumulative timing device activated by the fluoroscope switch shall be provided.

It shall indicate the passage of a predetermined period or irradiation either by an audible signal or by temporary or permanent interruption of the irradiation when the increment of exposure time exceeds a predetermined limit not exceeding six minutes.

§ 229.14. Current meters required.

Current meters, or other devices which indicate the X-ray tube is operating, shall be provided on such equipment installed after January 1, 1971.

§ 229.15. Exposure rates.

(a) The exposure rate at the minimum target-to-skin distances shall not exceed the values given in the following table:

Operating Voltage (kVp)	Exposure Rate (R/mamp-min)
70 or below	2.2
80	3.2
90	4.3
100	5.5
110	6.8
120 and above	8.0

(b) With the fluorescent screen 14 inches (35 cm) from the panel or table top, the exposure rate two inches (5 cm) beyond the viewing surface of the screen shall not exceed 30 mR/hr for each R per minute at the table top with the screen in the useful beam without a patient and with the fluoroscope operating at the highest potential employed.

§ 229.16. Mobile equipment.

Mobile fluoroscopic equipment shall be subject to the following additional requirements:

- (1) Provisions shall be made so that the machine is not operated at source-skin distance of less than 12 inches (30 cm).
- (2) Image intensification shall always be provided.
- (3) The useful beam shall be intercepted by the image intensifier.

§ 229.17. Operating procedures.

(a) The fluoroscopist shall be aware of the radiation characteristics of his equipment that effect radiation exposure of the patient. Accordingly, radiation measurements shall be made such that the fluoroscopist can estimate the radiation exposure to the patient under the operating conditions used.

- (b) Protective gloves and aprons shall be made available.
- (c) Hand-held fluoroscopic screens shall not be used.

RADIOGRAPHIC INSTALLATIONS
OTHER THAN INTRA-ORAL DENTAL

§ 229.21. Housing and collimators.

- (a) The diagnostic-type protective tube housing shall be used.
- (b) Collimators capable of restricting the useful beam to the area of clinical interest shall be provided to define the beam and shall provide the same degree of attenuation as required of the protective tube housing. Collimators shall be calibrated in terms of the size of the projected useful beam at specified source-film distances.

(c) Except for stereoradiography, the size of the useful beam shall not exceed any one of the dimensions of the film by more than two inches for a source-film distance of 72 inches or one inch for a source-film distance of 36 inches. For photofluorographic equipment, the size of the useful beam shall be restricted to the area of the photofluorographic screen.

§ 229.22. Total filtration.

The aluminum equivalent of the total filtration in the useful beam shall be not less than that shown in the following table except when contraindicated for a particular diagnostic procedure:

Operating Voltage (kVp)	Total Filtration - Inherent Plus Added (Millimeters Aluminum Equivalent)
Below 50	0.5 millimeters
50 to 70	1.5 millimeters
Above 70	2.5 millimeters

§ 229.23. Exposure switches and indicators.

(a) A device shall be provided which terminates the exposure at a preset time interval or exposure. If a recycling timer is employed, it shall not be possible to make a repeat exposure without release of the exposure switch to reset the timer.

(b) The exposure switch except for those used in cinefluoroscopy or in conjunction with "spot film" devices in fluoroscopy shall be so arranged that it cannot be conveniently operated outside a shielded area.

(c) Machines equipped with beryllium window X-ray tubes shall contain keyed filter interlock switches in the tube housing and suitable indication on the control panel of the added filter in the useful beam if the total filtration permanently in the useful beam is less than 0.5 mm aluminum equivalent. The total filtration permanently in the useful beam shall be clearly indicated on the tube housing.

§ 229.24. Control panel.

(a) The control panel shall include a device, such as a milliammeter, which shall give positive indication of the production of X-rays whenever the X-ray tube is energized.

(b) The control panel shall include appropriate indicators, for example, labeled control settings and meters, indicating the physical factors, such as kVp, ma, exposure time or whether timing is automatic, used for the exposure.

§ 229.25. Operating procedures.

(a) When a patient or film must be held in position for radiography by an individual other than a patient, that individual shall be protected with appropriate shielding devices, such as protective gloves and apron, and he shall be so positioned that no part of his body, except for hands and arms, will be struck by the useful beam. Individuals frequently used for this purpose shall be considered occupationally exposed workers.

(b) The useful beam shall be restricted to the area on the patient which is of clinical interest.

MOBILE DIAGNOSTIC RADIOGRAPHIC EQUIPMENT

§ 229.31. General.

Mobile diagnostic equipment shall be subject to the requirements of §§ 229.21 - 229.23 (a) and §§ 229.23 (c) - 229.25 of this Title (relating to non-dental radiographic installations).

§ 229.32. Exposure switch and timer.

(a) A device shall be provided which terminates the exposure at a preset time interval or exposure and shall be so arranged that the operator can stand at least six feet from the patient and well away from the useful beam.

(b) If a recycling timer is employed, it shall not be possible to make a repeat exposure without release of the exposure switch to reset the timer.

§ 229.33. Distance of equipment from skin of patient.

Provisions shall be made so that the equipment is not operated at target-to-skin distances of less than 12 inches (30 cm).

§ 229.34. Operating procedure.

Mobile equipment shall be subject to the provisions of § 229.25 of this Title (relating to operating procedures for non-dental radiographic installations).

INTRA-ORAL DENTAL RADIOGRAPHIC INSTALLATIONS

§ 229.41. Housing and beam control.

(a) A diagnostic-type protective tube housing shall be used.

(b) Diaphragms or cones shall be used for restricting the useful beam and shall provide the same degree of attenuation as the housing. The diameter of the useful beam at the end of the cone shall not be more than three inches for intra-oral radiography.

(c) A cone or spacer frame shall provide a target-to-skin distance of not less than seven inches with apparatus operating above 55 kVp or four inches with apparatus operating at 55 kVp or below for intra-oral periapical exposures.

§ 229.42. Total filtrations.

The aluminum equivalent of the total filtration in the useful beam shall not be less than that shown in the following table:

Operating Voltage (kVp)	Total Filtration - Inherent Plus Added (Millimeters Aluminum Equivalent)
Below 50	0.5
50 to 70	1.5
Above 70	2.5

§ 229.43. Exposure switch and timer.

(a) A device shall be provided which terminates the exposure at a preset time interval or exposure.

(b) If a recycling timer is employed, it shall not be possible to make a repeat exposure without release of the exposure switch to reset the timer.

§ 229.44. Protective barrier.

Each installation shall be provided with a protective barrier for the operator or shall be so arranged that the operator may stand at least six feet from the patient and well away from the useful beam.

§ 229.45. Control panel.

(a) The X-ray control shall include means for indicating tube voltage, milliamperage and exposure duration.

- (b) Tube voltage and milliamperage shall be indicated by meters or control settings.
- (c) A milliammeter, light, or other device shall give visual indication when X-rays are being produced.

§ 229.46. Operating procedures.

- (a) The dentist or any assistant shall not hold patients or film during exposures.
- (b) Only the patient shall be in the useful beam.
- (c) Neither the tube housing nor the cone shall be hand-held during the exposure.
- (d) Intra-oral fluoroscopy shall not be used in dental examinations.

THERAPEUTIC INSTALLATIONS

§ 229.51. Housing, diaphragms and cones.

(a) A therapeutic-type protective tube housing shall be used. Contact therapy machines shall meet the additional requirement that the leakage radiation at two inches (five cm) from the surface of the housing does not exceed 0.1 roentgen per hour or equivalent.

(b) Permanent diaphragms or cones used for collimating the useful beam shall afford the same degree of attenuation as the tube housing. Adjustable or removable beam-defining diaphragms or cones shall transmit not more than 5% of the useful beam at the maximum kilovoltage and with maximum treatment filter.

§ 229.52. Filters.

(a) Filters shall be secured in place to prevent them from dropping out.

(b) The filter slot shall be so constructed that the radiation escaping through it does not produce an exposure exceeding one roentgen per hour or equivalent at one meter.

(c) Radiation from the slot which is accessible to the patient shall not exceed 30 roentgens per hour or equivalent at five centimeters from the external opening.

(d) Each removable filter shall be marked with its thickness and material.

(e) On all equipment purchased after January 1, 1971 a filter indication system shall be used on all therapy machines using changeable filters. It shall indicate from the control panel the presence or absence of any filter, and it shall be designed so as to permit easy recognition of any added filter in place.

§ 229.53. Radiation source tube.

(a) The radiation source tube shall be so mounted that it cannot turn or slide with respect to the housing aperture.

(b) Means shall be provided to immobilize the tube housing during stationary portal treatment.

§ 229.54. Exposure control device.

(a) A suitable exposure control device shall be provided to terminate the exposure after a preset time interval or preset exposure or dose limit.

(b) Means shall be provided for the operator to terminate the exposure at any time.

§ 229.55. Control panel.

(a) The control panel shall include a device which shall give positive indication of the production of radiation whenever the radiation source tube is energized.

(b) With equipment operating above 150 kVp, the control panel shall be within a protective booth equipped with an interlocked door, or outside the treatment room.

§ 229.56. Interlocks.

Interlocks shall be provided for equipment capable of operating above 150 kVp so that when any door of the treatment room is opened either the machine will shut off automatically or the radiation level within the room will be reduced to an average of not more than two milliroentgens per hour and a maximum of ten milliroentgens per hour at a distance of one meter in any direction from the target, or shall energize a conspicuous visible or audible alarm signal in such a manner that the individual entering and the operator are made aware of the entry. After a shut-off or reduction in output, it shall be possible to restore the machine to full operation only from the control panel.

§ 229.57. Observation of patient.

(a) Provision shall be made to permit continuous observation of and communication with the patient during irradiation.

(b) Windows, mirror systems or closed-circuit television viewing screens used for observing the patient shall be so located that the operator can maintain direct surveillance over both the control panel and the patient.

§ 229.58. Protective barriers.

With equipment operating above 500 kVp, mechanical or electrical means shall be provide to prevent the useful beam from striking secondary protective barriers.

§ 229.59. Operating procedures.

(a) Any radiation-producing machine used for therapy shall be calibrated by a qualified expert prior to human use and at least once in every calendar year thereafter. Additional calibration by a qualified expert shall be performed following major alterations affecting radiation output or whenever significant changes in radiation output are observed. Records of calibration shall be maintained by the registrant.

(b) A radiation protection survey of all new installations and existing installations not previously surveyed shall be made by, or under the direction of, a qualified expert. This shall be done prior to initial use and after any change which might significantly alter the radiation protection situation. The expert shall report his findings in writing to the person in charge of the facility and a copy of this report shall be available for inspection by the Department.

(c) The facility shall be operated in compliance with any limitations indicated by the protection survey.

(d) If the patient must be held by an individual, that individual shall be adequately protected and he shall be positioned so that no part of his body will be struck by the useful beam and that his body is as far as possible from the edge of the useful beam. The exposure of any individual used for this purpose shall be monitored.

(e) If the radiation source tube of a contact therapy machine is hand-held during irradiation, the operator shall wear protective gloves and apron.

(f) All interlocks, "ON-OFF" beam control mechanisms, safety and warning devices shall be checked and appropriately serviced at least once in every calendar year.

TITLE 25. RULES AND REGULATIONS
PART I. DEPARTMENT OF ENVIRONMENTAL RESOURCES
Subpart D. ENVIRONMENTAL HEALTH AND SAFETY
ARTICLE V. RADIOLOGICAL HEALTH

CHAPTER 231. HUMAN USE OF SEALED SOURCES

Authority

The provisions of this Chapter 231 issued under act of January 28, 1966, P.L. 1625 § 301 (73 P.S. § 1301).

Source

The provisions of this Chapter 231 adopted February 1, 1972, effective March 1, 1972, 2 Pa. B. 212.

GENERAL PROVISIONS

§ 231.1. Scope.

The provisions of this Chapter shall establish requirements for human use of sealed sources. The provisions of this Chapter are in addition to, and not in substitution for, the requirements of Chapters 221, 225 and 227 of this Title (relating to general provisions, licensing and control of exposure).

§ 231.2. License.

Each person who handles sealed radioactive sources shall be duly licensed as provided by this Article and shall comply with the appropriate provisions of this Article.

ACCOUNTABILITY, STORAGE, AND EXPOSURE

§ 231.11. Records and inventories.

(a) Except as authorized by the Department, each licensee shall keep records of sealed sources and shall keep a permanent record of the receipt and disposal, and of the issue, use and return of all sealed sources.

(b) A physical inventory shall be made at least every six months and a written record of the inventory maintained. The record shall include the location, quantities and kinds of radioactive material, and the date of the inventory.

§ 231.12. Storage.

When not in use, sealed sources and applicators containing sealed sources shall be kept in a protective enclosure of such material and wall thickness as may be necessary to assure compliance with the provisions of Chapter 227 of this Title (relating to standards for control of exposure).

§ 231.13. Exposure.

Non-occupationally exposed individuals having incidental contact with patients having implanted or applied sealed sources, for example, visitors, nurses, and other patients, shall not be exposed to doses in excess of 10 percent of those doses specified in § 227.11 of this Title (relating to maximum exposure limits) as a result of their contact with such patients.

LEAKAGE AND CONTAMINATION

§ 231.21. Leak tests.

(a) All sealed sources shall be tested for leakage and contamination prior to initial use and at least every six months.

(b) If there is reason to suspect that a sealed source might have been damaged or might be leaking, it shall be tested for leakage before further use.

§ 231.22. Test procedure.

(a) Except for gamma beam therapy equipment, leak tests shall be capable of detecting the presence of 0.005 microcurie of removable contamination on the test sample, or in the case of radium, the escape of radon at the rate of 0.001 microcurie per 24 hours.

(b) Any test which reveals the presence of removable contamination in excess of the limits of this section shall be considered evidence that the sealed source is leaking.

(c) The licensee shall immediately withdraw the source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with applicable provisions of § 225.22 of this Title (relating to transfer of material), and §§ 227.81 - 227.85 of this Title (relating to waste disposal).

GAMMA-BEAM THERAPY EQUIPMENT

§ 231.31. Sources and leak tests.

(a) All radioactive sources used in gamma-beam therapy shall be sealed sources.

(b) Leak tests shall be conducted prior to use of and whenever a gamma-beam source is replaced. Leak tests shall be conducted thereafter at least every six (6) months. Any significant removable contamination shall be removed prior to insertion of a new source.

(c) Leak tests shall be capable of detecting the presence of 0.05 microcurie of removable contamination. Any such test revealing the presence of 0.05 microcurie or more of removable contamination shall be considered as evidence that the sealed source is leaking. An acceptable method of testing for source leakage is to wipe (with moistened cotton swabs or filter paper) accessible surfaces of the housing port and collimator with the beam in the "OFF" position and to assay these wipes for transferred contamination. Should the leak test reveal leakage, the source shall not be used until it is decontaminated, repaired, or disposed of in accordance with the applicable provisions of § 225.22 of this Title (relating to transfer of material) and §§ 227.81 - 227.85 of this Title (relating to waste disposal).

§ 231.32. Specifications.

(a) The housing shall be so constructed that at one meter from the source, the maximum and the average exposure rates do not exceed 10 mR/hr and 2 mR/hr, respectively, when the beam control mechanism is in the "OFF" position.

(b) The leakage radiation measured at one meter from the source shall not exceed 0.1% of the useful beam exposure rate at that distance when the beam control mechanism is in the "ON" position, except for the portion of the housing which includes the collimator zone. This limit shall not apply to source housings where the leakage radiation at one meter is less than one R/hr, nor shall it apply to apparatus used exclusively for whole body irradiation.

(c) The beam-defining apparatus comprising the collimator zone shall be constructed to attenuate the useful beam so that the transmitted exposure rate is not more than 5% of the unattenuated beam. Auxilliary beam-defining devices need not meet this requirement.

(d) The beam-control mechanism shall meet the following specifications:

(1) In the "ON" position, the source and beam-collimating device shall be accurately aligned.

- (2) The mechanism shall be capable of acting in any orientation of the housing.
 - (3) The mechanism shall be so constructed that in an emergency, it can be returned manually to the "OFF" position with a minimum exposure to personnel.
 - (4) There shall be on the housing and on the control panel a warning device that plainly indicates whether the beam is "ON" or "OFF."
 - (5) A suitable exposure control device shall be provided to terminate the exposure after a preset time interval or preset exposure or dose limit. Means shall be provided for the operator to terminate the exposure at any time.
 - (6) The beam-control mechanism shall be designed so as to return automatically to the "OFF" position in the event of any breakdown or interruption of the activating force and shall stay in the "OFF" position until reactivated from the control panel.
 - (7) Interlocks shall be provided so that when any door of the treatment room is opened, the beam control mechanism automatically and rapidly returns to the "OFF" position where it shall remain until the door is again closed and the machine is manually reactivated from the control panel.
 - (8) It shall not be possible to switch the beam-control mechanism to the "ON" position from inside the treatment room.
- (e) The equipment shall be provided with a locking device to prevent unauthorized use.

§ 231.33. Structural shielding.

- (a) All walls, floors and ceilings which can be struck by the useful beam shall be provided with primary protective barriers.
- (b) All walls, floors and ceilings which, because of restrictions in the orientation of the useful beam, cannot be struck by the useful beam shall be provided with secondary protective barriers.
- (c) The control panel shall be within a protective booth equipped with an interlocked door, or outside the treatment room.
- (d) Provisions shall be made to permit continuous observation of the patient during irradiation.
- (e) Windows, mirror systems or closed-circuit television viewing screens used for observing the patient shall be so located that the operator may see the patient and the control panel from the same position.

§ 231.34. Operating procedures.

- (a) Gamma-beam therapy equipment shall be calibrated by a qualified expert prior to use and whenever the sealed source is replaced. Records of calibration shall be maintained by the licensee.
- (b) All facilities shall have a radiation protection survey made by, or under the direction of, a qualified expert. This shall be done prior to initial use and after any change which might significantly alter the radiation protection situation. The expert shall report his findings and recommendations for compliance in writing to the licensee. A copy of his report shall be made available for inspection by the Department.
- (c) The facility shall be operated in compliance with any limitations indicated by the protection survey.
- (d) If the patient must be held by an individual, that individual shall be adequately protected and he shall be positioned so that no part of his body will be struck by the useful beam and that his body is as far as possible from the edge of the useful beam. The exposure of any individual used for this purpose shall be monitored.
- (e) All interlocks, "ON-OFF" beam control mechanism safety and warning devices shall be checked and appropriately serviced at least once in every calendar year.
- (f) Emergency procedures to be followed in the event of failure of the beam control mechanism shall be established and posted at the control panel.

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TITLE 25. RULES AND REGULATIONS
PART I. DEPARTMENT OF ENVIRONMENTAL RESOURCES
Subpart D. ENVIRONMENTAL HEALTH AND SAFETY
ARTICLE V. RADIOLOGICAL HEALTH

CHAPTER 233. INDUSTRIAL RADIOGRAPHIC OPERATIONS

Authority

The provisions of this Chapter 233 issued under act of January 28, 1966, P.L. 1625 § 301 (73 P.S. § 1301).

Source

The provisions of this Chapter 233 adopted February 1, 1972, effective March 1, 1972, 2 Pa. B. 212.

GENERAL PROVISIONS

§ 233.1. Definitions.

The following words and terms, when used in this Chapter shall have the following meanings, unless the context clearly indicates otherwise:

(1) *Cabinet radiography* - Industrial radiography using radiation-producing machines or equipment, which is conducted in an enclosed, interlocked cabinet, such that the radiation machine will not operate unless all openings are securely closed, and which openings meet the requirements of § 227.63 of this Title (relating to high radiation areas), and which cabinet is so shielded that every location on the exterior meets conditions for an unrestricted area.

(2) *Industrial radiography* - The industrial examination of the macroscopic structure of materials by nondestructive methods utilizing radiation sources.

(3) *Radiographer* - Any individual who performs or who, in attendance at the site where radiation sources are being used, personally supervises industrial radiographic operations and who is responsible to the licensee or registrant for assuring compliance with the requirements of these regulations and all license conditions.

(4) *Radiographer's assistant* - Any individual who, under the personal supervision of a radiographer, uses radiation sources, related handling tools, or survey instruments in industrial radiography.

(5) *Radiographic exposure device* - Any instrument containing a sealed source fastened or contained therein, in which the source or shielding thereof may be moved, or otherwise changed, from a shielded to unshielded position for purposes of making a radiographic exposure.

(6) *Shielded room radiography* - Industrial radiography which is conducted in an enclosed room, the interior of which is not occupied during radiographic operations, and which is so shielded that every location on the exterior meets conditions for an unrestricted area, and the only access to which is through openings which are interlocked so that the radiation machine will not operate unless all openings are securely closed and meet the requirements of § 227.63 of this Title (relating to high radiation areas).

(7) *Storage container* - A device in which sealed radioactive sources are transported or stored.

§ 233.2. Scope.

The provisions of this Chapter shall establish radiation safety requirements for persons utilizing sources of radiation for industrial radiography. The requirements of this Chapter are in addition to, and not in substitution for, the other requirements of this Article.

SEALED SOURCE REQUIREMENTS

§ 233.11. Radiation level limits.

(a) Radiographic exposure devices measuring less than four inches from the sealed source storage position to any exterior surface of the device shall have no radiation level in excess of 50 milliroentgens per hour at six inches from any exterior surface of the device.

(b) Radiographic exposure devices measuring a minimum of four inches from the sealed source storage position to any exterior surface of the device, and all storage containers for sealed sources or outer containers for radiography exposure devices, shall have no radiation level in excess of 200 milliroentgens per hour at any exterior surface, and ten milliroentgens per hour at one meter from any exterior surface.

(c) The radiation levels specified are with the sealed source in the shielded ("OFF") position.

§ 233.12. Radiation source locks.

(a) Each radiation source shall be provided with a lock or outer-locked container designed to prevent unauthorized or accidental production of radiation, or removal or exposure of a sealed source, and shall be kept locked at all times except when under the direct surveillance of a radiographer or radiographer's assistant, or as may be otherwise authorized pursuant to § 233.51 of this Title (relating to security).

(b) Each storage container shall be provided with a lock and kept locked when containing sealed sources, except when the container is under the direct surveillance of a radiographer or radiographer's assistant.

§ 233.13. Storage precautions.

Locked radiographic exposure devices and storage containers shall be physically secured to prevent tampering or removal by unauthorized personnel.

§ 233.14. Repairs and testing.

(a) The replacement of any sealed source fastened to or contained in a radiographic exposure device and leak testing, repair, tagging, opening or any other modification of any sealed source shall be performed only by persons specifically authorized to do so by the Department, the U.S. Atomic Energy Commission or any agreement state.

(b) Each sealed source shall be tested for leakage at intervals not to exceed six months. In the absence of a certificate from a transferor that a test has been made within the six-month period prior to the transfer, the sealed source shall not be put into use until tested. The leak test shall be capable of detecting the presence of 0.005 microcurie of removable contamination on the sealed source. An acceptable leak test for sealed sources in the possession of a radiography licensee would be to test at the nearest accessible point to the sealed source position or other appropriate measuring point. Records of leak test results shall be expressed in units of microcuries and maintained for inspection by the Department.

(c) Any test conducted pursuant to subsection (b) of this section which reveals the presence of 0.005 microcurie or more of removable radioactive material shall be considered evidence that the sealed source is leaking. The licensee shall immediately withdraw the equipment involved from use and shall cause it to be decontaminated and repaired or to be disposed of, in accordance with § 225.22 of this Title (relating to transfer of materials) and §§ 227.81 - 227.85 of this Title (relating to waste disposal). Within 15 days after obtaining results of the test evidencing leakage, the licensee shall file a report with the Department describing the equipment involved, the test results and the corrective action taken.

(d) A sealed source which is not fastened to or contained in a radiographic exposure device shall have permanently attached to it a durable tag at least one inch square bearing

the prescribed radiation caution symbol in conventional colors, purple on a yellow background, and at least the instructions: "Danger - Radioactive Material - Do Not Handle - Notify Civil Authorities if Found."

§ 233.15. Quarterly inventory.

Each licensee shall conduct a quarterly physical inventory to account for all radiation sources received or possessed by him. The records of the inventories shall be maintained for inspection by the Department and shall include the location, quantities and kinds of radioactive material, and the date of the inventory.

RADIOGRAPHY AND RADIATION-PRODUCING MACHINES

§ 233.21. Cabinet radiography.

Cabinet radiography using radiation-producing machines or equipment shall be exempt from other requirements of this Chapter. No registrant, however, shall permit any individual to operate a cabinet radiography unit until such individual has received a copy of, and instruction in, and demonstrated an understanding of operating procedures for the unit, and has demonstrated competence in its use.

§ 233.22. Shielded room radiography.

Shielded room radiography using radiation producing machines or equipment shall be exempt from other requirements of this Chapter. The following shall apply, however:

(1) No registrant shall permit any individual to operate a radiation-producing machine or equipment for shielded room radiography until such individual has received a copy of, and instruction in, and demonstrated an understanding of operating procedures for the unit, and has demonstrated competence in its use.

(2) Each registrant shall supply appropriate personnel monitoring equipment to, and shall require the use of such equipment by, every individual who operates, who makes "set-ups," or who performs maintenance on a radiation-producing machine for shielded room radiography.

§ 233.23. Other radiography.

Other radiography using radiation machines or equipment shall be exempt from § 233.11 - 233.15 and § 233.53 (c) and (d) of this Title (relating to sealed source requirements, radiation surveys and records thereof). The following shall apply, however:

(1) A physical radiation survey shall be conducted to determine that the radiation machine is "OFF" prior to each entry into the radiographic exposure area. Such surveys shall be made with a radiation measuring instrument capable of measuring radiation of the energies and at the dose rates to be encountered, which is in good working order, and which has been properly calibrated within the preceding three months or following the last instrument servicing, whichever is later. Survey results and records of boundary locations shall be maintained and kept available for inspection.

(2) Mobile or portable radiation machines shall be physically secured to prevent removal by unauthorized personnel.

RADIATION SURVEY INSTRUMENTS AND LOGS

§ 233.31. General requirements:

(a) The licensee or registrant shall maintain sufficient calibrated and operable radiation survey instruments to make physical radiation surveys as required by this Chapter and Chapter 227 of this Title (relating to standards for control of radiation exposure).

(b) Each radiation survey instrument shall be calibrated at intervals not to exceed three months and after each instrument servicing and a record maintained of the latest date of calibration.

(c) Instrumentation required by this Chapter shall have a range such that two milliroentgens per hour through one roentgen per hour can be measured.

§ 233.32. Utilization logs.

Each licensee or registrant shall maintain current logs which shall be kept available for inspection by the Department, showing the following information for each source of radiation:

- (1) A description (or make and model number) of each radiation source or storage container in which a sealed source is located.
- (2) The identity of the radiographer to whom the source is assigned.
- (3) Locations where used and dates of use.
- (4) The voltage, current and exposure time for each radiographic exposure employing a radiation machine.

OPERATORS' PERSONAL SAFETY REQUIREMENTS

§ 233.41. Limitations.

(a) *Radiographer*. No licensee or registrant shall permit any person to act as a radiographer until that person has complied with the following requirements:

(1) Been instructed in and demonstrated understanding of the following subjects:

- (i) Fundamentals of radiation safety, including:
 - (A) characteristics of gamma and X radiation;
 - (B) units of radiation dose (mrem) and quantity of radioactivity (curie);
 - (C) hazards of excessive exposure of radiation;
 - (D) levels of radiation from sources of radiation; and
 - (E) methods of controlling radiation dose, including working time, working distance and shielding.
- (ii) Radiation detection instrumentation to be used, including:
 - (A) use of radiation survey instruments, including operation, calibration and limitations;
 - (B) survey techniques; and
 - (C) use of personnel monitoring equipment, including film badges, pocket dosimeters and pocket chambers.
- (iii) Radiographic equipment to be used, including:
 - (A) remote handling equipment;
 - (B) radiographic exposure devices and sealed sources;
 - (C) storage containers; and
 - (D) operation and control of X-ray equipment.
- (iv) The requirements of pertinent federal and state regulations.
- (v) The licensee's or registrant's written operating and emergency procedures.

(2) Received copies of and instruction in the regulations contained in this Chapter and the applicable sections of Chapter 277 of this Title (relating to standards for control of radiation exposure), and the licensee's or registrant's operating and emergency procedures, and shall have demonstrated understanding thereof.

(3) Demonstrated competence to use the source of radiation, related handling tools, and survey instruments which will be employed in his assignment.

(b) *Radiographer's assistant*. No licensee or registrant shall permit any person to act as a radiographer's assistant until such person has complied with the following requirements:

(1) Received copies of and instructions in the licensee's or registrant's operating and emergency procedures, and shall have demonstrated understanding thereof.

(2) Demonstrated competence to use under the personal supervision of the radiographer the sources of radiation, related handling tools, and radiation survey instruments which will be employed in his assignment.

§ 233.42. Operating and emergency procedures.

The licensee's or registrant's operating and emergency procedures shall include instructions in at least the following:

- (1) The handling and use of radiation sources to be employed such that no person is likely to be exposed to radiation doses in excess of the limits established in Chapter 227 of this Title (relating to standards for control of radiation exposure).
- (2) Methods and occasions for conducting radiation surveys.
- (3) Methods for controlling access to radiographic areas.
- (4) Methods and occasions for locking and securing sources of radiation.
- (5) Personnel monitoring and the use of personnel monitoring equipment.
- (6) Transportation to field locations, if appropriate, including packing of sources of radiation in the vehicles, posting of vehicles and control of sources of radiation during transportation.
- (7) Minimizing exposure of persons in the event of an accident.
- (8) The procedure for notifying proper persons in the event of an accident.
- (9) Maintenance of records.

§ 233.43. Personnel monitoring control.

(a) No licensee or registrant shall permit any person to act as a radiographer or as a radiographer's assistant unless, at all times during radiographic operations, each such person shall wear a film badge and a pocket dosimeter, pocket chamber or other device which can be read immediately. Pocket dosimeters and pocket chambers shall be capable of indicating exposures as low as 50 milliroentgens (such as, ranges from zero to 200). A film badge shall be assigned to and worn by only one person.

(b) Pocket dosimeters, pocket chambers or other Department approved devices shall be read and doses recorded daily. A film badge shall be immediately processed if a pocket chamber or pocket dosimeter is discharged beyond its range. The film badge reports received from the film badge processor and records of pocket dosimeter and pocket chamber readings shall be maintained for inspection by the Department.

PRECAUTIONARY PROCEDURES

§ 233.51. Security.

During each radiographic operation the radiographer or radiographer's assistant shall maintain a direct surveillance of the operation to protect against unauthorized entry into a high radiation area, except:

- (1) where the high radiation area is equipped with a control device or an alarm system as described in § 227.63 of this Title (relating to high radiation areas); or
- (2) where the high radiation area is locked to protect against unauthorized or accidental entry.

§ 233.52. Posting.

Areas in which radiography is being performed shall be conspicuously posted as required by § § 227.62 and 227.63 of this Title (relating to posting).

§ 233.53. Radiation surveys and records.

(a) No radiographic operation shall be conducted unless calibrated and operable radiation survey instrumentation as described in § 233.31 of this Title (relating to radiation surveys) is available and used at each site where radiographic exposures are made.

(b) A physical radiation survey shall be made after each radiographic exposure utilizing radiographic exposure devices or sealed sources of radioactive material to determine that the sealed source has been returned to its shielded condition.

(c) A physical radiation survey shall be made to determine that each sealed source

is in its shielded condition prior to securing the radiographic exposure device or storage container as specified in § 223.12 of this Title (relating to locks).

(d) Records shall be kept of the surveys required by subsection (c) of this section and maintained for inspection by the Department.

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§ 235.14. Tests and surveys.

(a) Tests and inspections of all safety devices shall be performed at least annually to insure their proper operation.

(b) Surveys and monitoring sufficient to insure that operations are conducted safely shall be provided.

(c) Records of tests and inspections, surveys, and monitoring sufficient to show compliance with this Chapter shall be maintained and kept available for inspection by a representative of the Department upon demand.

§ 235.15. Instruction of personnel.

(a) Individuals having access to analytical X-ray machines or equipment shall be provided specific instructions concerning the radiation hazards, safe working practices and the symptoms of an acute localized exposure.

(b) Medical personnel examining work-connected injuries shall be informed of the possibility of radiation exposure to the worker.

(c) Operators shall be instructed in the procedure for reporting an actual or suspected radiation overexposure.

ACCELERATORS

§ 235.21. Kinetic energy imparted.

The term, accelerator, in this Chapter shall mean any radiation-producing machine imparting kinetic energies of one of the following:

(1) One MeV or greater to electrons.

(2) One-tenth of one MeV or greater to other particles.

§ 235.22. Instruction of operators.

(a) Operators shall be provided with written operating procedures for normal, bypass and emergency operations, and shall be familiar with such procedures.

(b) Up-to-date diagrams of the accelerator control, safety interlock and warning circuits shall be maintained and be available to operators.

§ 235.23. Warning devices and inspections.

(a) A copy of the written operating procedures and circuit diagrams required by § 235.22 of this Title (relating to instruction of operators) shall be available for inspection by the Department upon demand.

(b) In addition to the requirements of § 227.63 of this Title (relating to high radiation areas), an independent radiation monitoring system shall be provided so that persons entering high radiation areas become aware of the existence of the radiation hazard.

(c) Warning lights shall be placed inside and at entrances to high radiation areas. Warning lights shall be connected to the accelerator controls.

(d) All safety and warning devices shall be tested at least annually for proper operation and records kept of the test results.

§ 235.24. Other safety measures.

(a) In the event of a malfunction of safety or warning devices, the machine shall not be operated unless appropriate interim precautions are instituted to provide equivalent protection. Repairs necessary to correct the malfunction shall be initiated promptly.

(b) When bypassing of an interlock system is necessary, sufficient safeguards shall be provided to inform all affected individuals of the bypass status, to provide adequate protection in the interim, and to insure reactivation of the interlock system when bypassing is no longer necessary.

(c) When rapid egress is not possible from areas where a significant radiation hazard may exist, emergency "OFF" controls, that is, panic or scram buttons, shall be provided

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(c) When rapid egress is not possible from areas where a significant radiation hazard may exist, emergency "OFF" controls, that is, panic or scram buttons, shall be provided

at appropriate locations. They shall be clearly labeled as to their purpose. The controls shall include a manual reset, so that the accelerator cannot be restarted from the accelerator control without resetting the emergency "OFF" control.

(d) All facilities shall have a radiation protection survey made by or under the direction of a qualified expert. The expert shall report his findings in writing to the person in charge of the facility and a copy of this report shall be available for inspection by the Department upon demand.

(e) The facility shall be operated in compliance with any limitations indicated by the protection survey.

MACHINES IN VETERINARY MEDICINE

§ 235.31. Equipment.

(a) Equipment for diagnostic purposes shall be provided with diagnostic protective tube housings.

(b) Equipment used for therapeutic purposes shall be provided with therapeutic protective tube housings.

(c) Diagnostic equipment shall not be used for therapeutic purposes.

(d) Collimators capable of restricting the useful beam to the area of clinical interest shall be provided and shall provide the same degree of attenuation as is required of the housing.

(e) Except when contraindicated for a particular radiographic purpose, the total filtration permanently in the useful beam shall not be less than 1.5 millimeters aluminum equivalent for machines operating up to 70 kVp and two millimeters aluminum equivalent for machines operated at 70 kVp or above.

(f) A device shall be provided to terminate the exposure after a preset time or exposure.

(g) A dead-man type of exposure switch shall be provided, together with an electrical cord of sufficient length so that the operator can stand out of the useful beam and at least six feet from the tube head during all X-ray exposures.

(h) Portable X-ray tube heads shall be supported by a stand.

§ 235.32. Structural shielding.

All wall, ceiling and floor areas of facilities regularly used for veterinarian X-ray procedures shall be equivalent to or provided with applicable protective barriers as required.

§ 235.33. Operating procedures.

(a) The operator shall stand well away from the useful beam and the animal during radiographic exposures.

(b) Hand-held fluoroscopic screens shall not be used.

(c) All individuals, other than those whose presence is necessary to conduct the X-ray procedures, shall be outside the X-ray room, or, for field procedures, shall stand at least 15 feet away from the X-ray tube and the animal.

(d) In any application in which the operator and other assisting individual are not located behind a protective barrier, a protective apron having a lead equivalent of not less than 0.5 millimeter shall be worn by individuals during exposures.

(e) No individual shall be regularly employed to hold or support animals or hold film or the X-ray tube head during radiation exposures. Occupationally exposed individuals shall not perform this service except in cases in which no other method is available. Any individual holding or supporting an animal or film during radiation exposure shall wear protective gloves and apron having a lead equivalent of not less than 0.5 millimeter and shall be positioned so that no part of his body will be struck by the useful beam and that his body is as far as possible from the edge of the useful beam. The exposure of any individual used for this purpose shall be monitored.

(f) During therapeutic procedures no individual shall hold the tube head or the animal.

No. 480

AN ACT

Empowering the Commonwealth to acquire land and operate burial grounds for the disposal of radioactive materials.

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

Section 1. The Commonwealth shall have the power to acquire land by purchase, eminent domain or otherwise, for the purpose of establishing burial grounds for the disposal of radioactive material to be operated by the Secretary of Health or under his direction.

Burial grounds—
radioactive
materials.

Acquisition of
land for burial
of radioactive
material to be
operated by
Secretary of
Health.

Section 2. The Secretary of Health shall have the power to operate such burial grounds for the Commonwealth, or to contract with other governmental agencies or private persons to operate such burial grounds.

Powers of
Secretary of
Health.

Section 3. The Department of Health shall make a reasonable charge to any person requesting permission to bury radioactive material commensurate with the cost of operating the burial facilities. Such moneys collected shall be appropriated to the Department of Health. The moneys so appropriated shall constitute a fund from which the Department shall pay the cost of operation of such burial.

Charges and
disposition of
funds.

Section 4. This act shall take effect immediately.

Act effective
immediately.

APPROVED—The 26th day of October, A. D. 1959.

DAVID L. LAWRENCE

The foregoing is a true and correct copy of Act of the General Assembly No. 480.



Secretary of the Commonwealth.

Department of Transportation

Title 67, Chapter 20: Regulations Governing the Highway
Transportation of Hazardous Material

**PURDON'S
PENNSYLVANIA STATUTES
ANNOTATED**

Title 35

**Health and Safety
§§ 1 to 1500**

**Philadelphia, Pa.
George T. Biesel Company**

**St. Paul, Minn.
West Publishing Co.**

(6) Any person claiming the ownership of, or right of possession to, or claiming to be the holder of a chattel mortgage or contract of conditional sale upon, any such vehicle, the disposition of which is provided for herein may at any time prior to the sale thereof present his petition to the court alleging his lawful ownership thereof or right of possession thereto or his lien thereon or reservation of title thereto, and if, upon public hearing thereon, due notice of which having been given to the district attorney, such claimant shall prove by competent evidence to the satisfaction of the court that said vehicle was lawfully acquired, possessed and used by him or if, it appearing that the vehicle was unlawfully used by a person other than the claimant, he shall prove that such unlawful use was without his knowledge or consent, then the court may order the same returned or delivered to said claimant; otherwise it shall be sold as hereinabove provided.

(7) Unless either the Commonwealth or the claimant shall demand a jury trial within five (5) days after the conclusion of the hearing the right to such jury trial shall be deemed to have been waived.

1941, July 3, P.L. 263, § 5.

Transferred from 75 P.S. § 2055 in 1977. Section originally derived from former 75 P.S. 1291.5 (repealed).

Library References
Forfeitures § 5.
C.J.S. Forfeitures § 5.

1. Construction and application.
The Vehicle Code, former 75 P.S. § 101 et seq. (repealed), the Motor Vehicle

Sales Finance Act, 69 P.S. § 601 et seq., and the Uniform Commercial Code 12A, P.S. § 1-101 et seq. recognized fundamental distinction between goods themselves and property in goods and the "bundle of rights" labeled "title" is divided into security title and beneficial ownership. Com. v. Two Ford Trucks, 137 A.2d 847, 185 Pa. Super. 292, 1958.

HAZARDOUS SUBSTANCES TRANSPORTATION ACT [NEW]

Pursuant to the publication of new Title 75, Motor Vehicles, of Purdon's Pennsylvania Consolidated Statutes Annotated, material comprising §§ 841.1 to 841.14 of this title was transferred from 75 P.S. §§ 2401 to 2414 in 1977. Derivation is noted under each section.

§ 841.1 Short title

This act shall be known and may be cited as the "Hazardous Substances Transportation Act."

1965, Nov. 9, P.L. 657, § 1.

Approval by Governor—Exception

The approval of the act of 1965 by Governor William W. Scranton read: "Approved—The 9th day of November, A.D.1965, except for the appropriation from the Motor License Fund for the purposes of carrying out the provisions of legislation, which I approve in the sum of \$50,000. I withhold my approval from the remainder of said appropriation because a part of the fiscal year has already elapsed."

Transferred from 75 P.S. § 2401 in 1977. Section 15 of the act of 1965 was an appropriation provision.

Section 16 provided:
"This act shall take effect immediately except sections 10, 11, 12, 13 and 14 [former 75 P.S. §§ 2410 to 2414 (repealed)] which shall take effect January 1, 1966."

Title of Act:

An Act regulating the transportation of hazardous substances on highways and toll roads, including the Pennsylvania Turnpike; creating the Hazardous

Substances Transportation Board, prescribing its powers, duties and procedures; providing for the imposition of duties upon the Department of Revenue, the State Police and other departments and commissions of the Commonwealth; prescribing penalties; repealing inconsistent acts and making an appropriation. 1965, Nov. 9, P.L. 657.

Cross References

Regulation of explosives, see 73 P.S. § 151.
Transportation and carrying of explosives, see 18 Pa.C.S.A. §§ 6161, 6162.

§ 841.2 Definitions

The following words and phrases shall have the meanings ascribed to them in this section:

(1) "Hazardous substance." A flammable liquid, flammable solid, oxidizing substance, corrosive liquid, compressed gas, poisonous substance, radioactive substance, explosive, molten metal, or similar substance.

(2) "Similar substance." Any substance, which the board, by procedure herein prescribed, shall declare a hazardous substance.

(3) "Board." The Hazardous Substances Transportation Board created by this act.

(4) "Highway." A highway, street or other public way, or a toll road, including the Pennsylvania Turnpike.

(5) "Transportation." Carriage by vehicle upon a highway.

(6) "Carrier." Any person who or which, as owner, lessee or other possessor of one or more vehicles, directs and controls the transportation of hazardous substances either for his or its own account or for hire.

(7) "Person." Any natural person, firm, association, copartnership, joint venture or corporation.

1965, Nov. 9, P.L. 657, § 2. As amended 1972, May 26, P.L. 307, No. 82, §§ 1, 2.

Transferred from 75 P.S. § 2403 in 1977.

§ 841.3 Findings of fact; standards of administration

(a) It is hereby found as a fact that hazardous substances are essential for various industrial, commercial and other purposes, that their transportation is a necessary incident of their use, and therefore that such transportation is required for the employment and economic prosperity of the people. It is also found as a fact that the transportation of hazardous substances may involve risk of injury to persons and damage to property, and that the degree of such risk can and should be kept at a minimum consistent with technical feasibility and economic reasonableness.

(b) The purpose of this act, and the primary standard by which it shall be administered, is to so regulate the transportation of hazardous substances, and assure compliance with the regulations promulgated pursuant to this act, that there is established and maintained a reasonable balance between the interests of the people in the safety of themselves and their property, on the one hand, and the interests of the people in their employment and economic prosperity, on the other.

1965, Nov. 9, P.L. 657, § 3. As amended 1978, June 23, P.L. 509, No. 80, § 1, effective in 60 days.

Transferred from 75 P.S. § 2403 in 1977.

§ 841.4 Creation of board

(a) There is hereby established within the Department of Transportation a Hazardous Substances Transportation Board, composed of eight ex officio members and seven appointed members.

(b) The eight ex officio members shall be the Secretary of Transportation, who shall be the chairman, the Attorney General, the Secretary of Commerce, the Secretary of Labor and Industry, the Secretary of Health, the Secretary of Environmental Resources, the Commissioner of the Pennsylvania State Police, and a member of Pennsylvania Public Utility Commission to be designated by the Governor. Any ex officio member may designate a representative of his department to serve in his stead. Ex officio members, or their representatives, shall serve without pay.

The chairman shall preside at all meetings and, in his absence, shall designate his representative or other member of the board to act in his stead and so preside.

(c) The seven appointed members shall be appointed by the Governor by and with the advice and consent of two-thirds of the Senate for term

of six, and shall be removed for cause only. Of the first board three members shall be appointed for a term of six years, two for a term of four years and two for a term of two years. Each of the seven appointed members shall have had at least five years' experience with one or more hazardous substances. One member shall have had such experience as a manufacturer or shipper; one member shall have had such experience as a consignee or user; one member shall have had such experience in the management and operation of a common carrier by motor vehicle; one member shall have had such experience in the management and operation of a private carrier by motor vehicle; one member shall have had such experience in the fire services of the State; one member shall have had such experience in the practical application of principles of highway safety and the remaining member shall be selected from the general public. Each appointed member shall be paid fifty dollars for each day, or part thereof, upon which he attends a board meeting, or performs any duty assigned to him by the chairman, and he shall be reimbursed for reasonable traveling and other expenses incurred incident to such attendance and to such assigned duty.

(d) Eight members of the board shall constitute a quorum; and the affirmative vote of eight members shall be required for the issuance of any formal order pursuant to section 8 hereof.¹

1965, Nov. 9, P.L. 657, § 4. As amended 1970, May 6, P.L. 344, No. 111, § 1; 1972, May 26, P.L. 307, No. 82, § 3.

¹ Section 831.1 of this title.

Functions Transferred

Section 19(b) of Act 1970, May 6, P.L. 356, No. 120, provided: "(b) The Hazardous Substances Transportation Board created by the act of November 9, 1965 (P.L. 657), known as the 'Hazardous Substances Transportation Act,' is hereby transferred to the Department of Transportation from the Department of Revenue."

Transferred from 75 P.S. § 2404 in 1977. C.J.S. Motor Vehicles § 66 et seq.
Library References P.L.E. Automobiles § 40.
Automobiles § 62.

§ 841.5 Technical assistance; advisory committees

(a) The board in its discretion and from time to time may create advisory committees and appoint the members thereof, to perform such tasks and render such technical advice and assistance as the board may require. Members of an advisory committee shall be chosen for their competence in the subject to which the work of the committee pertains. All members of advisory committees shall serve without pay, but the board, in its discretion, may authorize reimbursement of a committee member's traveling expenses whenever it deems such authorization necessary to obtain his services.

(b) The board in its discretion and from time to time may avail itself of the services of personnel in the departments, boards and commissions of the Commonwealth, for technical advice and assistance, investigation, clerical work, and such other work as the board may require.
1965, Nov. 9, P.L. 657, § 5.

Transferred from 75 P.S. § 2405 in 1977. C.J.S. Motor Vehicles § 66 et seq.
Library References P.L.E. Automobiles § 40.
Automobiles § 62.

§ 841.6 General power and duty of the board

The board shall have the general power and duty to prescribe regulations and assure compliance thereto for the transportation of hazardous substances, consistent with the purpose and primary standard declared

in subsection (b) of section 31 hereof. In exercising such general power and duty the board may:

(1) Classify hazardous substances according to the nature and degree of risk involved in their transportation, and apply separate regulations to each class.

(2) Prescribe regulations pertaining to methods of packing, loading and unloading hazardous substances; to the specifications, marking, inspection, condition and equipment of vehicles transporting such substances; to qualification of drivers and other matters relating to operation of such vehicles; to routing and parking of such vehicles, except that such regulations may not supersede ordinances of local authorities; and all other factors which affect the nature or degree of risk involved in transportation of hazardous substances.

(3) Declare any substance, not defined in section 22 hereof, to be a hazardous substance and thereby subject its transportation to the provisions of this act.

(4) Employ personnel and purchase or lease equipment, office space and materials needed to carry out the provisions of this act.

(5) Employ personnel to inspect vehicles and investigate all other matters relating to the safe transportation of hazardous substances.

1965, Nov. 9, P.L. 657, § 6. As amended 1978, June 23, P.L. 509, No. 80, § 1, effective in 60 days.

¹ Section 841.3, subsec. (b) of this title.

² Section 841.2 of this title.

Transferred from 75 P.S. § 2406 in 1977.

§ 841.6a Posting of information

Any vehicle transporting hazardous substances shall have posted thereon the nature of the hazardous substance being transported. The board shall prescribe the size and type of notice to be posted.

1965, Nov. 9, P.L. 657, No. 323, § 6.1. Added 1978, June 23, P.L. 509, No. 80, § 2, effective in 60 days.

Library References

Automobiles § 5(1).

C.J.S. Motor Vehicles § 14 et seq.

§ 841.7 Correspondence with federal requirements

In the case of any person who is subject to Federal regulations pertaining to the transportation of hazardous substances, the board's regulations shall, and in any other case may, as far as practicable, correspond with such Federal regulations. It is the purpose of this section to avoid, as far as practicable, the imposition of conflicting regulations upon persons who operate vehicles subject to Federal regulations pertaining to the transportation of hazardous substances. It is also the purpose of this section to empower, but not require, the board to prescribe, for persons not subject to said Federal regulations, regulations identical with or similar to those Federal regulations pertaining to the transportation of hazardous substances.

1965, Nov. 9, P.L. 657, § 7. As amended 1978, June 23, P.L. 509, No. 80, § 3, effective in 60 days.

Transferred from 75 P.S. § 2407 in 1977.

§ 841.8 Repealed. 1978, June 23, P.L. 509, No. 80, § 4, eff. in 60 days

This section, which related to board procedure regarding regulations, was derived from Act 1965, Nov. 9, P.L. 657, § 1977.

§ 841.9 Repealed. 1978, April 28, P.L. 202, No. 53, § 2(a) [1885], effective June 27, 1978; 1978, June 23, P.L. 509, No. 80, § 4, eff. in 60 days

Former § 841.9, derived from Act 1965, Nov. 9, P.L. 657, No. 323, § 9, and Act 1971, June 3, P.L. 118, No. 6 § 1(171), and transferred from 75 P.S. § 2409 in 1977, related to appeals. For disposition of repealed subject matter, see Disposition Table preceding new Title 42, Judiciary and Judicial Procedure, of the Pennsylvania Consolidated Statutes Annotated.

§ 841.10 Enforcement of regulations

The enforcement of regulations or any parts thereof may be assigned by the board to one or more of the several departments and commissions represented by its ex officio members as the board sees fit. Such delegation shall be accomplished by resolution duly adopted by a majority of the board present at the meeting.

1965, Nov. 9, P.L. 657, § 10. As amended 1970, May 6, P.L. 344, No. 111, § 1; 1978, June 23, P.L. 509, No. 80, § 6, effective in 60 days.

Transferred from 75 P.S. § 2410 in 1977.

§ 841.11. Injunction and other remedies

(a) The Attorney General, upon request of the board or upon his own motion, may proceed in the name of the Commonwealth, by injunction, mandamus, quo warranto, or other appropriate remedy at law or in equity, criminal or civil, to restrain violations of the board's regulations or orders or to enforce obedience thereto.

(b) Whenever the Attorney General shall have reason to believe that a person has violated any regulation or order of the board but is outside the jurisdiction of this Commonwealth, the Attorney General may petition for an order authorizing the seizure and confiscation of such person's vehicles or hazardous substances wherever and whenever they may be found in the Commonwealth.

1965, Nov. 9, P.L. 657, § 11, effective Jan. 1, 1966. As affected 1978, April 28, P.L. 202, No. 53, § 2(a) [1385], effective June 27, 1978. As amended 1978, June 23, P.L. 509, No. 80, § 6, effective in 60 days.

Transferred from 75 P.S. § 2411 in 1977.

§ 841.12 Penalties

(a) Any person who, as operator of a vehicle, shall violate any regulation of the board pertaining to routing, parking or other act in the actual operation of a vehicle, shall be guilty of a misdemeanor, and, upon conviction thereof in the court of common pleas of the county in which the offense occurred, shall be sentenced to pay a fine of not less than one hundred dollars (\$100) nor more than five hundred dollars (\$500), or to undergo imprisonment in the county jail for not more than thirty (30) days, or both. Any such person, having been convicted of a first offense under this subsection, who shall at a later time commit a second or subsequent offense and be convicted thereof, shall be sentenced to pay a fine as aforesaid, or to undergo imprisonment in the county jail for not less than sixty (60) days nor more than one (1) year, or both.

(b) Any person who, as shipper, carrier, consignee or user of a hazardous substance, shall violate any regulation of the board, shall be guilty of a misdemeanor, and, upon conviction thereof in the court of common pleas of the county in which the offense occurred, shall be sentenced to pay a fine of not less than five hundred dollars (\$500) nor more than five thousand dollars (\$5000), or to undergo imprisonment in the county jail for not more than sixty (60) days, or both. Any person, having been convicted of a first offense under this subsection, who shall at a later time commit a second or subsequent offense and be convicted thereof, shall be sentenced to pay a fine as aforesaid, or to undergo imprisonment in the county jail for not less than sixty (60) days nor more than one (1) year, or both. If such person be a firm, partnership, joint venture or association, then the member thereof responsible for the violation, or if such person be a corporation, then the officer, agent or employe thereof responsible for the violation, shall have the sentence of imprisonment, herein prescribed, imposed upon him.

1965, Nov. 9, P.L. 657, § 12, effective Jan. 1, 1966. As amended 1978, June 23, P.L. 509, No. 80, § 7, effective Jan. 1, 1979.

Transferred from 75 P.S. § 2412 in 1977.
Reenacted without change by Act 1972,
May 26, P.L. 307, No. 82, § 4.

1. In general

Where appellant pleaded guilty and paid a fine on a charge of violation of a regulation of the department of transportation of operating a motor vehicle containing hazardous substance without

having a certificate of physical examination, such conviction would be treated as a nullity on appeal from an order suspending appellant's operating privileges for such violation, where neither the complaint nor the indictment stated that such violation was willful, as required by provisions of this section. *Com. v. Sunderland*, 63 D. & C.2d 252, 1972.

§ 841.13 Specific repeals

The following parts of acts are hereby repealed:

(a) The definitions of "Explosives" and "Flammable Liquid" in section 102, all of section 833, section 837 in so far as it pertains to the transportation of flammable liquids, flammable or combustible chemicals, or explosives, and all of section 1117, act of April 29, 1959 (P.L. 58),¹ known as "The Vehicle Code."

(b) Section 11, act of July 1, 1937 (P.L. 2681), entitled "An act relating to, and regulating the manufacture, storing and possession of explosives; requiring permits for magazines, and prescribing permit fees; and providing penalties,"² in so far as said section pertains to the transportation of explosives upon a highway, or upon a toll road, including the Pennsylvania Turnpike.

1965, Nov. 9, P.L. 657, § 13, effective Jan. 1, 1966.

¹ Former 75 P.S. §§ 102, 833, 837 and 1117 (repealed).

² 73 P.S. § 161.

Transferred from 75 P.S. § 2413 in 1977.

§ 841.14 General repealer

It is the intent of this act that this be the exclusive method of regulating and controlling the transportation of hazardous substances on state highways. To that end all acts and parts of acts, ordinances and regulations promulgated thereunder are hereby repealed and declared unenforceable in so far as they are inconsistent herewith.

1965, Nov. 9, P.L. 657, § 14, effective Jan. 1, 1966.

Transferred from 75 P.S. § 2414 in 1977.

CHAPTER 7.—MATTRESSES, BEDDING AND UPHOLSTERY**§ 972. Application of act**

The provisions herein set forth shall be construed to cover and apply to the manufacture, repair, and renovation of all mattresses, pillows, bolsters, feather beds, and other filled bedding and quilted clothing of any description, also to cushions and all types of upholstered furniture which are intended for sale or lease in this Commonwealth, and to the sale or lease thereof.

As amended 1978, July 1, P.L. 734, No. 134, § 1, effective in 60 days.

Effective Date of 1978 Amendment:

Section 2 of Act 1978, July 1, P.L. 734,
No. 134 provides as follows:

"This act shall take effect in 60 days and shall apply to all items of quilted clothing manufactured thereafter."

§ 978. Tagging of articles

[See main volume for text of (a) to (d)]

(e) The size of the tag required by this section shall be not less than six (6) square inches, and the lettering thereon, covering the statement of filling materials and whether new or secondhand, shall be in plain type not less than one-eighth ($\frac{1}{8}$) inch in height: Provided, however, that the department may by rules and regulations specify a tag of a smaller size and the information to be contained on such tag to be placed on all quilted clothing covered by this amending act.

As amended 1978, July 1, P.L. 734, No. 134, § 1, effective in 60 days.

PENICILLIUM (PENICILLIN)

§§ 957.1 to 957.4. Repealed. 1955, Dec. 28, P.L. 913, § 9; 1961, Sept. 26, P.L. 1664, § 31

Historical Note

<p>These sections, regulating the labeling, possession and sale of penicillin and its derivatives, were derived from:</p> <p>1945, April 26, P.L. 318, No. 139, §§ 1 to 4.</p>	<p>1949, April 21, P.L. 710, No. 173, § 1.</p> <p>1951, June 30, P.L. 955, No. 190, § 1.</p> <p>1953, July 25, P.L. 695, § 1.</p> <p>See, now, § 780-101 et seq. of this title.</p>
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RADIOACTIVE MATERIALS

BURIAL UNDER PERMIT

Cross References

Transfer of powers and duties of Department of Health to Department of Environmental Resources, see 71 P.S. § 510-1(18).

Library References

<p>Health and Environment ↪ 25.5.</p>	<p>C.J.S. Health and Environment §§ 61 to 66, 69, 71 to 73, 78 to 80, 82 to 86, 88 to 90, 94, 104, 110, 115 to 126.</p>
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§ 958.1. Permits

It shall be unlawful for any person, partnership, corporation or association to dispose of radioactive material by burial in the soil in any location within the Commonwealth, unless prior thereto a permit shall have been issued for such burial by the Department of Health: Provided, however, That the Department of Health may, by rule or regulation, exempt the burial of certain specified amounts of radioactive material from the permit requirements of this section where the burial of such amounts is not injurious to the public health.

Such permits shall state the place where and the amount of radioactive material to be buried and such other conditions as the department may, by rule or regulation, require.

All permits are to be issued subject to the condition that the Department of Health may, at any time, order the permittee to cease burying radioactive material if it appears to the department that such further burial may be injurious to the public health.

1959, Sept. 8, P.L. 807, § 1.

Historical Note

<p>Title of Act:</p> <p>An Act empowering the Department of Health to regulate the burial of ra-</p>	<p>dio-active material and to issue permits therefor; and prescribing penalties.</p> <p>1959, Sept. 8, P.L. 807.</p>
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§ 958.2. Applications

All applications for permit shall contain such information as the Department of Health may require, and shall be executed by the person applying for such permit. In the case of a partnership, corporation or association, such applications shall be signed by an officer thereof whose acts legally bind such partnership, corporation or association.

1959, Sept. 8, P.L. 807, § 2.

§ 958.3. Refusal of permit

The Department of Health shall have the power to refuse to issue a permit to any applicant where it appears that the public health and safety may be jeopardized.

1959, Sept. 8, P.L. 807, § 3.

§ 958.4. Change in occupancy or ownership of land

Any person, partnership, corporation or association shall furnish notification, in writing, to the Department of Health at least sixty days prior to any proposed change in occupancy or ownership of the land for which permits have been issued as provided in section 1 of this act.¹

1959, Sept. 8, P.L. 807, § 4.

¹ Section 958.1 of this title.

§ 958.5. Penalties

Any person who shall violate any of the provisions of this act or the rules, regulations, permits, conditions, or orders of the Department of Health, as herein provided for, shall, upon conviction in a summary proceeding, be sentenced to pay a fine of not less than one hundred dollars (\$100) and not more than three hundred dollars (\$300), and, in default of payment of such fine and costs, shall be imprisoned for a term of not more than thirty days. The penalties prescribed in this section shall extend in their application to the officers of any partnership, corporation or association.

1959, Sept. 8, P.L. 807, § 5.

STATE BURIAL GROUNDS

Cross References

Transfer of powers and duties of Department of Health to Department of Environmental Resources, see 71 P.S. § 510-1(19).

Library References

Health and Environment § 25.5.

C.J.S. Health and Environment §§ 61 to 66, 69, 71 to 73, 78 to 80, 82 to 86, 88 to 90, 94, 104, 110, 115 to 126.

§ 959.1. Acquisition of land

The Commonwealth shall have the power to acquire land by purchase, eminent domain or otherwise, for the purpose of establishing burial grounds for the disposal of radioactive material to be operated by the Secretary of Health or under his direction.

1959, Oct. 26, P.L. 1380, § 1.

Historical Note**Title of Act:**

An Act empowering the Commonwealth to acquire land and operate burial grounds for the disposal of radioactive materials. 1959, Oct. 26, P.L. 1380.

§ 959.2. Operation of grounds

The Secretary of Health shall have the power to operate such burial grounds for the Commonwealth, or to contract with other governmental agencies or private persons to operate such burial grounds.

1959, Oct. 26, P.L. 1380, § 2.

§ 959.3. Charges for permit to bury materials

The Department of Health shall make a reasonable charge to any person requesting permission to bury radioactive material commensurate with the cost of operating the burial facilities. Such moneys collected shall be appropriated to the Department of Health. The moneys so appropriated shall constitute a fund from which the Department shall pay the cost of operation of such burial.

1959, Oct. 26, P.L. 1380, § 3.

GENERIC EQUIVALENT DRUGS**§ 960.1. Purpose of act**

It is the purpose of this act to permit consumers to secure necessary drugs at the most economical cost consistent with the professional discretion of the purchaser's physician and pharmacist.

1976, Nov. 24, P.L. 1163, No. 259, § 1, imd. effective.

Historical Note**Title of Act:**

An Act relating to the prescribing and dispensing of generic equivalent drugs.

1976, Nov. 24, P.L. 1163, No. 259.

§§ 471 to 473. (Adm.Code §§ 1811 to 1813). Repealed. 1970, Dec. 3, P.L. 834, No. 275, § 10, effective Jan. 19, 1971

For provisions relating to section 471, see, now, section 510-1(1) of this title. 473 is now covered by sections 718-2 and 718-3 of this title.
The subject matter of sections 472 and

§§ 475, 476. (Adm.Code §§ 1815, 1816). Repealed. 1970, Dec. 3, P.L. 834, No. 275, § 10, effective Jan. 19, 1971

For provisions relating to section 475, see, now, section 510-1(1) of this title.

§§ 477 to 481. (Adm.Code §§ 1817 to 1821). Repealed. 1970, Dec. 3, P.L. 834, No. 275, § 10, effective Jan. 19, 1971

The subject matter of sections 477 to 481 is now covered by sections 510-10 to 510-14 of this title.

ARTICLE XIX. POWERS AND DUTIES OF THE DEPARTMENT OF MINES AND MINERAL INDUSTRIES AND ITS DEPARTMENTAL ADMINISTRATIVE OFFICERS

§§ 501 to 507. (Adm.Code §§ 1901 to 1907). Repealed. 1970, Dec. 3, P.L. 834, No. 275, § 10, effective Jan. 19, 1971

Prior to repeal, section 502 was amended by Act 1969, July 24, P.L. 196,

§ 1. The subject matter of sections 502 and 503 is now covered by sections 510-15 and 510-16 of this title.

Act 1970, July 22, P.L. 561, No. 194, § 1, amended subsection (c) of section 505, to read: "To designate two banks or trust companies in Dauphin County, two banks or trust companies in Allegheny County, two banks or trust companies in Philadelphia County, and thirteen banks or trust companies in any part of the Commonwealth, to be known as active depositories, in which

shall be deposited a sufficient amount of the daily receipts of the State Treasury to transact the current business of the Commonwealth. The board may designate seven other banks or trust companies, located anywhere in the Commonwealth, to be known as active depositories, and to be used for the purpose above mentioned."

For similar subject matter of section 506, see, now, section 510-103(c) of this title.

For similar subject matter of section 507, see, now, section 510-1(3) of this title.

ARTICLE XIX-A. POWERS AND DUTIES OF THE DEPARTMENT OF ENVIRONMENTAL RESOURCES, ITS OFFICERS AND DEPARTMENTAL AND ADVISORY BOARDS AND COMMISSIONS [NEW]

Article XIX-A heading was added to Act 1929, April 9, P.L. 177, by Act 1970, Dec. 3, P.L. 834, No. 275, § 20.

Rules and Regulations Governmental organization, see 4 Pa. Code § 9.101.

§ 510-1. (Adm.Code § 1901-A). Powers and duties in general

The Department of Environmental Resources shall, subject to any inconsistent provision in this act contained, continue to exercise the powers and perform the duties by law heretofore vested in and imposed upon:

(1) The Department of Forests and Waters, the Secretary of Forests and Waters, the Water and Power Resources Board, the Flood Control Commission, the Pennsylvania State Park and Harbor Commission of Erie, and the State Forest Commission;

(2) The Department of Mines and Mineral Industries, the Secretary of Mines and Mineral Industries, the Oil and Gas Conservation Commission, the Mine Inspectors' Examining Board for the Bituminous Coal

For Title 71, Consolidated Statutes, see Appendix following this Title

Mines of Pennsylvania, and the Anthracite Mine Inspectors' Examining Board;

(3) The Oil and Gas Inspectors' Examining Board, created by the act of December 21, 1959 (P.L.1967),¹ which board is hereby abolished;

(4) The Land Restoration Board, created by the act of June 27, 1947 (P.L. 1095),² which board is hereby abolished;

(5) The Land Reclamation Board, created by the act of May 31, 1946 (P.L. 1198),³ which board is hereby abolished;

(6) The Department of Health and the Secretary of Health in so far as such powers and duties pertain to the control of nuisances from grounds, vehicles, apartments, buildings and places within the Commonwealth, to the sanitary condition of tenements, lodging and boarding houses, to management of the sanitary affairs of the Commonwealth, the issuance of waterworks permits and to the control of water pollution;

(7) The former Commissioner of Health and the Department of Health by the act of April 22, 1905 (P.L. 260), entitled "An act to preserve the purity of the waters of the State, for the protection of the public health;"⁴

(8) The Department of Health and the Secretary of Health by the act of August 20, 1953 (P.L. 1217), entitled "An act providing for payments by the Commonwealth to municipalities which have expended money to acquire and construct sewage treatment plants in accordance with the Clean Streams Program and the act, approved the twenty-second day of June, one thousand nine hundred thirty-seven (Pamphlet Laws 1937), and making an appropriation;"⁵

(9) The Department of Health by the act of June 23, 1931 (P.L. 899), known as the "Public Bathing Law;"⁶

(10) The Department of Health by the act of January 19, 1968 (P.L. 996), known as "The Land and Water Conservation and Reclamation Act;"⁷

(11) The Department of Health by the act of May 23, 1945 (P.L. 926), entitled "An act for the protection of the public health by regulating the conduct and operation of public eating and drinking places within this Commonwealth; requiring their licensing; imposing certain duties on the Department of Health of this Commonwealth and on the local health authorities; and providing penalties;"⁸

(12) The Department of Health by the act of April 30, 1929 (P.L. 897), entitled "An act regulating the manufacturing, bottling, and selling of certain waters, and requiring permits therefor; prescribing the authority of the Department of Health and of local boards of health and health officers with respect thereto; and providing penalties;"⁹

(13) The Department of Health by the act of November 10, 1959 (P.L. 1400), entitled "An act providing for the annual registration of organized camps for children, youth and adults; defining the duties of the Department of Health of the Commonwealth of Pennsylvania; and prescribing penalties;"¹⁰

(14) The Department of Health by the act of January 24, 1966 (P.L. 1535), known as the "Pennsylvania Sewage Facilities Act;"¹¹

(15) The Department of Health by the act of July 31, 1968 (Act No. 241), known as the "Pennsylvania Solid Wastes Management Act;"¹²

¹ 58 P.S. | 251 et seq.

² 52 P.S. | 681.1 et seq.

³ 52 P.S. | 1396.1 et seq.

⁴ 35 P.S. | 711 et seq.

⁵ 35 P.S. | 701 et seq.

⁶ 35 P.S. | 872 et seq.

⁷ 32 P.S. | 5101 et seq.

⁸ 35 P.S. | 655.1 et seq.

⁹ 35 P.S. | 1001 et seq.

¹⁰ 35 P.S. | 3001 et seq.

¹¹ 35 P.S. | 750.1 et seq.

¹² 35 P.S. | 6001 et seq.

For Title 71, Consolidated Statutes, see Appendix following this Title

71 § 510-1 STATE GOVERNMENT

(16) The Department of Health by the act of January 8, 1960 (P.L. 2119), known as the "Air Pollution Control Act;"¹³

(17) The Department of Health by the act of January 28, 1966 (P.L. 1625), known as "The Atomic Energy Development and Radiation Control Act;"¹⁴

(18) The Department of Health by the act of September 8, 1959 (P.L. 807), entitled "An act empowering the Department of Health to regulate the burial of radioactive material and to issue permits therefor; and prescribing penalties;"¹⁵

(19) The Department of Health and the Secretary of Health by the act of October 26, 1959 (P.L. 1380), entitled "An act empowering the Commonwealth to acquire land and operate burial grounds for the disposal of radioactive materials;"¹⁶

(20) The Department of Health by the act of June 22, 1937 (P.L. 1987), known as "The Clean Streams Law;"¹⁷

(21) The Department of Health by the act of November 18, 1968 (Act No. 322), known as the "Sewage Treatment Plant and Waterworks Operators' Certification Act;"¹⁸

(22) The Sanitary Water Board;

(23) The Air Pollution Commission, created by the act of January 8, 1960 (P.L. 2119), known as the "Air Pollution Control Act,"¹⁹ which commission is hereby abolished;

(24) The Department of Labor and Industry and the Secretary of Labor and Industry in so far as such powers and duties relate to regulation of mining operations, quarry operations and sand and gravel pits under the act of July 1, 1937 (P.L. 2681), entitled "An act relating to, and regulating the manufacture, storing, and possession of explosives; requiring permits for magazines, and prescribing permit fees; and providing penalties;"²⁰ and July 10, 1957 (P.L. 685), entitled "An act regulating the use of explosives in certain blasting operations; requiring examination and licensing of certain explosives' detonators and prescribing the fee thereof; and conferring powers and imposing duties on the Department of Labor and Industry;"²¹

1929, April 9, P.L. 177, art. XIX-A, § 1901-A, added 1970, Dec. 3, P.L. 834, No. 275, § 20, effective Jan. 19, 1971.

¹³ 35 P.S. § 4001 et seq.
¹⁴ 73 P.S. § 1001 et seq.
¹⁵ 35 P.S. § 958.1 et seq.
¹⁶ 35 P.S. § 959.1 et seq.
¹⁷ 35 P.S. § 491.1 et seq.
¹⁸ 63 P.S. § 1001 et seq.
¹⁹ 35 P.S. § 4001 et seq.
²⁰ 73 P.S. § 151 et seq.
²¹ 73 F.S. § 164 et seq.

Reorganization Plan No. 1 of 1972, (§ 754-1) § 2 transferred to the Department of Environmental Resources, contract obligations, if any, records, files, property, supplies and equipment, and the unexpended balances of appropriations, allocations and other funds available or to be made available for use in connection with the functions, powers and duties, transferred by section 1 (71 PS § 754-1).

The functions, powers and duties of the Department of Labor and Industry, with regard to inspection and licensing of migrant labor camps as set forth in 43 PS § 25-9, and the power to make, alter, amend and repeal rules and regulations thereto, and the application of the provisions of 43 PS § 25-9, to specific conditions, set forth in 43 PS § 25-12, were transferred to the Department of Environmental Resources by Reorganization Plan No. 1 of 1972 (71 PS § 754-1).

Section 4 of Act 1975, Apr. 29, P.L. 99, No. 43, provides as follows:

"Section 4. (A) The Anthracite Committee of the Department of Commerce is hereby abolished.

(B) All allocations, appropriations, equipment, files, records, contracts, agreements, obligations, and other material which are used, employed or expended in connection with the powers, duties or functions transferred by this act to the Department of Environmental Resources are hereby transferred to the Department of Environmental Resources with the same force and effect as if the appropriations had been made to and said items had been the property of the Department of Environmental Resources in the first instance and as if said contract, agreements and obligations had been incurred or entered into by said Department of Environmental Resources."

jurisdiction of the department. The head of such unit shall be a deputy secretary who shall report directly to the Secretary of Environmental Resources. The unit shall have its own staff of investigatory, administrative and technical advisory personnel at both regional and State offices. Special legal counsel will be provided to the unit with the cooperation of the Attorney General.

1970, Dec. 3, P.L. 834, No. 275, § 28, effective Jan. 19, 1971.

Library references

States 67.
C.J.S. States §§ 58, 66.
1. Construction and application
Department of environmental resources did not have mandatory duty to commence legal action against allegedly

nonconforming water company or to revoke its permit or take over and operate water system and mandamus did not lie to compel these actions. Clear Vue Acres Homeowners Ass'n v. Com., Dept. of Environmental Resources, 317 A.2d 335, 13 Pa.Cmwith. 66, 1974.

§ 510-102. Salary; Secretary of Environmental Resources

The Secretary of Environmental Resources shall receive an annual salary, payable in equal semi-monthly installments, of twenty-five thousand dollars (\$25,000).

1970, Dec. 3, P.L. 834, No. 275, § 29, effective Jan. 19, 1971.

The Reports of the Commonwealth Compensation Commission of June and November, 1972 and related matter on the subject of salaries, retirement benefits and expenses of Commonwealth officials appear in full as an Appendix in 65 P.S. following chapter 14.

Cross References

Commonwealth compensation commission, see 65 P.S. § 364.

Library references

States 60(1).
C.J.S. States § 89 et seq.

§ 510-103. Abolishment of departments; transfer of functions

(a) The following departments, boards and commissions are hereby abolished and their functions transferred to the Department of Environmental Resources:

Department of Forests and Waters,
Water and Power Resources Board,
State Forest Commission,
State Flood Control Commission,
Pennsylvania State Park and Harbor Commission of Erie,
Anthracite Mine Inspectors' Examining Board,
Mine Inspectors' Examining Board for the Bituminous Coal Mines of Pennsylvania,
Oil and Gas Inspectors' Examining Board,
Oil and Gas Conservation Commission,
Land Reclamation Board,
Land Restoration Board,
Sanitary Water Board,
Air Pollution Commission.

(b). Repealed. 1976, July 9, P.L. 980, No. 197, § 5(a)(1), effective in 60 days.

(c) The following board is abolished and its functions transferred to the Department of Commerce:

Coal Research Board.

(d) The following board is abolished and its functions transferred to the Pennsylvania Historical and Museum Commission:

Geographic Board.

(e) The following board and commission are transferred to the Department of Environmental Resources:

State Board for Certification of Sewage Treatment and Waterworks Operators,
State Soil and Water Conservation Commission.

(f) The following are transferred to the Department of Environmental Resources:

All bureaus, divisions and government units in the Department of Mines and Mineral Industries except those concerned with the functions enumerated in clauses (c), (d) and (e) of section 2501-B of the act to which this is an amendment.¹

All bureaus, divisions and government units in the Department of Health concerned with the functions enumerated in clauses (6) through (23) inclusive of section 1901-A of the act to which this is an amendment.²

All bureaus, divisions and government units in the Department of Labor and Industry concerned with the functions enumerated in clause (24) of section 1901-A of the act to which this is an amendment.

The Topographic and Geologic Survey Bureau in the State Planning Board.

(g) The following are transferred to the Department of Commerce:

All bureaus, divisions and government units in the Department of Mines and Mineral Industries responsible for the functions enumerated in section 2503-B of the act to which this is an amendment.³

1970, Dec. 3, P.L. 834, No. 275, § 30, effective Jan. 19, 1971.

¹ Section 669 of this title.
² Section 510-1 of this title.
³ Section 670.1 of this title.

Library references

States 46.
C.J.S. States §§ 53, 66.

§ 510-104. Transfer of personnel, appropriations, records, etc.

(a) All personnel, allocations, appropriations, equipment, files, records, contracts, agreements, obligations, and other materials which are used, employed or expended in connection with the powers, duties or functions transferred by this act to the Department of Environmental Resources are hereby transferred to the Department of Environmental Resources with the same force and effect as if the appropriations had been made to and said items had been the property of the Department of Environmental Resources in the first instance and as if said contracts, agreements and obligations had been incurred or entered into by said Department of Environmental Resources.

(b) All personnel, allocations, appropriations, equipment, files, records, contracts, agreements, obligations, and other material which are used, employed or expended in connection with the powers, duties or functions transferred by this act to the Department of Transportation are hereby transferred to the Department of Transportation with the same force and effect as if the appropriations had been made to and said items had been the property of the Department of Transportation in the first instance and as if said contracts, agreements and obligations had been incurred or entered into by said Department of Transportation.

(c) All personnel, allocations, appropriations, equipment, files, records, contracts, agreements, obligations, and other material which are used, employed or expended in connection with the powers, duties or functions transferred by this act to the Department of Commerce are hereby transferred to the Department of Commerce with the same force and effect as if the appropriations had been made to and said items had been the property of the Department of Commerce in the first instance and as if said contracts, agreements and obligations had been incurred or entered into by said Department of Commerce.

(d) All personnel, allocations, appropriations, equipment, files, records, contracts, agreements, obligations, and other material which are used, employed or expended in connection with the powers, duties or functions transferred by this act to the Pennsylvania Historical and Museum Commission are hereby transferred to the Pennsylvania Historical and Museum Commission with the same force and effect as if the appropriations had been made to and said items had been the property of the

Pennsylvania Historical and Museum Commission in the first instance and as if said contracts, agreements and obligations had been incurred or entered into by said Pennsylvania Historical and Museum Commission.

(e) The personnel, appropriations, equipment and other items and material transferred by this section shall include an appropriate portion of the general administrative, overhead and supporting personnel, appropriations, equipment and other material of the agency and shall also include, where applicable, Federal grants and funds and other benefits from any Federal program.

(f) All personnel transferred pursuant to this act shall retain any civil service employment status assigned to said personnel.
1970, Dec. 3, P.L. 834, No. 275, § 31, effective Jan. 19, 1971.

§ 510—105. Civil service positions

All positions in the Department of Environmental Resources shall be deemed to be included in the list of positions set forth in clause (d) of section 1 of the act of August 5, 1941, (P.L. 753), known as the "Civil Service Act,"² and the provisions and benefits of that act shall be applicable to the employes of, and positions in, the department.
1970, Dec. 3, P.L. 834, No. 275, § 32, Jan. 19, 1971.

¹ Enrolled bill read "1".
² Section 741.3 of this title.

Library references
Officers § 11.1.
C.J.S. Officers § 34.

1. In general
Bituminous mine inspectors, while not employees of department of environmental resources, occupy positions in that department, and are within purview of civil service act 71 P.S. § 741.1 et seq. 1971 Op.Atty.Gen. No. 87.

§ 510—106. Secretary; membership on boards, commissions or other bodies

(a) Whenever the Secretary of Forests and Waters or the Secretary of Mines and Mineral Industries shall be entitled by law to serve on a board, commission or other body, the Secretary of Environmental Resources shall serve in his place as if the Secretary of Environmental Resources had been designated to serve in the first instance.

(b) The Secretary of Environmental resources shall serve in lieu of the Secretary of Health on the Ohio River Valley Water Sanitation Commission, created by the act of April 2, 1945 (P.L. 103), entitled "An act approving, ratifying and enacting into law the Ohio River Valley Sanitation Compact, for the prevention, abatement and control of pollution of the rivers, streams and waters in the Ohio River drainage basin, and making the State of Pennsylvania a party thereto; creating the 'Ohio River Valley Water Sanitation Commission,' providing for the members of such commission from the State of Pennsylvania; and providing for the carrying out of said compact after the conclusion of hostilities of the present war,"¹ and shall serve in lieu of a representative of the Sanitary Water Board on the Interstate Commission on the Potomac River Basin, created by the act of May 29, 1945 (P.L. 1134), entitled "An act to create a commission to act jointly with commissions appointed for like purpose by the States of West Virginia and Maryland, the Commonwealth of Virginia and the District of Columbia, which, together with three members to be appointed by the President of the United States, shall constitute the Interstate Commission on the Potomac River Basin, with power to cooperate in the abatement of existing pollution, and in control of future pollution of the waters of the drainage basin of the Potomac River within the States of Maryland and West Virginia, the Commonwealth of Virginia and the District of Columbia; to authorize the Governor of the State to execute on behalf of this State a compact v representatives of other states for the purpose of forming the

or Title 71, Consolidated Statutes, see Appendix following this Title

above-mentioned commission; and creating a Potomac Valley Conservancy District; providing for the appointment of the Pennsylvania members of said commission for the Commonwealth of Pennsylvania, and their terms of office; and providing an appropriation."²
1970, Dec. 3, P.L. 834, No. 275, § 33, effective Jan. 19, 1971.

¹ 32 P.S. § 816.1 et seq.
² 33 P.S. § 741 et seq.

Library references
States § 46.
C.J.S. States §§ 49, 52, 68 et seq.

§ 510—107. Effect of orders, regulations, etc. of agencies abolished or transferred

All orders, permits, regulations, decisions and other actions of any department, board or commission abolished by this act or of any agency whose functions have been transferred by this act shall remain in full force and effect until modified, repealed, suspended, superseded or otherwise changed by appropriate action of the agency assuming the applicable powers and duties pursuant to this act.
1970, Dec. 3, P.L. 834, No. 275, § 34, effective Jan. 19, 1971.

§ 510—108. Environmental Quality Board; Environmental Hearing Board; exercise of powers; proclamation

(a) All powers granted by this act to the Environmental Quality Board shall be exercised by the Department of Environmental Resources until the Governor has issued his proclamation stating that the Environmental Quality Board is organized and ready to perform the powers, duties and responsibilities granted to it by this act.

(b) All powers granted by this act to the Environmental Hearing Board shall be exercised by the Department of Environmental Resources until the Governor has issued his proclamation stating that the Environmental Hearing Board is organized and ready to perform the powers, duties and responsibilities granted to it by this act.
1970, Dec. 3, P.L. 834, No. 275, § 35, effective Jan. 19, 1971.

Law Review Commentaries
Defenses to orders and actions of Pennsylvania department of environmental resources. (1976) 80 Dick.L.Rev. 265.

1. Construction and application

Where changes in administrative code permitted newly created environmental hearing board to hold hearings through appointed hearing examiners and legislature provided that all powers granted by act to such board be exercised by existing department of environmental resources until board was organized and ready, no denial of due process was shown by mere fact of hearing before hearing examiners of department on day on which such legislative changes became effective and before board was formally organized. U. S. Steel Corp. v. Department of Environmental Resources, 300 A.2d 508, 7 Pa.Cmwlth. 429, 1973.
Where bituminous coal open pit mine operator accused of polluting spring had agreed to construct required facilities to treat existing and future mine drainage under court order and had commenced such construction, and was authorized in meantime to continue mining operations by special allowance of superintendent's appeal from revocation of mine drainage permit was essentially moot, but appeal would be decided in order either to justify or nullify conditions which Sanitary Water Board wished attached to approval of any further mining operations. A. P. Weaver and Sons v. Sanitary Water Bd., 284 A.2d 515, 3 Cmwlth. 499, 1971.

ARTICLE XX. POWERS AND DUTIES OF THE DEPARTMENT OF TRANSPORTATION

Article XX heading amended by Act 1970, May 6, P.L. 856, No. 120, § 11.

Rules and Regulations
Governmental organization, see 4 Pa. Code § 9.121.

§ 511. (Adm.Code § 2001). Powers and duties in general

The Department of Transportation shall, subject to any inconsistent provisions in this act contained, exercise the powers and perform

For Title 71, Consolidated Statutes, see Appendix following this Title

PURDON'S
PENNSYLVANIA STATUTES
ANNOTATED

Title 73
Trade and Commerce

Title 74
United States

Philadelphia, Pa.
George T. Biesel Company

St. Paul, Minn.
West Publishing Co.

CHAPTER 17.—ATOMIC ENERGY

ARTICLE I. GENERAL PROVISIONS

- Sec.
1001. Short title.
1002. Purpose.
1003. Definitions.

ARTICLE II. ADVISORY COMMITTEE. FEDERAL-STATE
AGREEMENTS; GOVERNOR'S POWER;
FEDERAL LICENSES

1101. Advisory committee.
1102. Federal-state agreements.

ARTICLE III. ATOMIC ENERGY DEVELOPMENT
1201. Powers and duties of the Department of Commerce.

- ARTICLE IV. RADIATION CONTROL
1301. Powers and duties of the Department of Health.
1302. Licensing and registration of radiation sources.
1303. Records.
1304. Inspection.
1305. Conflicting laws.
1306. Administrative procedure and judicial review.
1307. Injunctive proceedings.
1308. Prohibited uses.
1309. Impounding of materials.

ARTICLE V. PENALTIES
1401. Penalties.

ARTICLE VI. EFFECTIVE DATE
1501. Effective date.

ARTICLE I. GENERAL PROVISIONS

§ 1001. Short title

This act shall be known and may be cited as "The Atomic Energy Development and Radiation Control Act."

1966, Jan. 28, P.L. (1965) 1625, art. I, § 1.

Historical Note**Title of Act:**

An Act providing for atomic energy development and radiation control; creating the Advisory Committee on Atomic Energy Development and Radiation Control; empowering the Governor to enter into agreements with the Federal government for the assumption by the Commonwealth of certain regulatory powers; conferring powers and duties upon the Department of Commerce with respect to the promotion and development of atomic energy resources; conferring powers and duties upon the Department of Health with respect to the control and regulation of radiation sources, including provision for licensing and registration; and providing penalties. 1966, Jan. 28, P.L. (1965) 1625.

§ 1002. Purpose

It is the purpose of this act to encourage the development and use of atomic energy for peaceful purposes, consistent with the health and safety of the public.

1966, Jan. 28, P.L. (1965) 1625, art. I, § 2.

Library References

Health ☞ 20 et seq.

Poisons ☞ 1 et seq.

C.J.S. Health §§ 2, 9 et seq.

C.J.S. Poisons § 2 et seq.

P.L.E. Health § 4.

§ 1003. Definitions

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

(1) "Atomic energy" means all forms of energy released in nuclear reactions or transitions.

(2) "Ionizing radiation" means any radiation consisting of: (i) directly ionizing charged particles (electrons, protons, alpha particles, etc.) having sufficient kinetic energy to produce ionization by collision; or (ii) indirectly ionizing uncharged particles (neutrons, photons, etc.) which can liberate directly ionizing particles or can initiate a nuclear transformation.

(3) "Person" means any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, political subdivision of this Commonwealth, any other state or political subdivision or agency thereof, and any legal successor, representative, agent, or agency of the foregoing, other than the United States Atomic Energy Commission, or any successor thereto, and other than Federal government agencies licensed by the United States Atomic Energy Commission or any successor thereto.

(4) "Radiation source" means an apparatus or a material emitting or capable of emitting ionizing radiation.

1966, Jan. 28, P.L. (1965) 1625, art. I, § 3.

ARTICLE II. ADVISORY COMMITTEE. FEDERAL-STATE AGREEMENTS; GOVERNOR'S POWER; FEDERAL LICENSES

Cross References

Transfer of powers and duties of Department of Health to Department of Environmental Resources, 800 71 P.S. § 510—1(17).

§ 1101. Advisory committee

(a) There is hereby created the Advisory Committee on Atomic Energy Development and Radiation Control of nine members who shall be appointed by and serve at the pleasure of the Governor. The committee shall be an advisory committee within the Department of Health and shall have all the rights, powers and duties of advisory boards and commissions prescribed by the act known as the Administrative Code of 1929 and its amendments.¹ The members shall broadly reflect the varied interests in and aspects of atomic energy, and shall include individuals from industry, labor and education, as well as individuals with professional training and experience in medicine, radiology, health physics, or related sciences with specialization in ionizing radiation. Members of the committee shall receive no salary for services but may be reimbursed for actual expenses incurred in connection with attendance at committee meetings or for authorized business of the committee. The Secretary of Health and the Secretary of Commerce shall be additional and ex officio members of the committee.

(b) The committee shall:

(1) Review and evaluate policies and programs of the Commonwealth relating to the development of atomic energy resources and to the control of ionizing radiation;

(2) Make recommendations to the Department of Commerce and furnish such technical advice as may be required on matters relating to the development and utilization of atomic energy resources;

(3) Make recommendations to the Department of Health, review proposed rules and regulations, and furnish such technical advice as

may be required on matters relating to the regulation and control of radiation sources.

1966, Jan. 28, P.L. (1965) 1625, art. II, § 101.

171 P.S. § 51 et seq.

Library References

States ⇨45.

P.L.E. State Government § 7.

C.J.S. States §§ 52, 66.

§ 1102. Federal-state agreements

(a) The Governor, on behalf of this Commonwealth, is authorized to enter into agreements with the Federal government providing for discontinuance of certain of the Federal government's activities with respect to radiation sources and the assumption thereof by the Commonwealth toward the end of instituting and maintaining a regulatory program compatible with the standards and regulatory programs of the Federal government and consonant in so far as possible with those of other states.

(b) Any person who on the effective date of an agreement under subsection (a) of this section possesses a license issued by the Federal government authorizing activities, the regulation of which is assumed by the Commonwealth under such agreement, shall be deemed to possess a license issued under this act, which shall expire either ninety days after receipt from the Department of Health of a notice of expiration of such license, or ninety days after the date of expiration specified in the Federal license, whichever is earlier.

1966, Jan. 28, P.L. (1965) 1625, art. II, § 102.

ARTICLE III. ATOMIC ENERGY DEVELOPMENT

§ 1201. Powers and duties of the Department of Commerce

(a) The Department of Commerce, hereinafter in this article referred to as the department, is hereby designated as the agency of the Commonwealth of Pennsylvania which shall be responsible for the promotion and development of atomic energy resources.

(b) In accordance with the laws of this Commonwealth, the department shall employ, compensate and prescribe the powers and duties of such individuals as may be necessary to carry out the provisions of this article.

(c) The department shall have the power and its duty shall be to:

(1) Advise the Governor and the Legislature with regard to the status of atomic energy research development and education, make recommendations designed to assure progress in these fields, and advise and assist the Governor and Legislature in developing and promoting a State policy for atomic energy research, development and education.

(2) Coordinate the atomic energy development activities of the various departments, other agencies and political subdivisions of the Commonwealth, recognizing also the authority of the Department of Health under this act.

(3) Cooperate with business enterprise and other persons concerned with atomic energy, the Federal government and the governments of other states.

(4) Sponsor or conduct studies and disseminate information and foster and support research and education relating to atomic energy.

(5) Have the authority to accept and administer loans, grants, or other funds or gifts, conditional or otherwise, in the furtherance of its functions, from the Federal government and from other sources, public or private.

(6) Promote and assist the establishment of atomic energy facilities, such as waste disposal sites, test reactor sites, port facilities, transportation facilities, and others which are necessary or desirable for the promotion and development of atomic energy resources within the Commonwealth.

1966, Jan. 28, P.L. (1965) 1625, art. III, § 201.

Library References

States ⇨67.

P.L.E. State Government § 11.

C.J.S. States §§ 53, 66.

ARTICLE IV. RADIATION CONTROL

§ 1301. Powers and duties of the Department of Health

(a) The Department of Health, hereinafter in this article referred to as the department, is hereby designated as the agency of the Commonwealth which shall be responsible for the control and regulation of radiation sources, but, notwithstanding anything in this article to the contrary, shall not have power to regulate, license, or control nuclear reactors or facilities or operations incident thereto in duplication of any

activity of the Federal government which has not been discontinued by agreement pursuant to section 102.¹

(b) In accordance with the laws of this Commonwealth, the department shall employ, compensate and prescribe the powers and duties of such individuals as may be necessary to carry out the provisions of this act, except in so far as the Department of Commerce is so empowered.

(c) The department shall have the power and its duty shall be to:

(1) Develop and conduct programs for evaluation of hazards associated with the use of radiation sources;

(2) Develop and conduct programs for the control and regulation of radiation sources;

(3) Formulate, adopt, promulgate and repeal rules and regulations relating to the control of ionizing radiation;

(4) Issue such orders or modifications thereof as may be necessary in connection with proceedings under this act;

(5) Advise the Governor and the Legislature with regard to the status of radiation control, and consult and cooperate with the various departments, agencies and political subdivisions of the Commonwealth, the Federal government, other states, interstate agencies, political subdivisions, and with groups concerned with control of radiation sources;

(6) Have the authority to accept and administer loans, grants, or other funds or gifts, conditional or otherwise, in furtherance of its functions, from the Federal government and from other sources, public or private;

(7) Encourage, participate in, or conduct studies, investigations, training, research and demonstrations relating to control of radiation sources; and

(8) Collect and disseminate information relating to control of radiation sources.

1966, Jan. 28, P.L. (1965) 1625, art. IV, § 301.

¹ Section 1102 of this title.

Library References

Health ☞ 20.
C.J.S. Health §§ 2, 9 et seq.

P.L.E. Health § 4.

§ 1302. Licensing and registration of radiation sources

(a) The department is authorized to provide, by rule and regulation, for the licensing or registration of radiation sources or devices or equipment utilizing such sources. Such rules or regulations shall provide for amendment, suspension, or revocation of licenses. Such rules or regulations may provide that:

(1) Each application for a license shall be in writing and shall state such information as the department, by rule or regulation, may determine to be necessary to decide the technical, insurance and financial qualifications or other qualifications of the applicant as the department may deem reasonable and necessary to protect the public health and safety. The department may, at any time after the filing of the application and before the expiration of the license, require further written statements, and may make such inspections as the department may deem necessary in order to determine whether the license should be granted or denied, or whether the license should be modified, suspended, or revoked. All applications and statements shall be signed by the applicant or licensee. The department may require any applications or statements to be made under oath or affirmation.

(2) Each license shall be in such form and contain such terms and conditions as the department may, by rule or regulation, prescribe.

(3) No license issued under the authority of this act and no right to possess or utilize radiation sources granted by any license shall be assigned or in any manner disposed of, without the approval of the department.

(4) The terms and conditions of all licenses shall be subject to amendment, revision, or modification by rules, regulations, or orders issued in accordance with the provisions of this act.

(b) The department is authorized to exempt certain radiation sources or kinds of uses or users from the licensing or registration¹ requirements set forth in this section, when the department makes a finding that the exemption of such radiation sources or kinds of uses or users will not constitute a significant risk to the health and safety of the public.

(c) Rules and regulations promulgated pursuant to this act may provide for recognition of other State or Federal licenses as the department shall deem desirable, subject to such registration requirements as the department may prescribe.

1966, Jan. 28, P.L. (1965) 1625, art. IV, § 302.

¹ Enrolled bill read "regulation".

Library References

Licenses ⇐ 10.
C.J.S. Licenses § 26.

P.L.E. Licenses § 8.

§ 1303. Records

(a) The department shall require each person who possesses or uses any radiation source to maintain records relating to its receipt, storage, transfer, or disposal, and such other records as the department may require, subject to such exemptions as may be provided by rules or regulations.

(b) The department shall require each person who possesses or uses a radiation source to maintain appropriate records showing the radiation exposure of all individuals for whom personnel monitoring is required by the rules and regulations of the department. Copies of these records and those required to be kept by subsection (a) of this section shall be submitted to the department on written request. Any person possessing or using a radiation source shall furnish to each employee for whom personnel monitoring is required, or to such employee's physician, a copy of such employee's personal exposure record at such times as the department, by rule or regulation, may prescribe.

1966, Jan. 28, P.L. (1965) 1625, art. IV, § 303.

§ 1304. Inspection

The department or its duly authorized representatives shall have the power to enter at all reasonable times upon any private or public property for the purpose of determining whether or not there is compliance with or violation of the provisions of this act and rules and regulations issued thereunder. Any report of investigation or inspection or any information concerning trade secrets or secret industrial processes obtained under this act shall not be disclosed or opened to public inspection except as may be necessary for the performance of the functions of the department.

1966, Jan. 28, P.L. (1965) 1625, art. IV, § 304.

§ 1305. Conflicting laws

Ordinances, resolutions, or regulations now or hereafter in effect, of the governing body of an agency or political subdivision of this Commonwealth relating to radiation sources shall not be superseded by this act if such ordinances or regulations are and continue to be consistent

with the provisions of this act, amendments thereto and rules and regulations thereunder. Nothing in this act shall be deemed to enlarge or diminish the powers and responsibility of the Sanitary Water Board under the authority of the act of June 22, 1937 (P.L. 1987), and its amendments,¹ or of the Air Pollution Commission under the authority of the act of January 8, 1960 (P.L. 2119), and its amendments.²

1966, Jan. 28, P.L. (1965) 1625, art. IV, § 305.

¹ 35 P.S. § 691.1 et seq.

² 35 P.S. § 4001 et seq.

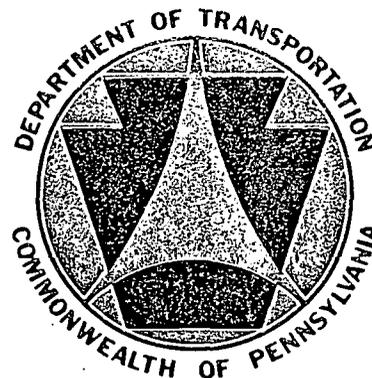
§ 1306. Administrative procedure and judicial review

(a) Any person who shall be aggrieved by any action of the department under this act, or by any rule or regulation promulgated by the department, shall have the right to file a complaint with the Secretary of Health, hereinafter referred to in this article as the secretary, and to have a hearing thereon. The hearing shall be held before the secretary, or such person designated by him, and shall be conducted in accordance with the provisions of the Administrative Agency Law approved June 4, 1945 (P.L. 1388) and its amendments.¹ Any person aggrieved by any adjudication of the secretary shall have the right to appeal therefrom to the Court of Common Pleas of Dauphin County, and have a judicial review of such adjudication within the time and in the manner and with the same effect as is provided by the Administrative Agency Law and the Rules of Civil Procedure promulgated by the Supreme Court for judicial review of adjudications of agencies of the Commonwealth. Such appeal shall not act as a supersedeas.

(b) Whenever the secretary finds that an emergency exists requiring immediate action to protect the public health and safety, the secretary may without notice or hearing issue a regulation or order reciting the existence of such emergency and requiring that such action be taken as is necessary to meet the emergency. Notwithstanding any provision of this act, such regulation or order shall be effective immediately. Any person to whom such regulation or order is directed shall comply therewith immediately, but on application to the secretary shall be afforded a hearing within ten days. On the basis of such hearing, the emergency regulation or order shall be continued, modified, or revoked within thirty days after such hearing.

1966, Jan. 28, P.L. (1965) 1625, art. IV, § 306.

¹ 71 P.S. § 1710.1 et seq.



REGULATIONS

Governing the Highway Transportation

of

HAZARDOUS MATERIALS

HAZARDOUS SUBSTANCES TRANSPORTATION
BOARD

Harrisburg, Pennsylvania 17120
Telephone: Area Code (717) 787-7444-45

24-hour Emergency Service (717) 787-7445

Effective: November 1, 1979
Pub 105

ANNEX A
TITLE 67. TRANSPORTATION
DEPARTMENT OF TRANSPORTATION
CHAPTER 20. HAZARDOUS SUBSTANCES
TRANSPORTATION BOARD

Promulgated Pursuant to the Authority Contained in Section 6 of the Hazardous Substances Transportation Act, Act of November 9, 1965 (P.L. 657, No. 323), as amended by the Act of June 23, 1978 (35 P.S. Section 841-6) (P.L. 509, No. 80).

These Regulations were Proposed on March 31, 1979, at 9 Pa. B. 1135 and Adopted on July 28, 1979, at 9 Pa. B. 2451, with an Effective Date of November 1, 1979.

TABLE OF CONTENTS

Section	Page
20.1	General Information and Requirements 1
20.2	Definitions 2
20.3	Recording and Reporting of Accidents 4
20.4	Adoption of the Code of Federal Regulations, Title No. 49, Parts 171-173 and 177-178, as of September 1, 1978 (49 C.F.R. §§ 171-173, 177 and 178). 5
20.5	Adoption of the Code of Federal Regulations, Title No. 49, Parts 390-397, as of September 1, 1978 (49 C.F.R. §§ 390-397). 5
20.6	Supplemental Material Relating to the Incorpora- tion of the Code of Federal Regulations. 6
20.7	Supplemental Rules and Regulations. 8
20.8	Vehicle Out-of-Service Criteria 11
20.9	Penalties 23
20.10	Exceptions. 24

**SECTION 20.1. GENERAL INFORMATION AND
REQUIREMENTS.**

A. Scope.

1. These regulations are promulgated so as to regulate the transportation of hazardous substances, and to assure compliance with the regulations pursuant to the act that there is established and maintained a reasonable balance between the interests of the people in the safety of themselves and their property, on the one hand, and the interest of the people in their employment and economic prosperity, on the other.

2. Hazardous substances are essential for various industrial, commercial and other purposes, that their transportation is a necessary incident of their use, and therefore that such transportation is required for the employment and economic prosperity of the people. It is also found as a fact that the transportation of hazardous substances may involve risk of injury to persons and damage to property, and that the degree of such risk can and should be kept at a level which is consistent with technical feasibility and economic reasonableness.

B. Application.

1. Every shipper and motor carrier and its officers, drivers, agents, employes and representatives involved or in any manner related to the transportation of interstate or intrastate commerce, or both, shall comply with and be bound by the regulations now or hereafter set forth, and shall take such measures as are necessary to insure compliance therewith.

2. All officers, agents, representatives, drivers, and employes of shippers and carriers involved or concerned with the management, maintenance, operation or driving of vehicles, shall be conversant and knowledgeable with the rules set forth in this chapter.

C. General rule.

1. Hazardous substances that do not comply with the

requirements of this chapter shall not be offered for transportation or transported.

2. Hazardous substances which are manufactured, packaged, stored, loaded, unloaded or transported, shall be open to inspection upon request by any duly authorized representative of the Board.

3. No person shall, by marking or otherwise, represent that a container or package for the transportation of hazardous substances is safe, certified or in compliance with the requirements of the Board unless such container or package meets the requirements of this chapter.

D. Exemptions. The Board may, upon its own motion or upon application from a carrier, grant exemptions or exceptions from the requirements of this chapter whenever it determines the result of granting the exemption or exception will not constitute a significant risk to the health or safety of the public.

E. Repealer. All previously promulgated regulations of the Board are hereby repealed upon the effective date of this chapter.

SECTION 20.2. DEFINITIONS.

In addition to the definitions set forth in sections 20.4 and 20.5 of this chapter, the following words and terms, when used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise. Any definitions set forth in this section shall supersede the definition which may appear in sections 20.4 or 20.5 for the same word or phrase.

Act -- The Hazardous Substances Transportation Act, act of November 9, 1965 (P.L. 657, No. 323) (35 P.S. s s 841.1-841.14).

Aggregate gross weight -- The combined weight of the motor vehicle and any load thereon including the operator of the vehicle.

Board -- The Hazardous Substances Transportation Board.

Commonwealth -- The Commonwealth of Pennsylvania.

Empty container -- Any container that has had all of its contents removed by purging, or cleaning, or both.

Executive Secretary -- The Executive Secretary of the Board; any reference to Director appearing in the sections of the Code of Federal Regulations incorporated in sections 20.4 and 20.5 of this chapter shall mean the Executive Secretary.

Gross weight -- The weight of any package, cargo tank, container, or cylinder, plus the weight of its contents.

Hazardous substance -- A flammable liquid, flammable solid, oxidizing substance, corrosive liquid, compressed gas, poisonous substance, radioactive substance, explosive, molten metal, or any similar substance.

Highway -- A highway, street or other public way, or a toll road, including the Pennsylvania Turnpike.

H.S.T.B. The Board.

Motor carrier -- A common carrier by motor vehicle, a contract carrier by motor vehicle, or a private carrier by motor vehicle, or any person who or which as owner, lessee or other possessor of one or more vehicles, directs or controls the transportation of hazardous substances either for their own account or for hire.

Motor vehicle -- Any vehicle, machine, tractor, semi-trailer or any combination thereof propelled or drawn by mechanical power and used upon the highways in the transportation of hazardous substances as defined by this chapter.

Net weight -- The weight which includes only the contents of a package, cargo tank, container, or cylinder, and does not include the weight of any package, cargo tank, container or cylinder.

Out of service -- The temporary prohibition of a vehicle or operator from further service because of one or more violations regarding the safety of either.

Person -- Any natural person, firm, association, copartnership, corporation, company, or joint stock association; it includes any trustee, receiver, assignee or personal representative thereof.

Similar substance -- Any substance which the Board, by regulation, shall determine to be a hazardous substance.

Special investigator -- An employe of the Board, authorized to inspect vehicles and investigate all other matters relating to the transportation of hazardous substances.

Transportation -- Carriage by vehicle upon a highway.

SECTION 20.3 RECORDING AND REPORTING OF ACCIDENTS.

A. Reporting of accidents.

1. Within 30 days after a reportable accident occurs, the motor carrier shall file the original and one copy of H.S.T.B. Form A-100 and the original and one copy of Federal Form MCS-50T. These forms shall be filled out completely and accurately with the most reliable information available at the time the report is filed.

2. Federal Form MCS-50T and H.S.T.B. accident report Forms A-100 will be supplied by the Board upon request by writing to Executive Secretary, Hazardous Substances Transportation Board, Room 1004 Transportation and Safety Building, Harrisburg, Pennsylvania 17120, or by telephoning 717-787-7444 or 717-787-7445.

B. Reportable accident.

1. The term "reportable accident" shall mean an occurrence involving a motor vehicle engaged in the interstate, foreign, or intrastate operations of a motor carrier which is subject to the regulations of this chapter and which occurrence results in:

(i) The death of a human being; or

(ii) bodily injury to a person who, as a result, receives hospitalization; or

(iii) the total damage to all property as a result of the occurrence being \$1,000 or more, said sum being based upon actual costs or reasonably reliable estimates; or

(iv) fire, explosion, release of product, or damage to the containers to such a degree as to necessitate repackaging of the cargo, or necessitate the transfer of cargo to another vehicle. Furthermore this type of accident shall additionally be reported by the carrier by telephone to the Board at 717-787-7444 or 717-787-7445 within 24 hours.

C. Confidentiality. Accident reports made by carriers in compliance with this chapter shall be for the information of the Board and shall not be open to public inspection.

SECTION 20.4. Adoption of the Code of Federal Regulations, Title No. 49, Parts 171-173, 177 and 178 as of September 1, 1978 (49 C.F.R. §§171-173, 177 and 178).

A. The Board hereby incorporates by reference the following sections of the Code of Federal Regulations as of September 1, 1978:

1. Sections 171.1 - 171.7.
2. Sections 171.9 - 171.14.
3. Part 172.
4. Part 173.
5. Part 177.
6. Part 178.

B. Appropriate parts of Title 49 of the Code of Federal Regulations may be obtained from the United States Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402.

SECTION 20.5. Adoption of the Code of Federal Regulations, Title No. 49, Parts 390-397, as of September 1, 1978 (49 C.F.R. §§390-397).

A. The Board hereby incorporates by reference the following sections of the Code of Federal Regulations as of September 1, 1978:

1. Sections 390.2, 390.4-390.8, 390.11-390.13, 390.17, 390.28, 390.30-390.32, 390.45.

2. Sections 391.1, 391.5, 391.7, 391.11, 391.15, 391.21, 391.23, 391.25, 391.27, 391.31, 391.33, 391.35, 391.37, 391.41, 391.43, 391.45, 391.47, 391.51, 391.61, 391.63, 391.65, 391.67, 391.69.

3. Sections 392.1-392.9b, 392.10(a) and (b) (2)-(5), 392.11-392.16, 392.20-392.22, 392.24, 392.25, 392.30-392.33, 392.40-392.42, 392.50-392.52, 392.60-392.69.

4. Part 393.

5. Sections 394.1, 394.5, 394.13, 394.15.

6. Sections 395.2(a)-(g), 395.3, 395.6-395.8, 395.10, 395.11, 395.13.

7. Part 396.

8. Sections 397.2, 397.3, 397.5, 397.7, 397.9, 397.11, 397.13, 397.15, 397.17, 397.19, 397.21.

B. Appropriate parts of Title 49 of the Code of Federal Regulations may be obtained from the United States Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402.

SECTION 20.6. Supplemental material relating to the incorporation of the Code of Federal Regulations.

A. Title and name changes. In order to reconcile differences between these regulations and the incorporated sections of Federal regulations and to effectuate their joint enforcement, the following words and phrases shall be substituted for the language of the Federal regulations as follows:

1. Any reference to Director shall mean the Executive Secretary.

2. Any reference to the Federal Highway Administration shall mean H.S.T.B.

3. Any reference to Department of Transportation shall mean the H.S.T.B.

4. Any reference to any authorized representative or special agency of the Federal Highway Administration shall mean any authorized representative or special investigator of the H.S.T.B.

5. Any reference to the Department shall mean the H.S.T.B.

6. Any reference to the Secretary of the Hazardous Materials Regulations Board, Department of Transportation, Washington, D. C. shall mean the Executive Secretary, H.S.T.B., Room 1004, Transportation and Safety Building, Harrisburg, Pennsylvania 17120.

7. Any reference to Office of Hazardous Materials Operations shall mean H.S.T.B.

8. Any reference to Office of Hazardous Materials Operations Bureau shall mean the H.S.T.B.

9. Any reference to Director of the Bureau of Motor Carrier Safety shall mean the Executive Secretary, H.S.T.B.

B. Form and document changes. In order to establish a procedure for filing the necessary documentation with the Board, the following Federal forms shall be replaced or supplemented by the Board forms as set forth below:

1. Federal Form MCS-126 (Compliance Report) shall be replaced by Board Form C-50.

2. Federal Form MCS-63 (Driver Equipment Compliance Check) shall be replaced by Board Form C-25.

3. Federal Form MCS-64 (Out-of-Service Vehicle) shall be replaced by Board Form OS-50.

4. Federal Form MCS-88 (Out-of-Service Driver) shall be replaced by Board Form OS-60.

5. Federal Form DOT F-5800.1 (Incident Report) shall be supplemented by the additional information requested by Board Form I-200.

6. Federal Form MCS-50T (Property and Passenger Accident Report) shall be filed as required herein and supplemented by the additional information requested by Board Form A-100.

SECTION 20.7. SUPPLEMENTAL RULES AND REGULATIONS.

A. Carrier registration.

1. Contents. All carriers (interstate and intrastate) transporting hazardous substances in quantities requiring the vehicle to display markings or placarding in accordance with these regulations, shall register with the Board each calendar year between January 1 and January 31. If any person initiates carriage within a given year, he shall register within 30 days of such initiation and each year thereafter in accordance with this paragraph. This report shall be filed in writing and include the following:

(i) name, address and county of carrier, including all terminals located in this Commonwealth.

(ii) class or classes of commodity transported over the highways of this Commonwealth.

(iii) total number of vehicles, by terminal, transporting hazardous substances over the highways of this Commonwealth.

(iv) names and addresses under which the vehicles are registered.

(v) names and title of officers, owners, partnership, joint venture, firm, company or association.

(vi) signature and title of person filing report.

(vii) date the report is submitted.

2. Notarization. This report shall be notarized.

3. Retention of report. The motor carrier shall maintain a copy of this report in its files for a period of three years.

(EXAMPLE)

TO: The Hazardous Substances Transportation Board,
1004 Transportation and Safety Building,
Harrisburg, Pa. 17120

SUBJECT: Carrier Registration
Please register our firm for the year 19__.

(1) List name and address of terminal (s).

(2) List class or classes of commodity.

(3) List total number of vehicles.

(4) List name and addresses that vehicles are registered under.

(5) List name and titles of all officers, owners, partnership, joint venture, firm, company or association.

(6) Signature and title of person filing report.

(7) List date report is submitted.

B. Towing of vehicles. No vehicle transporting any hazardous substances in a quantity requiring the vehicle to display markings or placarding shall be towed on any highway unless to remove the vehicle and cargo to the nearest place of safety to prevent possible injury to persons or property.

C. Extended loads. Loads which extend beyond the cargo-carrying compartment. No person shall transport any hazardous substance on any vehicle when such load extends beyond the sides, front, or rear of the cargo-carrying compartment of the vehicle.

D. Unlawful transportation. No person shall transport, by vehicle, on any highway, any hazardous substance in a reckless manner or under conditions that will unreasonably endanger persons or property.

E. Pennsylvania Vehicle Code. All provisions of the Pennsylvania Vehicle Code and all regulations promulgated thereunder, not inconsistent with these regulations, shall apply to the transportation of hazardous substances.

F. Weight limitations. All vehicles subject to this chapter shall comply with the weight limitations set forth in the Pennsylvania Vehicle Code and any regulations promulgated thereunder.

G. Containers other than specified. When the use of containers other than those specified in this chapter is proposed for transportation on any highway, the shipper shall submit complete specifications covering the proposal, including supporting information from the Bureau of Explosives, Underwriter's Laboratories, or any other accredited technical source which is acceptable to the Board. The Board will review the data and advise the shipper of acceptance or rejection of the proposal for use on highways within the Commonwealth.

H. Special testing. The Board or its agents may, at their discretion, cause any container or cargo tank, or both, to be retested at any time.

I. United States Department of Transportation special permits. Hazardous substances, shipped under special permits of, and in containers specified by, the United States Department of Transportation, may be transported within this Commonwealth.

J. Streetcar crossings. Any vehicle, normally required to stop at railroad grade crossings under the provisions of this chapter need not stop if said tracks are used exclusively by streetcars.

K. Presentation of documents. A driver of any vehicle transporting a hazardous substance on any highway shall present upon request to any agent or special investigator of the Board, or member of the

Pennsylvania State Police, all documents required by this chapter to be in their possession.

SECTION 20.8. VEHICLE OUT-OF-SERVICE CRITERIA.

A. General.

1. Investigators of the Board and State Police shall have the authority to declare any vehicle out-of-service when the condition of the vehicle presents a safety hazard.

2. Existence of a safety hazard in any vehicle shall also constitute an offense punishable under section 20.9 of this chapter.

B. Steering mechanism. The following shall constitute a safety hazard:

1. Turning -- If the steering wheels are incapable of being turned from full right to full left because of interference by parts of the steering mechanism, or by other damaged or dislocated parts of the vehicle. Utilization of a power steering mechanism is permitted in the test.

2. Steering wheel play -- If total movement of more than 30 degrees is required at the steering wheel rim before the front wheels move from the straight-ahead position.

3. Steering column -- If any absence or looseness of bolts or positioning parts results in motion of the steering column from its normal position.

4. Steering gear attachment -- If any absence or looseness of bolts or other parts results in motion of the steering gear at the point of attachment to the vehicle's frame.

5. Ball and socket joints -- If any looseness at any ball and socket joint in the steering linkage is in excess of 3/8 inch measured in alignment with the shank or neck of the ball.

6. Front wheel play -- If the play on either a horizontal or vertical axis of either front wheel exceeds 1/2-inch measured at the tread surface of the tire.

C. Brake systems.

1. General rules. The following shall constitute a safety hazard:

(i) Stopping -- If the vehicle or combination fails, in both of two trials, to stop from a speed of 20 miles per hour in a distance of 60 feet from a point at which the brake controls are first moved for the purpose of applying brakes when tested on a smooth, dry level surface free from loose materials. Such tests may be made only when they will clearly not interfere with or endanger other traffic, and then only if adequate police protection is utilized to assure the safety of any other traffic on the roadway.

(ii) Missing or inoperative brakes -- If brakes are missing or not operating or the shoes are not touching the drum on any wheel required to have operative brakes. Three-axle trucks or truck tractors having front wheel brakes which have been rendered inoperative shall not be placed out-of-service because the front wheel brakes are inoperative. However, this finding on the H.S.T.B. Form C-25 is a violation of 49 C.F.R. §393.48.

(iii) Pedal reserve -- If on hydraulic, mechanical or power-assisted brake systems, the service brake pedal meets firm resistance at a point closer to the floor board or other fixed obstruction than to the released position when measured in a straight line.

(iv) Brake linings and pads -- If any brake lining or pad has:

(a) Loose or missing rivets or bolts.

(b) A lining friction surface which is contaminated with oil, grease or brake fluid in such a manner as to change its frictional characteristics.

(v) Drums and discs -- If any drum or disc:

(a) Is contaminated with oil, grease, or brake fluid in such a manner as to change the frictional characteristics of the friction face.

(b) Has any crack visible on the exterior of any brake drum extending more than 3/4 the width of the drum, except when the drum is properly banded to prevent the crack from expanding upon the application of brakes or otherwise. Bands so used must be free of cracks.

(vi) Internal components. If any internal mechanical parts are misaligned, broken or missing.

2. Brake system.

(i) Hydraulic brake systems. If a hydraulic brake system:

(a) Has leaks in the master cylinder.

(b) Has hydraulic hoses worn, chaffed, cut or cracked through the outer casing and one ply of fabric.

(c) Has hydraulic hoses, tubes, or connections leaking, restricted, crimped, cracked or broken.

(d) Has a hydraulic service brake pedal which when applied with uniform foot pressure, continues to move forward or downward.

(e) Lacks an operative warning signal as required by 49 C.F.R. §393.51(b). Check exemptions in 49 C.F.R. §393.51(g).

(f) Has any visually observed leaking hydraulic fluid anywhere in the brake system.

(g) Has connecting lines or tubes not properly attached or supported to prevent damage by vibration or abrasion by

contact with the frame, axle, other lines of any other part of the vehicle and damage as set forth in subsection (C) (2) (i) (b) or (C) (2) (i) (c) of this section.

(ii) Vacuum systems. If any vacuum system:

(a) Has evidence of leakage in the system.

(b) Has a vacuum hose which is worn, chaffed, cut, or cracked through the outer casing and through one ply of fabric.

(c) Has a hose, tube, or connection leaking, restricted, crimped, cracked or broken.

(d) Has a vacuum hose which collapses when vacuum is applied.

(e) Has connecting lines or tubes not properly attached or supported to prevent damage by vibration or abrasion by contact with the frame, axle or other part of the vehicle and damage as set forth in subsection (C) (2) (ii) (b) or (C) (2) (ii) (c) of this section.

(f) Lacks an operative low-vacuum warning device as required in 49 C.F.R. §393.51(d). Check exemptions in 49 C.F.R. §393.51 (g).

(g) In vacuum assisted systems, the service brake pedal does not move slightly as the engine is started while pressure is maintained on the brake pedal.

(h) With all vacuum brakes fully applied, with the trailer brake connections open -- if a trailer is connected -- and the engine operated long enough to reach constant vacuum, and the trailer brake connections disconnected from the towing vehicle the trailer brake application cannot be maintained for at least five minutes.

(i) Fails to have an operative second independent

means for applying brakes on towed vehicles equipped with vacuum brakes, as required in 49 C.F.R. § 393.43 (c).

(j) Has any vacuum reservoir not securely attached to the motor vehicle.

(iii) Air-mechanical brake systems. If any air-mechanical brake system:

(a) Has an air hose worn, chaffed, cut or cracked through the "outer" casing and one ply of fabric.

(b) Has an air hose worn, chaffed, cut or cracked, restricted, crimped or broken.

(c) Has connecting line or tubes not properly attached or supported to prevent damage by vibration or abrasion by contact with the frame, axle, other lines and any other part of the vehicle and damage as set forth in subsection (C) (2) (iii) (a) or (C) (2) (iii) (b) of this section present.

(d) Has a brake chamber, foot valve, or any other valve in the system or stop-light switch with a clearly audible leak.

(e) Has an air reservoir not securely attached to the motor vehicle.

(f) Has a belt-driven compressor subject to intermittent operation due to looseness of belts or defective pulley condition, or any looseness of mounting bolts on any compressor.

(g) Has an air pressure drop of more than 3 PSI in one minute for single-unit vehicles, and 4 PSI in one minute for vehicle combinations, with engine running at idling speed and the service brake applied.

(h) Is such that with control (service) and supply (emergency) lines disconnected, the towed vehicle brakes fail to remain in the applied position for at least five minutes.

(i) Lacks an operative low-air warning device as required in 49 C.F.R. § 393.51 (c). Check exemptions in 49 C.F.R. §393.51 (g).

(j) On an air-mechanical braked power unit while towing a trailer with air-mechanical brakes, the power unit is:

(I) not equipped with automatic and manual means for activation;

(II) found to be inoperative; or

(III) malfunctioning to the extent that towing unit supply is vented to atmosphere when either of the means is used.

(k) The brakes on air-mechanical braked towed vehicles do not apply automatically when the power unit air pressure is reduced to some point between 45 and 20 PSI.

(iv) Electric brake system. If any electric brake system:

(a) Has loose or dirty terminal connections, or broken, frayed, or unsupported wires.

(b) Has brakes that do not apply and remain applied for at least five minutes when the breakaway safety switch is activated.

(v) Parking brake system. If any parking brake system:

(a) Has any mechanical part of the parking brake missing, broken, or disconnected.

(b) Is not capable under any load condition of holding the vehicle or combination of vehicles on the grade on which it is tested.

(c) Is such that the application mechanism, when fully applied, will not hold in the applied position without manual effort.

(d) Uses fluid pressure, air pressure, or electric energy to hold it in the applied positions.

D. Lighting devices and reflectors. The following shall constitute a safety hazard:

1. The following provisions are applicable to vehicles operated only between sunset and sunrise.

(i) Headlamps. If a single vehicle or towing vehicle does not have at least one operative headlamp on one side, and either:

(a) one other operative road lighting device on the other side; or

(b) all required front clearance lamps operative.

(ii) Lamps on rear.

(a) Vehicles 80 inches or more in width. If there are not at least two operative red lamps, other than stop lamps, in the rear of the rearmost vehicle visible from a distance of 500 feet.

(b) All vehicles and combination of vehicles less than 80 inches in width and truck tractors operated as single vehicles, if there is not at least one operative red lamp, other than a stop lamp, on the rear of the rearmost vehicle visible from a distance of 500 feet.

2. If the turn signals on a vehicle or combination of vehicles are not operative, regardless of light conditions.

3. If all stop lamps on the rear of a single unit vehicle or the rearmost vehicle of a combination of vehicles are inoperative, regardless of light conditions.

E. Tires. The following shall constitute a safety hazard:

1. Tread depth.

(i) If any tire on the front wheels is worn so that less than 2/32 inch tread remains when measured in any two adjacent major tread grooves at three equally spaced intervals around the circumference of the tire.

(ii) If a tire on any wheel other than a front wheel has less than 1/64 inch tread when measured in any two adjacent major tread grooves at three equally spaced intervals around the circumference of the tire.

2. Other requirements. If any tire:

(i) Has any visually observed bump, bulge, or knot apparently related to tread or sidewalk separation.

(ii) Has any tread separation from the carcass:

(a) exposing fabric in excess of four square inches;

(b) exposing buffed or prepared carcass surface in excess of four square inches; or

(c) extending across 3/4 of the width of the tread.

(iii) Has a cut through three or more layers of textile plies which is four inches or more long at the third layer.

(iv) Is flat or has an audible leak.

(v) Is a dual tire so mounted or inflated that it comes in contact with its mate.

(vi) Is marked "not for highway use" or otherwise marked with words having a like meaning.

(vii) Is a steering axle tire with any textile ply showing in the tread area or worn through one ply in the sidewall.

F. Wheels and rims. The following shall constitute a safety hazard:

1. If rims and rings are mismatched, bent, sprung, or cracked. This should not be confused with rims purposely split or cut at time of manufacture.

2. If disc wheels have elongated bolt holes or cracks between hand holes or stud holes, or both.

3. If cast wheels — spoke type — are cracked.

4. If wheels within two or more of the wheel bolts, nuts, or clamps are loose, broken, missing, or mismatched.

5. If there is any disc, spoke type wheel, or rim with welded repair.

G. Exhaust system. The following shall constitute a safety hazard:

1. If exhaust systems not securely fastened. Some exhaust systems have mounting brackets that are intended to allow movement to counteract thermal expansion. Such vehicles are not in violation of these regulations unless the bolts or other method of attaching the mounting brackets are loose.

2. If exhaust systems are determined to be leaking at a point forward or directly below the driver compartment of any truck or truck tractor.

Note: The criteria in subsections (G) (1) and (G) (2) of this section are to be construed to exclude vehicles equipped with exhaust systems intentionally designed to exhaust to the front end of the vehicle. However, such vehicles should be cited on Form H.S.T.B. C-25 as being in violation of 49 C.F.R. §393.83.

Note: Carbon or other types or residue are found in flexible pipe and joints in exhaust systems. The carbon and other materials will work through the flexible pipe and joints. Therefore, actual leakage of exhaust gases must occur at the locations specified above before leakage is cited on Form H.S.T.B. C-25.

H. Fuel systems. The following shall constitute a safety hazard:

1. If any fuel system has visible leaks at any point in the fuel system.
2. If any fuel tank filler cap is missing, poorly fitted or with a defective gasket.
3. If any fuel tank is not securely attached to the motor vehicle. Some fuel tanks use springs or rubber bushings to permit movement.

I. Coupling devices. The following shall constitute a safety hazard:

1. If any tow-bar or adjustable fifth wheel assembly has 1/4 or more of the locking pins missing.
2. If any adjustable fifth wheel locking mechanism does not remain in the locked position without manual effort.
3. If any leakage in adjustable fifth wheel locking mechanisms is dependent on fluid energy or air pressure.
4. Any fifth wheel and tow-bar play.
 - (i) If play lengthwise of the vehicle exceeds one inch between the upper and lower fifth wheel halves.
 - (ii) If, where provisions are made for adjustment of a fifth wheel lower half or tow-bar relative to the vehicle frame, there is more than one inch of play lengthwise of the vehicle in any such adjustment when locked or latched in position.
5. If fifth wheel mounting, including bolts, nuts, welds, and brackets, but not including adjustable features, are loose, worn, or broken so as to permit 1/4 inch or more observable relative motion between the fifth wheel mounting and the frame of the vehicle.

6. If any cracks or breaks are in the tow-bar of fifth wheel except:

- (i) Cracks in the ramps or horns of fifth wheels.
- (ii) Casting shrinkage cracks in the ribs of the body of case fifth wheels.

J. Suspension. The following shall constitute a safety hazard:

1. Axle positioning parts. If any torque arms, u-bolts, spring hangers, or other axle positioning parts are cracked, broken, loose, or missing so as to permit displacement of an axle from its normal position.
2. Spring assembly.
 - (i) If one-fourth or more of the leaves in any leaf spring assembly are broken or missing, or the main leaf depended upon for positioning the axle is broken.
 - (ii) If one or more leaves are shifted from normal position so as to contact with a tire, rim, brake drum, or frame.
 - (iii) If there are leaking air suspensions.
3. Torsion bar assembly or torque arm. If any part of the torsion arm assembly or torque arm or any part used for attaching the same to the vehicle frame or axle is cracked, broken or missing.
4. Frame members. If there is any cracked, loose or broken frame member (permitting shifting of the body onto moving parts or collapse of the frame).
5. Unsafe contact. If any suspension system defect or any condition of loading permits the body or frame to come in contact with a tire or any part of the wheel assemblies.

6. Adjustable axle assemblies. If any.

(i) Adjustable axle assembly has 1/4 or more of the locking pins missing.

(ii) Adjustable axle assembly has more than one inch of play lengthwise along the vehicle in any such adjustment when locked or latched in position.

K. Unsafe load. The following shall constitute a safety hazard:

1. If any load within any passenger carrying space interferes with the ready exit of persons from the vehicle.

2. If any load within the driver's compartment obscures the driver's view in any direction.

3. Protection against shifting cargo.

(i) If any vehicle is without a front-end structure, or equivalent device as required by 49 C.F.R. §393.106.

(ii) If a vehicle is loaded in such a way that any part of the load can fall onto the roadway.

L. Engine. The following shall constitute a safety hazard:

1. If the engine cannot be started without external assistance within five minutes.

2. If the engine cannot be started with the transmission in neutral because of a defective or improperly adjusted clutch. Transmission cannot be shifted from neutral after engine is started.

M. Mirrors. If the mirror on the driver's side is cracked, pitted, or clouded to the extent that rear vision is obscured, it shall constitute a safety hazard.

N. Windshield wipers. If the wiper on the driver's side is operative, severely damaged or is missing parts of the blade or arm, it shall constitute a safety hazard.

O. Cargo. The following shall constitute a safety hazard:

1. If there is a loss or leakage of any cargo classed as a hazardous material which is visible on the outside of the vehicle.

2. If a loaded cargo tank or portable tank has loose dome covers or other openings not securely closed.

3. If a vehicle is transporting hazardous materials in such quantity to require placards and no placards are installed on the sides, rear and front.

4. If a vehicle transporting hazardous materials in such quantity to require placards has bare electrical wiring or evidence of burning or short circuiting.

SECTION 20.9. PENALTIES.

A. Operator. Any person who, as operator of a vehicle, shall violate any regulation of the Board pertaining to the routing, parking or other act in the actual operation of a vehicle, shall be guilty of a misdemeanor, and upon conviction thereof in the Court of Common Pleas of the county in which the offense occurred, shall be sentenced to pay a fine of not less than \$100.00 nor more than \$500.00, or undergo imprisonment in the County jail for not more than 30 days, or both. Any such person having been convicted of a first offense under this subsection, who shall at a later time commit a second or subsequent offense and be convicted thereof shall be sentenced to pay a fine as aforesaid, or to undergo imprisonment in the County jail for not less than 60 days nor more than one year, or both.

B. Shipper, carrier, consignee, other user. Any person who, as shipper, carrier, consignee or user of a hazardous substance, shall violate any regulation of the Board, shall be guilty of a misdemeanor, and upon conviction thereof in the Court of Common Pleas of the County in which the offense occurred, shall be sentenced to pay a fine of not less than \$500.00 nor more than \$5,000.00 or undergo imprisonment in the County jail for not more than 60 days, or both. Any person having been convicted of a first offense under this subsection, who shall at a later time commit a second or subsequent offense and be convicted thereof, shall be sentenced to pay a fine as aforesaid, or to undergo imprisonment in the County jail for not less

than 60 days nor more than one year, or both. If such person be a firm, partnership, joint venture or association, then the member thereof responsible for the violation or if such person be a corporation then the officer, agent or employe thereof responsible for the violation, shall have the sentence of imprisonment herein prescribed imposed upon him.

SECTION 20.10. EXCEPTIONS.

A. Certain drivers of combustible liquids. The provisions of 49 C.F.R. § 391.11 (b) (1) (relating to minimum age), 49 C.F.R. § 391.31 (relating to application for employment), 49 C.F.R. § 391.23 (relating to investigations and inquiries), 49 C.F.R. § 391.31 (relating to road test) and 49 C.F.R. § 391.35 (relating to written examinations) do not apply to a driver who is otherwise qualified and who was a regularly employed driver as defined in 49 C.F.R. § 391.2(F) as of the effective date of these regulations, and who continues to be a regularly employed driver of that motor carrier and who drives a motor vehicle that:

1. is transporting combustible liquids as defined in 49 C.F.R. § 173.115; and
2. is being operated in intrastate commerce.

B. Visual requirements. In addition to the exceptions provided in subsection (A) of this section, the provisions of 49 C.F.R. § 391.41 (b) (10), relating to minimum visual requirements, do not apply to a driver who was a regularly employed driver as defined in 49 C.F.R. § 395.2(F) as of the effective date of this chapter and continues to be a regularly employed driver of that motor carrier who drives a vehicle that:

1. is a truck as defined in 49 C.F.R. § 390.4;
2. is operated in retail delivery service;
3. is transporting combustible liquids as defined in 49 C.F.R. § 173.115; and
4. is operated in intrastate commerce.

COMMONWEALTH OF PENNSYLVANIA



PENNSYLVANIA TURNPIKE COMMISSION

P.O. BOX 2531 - HARRISBURG, PA. 17120

OFFICE
OF
SECRETARY AND TREASURER

November 24, 1980

AREA CODE 717 939-9551

Resource Development Assoc.
2550 M St., N.W. - Suite 300
Washington, D.C. 20037

ATTN: Mr. Patrick Raffaniello

Hazardous materials can be transported, under permit, on the Pennsylvania Turnpike System, provided the shipments are in full compliance with the U.S. Department of Transportation Code of Federal Regulations, Title 49 - Parts 170 through 179 and Federal Motor Carrier Safety Regulations - Parts 390 through 397. Any carrier transporting "hazardous materials" requiring placarding under these regulations, over the Pennsylvania Turnpike System, must have a Hazardous Materials Transportation Permit application on file in the office of the Secretary-Treasurer. Every vehicle transporting "hazardous materials" over the Turnpike System must carry a "Hazardous Materials Transportation Permit Card".

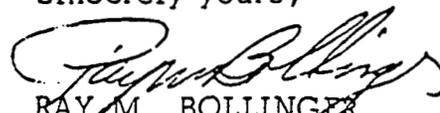
Enclosed is "Application" and "Order Blank". Please complete and return these, along with your check in the proper amount, payable to the Pennsylvania Turnpike Commission.

The charge for the first card issued under the Permit is \$10, with a \$5 charge for each additional card issued during the year. These cards are transferable among your units, so long as each vehicle carries a card when using the Pennsylvania Turnpike System. All cards are to be renewed March 31 of each year.

Shipments of "hazardous materials", requiring placarding under the Code of Federal Regulations, are prohibited from being transported through any and all tunnels on the Pennsylvania Turnpike System. The only exceptions to this regulation are shipments placarded as COMBUSTIBLE, NON-FLAMMABLE COMPRESSED GAS or FUEL OIL. Please inform your drivers of these rules and regulations.

If you need any additional information, please contact this office. Telephone Area Code 717 - 939-9551, Extension 222.

Sincerely yours,


RAY M. BOLLINGER
Secretary and Treasurer

RMB:ds
Enclosures

ORDER FORM

HAZARDOUS MATERIALS TRANSPORTATION PERMIT CARDS

Date _____

Pennsylvania Turnpike Commission
Secretary and Treasurer
P.O. Box 8531
Harrisburg, Pennsylvania 17105

ATTN: HMTP SECTION

RE: HMTP NO. _____

Dear Sir:

Please send _____ HMTP Cards for use under the above
numbered Hazardous Materials Transportation Permit, for the year from
April 1, 1980, through March 31, 1981.

We enclose our Check No. _____, in the sum of
\$ _____, as payment for these cards.

Yours very truly,

Company) _____

Mailing)
Address) _____

By) _____

Phone Number _____

Enc: Check

APPLICATION FOR PERMIT TO TRANSPORT HAZARDOUS MATERIALS
ON THE PENNSYLVANIA TURNPIKE SYSTEM

Date _____

Pennsylvania Turnpike Commission
P.O. Box 2531
Harrisburg, Pennsylvania 17120

NAME _____

ADDRESS _____

hereby applies for a Hazardous Materials Transportation Permit to transport hazardous materials on the Pennsylvania Turnpike System.

(Kind of Products)

in _____
(Type of Vehicles)

and does hereby agree to fully comply with the Rules and Regulations of the Pennsylvania Turnpike Commission relating to the transport of such hazardous materials, and to indemnify and save harmless the Pennsylvania Turnpike Commission of and from any and all claims for damages arising from the transport of such hazardous materials on the Turnpike System by Applicant. It is further understood and agreed that Applicant will pay regular tariff rates as promulgated by the Pennsylvania Turnpike Commission.

Attest:

Secretary - Witness

President - Partner - Owner

NOTE: If Applicant is incorporated, this Form must be signed by the President and attested by the Secretary and Corporate Seal affixed. If a partnership, one partner must sign and have signature witnessed; if an individual, the owner must sign and have signature witnessed.

Official Advance Copy of Statute Enacted at 1978 Session

No. 1978-80

AN ACT

SB 704

Amending the act of November 9, 1965 (P.L.657, No.323), entitled "An act regulating the transportation of hazardous substances on highways and toll roads, including the Pennsylvania Turnpike; creating the Hazardous Substances Transportation Board, prescribing its powers, duties and procedures; providing for the imposition of duties upon the Department of Revenue, the State Police and other departments and commissions of the Commonwealth; prescribing penalties; repealing inconsistent acts and making an appropriation," further providing for Federal and State regulations, for powers and duties of the board, requiring the posting of certain information, making certain repeals, further providing for enforcement of the act and making editorial changes.

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

Section 1. Subsection (b) of section 3, and section 6, act of November 9, 1965 (P.L.657, No.323), known as the "Hazardous Substances Transportation Act," are amended to read:

Section 3. Findings of Fact; Standards of Administration.— * * *

(b) The purpose of this act, and the primary standard by which it shall be administered, is to so regulate the transportation of hazardous substances, *and assure compliance with the regulations promulgated pursuant to this act*, that there is established and maintained a reasonable balance between the interests of the people in the safety of themselves and their property, on the one hand, and the interests of the people in their employment and economic prosperity, on the other.

Section 6. General Power and Duty of the Board.—The board shall have the general power and duty to prescribe regulations *and assure compliance thereto* for the transportation of hazardous substances, consistent with the purpose and primary standard declared in subsection (b) of section 3 hereof. In exercising such general power and duty the board may:

(1) Classify hazardous substances according to the nature and degree of risk involved in their transportation, and apply separate regulations to each class.

(2) Prescribe regulations pertaining to methods of packing, loading and unloading hazardous substances; to the specifications, marking, inspection, condition and equipment of vehicles transporting such substances; to qualification of drivers and other matters relating to operation of such vehicles; to routing and parking of such vehicles, except that such regulations may not supersede ordinances of local authorities; and all other factors which affect the nature or degree of risk involved in transportation of hazardous substances.

(3) Declare any substance, not defined in section 2 hereof, to be a hazardous substance and thereby subject its transportation to the provisions of this act.

(4) Employ personnel and purchase or lease equipment, office space and materials needed to carry out the provisions of this act.

(5) *Employ personnel to inspect vehicles and investigate all other matters relating to the safe transportation of hazardous substances.*

Section 2. The act is amended by adding a section to read:

Section 6.1. Posting of Information.—Any vehicle transporting hazardous substances shall have posted thereon the nature of the hazardous substance being transported. The board shall prescribe the size and type of notice to be posted.

Section 3. Section 7 of the act is amended to read:

Section 7. Correspondence with Federal Requirements.—In the case of any person who is subject to [jurisdiction of the Interstate Commerce Commission] *Federal regulations pertaining to the transportation of hazardous substances*, the board's regulations shall, [and in any other case the board's regulations may,] *and in any other case may*, as far as practicable, correspond with [the regulations of such commission] *such Federal regulations*. It is the purpose of this section to avoid, as far as practicable, the imposition of [dual or] conflicting regulations upon persons who operate vehicles subject to [Interstate Commerce Commission jurisdiction in this Commonwealth] *Federal regulations pertaining to the transportation of hazardous substances*. It is also the purpose of this section to empower, but not require, the board to prescribe, for persons not subject to [Interstate Commerce Commission jurisdiction,] *said Federal regulations*, regulations identical with or similar to those [of the Interstate Commerce Commission and the Atomic Energy Commission] *Federal regulations pertaining to the transportation of hazardous substances*.

Section 4. Sections 8 and 9 of the act are repealed.

Section 5. Section 10 of the act, amended May 6, 1970 (P.L.344, No.111), is amended to read:

Section 10. Enforcement of Regulations.—[The board shall, with the approval of the Governor, assign among the several departments and commissions represented by its ex officio members the duty of enforcing its regulations and the several parts thereof.] *The enforcement of regulations or any parts thereof may be assigned by the board to one or more of the several departments and commissions represented by its ex officio members as the board sees fit. Such delegation shall be accomplished by resolution duly adopted by a majority of the board present at the meeting.*

Section 6. Section 11 of the act is amended to read:

Section 11. Injunction and Other Remedies.—(a) The Attorney General, upon request of the board or upon his own motion, may proceed in the name of the Commonwealth, by injunction, mandamus, quo warranto, or other appropriate remedy at law or in equity, *criminal or civil*,

to restrain violations of the board's regulations or orders or to enforce obedience thereto. Such proceedings may be brought in [~~the Court of Common Pleas of Dauphin County~~] *the Commonwealth Court* or in the court of common pleas of the county in which the violation occurred or in which the violator may be found, or in any district court of the United States, as the Attorney General shall deem appropriate *and which court shall have jurisdiction.*

(b) Whenever the Attorney General shall have reason to believe that a person has violated any regulation or order of the board but is outside the jurisdiction of this Commonwealth, the Attorney General may petition [~~the Court of Common Pleas of Dauphin County~~] *the Commonwealth Court* for an order authorizing the seizure and confiscation of such person's vehicles or hazardous substances wherever and whenever they may be found in the Commonwealth. The court may thereupon require the Attorney General to send a copy of such petition to the person by registered mail or such other means as the court deems appropriate, together with a notice that unless such person answers the petition and submits himself to the jurisdiction of the Commonwealth for the purpose of prosecution under this act within twenty days after receipt of such notice, the petition will be granted. If the person answers the petition and submits himself to the jurisdiction of the Commonwealth as aforesaid, the court shall deny the petition; otherwise, the court shall issue the order as prayed for in the petition.

Section 7. Section 12 of the act, reenacted May 26, 1972 (P.L.307, No.82), is amended to read:

Section 12. Penalties.—(a) Any person who, as operator of a vehicle, shall [~~knowingly or wilfully~~] violate any regulation of the board pertaining to routing, parking or other act in the actual operation of a vehicle, shall be guilty of a misdemeanor, and, upon conviction thereof in the court of [~~quarter sessions~~] *common pleas* of the county in which the offense occurred, shall be sentenced to pay a fine of not less than [~~twenty-five dollars (\$25)~~] *one hundred dollars (\$100)* nor more than five hundred dollars (\$500), or to undergo imprisonment in the county jail for not more than thirty (30) days, or both. Any such person, having been convicted of a first offense under this subsection, who shall at a later time commit a second or subsequent offense and be convicted thereof, shall be sentenced to pay a fine as aforesaid, or to undergo imprisonment in the county jail for not less than sixty (60) days nor more than one (1) year, or both.

(b) Any person who, as shipper, carrier, consignee or user of a hazardous substance, shall [~~knowingly or wilfully~~] violate any regulation of the board, shall be guilty of a misdemeanor, and, upon conviction thereof in the court of [~~quarter sessions~~] *common pleas* of the county in which the offense occurred, shall be sentenced to pay a fine of not less than [~~one hundred dollars (\$100)~~] *five hundred dollars (\$500)* nor more than five thousand dollars (\$5000), or to undergo imprisonment in the county jail for

not more than sixty (60) days, or both. Any person, having been convicted of a first offense under this subsection, who shall at a later time commit a second or subsequent offense and be convicted thereof, shall be sentenced to pay a fine as aforesaid, or to undergo imprisonment in the county jail for not less than sixty (60) days nor more than one (1) year, or both. If such person be a firm, partnership, joint venture or association, then the member thereof responsible for the violation, or if such person be a corporation, then the officer, agent or employe thereof responsible for the violation, shall have the sentence of imprisonment, herein prescribed, imposed upon him.

Section 8. This act shall take effect in 60 days.

APPROVED—The 23rd day of June, A. D. 1978.

MILTON J. SHAPP

Signed into law
July 20 1979

SENATE AMENDED

PRIOR PRINTER'S NOS. 55, 1066, 1620

Printer's No. 1967

THE GENERAL ASSEMBLY OF PENNSYLVANIA

HOUSE BILL

No. 53

Session of
1979

INTRODUCED BY MESSRS. B. F. O'BRIEN, J. L. WRIGHT, BURNS,
D. S. HAYES, COHEN, REED AND MCCALL, FEBRUARY 5, 1979

AS AMENDED ON SECOND CONSIDERATION, IN SENATE, JULY 10, 1979

AN ACT

1 To enhance the Commonwealth's environmental radiation
2 surveillance and emergency radiation response capabilities by
3 granting certain powers to the Department of Environmental
4 Resources. ~~and making an appropriation.~~ ←

5 The General Asserby of the Commonwealth of Pennsylvania

6 hereby enacts as follows:

7 Section 1. Short title.

8 This act shall be known and may be cited as the

9 "Environmental Radiation Protection Act."

10 Section 2. Findings and declaration of policy.

11 The General Assembly finds that there exist within the
12 Commonwealth of Pennsylvania several nuclear power plants in
13 operation or under construction and other major facilities
14 utilizing large quantities of radioactive materials.
15 Pennsylvania highways and rail systems are used with increasing
16 frequency to transport spent reactor fuel and other sources of
17 radioactive material. In order to minimize the effects of
18 exposure to radiation from both routine and accidental releases
19 of radioactive material to the environment, the General Assembly

1 finds it necessary and desirable to upgrade the present programs
2 of environmental radiation monitoring and emergency radiation
3 response now existing in the Department of Environmental
4 Resources and to provide additional funding for such activities.
5 Section 3. Environmental radiation monitoring.

6 The Department of Environmental Resources shall have the
7 power, and its duty shall be, to carry out a comprehensive
8 program of monitoring levels of radioactivity in Pennsylvania's
9 environment including all appropriate tests for alpha, beta and
10 gamma levels in all appropriate media. Sites to be monitored
11 shall include, but not be limited to, nuclear power reactor
12 sites and other sites with a substantial potential for
13 environmental radioactivity contamination.

14 Section 4. Radiation emergency response.

15 (a) The Department of Environmental Resources shall assist
16 the Pennsylvania Emergency Management Agency in preparing a
17 radiation emergency response plan in a manner consistent with
18 the provisions of 35 Pa.C.S. § 7101 et seq. (relating to
19 Emergency Management Services).

20 (b) The department shall also make available technical staff
21 and equipment to determine levels of radiation in the
22 environment and recommend emergency measures to protect the
23 public from exposure to such radiation in the event of an
24 accident at a nuclear power plant, a transportation accident
25 involving radioactive materials, or any other condition or
26 occurrence which necessitates radiation emergency assistance at
27 any location in the Commonwealth.

28 Section 5. Annual report.

29 The department shall prepare a report on environmental
30 radiation levels, as determined by the monitoring program, on at

1 least an annual basis. Copies of the report shall be submitted
2 to the President pro tempore of the Senate and the Speaker of
3 the House of Representatives of the General Assembly and shall
4 be made available to the general public. The report shall also
5 contain a description and analysis of any emergency responses or
6 other actions taken by the department under this act and any
7 other information about environmental radiation or radiation
8 emergencies which the department deems to be of sufficient
9 importance to call to the attention of the General Assembly and
10 the citizens of the Commonwealth.

11 Section 6. Notification.

12 Whenever the Department of Environmental Resources during the
13 course of its duties under this act, determines that levels of
14 radiation exceed the normal range of radioactivity in that area,
15 the department shall immediately notify the Governor, the
16 Nuclear Regulatory Commission and also report its findings to
17 the public, and it shall subsequently submit a detailed report
18 on the occurrence to both the Governor and the Nuclear
19 Regulatory Commission and make such report public.

20 ~~Section 7. Appropriation.~~ ←

21 ~~There is hereby appropriated the sum of \$300,000 for the~~
22 ~~fiscal year 1979-1980 from the General Fund of the Commonwealth.~~
23 ~~All such moneys shall be used to upgrade the present~~
24 ~~environmental radiation monitoring and emergency response~~
25 ~~programs in the department.~~

26 Section 8- 7. Effective date. ←

27 This act shall take effect immediately.

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No. 1980-97

AN ACT

HB 1840

Providing for the planning and regulation of solid waste storage, collection, transportation, processing, treatment, and disposal; requiring municipalities to submit plans for municipal waste management systems in their jurisdictions; authorizing grants to municipalities; providing regulation of the management of municipal, residual and hazardous waste; requiring permits for operating hazardous waste and solid waste storage, processing, treatment, and disposal facilities; and licenses for transportation of hazardous waste; imposing duties on persons and municipalities; granting powers to municipalities; authorizing the Environmental Quality Board and the Department of Environmental Resources to adopt rules, regulations, standards and procedures; granting powers to and imposing duties upon county health departments; providing remedies; prescribing penalties; and establishing a fund.

TABLE OF CONTENTS

Article I. General Provisions

- Section 101. Short title.
- Section 102. Legislative finding; declaration of policy.
- Section 103. Definitions.
- Section 104. Powers and duties of the department.
- Section 105. Powers and duties of the Environmental Quality Board.
- Section 106. Powers and duties of county health departments; limitation.
- Section 107. Legislative oversight.
- Section 108. Powers and duties of the Environmental Hearing Board.

Article II. Municipal Waste

- Section 201. Submission of plans; permits.
- Section 202. Powers and duties of municipalities.
- Section 203. Grants authorized.

Article III. Residual Waste

- Section 301. Management of residual waste.
- Section 302. Disposal, processing and storage of residual waste.
- Section 303. Transportation of residual waste.

Article IV. Hazardous Waste

- Section 401. Management of hazardous waste.
- Section 402. Listing of hazardous waste.
- Section 403. Generation, transportation, storage, treatment and disposal of hazardous waste.
- Section 404. Transition scheme.
- Section 405. Conveyance of disposal site property.

Article V. Applications and Permits

- Section 501. Permits and licenses required; transition scheme; reporting requirements.
- Section 502. Permit and license application requirements.
- Section 503. Granting, denying, renewing, modifying, revoking and suspending permits and licenses.
- Section 504. Approval by governing body.
- Section 505. Bonds.
- Section 506. Financial responsibility.
- Section 507. Siting of hazardous waste treatment and disposal facilities.

Article VI. Enforcement and Remedies

- Section 601. Public nuisances.
- Section 602. Enforcement orders.
- Section 603. Duty to comply with orders of the department.
- Section 604. Restraining violations.
- Section 605. Civil penalties.
- Section 606. Criminal penalties.
- Section 607. Existing rights and remedies preserved; cumulative remedies authorized.
- Section 608. Production of materials; recordkeeping requirements; rights of entry.
- Section 609. Search warrants.
- Section 610. Unlawful conduct.
- Section 611. Presumption of law for civil and administrative proceedings.
- Section 612. Collection of fines and penalties.
- Section 613. Recovery of costs of abatement.
- Section 614. Forfeiture of contraband.
- Section 615. Right of citizen to intervene in proceedings.
- Section 616. Notice of proposed settlement.
- Section 617. Limitation on action.

Article VII. Solid Waste Abatement Fund

- Section 701. Solid Waste Abatement Fund.

Article VIII. Leasing Real Estate

- Section 801. No prohibition against leasing real estate.

Article IX. Liberal Construction

- Section 901. Construction of act.

Article X. Repealer; Effective Date

- Section 1001. Repeal.
- Section 1002. Severability.
- Section 1003. Effective date.

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

**ARTICLE I
GENERAL PROVISIONS**

Section 101. Short title.

This act shall be known and may be cited as the "Solid Waste Management Act."

Section 102. Legislative finding; declaration of policy.

The Legislature hereby determines, declares and finds that, since improper and inadequate solid waste practices create public health hazards, environmental pollution, and economic loss, and cause irreparable harm to the public health, safety and welfare, it is the purpose of this act to:

(1) establish and maintain a cooperative State and local program of planning and technical and financial assistance for comprehensive solid waste management;

(2) encourage the development of resource recovery as a means of managing solid waste, conserving resources, and supplying energy;

(3) require permits for the operation of municipal and residual waste processing and disposal systems, licenses for the transportation of hazardous waste and permits for hazardous waste storage, treatment, and disposal;

(4) protect the public health, safety and welfare from the short and long term dangers of transportation, processing, treatment, storage, and disposal of all wastes;

(5) provide a flexible and effective means to implement and enforce the provisions of this act;

(6) establish the Pennsylvania Hazardous Waste Facilities Plan, which plan shall address the present and future needs for the treatment and disposal of hazardous waste in this Commonwealth;

(7) develop an inventory of the nature and quantity of hazardous waste generated within this Commonwealth or disposed of within this Commonwealth, wherever generated;

(8) project the nature and quantity of hazardous waste that will be generated within this Commonwealth in the next 20 years or will be disposed of within this Commonwealth, wherever generated;

(9) provide a mechanism to establish hazardous waste facility sites;

(10) implement Article I, section 27 of the Pennsylvania Constitution; and

(11) utilize, wherever feasible, the capabilities of private enterprise in accomplishing the desired objectives of an effective, comprehensive solid waste management program.

Section 103. Definitions.

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

"Abatement." The restoration, reclamation, recovery, etc., of a natural resource adversely affected by the activity of a person, permittee or municipality.

"Agricultural waste." Poultry and livestock manure, or residual materials in liquid or solid form generated in the production and marketing of poultry, livestock, fur bearing animals, and their products, provided that such agricultural waste is not hazardous. The term includes the residual materials generated in producing, harvesting, and marketing of all agronomic, horticultural, and silvicultural crops or commodities grown on what are usually recognized and accepted as farms, forests, or other agricultural lands.

"Captive facilities." Facilities which are located upon lands owned by a generator of hazardous waste and which are operated to provide for the treatment or disposal solely of such generator's hazardous waste.

"Commercial establishment." Any establishment engaged in nonmanufacturing or nonprocessing business, including, but not limited to, stores, markets, office buildings, restaurants, shopping centers and theaters.

"Commonwealth." The Commonwealth of Pennsylvania.

"Department." The Department of Environmental Resources of the Commonwealth of Pennsylvania and its authorized representatives.

"Disposal." The incineration, deposition, injection, dumping, spilling, leaking, or placing of solid waste into or on the land or water in a manner that the solid waste or a constituent of the solid waste enters the environment, is emitted into the air or is discharged to the waters of the Commonwealth.

"Food processing waste." Residual materials in liquid or solid form generated in the slaughtering of poultry and livestock, or in processing and converting fish, seafood, milk, meat, and eggs to food products; it also means residual materials generated in the processing, converting, or manufacturing of fruits, vegetables, crops and other commodities into marketable food items.

"Food processing wastes used for agricultural purposes." The use of food processing wastes in normal farming operations as defined in this section.

"Hazardous waste." Any garbage, refuse, sludge from an industrial or other waste water treatment plant, sludge from a water supply treatment plant, or air pollution control facility and other discarded material including solid, liquid, semisolid or contained gaseous material resulting from municipal, commercial, industrial, institutional, mining, or agricultural operations, and from community activities, or any combination of the above, (but does not include solid or dissolved

material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under § 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880) or source, special nuclear, or by-product material as defined by the U.S. Atomic Energy Act of 1954, as amended (68 Stat. 923)), which because of its quantity, concentration, or physical, chemical, or infectious characteristics may:

(1) cause or significantly contribute to an increase in mortality or an increase in morbidity in either an individual or the total population; or

(2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed.

The term "hazardous waste" shall not include coal refuse as defined in the act of September 24, 1968 (P.L.1040, No.318), known as the "Coal Refuse Disposal Control Act." "Hazardous waste" shall not include treatment sludges from coal mine drainage treatment plants, disposal of which is being carried on pursuant to and in compliance with a valid permit issued pursuant to the act of June 22, 1937 (P.L.1987, No.394), known as "The Clean Streams Law."

"Industrial establishment." Any establishment engaged in manufacturing or processing, including, but not limited to factories, foundries, mills, processing plants, refineries, mines and slaughterhouses.

"Institutional establishment." Any establishment engaged in service, including, but not limited to, hospitals, nursing homes, orphanages, schools and universities.

"Management." The entire process, or any part thereof, of storage, collection, transportation, processing, treatment, and disposal of solid wastes by any person engaging in such process.

"Manifest system." A written record identifying the quantity, composition, origin, routing, and destination of hazardous waste from the point of generation to the point of disposal, treatment or storage.

"Mine." Any deep or surface mine, whether active, inactive or abandoned.

"Mining." The process of the extraction of minerals from the earth or from waste or stockpiles or from pits or banks.

"Municipality." A city, borough, incorporated town, township or county or any authority created by any of the foregoing.

"Municipal waste." Any garbage, refuse, industrial lunchroom or office waste and other material including solid, liquid, semisolid or contained gaseous material resulting from operation of residential, municipal, commercial or institutional establishments and from community activities and any sludge not meeting the definition of residual or hazardous waste hereunder from a municipal, commercial or institutional water supply treatment plant, waste water treatment plant, or air pollution control facility.

"Normal farming operations." The customary and generally accepted activities, practices and procedures that farms adopt, use, or engage in year after year in the production and preparation for market of poultry, livestock, and their products; and in the production, harvesting and preparation for market of agricultural, agronomic, horticultural, silvicultural and aquicultural crops and commodities; provided that such operations are conducted in compliance with applicable laws, and provided that the use or disposal of these materials will not pollute the air, water, or other natural resources of the Commonwealth. It includes the storage and utilization of agricultural and food process wastes for animal feed, and includes the agricultural utilization of septic tank cleanings and sewage sludges which are generated off-site. It includes the management, collection, storage, transportation, use or disposal of manure, other agricultural waste and food processing waste on land where such materials will improve the condition of the soil, the growth of crops, or in the restoration of the land for the same purposes.

"Person." Any individual, partnership, corporation, association, institution, cooperative enterprise, municipal authority, Federal Government or agency, State institution and agency (including, but not limited to, the Department of General Services and the State Public School Building Authority), or any other legal entity whatsoever which is recognized by law as the subject of rights and duties. In any provisions of this act prescribing a fine, imprisonment or penalty, or any combination of the foregoing, the term "person" shall include the officers and directors of any corporation or other legal entity having officers and directors.

"Point sources subject to permits under § 402 of the Federal Water Pollution Control Act." Point source discharges for which valid and current permits have been issued under § 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880) to the extent that such discharges are authorized by said permits.

"Pollution." Contamination of any air, water, land or other natural resources of the Commonwealth such as will create or is likely to create a public nuisance or to render such air, water, land or other natural resources harmful, detrimental or injurious to public health, safety or welfare, or to domestic, municipal, commercial, industrial, agricultural, recreational or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other life.

"Processing." Any technology used for the purpose of reducing the volume or bulk of municipal or residual waste or any technology used to convert part or all of such waste materials for off-site reuse. Processing facilities include but are not limited to transfer facilities, composting facilities, and resource recovery facilities.

"Residual waste." Any garbage, refuse, other discarded material or other waste including solid, liquid, semisolid, or contained gaseous materials resulting from industrial, mining and agricultural operations

and any sludge from an industrial, mining or agricultural water supply treatment facility, waste water treatment facility or air pollution control facility, provided that it is not hazardous. The term "residual waste" shall not include coal refuse as defined in the "Coal Refuse Disposal Control Act." "Residual waste" shall not include treatment sludges from coal mine drainage treatment plants, disposal of which is being carried on pursuant to and in compliance with a valid permit issued pursuant to "The Clean Streams Law."

"Secretary." The Secretary of the Department of Environmental Resources of the Commonwealth of Pennsylvania.

"Solid waste." Any waste, including but not limited to, municipal, residual or hazardous wastes, including solid, liquid, semisolid or contained gaseous materials.

"Storage." The containment of any waste on a temporary basis in such a manner as not to constitute disposal of such waste. It shall be presumed that the containment of any waste in excess of one year constitutes disposal. This presumption can be overcome by clear and convincing evidence to the contrary.

"Transportation." The off-site removal of any solid waste at any time after generation.

"Treatment." Any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any waste so as to neutralize such waste or so as to render such waste nonhazardous, safer for transport, suitable for recovery, suitable for storage, or reduced in volume. Such term includes any activity or processing designed to change the physical form or chemical composition of waste so as to render it neutral or nonhazardous.

Section 104. Powers and duties of the department.

The department in consultation with the Department of Health regarding matters of public health significance shall have the power and its duty shall be to:

- (1) administer the solid waste management program pursuant to the provisions of this act;
- (2) cooperate with appropriate Federal, State, interstate and local units of government and with appropriate private organizations in carrying out its duties under this act;
- (3) develop a Statewide solid waste management plan in cooperation with local governments, the Department of Community Affairs, the Department of Commerce and the State Planning Board; emphasis shall be given to area-wide planning;
- (4) provide technical assistance to municipalities including the training of personnel;
- (5) initiate, conduct, and support research, demonstration projects, and investigations, and coordinate all State agency research programs, pertaining to solid waste management systems;

(6) regulate the storage, collection, transportation, processing, treatment and disposal of solid waste;

(7) issue permits, licenses and orders, and specify the terms and conditions thereof, and conduct inspections and abate public nuisances to implement the purposes and provisions of this act and the rules, regulations and standards adopted pursuant to this act;

(8) require the payment of a fee according to a standard uniform schedule of permit and license fees for the processing of any permit or license application. Permit and license fees shall be in an amount sufficient to cover the aggregate cost of reviewing all applications, acting on all applications, processing all renewals, and administering all the terms and conditions of all permits and all provisions of this act relating thereto;

(9) serve as the agency of the Commonwealth for the receipt of moneys from the Federal Government or other public agencies or private agencies and expend such moneys for studies and research with respect to, and for the enforcement and administration of, the purposes and provisions of this act and the rules and regulations promulgated thereunder;

(10) institute in a court of competent jurisdiction, proceedings against any person or municipality to compel compliance with the provisions of this act, any rule or regulation issued thereunder, any order of the department, or the terms and conditions of any permit;

(11) institute prosecutions against any person or municipality under this act;

(12) appoint such advisory committees as the secretary deems necessary and proper to assist the department in carrying out the provisions of this act. The secretary is authorized to pay reasonable and necessary expenses incurred by the members of such advisory committees in carrying out their functions;

(13) do any and all other acts and things not inconsistent with any provision of this act, which it may deem necessary or proper for the effective enforcement of this act and the rules or regulations which may be promulgated hereunder after consulting with the Department of Health regarding matters of public health significance;

(14) develop, prepare and submit to the Environmental Quality Board, within two years after the effective date of this act, its proposed Pennsylvania Hazardous Waste Facilities Plan;

(15) develop, prepare and publish in the Pennsylvania Bulletin six months after the effective date of this act its preliminary environmental, social and economic criteria and standards for siting hazardous waste treatment and disposal facilities;

(16) require the payment of such annual inspection fees and perform such inspections of hazardous waste treatment and disposal facilities as are provided for in the Environmental Quality Board guidelines adopted pursuant to section 105(e). This provision shall

not be construed to limit or restrict the department's inspection powers as elsewhere set forth in this act; and

(17) administer funds collected by the United States Government and granted to Pennsylvania for the purpose of closing, maintaining or monitoring abandoned or closed hazardous waste storage, treatment or disposal sites and for the purpose of action to abate or prevent pollution at such sites. If Congress has not authorized the collection of such funds within one year after the effective date of this act, or if the department finds that the funding program authorized is inadequate, the department shall transmit to the General Assembly within 15 months after the effective date of this act a proposal for the establishment of a fund in Pennsylvania comprised of surcharges collected from users of hazardous waste storage, treatment and disposal facilities excluding captive facilities in the Commonwealth. Such fund shall be proposed for the purpose of closing, maintaining or monitoring hazardous waste storage, treatment or disposal sites excluding captive facilities which have been abandoned or which have been closed for at least 20 years, and for the purpose of taking action to abate or prevent pollution at such closed or abandoned sites.

Section 105. Powers and duties of the Environmental Quality Board.

(a) The Environmental Quality Board shall have the power and its duty shall be to adopt the rules and regulations of the department to accomplish the purposes and to carry out the provisions of this act, including but not limited to the establishment of rules and regulations relating to the protection of safety, health, welfare and property of the public and the air, water and other natural resources of the Commonwealth.

(b) The Environmental Quality Board shall, by regulation, set the term of expiration of permits and licenses appropriate to the category of the permit or license.

(c) The Environmental Quality Board shall have the power and its duty shall be to adopt rules and regulations and standards to provide for the coordination of administration and enforcement of this act between the Department of Environmental Resources and county health departments where they exist.

(d) The Environmental Quality Board shall have the power and its duty shall be to adopt a Pennsylvania Hazardous Waste Facilities Plan.

(e) The Environmental Quality Board shall have the power and its duty shall be to adopt guidelines which shall:

(1) Provide for the necessary inspection of hazardous waste treatment and disposal facilities considering the degree of hazard and the quantity of wastes handled.

(2) Establish an inspection fee based on the frequency of inspection provided for in paragraph (1).

(3) Encourage cooperative agreements between local communities and the hazardous waste facility operators to minimize local concerns regarding the operation of the facility.

(f) In addition to exercising its powers and duties under section 1920-A of the act of April 9, 1929 (P.L.177, No.175), known as "The Administrative Code of 1929," the Environmental Quality Board shall have the power and its duty shall be to assist in the implementation of the Pennsylvania Hazardous Waste Facilities Plan through the issuance of certificates of public necessity for the establishment of hazardous waste treatment or disposal facilities. Any person prior to applying for a certificate of necessity shall have obtained all permits from the department of the Federal agency authorized to issue such permits in the Commonwealth and shall have implemented all impact assessments and public participation programs. In issuing certificates of public necessity the Environmental Quality Board shall:

(1) Prescribe the form and content of applications for a certificate of public necessity to operate a hazardous waste treatment or disposal facility.

(2) Require the payment of a fee for the processing of any application for a certificate of public necessity. Fees shall be in an amount sufficient to cover the aggregate cost of reviewing the application and acting on it.

(3) Issue such certificates of public necessity for the operation of hazardous waste treatment and disposal facilities as are warranted by:

(i) the extent to which the facility is in conformance with the Pennsylvania Hazardous Waste Facilities Plan;

(ii) the impact of the proposed facility on adjacent populated areas and areas through which wastes are transported to such facility;

(iii) the impact on the borough, township, town or city in which the facility is to be located in terms of health, safety, cost and consistency with local planning; and

(iv) the extent to which the proposed facility has been the subject of a public participation program in which citizens have had a meaningful opportunity to participate in evaluation of alternate sites or technologies, development of siting criteria, socioeconomic assessment, and all other phases of the site selection process.

(4) Provide the public with opportunities to comment upon the application for certificate of public necessity and consider the comments submitted.

(5) Accept applications for certificates of public necessity only from persons or municipalities which have obtained the necessary solid waste treatment or disposal permits from the department or from the Federal agency authorized to issue such permits in the Commonwealth.

(g) In carrying out the powers and duties set forth in this subsection, the board may consult with any person and hold any hearings which it deems necessary and proper to enable it to render a decision to issue or deny the certificate of public necessity and in any such hearing the board shall be represented by a minimum of three members.

(h) Issuance of a certificate of public necessity under this section shall suspend and supersede any and all local laws which would preclude or prohibit the establishment of a hazardous waste treatment or disposal facility at said site, including zoning ordinances. The suspension and supersession is explicitly extended to any person to whom such certificates issued for the purpose of hazardous waste treatment or disposal, and to the successors and assigns of such person.

(i) During all deliberations of the board a representative of the county and township, borough or municipality affected will be invited to participate.

(j) Regulations promulgated under this section concerning the generation, transportation, storage, treatment and disposal of hazardous wastes may, to the extent consistent with Federal regulations promulgated under the Resource Conservation and Recovery Act, establish classes of hazardous wastes taking into account the relative availability to the environment of the hazardous constituents in waste materials and the degree of hazard thereby presented.

Section 106. Powers and duties of county health departments; limitation.

(a) The county health department where it exists of each of the counties of the Commonwealth may elect to administer and enforce any of the provisions of this act together with the department in accordance with the established policies, procedures, guidelines, standards and rules and regulations of the department. Where this program activity exceeds the minimum program requirements adopted by the Advisory Health Board under the provisions of the act of August 24, 1951 (P.L.1304, No.315), known as the "Local Health Administration Law," such activity may be funded through contractual agreements with the department. The department is authorized to provide funds to county health departments from funds appropriated for this purpose by the General Assembly.

(b) Notwithstanding the grant of powers in subsection (a), in any case where administration and enforcement of this act by a county health department shall conflict with administration and enforcement by the Department of Environmental Resources, administration and enforcement by the Department of Environmental Resources shall take precedence over administration and enforcement by a county health department.

Section 107. Legislative oversight.

At least 30 days prior to consideration by the Environmental Quality Board of draft regulations for proposed rule making, the department shall submit such draft regulations to the Senate Environmental Resources and House Conservation Committees of the General Assembly for their review and comment.

Section 108. Powers and duties of the Environmental Hearing Board.

In addition to exercising its powers and duties to hold hearings and issue adjudications or any order, permit, license or decision of the department according to the provisions of "The Administrative Code of 1929" and the Administrative Agency Law, the Environmental Hearing Board shall have the power and its duty shall be to hold, if requested to do so by any party to a duly perfected appeal of an oral order under section 602(d), to hold a hearing on any duly filed petition for supersedeas of such order within six business days of the receipt of such request by the board.

**ARTICLE II
MUNICIPAL WASTE**

Section 201. Submission of plans; permits.

(a) No person or municipality shall store, collect, transport, process, or dispose of municipal waste within this Commonwealth unless such storage, collection, transportation, processing or disposal is authorized by the rules and regulations of the department and no person or municipality shall own or operate a municipal waste processing or disposal facility unless such person or municipality has first obtained a permit for such facility from the department.

(b) Each municipality with a population density of 300 or more inhabitants per square mile and each municipality with a population density of less than 300 wherein the department has identified a waste problem or a potential waste problem shall submit to the department an officially adopted plan for a municipal waste management system or systems serving the areas within its jurisdiction within two years of the effective date of this section, and shall, from time to time, submit such revisions of said plan as it deems necessary or as the department may require. Nothing in this subsection shall prohibit such a municipality from requesting the county in which it is located, and the county or an agency it designates from agreeing, to perform this function in its behalf. Whenever a county prepares and adopts such a solid waste management plan and revisions thereto, it shall provide for the participation and review of all affected municipalities. Whenever a city, borough, incorporated town or township prepares its own solid waste management plan or revisions thereto, it shall provide for review by the county prior to adoption. All solid waste management plans and subsequent revisions shall become official upon formal adoption by the governing body of the municipality and approval and certification by the department.

(c) When more than one municipality has authority over an existing or proposed municipal waste management system or systems or any part thereof, the required plan or any revisions thereof shall be submitted jointly by the municipalities concerned or by an authority or county or by one or more of the municipalities with the concurrence of the affected municipalities.

(d) Every plan, and any revision thereof, shall delineate areas where municipal waste management systems are in existence and areas where the municipal waste management systems are planned to be available within a ten-year period.

(e) Every plan shall:

(1) Provide for the orderly extension of municipal waste management systems in a manner consistent with the needs and plans of the whole area, and in a manner which will not create a risk of pollution of the water, air, land or other natural resources of the Commonwealth, nor constitute a public nuisance, and shall otherwise provide for the safe and sanitary disposal of municipal waste.

(2) Take into consideration all aspects of planning, zoning, population estimates, engineering and economics so as to delineate with precision those portions of the area which may reasonably be expected to be served by a municipal waste management system within ten years of the submission of the plan, as well as those areas where it is not reasonably foreseeable that a municipal waste management system will be needed within ten years of the submission of the plan.

(3) Take into consideration any existing State plan affecting the development, use and protection of air, water, land or other natural resources.

(4) Set forth a time schedule and proposed methods for financing the development, construction and operation of the planned municipal waste management systems, together with the estimated cost thereof.

(5) Include a provision for periodic revision of the plan.

(6) Include such other information as the department shall require.

(f) The plan shall be reviewed by appropriate official planning agencies within a municipality, including a planning agency with area-wide jurisdiction, if one exists, the county, county planning commission, and county health department for consistency with programs of planning if one exists, of planning for the area, and all such reviews shall be transmitted to the department with the proper plan. In the event a review of any plan has not been transmitted by such planning agency or commission within 90 days of its submission to such agency or commission, then such agency or commission shall be deemed to have waived its right to review the plan, and the department shall then review the plan for approval in the absence of the reviews of such planning agency or commission.

(g) The department is hereby authorized to approve or disapprove plans for municipal waste management systems submitted in accordance with this act. Any plan which has not been disapproved within 120 days of the date of its submission shall be deemed an approved plan, unless notice of pending investigation is given to the applicant by the department before expiration of the 120-day period.

(h) The department is hereby authorized to approve or disapprove revisions of plans for municipal waste management systems submitted in accordance with this act.

(i) The department is authorized to provide technical assistance to counties, municipalities and authorities in coordinating plans for municipal waste management systems required by this act, including revisions of such plans.

(j) The department may establish priorities for the time within which plans shall be submitted and may, in appropriate cases, require the submission of joint plans.

(k) The department may issue any order or may institute any appropriate legal or equitable action to compel municipalities to submit plans in accordance with this act and the rules, regulations and procedures of the department.

(l) The department may order, or obtain an injunction requiring municipalities to implement the plans which they have submitted, in accordance with this act and the rules, regulations and procedures of the department.

Section 202. Powers and duties of municipalities.

(a) Each municipality shall be responsible for the collection, transportation, processing, and disposal of municipal waste which is generated or present within its boundaries and shall be responsible for implementing its approved plan as it relates to the storage, collection, transportation, processing, and disposal of its municipal wastes.

(b) In carrying out its responsibilities, any such municipality may adopt ordinances, regulations and standards for the storage and collection of municipal wastes which shall be not less stringent than, and not in violation of, the rules, regulations, standards, and procedures of the department for the storage, collection, transportation, processing and disposal of municipal waste. Any ordinances, regulations and standards so adopted shall be made a part of the plan required in section 201.

(c) Municipalities may contract with any person or other municipality to carry out their responsibilities for the collection, transportation, processing and disposal of municipal wastes, provided that the ultimate disposal is known to be at a site permitted to accept such waste, and provided, further, that no municipality may delegate the duties imposed by this section. In cases where the planning agency determines and the governing body approves that it is in the public interest for municipal wastes management and disposal to be a public function, the plan shall provide for the mechanisms. Municipalities are

authorized to require by ordinance that all municipal wastes generated within their jurisdiction shall be disposed at a designated facility.
Section 203. Grants authorized.

(a) The department is authorized to assist municipalities by administering grants to pay 50% of the costs of preparing official plans for municipal waste management systems in accordance with the requirements of this act and the rules, regulations, and standards adopted pursuant to this act, and for carrying out related studies, surveys, investigations, inquiries, research and analyses.

(b) All grants shall be made from funds appropriated for this purpose by the General Assembly.

ARTICLE III RESIDUAL WASTE

Section 301. Management of residual waste.

No person or municipality shall store, transport, process, or dispose of residual waste within this Commonwealth unless such storage, or transportation, is consistent with or such processing or disposal is authorized by the rules and regulations of the department and no person or municipality shall own or operate a residual waste processing or disposal facility unless such person or municipality has first obtained a permit for such facility from the department.

Section 302. Disposal, processing and storage of residual waste.

(a) It shall be unlawful for any person or municipality to dispose, process, store, or permit the disposal, processing or storage of any residual waste in a manner which is contrary to the rules and regulations of the department or to any permit or to the terms or conditions of any permit or any order issued by the department.

(b) It shall be unlawful for any person or municipality who stores, processes, or disposes of residual waste to fail to:

(1) Use such methods and facilities as are necessary to control leachate, runoff, discharges and emissions from residual waste in accordance with department regulations.

(2) Use such methods and facilities as are necessary to prevent the harmful or hazardous mixing of wastes.

(3) Design, construct, operate and maintain facilities and areas in a manner which shall not adversely effect or endanger public health, safety and welfare or the environment or cause a public nuisance.

Section 303. Transportation of residual waste.

(a) It shall be unlawful for any person or municipality to transport or permit the transportation of residual waste:

(1) to any processing or disposal facility within the Commonwealth unless such facility holds a permit issued by the department to accept such waste; or

(2) in a manner which is contrary to the rules and regulations of the department or any permit or the conditions of any permit or any order issued by the department.

(b) It shall be unlawful for any person or municipality who transports residual waste to fail to:

(1) use such methods, equipment and facilities as are necessary to transport residual waste in a manner which shall not adversely affect or endanger the environment or the public health, welfare and safety; and

(2) take immediate steps to contain and clean up spills or accidental discharges of such waste, and notify the department, pursuant to department regulations, of all spills or accidental discharges which occur on public highways or public areas or which may enter the waters of the Commonwealth as defined by the act of June 22, 1937 (P.L.1987, No.394), known as "The Clean Streams Law," or any other spill which is governed by any notification requirements of the department.

ARTICLE IV HAZARDOUS WASTE

Section 401. Management of hazardous waste.

(a) No person or municipality shall store, transport, treat, or dispose of hazardous waste within this Commonwealth unless such storage, transportation, treatment, or disposal is authorized by the rules and regulations of the department; no person or municipality shall own or operate a hazardous waste storage, treatment or disposal facility unless such person or municipality has first obtained a permit for the storage, treatment and disposal of hazardous waste from the department; and, no person or municipality shall transport hazardous waste within the Commonwealth unless such person or municipality has first obtained a license for the transportation of hazardous waste from the department.

(b) The storage, transportation, treatment, and disposal of hazardous waste are hereby declared to be activities, which subject the person carrying on those activities to liability for harm although he has exercised utmost care to prevent harm, regardless whether such activities were conducted prior to the enactment hereof.

Section 402. Listing of hazardous waste.

The Environmental Quality Board shall establish rules and regulations identifying the characteristics of hazardous wastes and listing particular hazardous wastes which shall be subject to the provisions of this act. The list promulgated shall in no event prevent the department from regulating other wastes, which, although not listed, the department has determined to be hazardous; the Department of Environmental Resources may regulate such hazardous wastes when the department has determined such waste poses a substantial present or potential hazard to the human health or the environment by any means including, but not limited to, issuance of orders and the imposition of terms and conditions of permits. The board shall identify the characteristics of hazardous wastes and list particular hazardous

wastes within 30 days after the effective date of this section, which initial list shall not be subject to section 107 of this act but shall be promulgated in accordance with section 204(3) (relating to omission of notice of proposed rule making) of the act of July 31, 1968 (P.L.769, No.240), referred to as the Commonwealth Documents Law.

Section 403. Generation, transportation, storage, treatment and disposal of hazardous waste.

(a) It shall be unlawful for any person or municipality who generates, transports or stores hazardous waste to transfer such waste unless such person or municipality complies with the rules and regulations of the department and the terms or conditions of any applicable permit or license and any applicable order issued by the department.

(b) It shall be unlawful for any person or municipality who generates, transports, stores, treats or disposes of hazardous waste to fail to:

(1) Maintain such records as are necessary to accurately identify the quantities of hazardous waste generated, the constituents thereof which are significant in quantity or in potential harm to human health or the environment, the method of transportation and the disposition of such wastes; and where applicable, the source and delivery points of such hazardous waste.

(2) Label any containers used for the storage, transportation or disposal of such hazardous waste so as to identify accurately such waste.

(3) Use containers appropriate for such hazardous waste and for the activity undertaken.

(4) Furnish information on the general chemical composition of such hazardous waste to persons transporting, treating, storing or disposing of such wastes.

(5) Use a manifest system as required by the department to assure that all such hazardous waste generated is designated for treatment, storage or disposal in such treatment, storage or disposal facilities (other than facilities on the premises where the waste is generated, where the use of a manifest system is not necessary) approved by the department, as provided in this article.

(6) Transport hazardous waste for treatment, storage or disposal to such treatment, storage or disposal facilities which the shipper has designated on the manifest form as a facility permitted to receive such waste or as a facility not within the Commonwealth.

(7) Submit reports to the department at such times as the department deems necessary, listing out:

(i) the quantities of hazardous waste generated during a particular time period; and

(ii) the method of disposal of all hazardous waste.

(8) Carry out transportation activities in compliance with the rules and regulations of the department and the Pennsylvania Department of Transportation.

(9) Treat, store and dispose of all such waste in accordance with the rules and regulations of the department and permits, permit conditions and orders of the department.

(10) Develop and implement contingency plans for effective action to minimize and abate hazards from any treatment, storage, transportation or disposal of any hazardous waste.

(11) Maintain such operation, train personnel, and assure financial responsibility for such storage, treatment or disposal operations to prevent adverse effects to the public health, safety and welfare and to the environment and to prevent public nuisances.

(12) Immediately notify the department and the affected municipality or municipalities of any spill or accidental discharge of such waste in accordance with a contingency plan approved by the department and take immediate steps to contain and clean up the spill or discharge.

(c) After January 1, 1981 any producer of any hazardous waste or any producer having a by-product of production which is a hazardous waste may be required by the department to submit to the department for its approval a plan relating to the disposal of such hazardous waste at either an on-site disposal area or an off-site disposal area before transferring, treating or disposing of this waste.

Section 404. Transition scheme.

(a) Any person or municipality who:

(1) owns or operates a hazardous waste storage or treatment facility required to have a permit under this act, which facility is in existence on the effective date of this act;

(2) has complied with the requirements of section 501(c);

(3) has made an application for a permit under this act; and

(4) operates and continues to operate in such a manner as will not cause, or create a risk of, a health hazard, a public nuisance, or an adverse effect upon the environment;

shall be treated as having been issued such permit until such time as a final departmental action on such application is made. In no instance shall such person or municipality continue to store or treat hazardous wastes without obtaining a permit from the department within two years after the date of enactment hereof.

(b) Any person or municipality who:

(1) as of the effective date of this act transports hazardous waste within the Commonwealth and is required to have a license under this act;

(2) has complied with the requirements of section 501(c);

(3) has made an application for a license under this act; and

(4) transports and continues to transport in such a manner as will not cause, or create a risk of, a health hazard, a public nuisance, or an adverse effect upon the environment;

shall be treated as having been issued such license until such time as a final departmental action on such application is made. In no instance

shall such person or municipality continue to transport hazardous waste without obtaining a license from the department within two years after the date of enactment.

Section 405. Conveyance of disposal site property.

After the effective date of this act, the grantor in every deed for the conveyance of property on which hazardous waste is presently being disposed, or has ever been disposed by the grantor or to the grantor's actual knowledge shall include in the property description section of such deed an acknowledgement of such hazardous waste disposal; such acknowledgement to include to the extent such information is available, but not be limited to, the surface area size and exact location of the disposed waste and a description of the types of hazardous wastes contained therein. Such amended property description shall be made a part of the deed for all future conveyances or transfers of the subject property: Provided, however, That the warranty in such deed shall not be applicable to the surface area size and exact location of the disposed waste and a description of the types of hazardous wastes contained therein.

ARTICLE V APPLICATIONS AND PERMITS

Section 501. Permits and licenses required; transition scheme; reporting requirements.

(a) It shall be unlawful for any person or municipality to use, or continue to use, their land or the land of any other person or municipality as a solid waste processing, storage, treatment or disposal area without first obtaining a permit from the department as required by this act: Provided, however, That this section shall not apply to the short-term storage of by-products which are utilized in the processing or manufacturing of other products, to the extent that such by-products are not hazardous, and do not create a public nuisance or adversely affect the air, water and other natural resources of the Commonwealth: And provided further, however, That the provisions of this section shall not apply to agricultural waste produced in the course of normal farming operations nor the use of food processing wastes in the course of normal farming operations provided that such wastes are not classified by the board as hazardous.

(b) It shall be unlawful for any person or municipality to transport hazardous waste within the Commonwealth unless such person or municipality has first obtained a license from the department to conduct such transportation activities.

(c) Not later than 90 days after promulgation or revision of regulations under section 402 identifying by its characteristics or listing any substance as hazardous waste, any person or municipality generating or transporting such substance or owning or operating a facility for treatment, storage, or disposal of such substance shall file with the department a notification stating the location and general description

of such activity and the identified or listed hazardous wastes handled by such person or municipality. Not more than one such notification shall be required to be filed with respect to the same substance. No identified or listed hazardous waste may be transported, treated, processed, stored or disposed of unless notification has been given as required under this subsection.

Section 502. Permit and license application requirements.

(a) Application for any permit or license shall be in writing, shall be made on forms provided by the department and shall be accompanied by such plans, designs and relevant data as the department may require. Such plans, designs and data shall be prepared by a registered professional engineer.

(b) The application for a permit to operate a hazardous waste storage, treatment or disposal facility shall also be accompanied by a form, prepared and furnished by the department, containing the written consent of the landowner to entry upon any land to be affected by the proposed facility by the Commonwealth and by any of its authorized agents prior to and during operation of the facility and for 20 years after closure of the facility, for the purpose of inspection and for the purpose of any such pollution abatement or pollution prevention activities as the department deems necessary. Such forms shall be deemed to be recordable documents and prior to the initiation of operations under the permit, such forms shall be recorded and entered into the deed book (d.b.v.) indexing system at the office of the recorder of deeds in the counties in which the area to be affected under the permit is situated.

(c) All records, reports, or information contained in the hazardous waste storage, treatment or disposal facility permit application submitted to the department under this section shall be available to the public; except that the department shall consider a record, report or information or particular portion thereof, confidential in the administration of this act if the applicant can show cause that the records, reports or information, or a particular portion thereof (but not emission or discharge data or information concerning solid waste which is potentially toxic in the environment), if made public, would divulge production or sales figures or methods, processes or production unique to such applicant or would otherwise tend to affect adversely the competitive position of such applicant by revealing trade secrets. Nothing herein shall be construed to prevent disclosure of such report, record or information to the Federal Government or other State agencies as may be necessary for purposes of administration of any Federal or State law.

(d) The application for a permit shall set forth the manner in which the operator plans to comply with the requirements of the act of June 22, 1937 (P.L.1987, No.394), known as "The Clean Streams Law," the act of May 31, 1945 (P.L.1198, No.418), known as the "Surface Mining Conservation and Reclamation Act," the act of

January 8, 1960 (1959 P.L.2119, No.787), known as the "Air Pollution Control Act," and the act of November 26, 1978 (P.L.1375, No.325), known as the "Dam Safety and Encroachments Act," as applicable. No approval shall be granted unless the plan provides for compliance with the statutes hereinabove enumerated, and failure to comply with the statutes hereinabove enumerated during construction and operation or thereafter shall render the operator liable to the sanctions and penalties provided in this act for violations of this act and to the sanctions and penalties provided in the statutes hereinabove enumerated for violations of such statutes. Such failure to comply shall be cause for revocation of any approval or permit issued by the department to the operator. Compliance with the provisions of this subsection and with the provisions of this act and the provisions of the statutes hereinabove enumerated shall not relieve the operator of the responsibility for complying with the provisions of all other applicable statutes, including, but not limited to the act of July 17, 1961 (P.L.659, No.339), known as the "Pennsylvania Bituminous Coal Mine Act," the act of November 10, 1965 (P.L.721, No.346), known as the "Pennsylvania Anthracite Coal Mine Act," and the act of July 9, 1976 (P.L.931, No.178), entitled "An act providing emergency medical personnel; employment of emergency medical personnel and emergency communications in coal mines."

(e) The application for a permit shall certify that the operator has in force, or will, prior to the initiation of operations under the permit have in force, an ordinary public liability insurance policy in an amount to be prescribed by rules and regulations promulgated hereunder.

(f) The department may require such other information, and impose such other terms and conditions, as it deems necessary or proper to achieve the goals and purposes of this act.

(g) The department, upon receipt of an application for a permit, shall give written notice to each and every municipality in which the proposed hazardous waste facility will be located.

Section 503. Granting, denying, renewing, modifying, revoking and suspending permits and licenses.

(a) Upon approval of the application, the department shall issue a permit for the operation of a solid waste storage, treatment, processing or disposal facility or area or a license for the transportation of hazardous wastes, as set forth in the application and further conditioned by the department.

(b) No permit shall be issued unless and until all applicable bonds have been posted with the department.

(c) In carrying out the provisions of this act, the department may deny, suspend, modify, or revoke any permit or license if it finds that the applicant, permittee or licensee has failed or continues to fail to comply with any provision of this act, the act of June 22, 1937 (P.L.1987, No.394), known as "The Clean Streams Law," the act of

January 8, 1960 (1959 P.L.2119, No.787), known as the "Air Pollution Control Act," and the act of November 26, 1978 (P.L.1375, No.325), known as the "Dam Safety and Encroachments Act," or any other state or Federal statute relating to environmental protection or to the protection of the public health, safety and welfare; or any rule or regulation of the department; or any order of the department; or any condition of any permit or license issued by the department; or if the department finds that the applicant, permittee or licensee has shown a lack of ability or intention to comply with any provision of this act or any of the acts referred to in this subsection or any rule or regulation of the department or order of the department, or any condition of any permit or license issued by the department as indicated by past or continuing violations. In the case of a corporate applicant, permittee or licensee, the department may deny the issuance of a license or permit if it finds that a principal of the corporation was a principal of another corporation which committed past violations of this act.

(d) Any person or municipality which has engaged in unlawful conduct as defined in this act, or whose partner, associate, officer, parent corporation, subsidiary corporation, contractor, subcontractor or agent has engaged in such unlawful conduct, shall be denied any permit or license required by this act unless the permit or license application demonstrates to the satisfaction of the department that the unlawful conduct has been corrected. Independent contractors and agents who are to operate under any permit shall be subject to the provisions of this act. Such independent contractors, agents and the permittee shall be jointly and severally liable, without regard to fault, for violations of this act which occur during the contractor's or agent's involvement in the course of operations.

(c) Any permit or license granted by the department, as provided in this act, shall be revocable or subject to modification or suspension at any time the department determines that the solid waste storage, treatment, processing or disposal facility or area or transportation of solid waste:

- (1) is, or has been, conducted in violation of this act or the rules, regulations, adopted pursuant to the act;
- (2) is creating a public nuisance;
- (3) is creating a potential hazard to the public health, safety and welfare;
- (4) adversely affects the environment;
- (5) is being operated in violation of any terms or conditions of the permit; or
- (6) was operated pursuant to a permit or license that was not granted in accordance with law.

Section 504. Approval by governing body.

Applications for a permit shall be reviewed by the appropriate county, county planning agency or county health department where

they exist and the host municipality, and they may recommend to the department conditions upon, revisions to, or disapproval of the permit only if specific cause is identified. In such case the department shall be required to publish in the Pennsylvania Bulletin its justification for overriding the county's recommendations. If the department does not receive comments within 60 days, the county shall be deemed to have waived its right to review.

Section 505. Bonds.

(a) With the exception of municipalities operating landfills solely for municipal waste not classified hazardous, prior to the commencement of operations, the operator of a municipal or residual waste processing or disposal facility or of a hazardous waste storage, treatment or disposal facility for which a permit is required by this section shall file with the department a bond for the land affected by such facility on a form prescribed and furnished by the department. Such bond shall be payable to the Commonwealth and conditioned so that the operator shall comply with the requirements of this act, the act of June 22, 1937 (P.L.1987, No.394), known as "The Clean Streams Law," the act of May 31, 1945 (P.L.1198, No.418), known as the "Surface Mining Conservation and Reclamation Act," the act of January 8, 1960 (1959 P.L.2119, No.787), known as the "Air Pollution Control Act," and the act of November 26, 1978 (P.L.1375, No.325), known as the "Dam Safety and Encroachments Act." The department may require additional bond amounts for the permitted areas should such an increase be determined by the department to be necessary to meet the requirements of this act. The amount of the bond required shall be in an amount determined by the secretary based upon the total estimated cost to the Commonwealth of completing final closure according to the permit granted to such facility and such measures as are necessary to prevent adverse effects upon the environment; such measures include but are not limited to satisfactory monitoring, post-closure care, and remedial measures. The bond amount shall reflect the additional cost to the Commonwealth which may be entailed by being required to bring personnel and equipment to the site. All permits shall be bonded for at least \$10,000. Liability under such bond shall be for the duration of the operation, and for a period of up to ten full years after final closure of the permit site. Such bond shall be executed by the operator and a corporate surety licensed to do business in the Commonwealth and approved by the secretary: Provided, however, That the operator may elect to deposit cash, certificates of deposit, automatically renewable irrevocable letters of credit which are terminable only upon 90 days written notice to the operator and the department, or negotiable bonds of the United States Government or the Commonwealth of Pennsylvania, the Pennsylvania Turnpike Commission, the General State Authority, the State Public School Building Authority, or any municipality within the Commonwealth, with the department in lieu of a

corporate surety. The cash amount of such deposit, irrevocable letters of credit or market value of such securities shall be equal at least to the sum of the bond. The secretary shall, upon receipt of any such deposit of cash or negotiable bonds, immediately place the same with the State Treasurer, whose duty it shall be to receive and hold the same in the name of the Commonwealth, in trust, for the purposes for which such deposit is made. The State Treasurer shall at all times be responsible for the custody and safekeeping of such deposits. The operator making the deposit shall be entitled from time to time to demand and receive from the State Treasurer, on the written order of the secretary, the whole or any portion of any collateral so deposited, upon depositing with him, in lieu thereof, other collateral of the classes herein specified having a market value at least equal to the sum of the bond, also to demand, receive and recover the interest and income from said negotiable bonds as the same becomes due and payable: Provided, however, That where negotiable bonds, deposited as aforesaid, mature or are called, the State Treasurer, at the request of the permittee, shall convert such negotiable bonds into such other negotiable bonds of the classes herein specified as may be designated by the permittee: And provided further, That where notice of intent to terminate a letter of credit is given, the department shall, after 30 days written notice to the operator and in the absence of a replacement of such letter of credit within such 30-day period by the operator with other acceptable bond guarantees provided herein, draw upon and convert such letter of credit into cash and hold it as a collateral bond guarantee.

(b) In the case of applications for permits where the department determines that the operations are reasonably anticipated to continue for a period of at least ten years from the date of application, the operator may elect to deposit collateral and file a collateral bond as provided in subsection (a) according to the following phase deposit schedule. The operator shall, prior to commencing operations, deposit \$10,000 or 25% of the amount of the bond determined under subsection (a), whichever is greater. The operator shall, thereafter, annually deposit 10% of the remaining bond amount for a period of ten years. Interest accumulated by such collateral shall become a part of the bond. The department may require additional bonding at any time to meet the intent of subsection (a). The collateral shall be deposited in trust, with the State Treasurer as provided in subsection (a) or with a bank, selected by the department, which shall act as trustee for the benefit of the Commonwealth, according to rules and regulations promulgated hereunder, to guarantee the operator's compliance with this act and the statutes enumerated in subsection (a). The operator shall be required to pay all costs of the trust. The collateral deposit, or part thereof, shall be released of liability and returned to the operator, together with a proportional share of accumulated interest, upon the conditions of and pursuant to the schedule and criteria for release provided in this act.

(c) The operator shall, prior to commencing operations on any additional land exceeding the estimate made in the application for a permit, file an additional application and bond. Upon receipt of such additional application and related documents and information as would have been required for the additional land had it been included in the original application for a permit and should all the requirements of this act be met as were necessary to secure the permit, the secretary shall promptly issue an amended permit covering the additional acreage covered by such application, and shall determine the additional bond requirement therefor.

(d) If the operator abandons the operation of a municipal or residual waste processing or disposal facility or a hazardous waste storage, treatment or disposal facility for which a permit is required by this section or if the permittee fails or refuses to comply with the requirements of this act in any respect for which liability has been charged on the bond, the secretary shall declare the bond forfeited and shall certify the same to the Department of Justice which shall proceed to enforce and collect the amount of liability forfeited thereon, and where the operation has deposited cash or securities as collateral in lieu of a corporate surety, the secretary shall declare said collateral forfeited and shall direct the State Treasurer to pay said funds into the Waste Abatement Fund. Should any corporate surety fail to promptly pay, in full, forfeited bond, it shall be disqualified from writing any further surety bonds under this act.

(e) Prior to the issuance of any license for the transportation of hazardous waste, the applicant for a license shall file with the department a collateral bond on a form prescribed and furnished by the department. Such bond shall be payable to the Commonwealth and conditioned upon compliance by the licensee with every requirement of this act, rule and regulation of the department, order of the department and term and condition of the license. The amount of the bond required shall be in an amount determined by the secretary, but in an amount no less than \$10,000. The department may require additional bond amounts if the department determines such additional amounts are necessary to guarantee compliance with this act. The licensee may elect to deposit cash or automatically renewable irrevocable letters of credit which are terminable only upon 90 days written notice to the operator and the department, or negotiable bonds of the United States Government or the Commonwealth of Pennsylvania, the Pennsylvania Turnpike Commission, the General State Authority, the State Public School Building Authority, or any municipality within the Commonwealth. No corporate surety bond is authorized by this subsection. The cash amount of such deposit, irrevocable letters of credit, or market value of such securities shall be equal at least to the sum of the bond. The secretary shall, upon receipt of any such deposit of cash or negotiable bonds, immediately place the same with the State Treasurer, whose duty it shall be to receive and hold the same in

the name of the Commonwealth, in trust, for the purposes for which such deposit is made. The State Treasurer shall at all times be responsible for the custody and safekeeping of such deposits. The licensee making the deposit shall be entitled from time to time to demand and receive from the State Treasurer, on the written order of the secretary, the whole or any portion of any collateral so deposited, upon depositing with him, in lieu thereof, other collateral of the classes herein specified having a market value at least equal to the sum of the bond, also to demand, receive and recover the interest and income from said negotiable bonds as the same becomes due and payable: Provided, however, That where negotiable bonds, deposited as aforesaid, mature or are called, the State Treasurer, at the request of the licensee, shall convert such negotiable bonds into such other negotiable bonds of the classes herein specified as may be designated by the licensee: And provided further, That where notice of intent to terminate a letter of credit is given, the department shall, after 30 days written notice to the licensee and in the absence of a replacement of such letter of credit within such 30-day period by the licensee with other acceptable bond guarantees provided herein, draw upon and convert such letter of credit into cash and hold it as a collateral bond guarantee. Liability under such bond shall be for the duration of the license and for a period of one year after the expiration of the license.

Section 506. Financial responsibility.

The Environmental Quality Board shall adopt such additional regulations to provide for proof of financial responsibility of owners or operators of hazardous waste storage, treatment, and disposal facilities, as necessary or desirable for closure of the facility, post-closure monitoring and maintenance, sudden and accidental occurrences, and nonsudden and accidental occurrences, and to comply with section 3004 of the Resource Conservation and Recovery Act of 1976 42 U.S.C. § 6924.

Section 507. Siting of hazardous waste treatment and disposal facilities.

(a) The Department of Environmental Resources shall have the power and authority to develop, prepare and modify the Pennsylvania Hazardous Waste Facilities Plan. The plan shall include:

- (1) Criteria and standards for siting hazardous waste treatment and disposal facilities.
- (2) An inventory and evaluation of the sources of hazardous waste concentration within the Commonwealth including types and quantities of hazardous waste.
- (3) An inventory and evaluation of current hazardous waste practices within the Commonwealth including existing hazardous waste treatment and disposal facilities.
- (4) A determination of future hazardous waste facility needs based on an evaluation of existing treatment and disposal facilities including their location, capacities and capabilities, and the existing

and projected generation of hazardous waste within the Commonwealth and including where the department within its discretion finds such information to be available, the projected generation outside the Commonwealth of hazardous wastes expected to be transported into the Commonwealth for storage, treatment or disposal.

(5) An analysis of methods, incentives or technologies for source reduction, detoxification, reuse and recovery of hazardous waste and a strategy for implementing such methods, incentives and technologies.

(6) Identification of such hazardous waste treatment and disposal facilities and their locations (in addition to existing facilities) as are necessary to provide for the proper management of hazardous waste generated within this Commonwealth.

(b) In preparation of the plan the department shall consult with affected persons, municipalities and State agencies. Within 60 days after the effective date of this act the secretary shall appoint the Pennsylvania Hazardous Waste Facilities Planning Advisory Committee. The department shall insure that the advisory body consist of substantially equivalent proportions of the following four groups: private citizens, representatives of public interest groups, public officials and citizens or representatives of organizations with substantial economic interest in the plan. It shall specifically include but not be limited to a representative of a waste treatment operator, a waste generator, local governments, environmentalists, and academic scientist.

(c) The committee may recommend to the department the adoption of such rules and regulations, standards, criteria and procedures as it deems necessary and advisable for the preparation, development, adoption and implementation of the Pennsylvania Hazardous Waste Facilities Plan.

(d) A vacancy occurring on the committee shall be filled in the same manner as the original appointment and the secretary or his representative shall serve as chairperson of the committee.

(e) The committee shall establish operating procedures and may solicit the advice of municipalities or other persons.

(f) The committee shall disband after adoption of the plan by the Environmental Quality Board unless the committee is reconstituted as a provision of the plan.

(g) Not later than two years after the date of enactment of this act, the Environmental Quality Board shall adopt the Pennsylvania Hazardous Waste Facilities Plan and the department shall review and amend said plan as necessary but in no event less than every five years following adoption.

**ARTICLE VI
ENFORCEMENT AND REMEDIES**

Section 601. Public nuisances.

Any violation of any provision of this act, any rule or regulation of the department, any order of the department, or any term or condition of any permit, shall constitute a public nuisance. Any person or municipality committing such a violation shall be liable for the costs of abatement of any pollution and any public nuisance caused by such violation. The Environmental Hearing Board and any court of competent jurisdiction is hereby given jurisdiction over actions to recover the costs of such abatement.

Section 602. Enforcement orders.

(a) The department may issue orders to such persons and municipalities as it deems necessary to aid in the enforcement of the provisions of this act. Such orders may include, but shall not be limited to, orders modifying, suspending or revoking permits and orders requiring persons and municipalities to cease unlawful activities or operations of a solid waste facility which in the course of its operation is in violation of any provision of this act, any rule or regulation of the department or any terms and conditions of a permit issued under this act. An order issued under this act shall take effect upon notice, unless the order specifies otherwise. An appeal to the Environmental Hearing Board shall not act as a supersedeas. The power of the department to issue an order under this act is in addition to any other remedy which may be afforded to the department pursuant to this act or any other act.

(b) If the department finds that the storage, collection, transportation, processing, treatment or disposal of solid waste is causing pollution of the air, water, land or other natural resources of the Commonwealth or is creating a public nuisance, the department may order the person or the municipality to alter its storage, collection, transportation, processing, treatment or disposal systems to provide such storage, collection, transportation, processing, treatment, or disposal systems as will prevent pollution and public nuisances. Such order shall specify the length of time after receipt of the order within which the facility or area shall be repaired, altered, constructed or reconstructed.

(c) Any person or municipality ordered by the department to repair, alter, construct, or reconstruct a solid waste facility or area shall take such steps for the repair, alteration, construction, or reconstruction of the facility or area as may be necessary for the storage, processing, treatment and disposal of its solid waste in compliance with this act and the rules and regulations of the department, and standards and orders of the department.

(d) The Department of Environmental Resources shall have the power to order, orally or in writing, any person or municipality to

immediately suspend or modify hazardous waste treatment or disposal activities when he determines that continued operation will jeopardize public health, safety or welfare. Said order shall be effective upon issuance and may only be superseded by further department action or, after an appeal has been perfected, by the Environmental Hearing Board after notice and hearing. Furthermore, said order may require remedial actions to be taken in order to prevent harm to public health, safety or welfare. Within two business days after the issuance of such oral order, the department shall issue a written order reciting and modifying, where appropriate, the terms and conditions contained in the oral order.

Section 603. Duty to comply with orders of the department.

It shall be the duty of any person and municipality to proceed diligently to comply with any order issued pursuant to section 602. If such person or municipality fails to proceed diligently, or fails to comply with the order within such time, if any, as may be specified, such person or municipality shall be guilty of contempt, and shall be punished by the court in an appropriate manner and for this purpose, application may be made by the department to the Commonwealth Court, which court is hereby granted jurisdiction.

Section 604. Restraining violations.

(a) In addition to any other remedies provided in this act, the department may institute a suit in equity in the name of the Commonwealth where a violation of law or nuisance exists for an injunction to restrain a violation of this act or the rules, regulations, standards or orders adopted or issued thereunder and to restrain the maintenance or threat of a public nuisance. In any such proceeding, the court shall, upon motion of the Commonwealth, issue a prohibitory or mandatory preliminary injunction if it finds that the defendant is engaging in unlawful conduct as defined by this act or is engaged in conduct which is causing immediate and irreparable harm to the public. The Commonwealth shall not be required to furnish bond or other security in connection with such proceedings. In addition to an injunction, the court in such equity proceedings, may levy civil penalties as specified in section 605.

(b) In addition to any other remedies provided for in this act, upon relation of any district attorney of any county affected, or upon relation of the solicitor of any municipality affected, an action in equity may be brought in a court of competent jurisdiction for an injunction to restrain any and all violations of this act or the rules and regulations promulgated hereunder, or to restrain any public nuisance or detriment to health.

(c) The penalties and remedies prescribed by this act shall be deemed concurrent and the existence of or exercise of any remedy shall not prevent the department from exercising any other remedy hereunder, at law or in equity.

(d) Actions instituted under this section may be filed in the appropriate court of common pleas or in the Commonwealth Court, which courts are hereby granted jurisdiction to hear such actions.

Section 605. Civil penalties.

In addition to proceeding under any other remedy available at law or in equity for a violation of any provision of this act, any rule or regulation of the department or order of the department or any term or condition of any permit issued by the department, the department may assess a civil penalty upon a person for such violation. Such a penalty may be assessed whether or not the violation was willful or negligent. In determining the amount of the penalty, the department shall consider the willfulness of the violation, damage to air, water, land or other natural resources of the Commonwealth or their uses, cost of restoration and abatement, savings resulting to the person in consequence of such violation, and other relevant factors. If the violation leads to the issuance of a cessation order or occurs after the release of security for performance, a civil penalty shall be assessed. When the department proposes to assess a civil penalty, it shall inform the person or municipality of the proposed amount of said penalty. The person charged with the penalty shall then have 30 days to pay the proposed penalty in full or, if the person wishes to contest either the amount of the penalty or the fact of the violation, the person shall within such 30 day period file an appeal of such action with the Environmental Hearing Board. Failure to appeal within 30 days shall result in a waiver of all legal rights to contest the violation or the amount of the penalty. The maximum civil penalty which may be assessed pursuant to this section is \$25,000 per offense. Each violation for each separate day and each violation of any provision of this act, any rule or regulation under this act, any order of the department, or any term or condition of a permit shall constitute a separate and distinct offense under this section. A generator of hazardous waste who has complied with section 403 and has designated on the manifest a facility permitted to treat or dispose of his wastes shall not be held liable for civil penalties with respect to such wastes by other persons after:

(1) the wastes have been transported in compliance with all applicable provisions of this act and regulations promulgated and licenses issued thereunder; and

(2) such wastes have been accepted by a disposal or treatment facility permitted to receive such wastes and designated on the manifest.

Section 606. Criminal penalties.

(a) Any person, other than a municipal official exercising his official duties, or any municipality who violates any provision of this act, the rules and regulations of the department, or any order of the department, or any term or condition of any permit upon conviction thereof in a summary proceeding, shall be sentenced to pay a fine of

not less than \$100 and not more than \$1,000 and costs and, in default of the payment of such fine and costs, to undergo imprisonment for not more than 30 days.

(b) Any person other than a municipal official exercising his official duties who violates any provision of this act, any rule or regulation of the department, any order of the department, or any term or condition of any permit, shall be guilty of a misdemeanor of the third degree and, upon conviction, shall be sentenced to pay a fine of not less than \$1,000 but not more than \$25,000 per day for each violation or to imprisonment for a period of not more than one year, or both.

(c) Any person other than a municipal official exercising his official duties who, within two years after a conviction of a misdemeanor for any violation of this act, violates any provision of this act, any rule or regulation of the department, any order of the department, or any term or condition of any permit shall be guilty of a misdemeanor of the second degree and, upon conviction, shall be sentenced to pay a fine of not less than \$2,500 nor more than \$50,000 for each violation or to imprisonment for a period of not more than two years, or both.

(d) Any person or municipality that knowingly:

(1) transports any hazardous waste to a facility which does not have a permit under this act to accept such waste for storage, treatment or disposal; or

(2) makes any false statement or representation in any application label, manifest, record, report, permit or other document relating to hazardous waste generation, storage, transportation, treatment or disposal, which is filed, submitted, maintained or used for purposes of compliance with this act or any municipality which knowingly stores, treats or disposes of any hazardous waste without having obtained a permit for such storage, treatment or disposal; shall be guilty of a misdemeanor of the third degree and, upon conviction, shall be sentenced to pay a fine of not less than \$1,000 but not more than \$25,000 per day for each violation.

(e) Any person or municipality that within two years after a conviction of a misdemeanor for any violation of this act, commits a violation of subsection (d), shall be guilty of a misdemeanor of the second degree and upon conviction, shall be sentenced to pay a fine of not less than \$2,500 nor more than \$50,000 for each violation or to a term of imprisonment of not less than two years, but not more than 20 years, or both.

(f) Any person who stores, transports, treats, or disposes of hazardous waste within the Commonwealth in violation of section 401, or in violation of any order of the department shall be guilty of a felony of the second degree and, upon conviction, shall be sentenced to pay a fine of not less than \$2,500 but not more than \$100,000 per day for each violation or to imprisonment for not less than two years but not more than ten years, or both.

(g) Any person who intentionally, knowingly or recklessly stores, transports, treats, or disposes of hazardous waste within the Commonwealth in violation of any provision of this act, and whose acts or omissions cause pollution, a public nuisance or bodily injury to any person, shall be guilty of a felony of the first degree, and upon conviction, shall be sentenced to pay a fine of not less than \$10,000 but not more than \$500,000 per day for each violation or to a term of imprisonment of not less than two years, but not more than 20 years, or both.

(h) Each violation for each separate day and each violation of any provision of this act, any rule or regulation of the department, any order of the department, or term and condition of a permit shall constitute a separate and distinct offense under subsections (a), (b), (c), (d) and (e).

(i) With respect to the offenses specified in subsections (a), (b), (c) and (f), it is the legislative purpose to impose absolute liability for such offenses. However, a generator who has complied with section 403 shall not be held criminally liable under this section if wastes have been transported in compliance with all applicable provisions of this act and the regulations promulgated and licenses issued thereunder, and provided that such wastes have been accepted by a facility designated in accordance with section 403(b)(6).

(j) With respect to the offenses specified in subsections (a), (b), (c), (d), (e), (f) and (g), it is the legislative purpose to impose liability on corporations.

Section 607. Existing rights and remedies preserved; cumulative remedies authorized.

Nothing in this act shall be construed as estopping the Commonwealth, or any district attorney or solicitor of a municipality, from proceeding in courts of law or equity to abate pollution forbidden under this act, or abate nuisances under existing law. It is hereby declared to be the purposes of this act to provide additional and cumulative remedies to control the collection, storage, transportation, processing, treatment, and disposal of solid waste within the Commonwealth, and nothing contained in this act shall in any way abridge or alter rights of action or remedies now or hereafter existing in equity, or under the common law or statutory law, criminal or civil, nor shall any provision in this act, or the granting of any permit under this act, or any act done by virtue of this act, be construed as estopping the Commonwealth, persons or municipalities, in the exercise of their rights under the common law or decisional law or in equity, from proceeding in courts of law or equity to suppress nuisances, or to abate any pollution now or hereafter existing, or to enforce common law or statutory rights. No courts of this Commonwealth having jurisdiction to abate public or private nuisances shall be deprived of such jurisdiction in any action to abate any private or public nuisance instituted by any person for the reasons that such nuisance constitutes air or water pollution.

Section 608. Production of materials; recordkeeping requirements; rights of entry.

The department and its agents and employees shall:

(1) Have access to, and require the production of, books and papers, documents, and physical evidence pertinent to any matter under investigation.

(2) Require any person or municipality engaged in the storage, transportation, processing, treatment or disposal of any solid waste to establish and maintain such records and make such reports and furnish such information as the department may prescribe.

(3) Enter any building, property, premises or place where solid waste is generated, stored, processed, treated or disposed of for the purposes of making such investigation or inspection as may be necessary to ascertain the compliance or noncompliance by any person or municipality with the provisions of this act and the rules or regulations promulgated hereunder. In connection with such inspection or investigation, samples may be taken of any solid, semisolid, liquid or contained gaseous material for analysis. If any analysis is made of such samples, a copy of the results of the analysis shall be furnished within five business days to the person having apparent authority over the building, property, premises or place.

Section 609. Search warrants.

An agent or employee of the department may apply for a search warrant to any Commonwealth official authorized to issue a search warrant for the purposes of inspecting or examining any property, building, premise, place, book, record or other physical evidence, of conducting tests, or of taking samples of any solid waste. Such warrant shall be issued upon probable cause. It shall be sufficient probable cause to show any of the following:

(1) that the inspection, examination, test, or sampling is pursuant to a general administrative plan to determine compliance with this act;

(2) that the agent or employee has reason to believe that a violation of this act has occurred or may occur; or

(3) that the agent or employee has been refused access to the property, building, premise, place, book, record or physical evidence, or has been prevented from conducting tests or taking samples.

Section 610. Unlawful conduct.

It shall be unlawful for any person or municipality to:

(1) Dump or deposit, or permit the dumping or depositing, of any solid waste onto the surface of the ground or underground or into the waters of the Commonwealth, by any means, unless a permit for the dumping of such solid wastes has been obtained from the department; provided, the Environmental Quality Board may by regulation exempt certain activities associated with normal farming operations as defined by this act from such permit requirements.

(2) Construct, alter, operate or utilize a solid waste storage, treatment, processing or disposal facility without a permit from the department as required by this act or in violation of the rules or regulations adopted under this act, or orders of the department, or in violation of any term or condition of any permit issued by the department.

(3) Burn solid wastes without a permit from the department.

(4) Store, collect, transport, process, treat, or dispose of, or assist in the storage, collection, transportation, processing, treatment, or disposal of, solid waste contrary to the rules or regulations adopted under this act, or orders of the department, or any term or any condition of any permit, or in any manner as to create a public nuisance or to adversely affect the public health, safety and welfare.

(5) Transport hazardous waste without first having obtained a license from the department to conduct such transport activities.

(6) Transport or permit the transportation of any solid waste to any storage, treatment, processing or disposal facility or area unless such facility or area possesses a permit issued by the department to accept such wastes, or contrary to the rules or regulations adopted under this act, or orders of the department, or in such a manner as to adversely affect or endanger the public health, safety and welfare or environment through which such transportation occurs.

(7) Refuse, hinder, obstruct, delay, or threaten any agent or employee of the department in the course of performance of any duty under this act, including, but not limited to, entry and inspection under any circumstances.

(8) Consign, assign, sell, entrust, give or in any way transfer residual or hazardous waste which is at any time subsequently, by any such person or any other person;

(i) dumped or deposited or discharged in any manner into the surface of the earth or underground or into the waters of the Commonwealth unless a permit for the dumping or depositing or discharging of such residual or hazardous waste has first been obtained from the department; or

(ii) stored, treated, processed, disposed of or discharged by a residual or hazardous waste facility unless such facility is operated under a permit first obtained from the department.

(9) Cause or assist in the violation of any provision of this act, any rule or regulation of the department, any order of the department or any term or condition of any permit.

Section 611. Presumption of law for civil and administrative proceedings.

It shall be presumed as a rebuttable presumption of law that a person or municipality which stores, treats, or disposes of hazardous waste shall be liable, without proof of fault, negligence, or causation, for all damages, contamination or pollution within 2,500 feet of the perimeter of the area where hazardous waste activities have been

carried out. Such presumption may be overcome by clear and convincing evidence that the person or municipality so charged did not contribute to the damage, contamination, or pollution.

Section 612. Collection of fines and penalties.

All fines and penalties shall be collectible in any manner provided by law for the collection of debts. If any person liable to pay any such penalty neglects or refuses to pay the same after demand, the amount together with interest and any costs that may accrue, shall be a judgment in favor of the Commonwealth upon the property of such person, but only after same has been entered and docketed of record by the prothonotary of the county where such property is situated. The department may, at any time, transmit to the prothonotaries of the respective counties certified copies of all such judgments, and it shall be the duty of each prothonotary to enter and docket the same of record in his office, and to index the same as judgments are indexed, without requiring the payment of costs as a condition precedent to the entry thereof.

Section 613. Recovery of costs of abatement.

Any person or municipality who causes a public nuisance shall be liable for the costs of abatement. The department, any Commonwealth agency, or any municipality which undertakes to abate a public nuisance may recover the costs of abatement in an action in equity brought before any court of competent jurisdiction. In addition, the Environmental Hearing Board is hereby given jurisdiction over actions by the department to recover the costs of abatement.

Section 614. Forfeiture of contraband.

Any vehicle, equipment, or conveyance used for the transportation or disposal of hazardous waste in the commission of an offense under section 606 shall be deemed contraband and shall be seized and forfeited to the department. The provisions of law relating to the seizure, summary and judicial forfeiture, and condemnation of intoxicating liquor shall apply to seizures and forfeitures under the provisions of this section.

Section 615. Right of citizen to intervene in proceedings.

Any citizen of this Commonwealth having an interest which is or may be adversely affected shall have the right on his own behalf, without posting bond, to intervene in any action brought pursuant to section 604 or 605.

Section 616. Notice of proposed settlement.

If a settlement is proposed in any action brought pursuant to section 604 or 605, the terms of such settlement shall be published in a newspaper of general circulation in the area where the violations are alleged to have occurred at least 30 days prior to the time when such settlement is to take effect. The publication shall contain a solicitation for public comments concerning such settlement which shall be directed to the government agency bringing the action.

Section 617. Limitation on action.

The provisions of any other statute to the contrary notwithstanding, actions for civil or criminal penalties under this act may be commenced at any time within a period of 20 years from the date the offense is discovered.

ARTICLE VII
SOLID WASTE ABATEMENT FUND

Section 701. Solid Waste Abatement Fund.

(a) All fines, penalties and bond forfeitures collected under the provisions of this act shall be paid into the Treasury of the Commonwealth into a special fund to be known as the "Solid Waste Abatement Fund" hereby established. The Solid Waste Abatement Fund shall be administered by the department for abatement or elimination of present or potential hazards to human health or to the environment from the improper treatment, transportation, storage, processing, or disposal of solid wastes, and for the enforcement of this act.

(b) All such moneys placed in the Solid Waste Abatement Fund under the provisions of this section are hereby made available immediately, and are hereby specifically appropriated to the department for the purposes specified in this section.

(c) Estimates of the amounts to be expended under this act shall be submitted to the Governor for his approval or disapproval.

ARTICLE VIII
LEASING REAL ESTATE

Section 801. No prohibition against leasing real estate.

Nothing in this act shall be construed to prevent the Commonwealth from leasing such real estate owned by the Commonwealth as is not being used in connection with the work of any department, board or commission thereof for a period of not more than 50 years to individuals, firms, corporations or the United States Government pursuant to section 2402(i) of "The Administrative Code of 1929," for the purpose of operating hazardous waste storage, treatment or disposal facilities.

ARTICLE IX
LIBERAL CONSTRUCTION

Section 901. Construction of act.

The terms and provisions of this act are to be liberally construed, so as to best achieve and effectuate the goals and purposes hereof.

ARTICLE X
REPEALER; EFFECTIVE DATE

Section 1001. Repeal.

The act of July 31, 1968 (P.L.788, No.241), known as the "Pennsylvania Solid Waste Management Act," is repealed: Provided,

however, That all permits and orders issued, municipal solid waste management plans approved, and regulations promulgated under such act shall remain in full force and effect unless and until modified, amended, suspended or revoked.

Section 1002. Severability.

If any provision of this act or the application thereof is held invalid, such invalidity shall not effect other provisions or applications of this act which can be given effect without the invalid provisions or application and to this end the provisions of this act are declared to be severable.

Section 1003. Effective date.

Section 402 of this act shall take effect immediately; the remainder of this act shall take effect in 60 days.

APPROVED—The 7th day of July, A. D. 1980.

DICK THORNBURGH