NEW YORK STATE

RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN

FOR COMMERCIAL NUCLEAR POWER PLANTS

Revised March 2011

TABLE OF CONTENTS

SECTION I: Introduction and Background

(NOT USED)

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
SECTION I: INTRODUCTION AND BACKGROUND

1.0 PURPOSE

The purpose of the Radiological Emergency Preparedness Plan (REPP) is to minimize the risk to the health of the inhabitants of the State of New York in the event of a radiological emergency. This will be accomplished by identifying measures to prevent and mitigate such an emergency by developing mechanisms to coordinate Federal, State, local and private sectors resources, during and after such an emergency; and by providing for recovery following a radiological emergency. A radiological emergency is an accident at a nuclear power plant that may result in the loss of control of a radiation source, leading to a hazard or potential hazard to health or property.

2.0 BACKGROUND

New York State has continuously addressed the matter of the safety of its citizens in regard to ionizing radiation. The New York State Department of Health (DOH) is the State agency having primary responsibility in this particular area. The status of primary responsibility was designated by the former State Atomic Energy Council in 1971 and later formally affirmed by the Governor of New York in his letter of March 18, 1975, to the United States Nuclear Regulatory Commission.

The New York State Public Health Law (Section 206) gives the Commissioner of Health broad authority for protecting the health and life of the people of New York State. Section 201 of that law further assigns the Commissioner of Health the responsibility for the protection of the public health regarding the use of ionizing radiation. The State Sanitary Code, Part 16, which implements the Public Health Law, includes requirements relating to accidents, emergencies, or incidents. Radiation dose limits are prescribed therein. Upon the release of radioactive materials, which exceed these limits, from any radiological installation into an uncontrolled area, certain actions are required to correct the situation and to prevent exposure to the public.

To carry out these actions the State developed and implemented an emergency plan for radiation accidents in 1971. This plan provided for a coordinated effort among Federal, State, and local agencies, to prevent or minimize hazards to life and health in the event of a radiological emergency. The plan assigned the State Health Commissioner the responsibility for recommending protective actions. It also recognized that the primary responsibility for implementing actions to mitigate the effects of a radiological emergency rests with the local political subdivisions affected by the emergency.

Since that State emergency plan for radiation accidents was written, certain key events have occurred manifesting a need for extensive revision to that Plan. Article 2-B of the New York State Executive Law (State and Local Natural and Manmade Disaster Preparedness) was enacted in l979 which, among its provisions, created a State Disaster Preparedness Commission (DPC). This Commission is charged with a wide variety of powers and responsibilities designed to

provide a comprehensive emergency system to prevent or react to emergencies or disasters within the State.

Among these responsibilities are: (l) to develop and maintain a State emergency plan and to assist local government in developing such plans; (2) to direct State disaster operations and coordinate State operations and resources with local disaster operations; (3) to coordinate recovery operations and recovery assistance; and (4) to provide training to assure that responsible personnel are familiar with plans and procedures. Article 2-B was amended in 1981 to deal with certain aspects of Radiological Emergency Preparedness specifically. The law provides that counties are the first line of defense in handling emergencies subject to an assumption of responsibility by the State pursuant to a State Declaration of Disaster Emergency (see Executive Law, Section 24, McKinney's Consolidated Laws of New York, Volume 18).

The State Office of Emergency Management (NYSOEM), as the staff arm of the DPC and its Chair, is responsible for developing, implementing, and maintaining comprehensive emergency plans and procedures for prompt reactions to potential emergencies at nuclear power plants in New York or in bordering states.

3.0 PLANNING BASIS

The National Response Framework (NRF) enacted in March 2008, along with NIMS/ICS principles have been incorporated into emergency response plans in New York State. Where, by tradition, emergency plans have been primarily concerned with response activities, New York State has adopted an overall emergency preparedness system which includes four interrelated critical phases:

3.1 Comprehensive Emergency Management

Readiness: This is the initial phase of activities that is aimed at eliminating or reducing the probability of the occurrence of a radiological emergency, and at minimizing the impact of a radiological emergency on public health and property. These activities include the development of
legislation and development of preparedness plans and training programs.

Mitigation: These activities form a basis for and enhance the quality of response operations.

Response: The Response phase follows the identification or notification of an emergency. Generally, response activities are planned to minimize the adverse impact on public health and to protect property, to the extent possible, through emergency assistance. These activities include accident assessment and evaluation, radiological exposure control, and protective action orders

and recommendations. They also reduce the probability of secondary damage and speed recovery operations.

Recovery: The Recovery phase begins when the emergency situation has been brought under control, there is no further threat to the public, the initiation of response activities has ended, and the relaxation of protective response options taken is being considered. Recovery activities continue until the community life of the affected area returns to its previous level or better.
These three phases are parts of an on-going cycle in which one phase leads into another. This Plan has been developed and patterned consistent with and supportive of the State Comprehensive Emergency Management Plan, which incorporates this comprehensive cyclical approach in planning and in dealing with all types of emergencies.

Under the provisions of Article 2-B, local governments have developed radiological emergency plans consistent with and as part of this State Plan. This State planning effort is designed to cope with a variety of potential radiological emergencies at a nuclear power plant that could have a public health impact.

In addition to the general State and local radiological plans, nuclear power plants licensees have developed and maintain site emergency preparedness plans.

The Nuclear Regulatory Commission (NRC), by law, can grant licenses for nuclear power plants only if the health and safety of the public is adequately protected. Although the law (The Atomic Energy Act) does not specifically require emergency plans and related preparedness measures, the NRC requires consideration of overall emergency preparedness as part of the licensing process. The NRC now requires adequate on and off-site emergency plans for the continuance of a license or the
issuance of a new license.

The U. S. Federal Emergency Management Agency (FEMA) has the lead responsibility for review and recommendation or approval of all off-site nuclear emergency planning.

All personnel carrying out State emergency assistance activities, including the distribution of supplies, processing of applications, and other relief and assistance activities, shall perform their work in an equitable and impartial manner, without discrimination on the grounds of race, religion, sex, color, age, economic status, or national origin.

3.2 Emergency Planning Zones

New York State has adopted the Federal concept of Emergency Planning Zones for nuclear power plants. Emergency Planning Zones (EPZs) around each nuclear facility must be defined for both short term and long term periods of exposure to ionizing radiation. Such zones are defined as the areas for which planning is needed, to assure that prompt and effective actions can

be taken, to protect the public in the event of an accident. They have been designed in size to accommodate the need for actions in regard to potential degree and radiological exposure.

There are two EPZs for each nuclear power plant site. The first zone is the Ingestion Exposure Pathway, which is the area within (approximately) a fifty-mile radius from the site. The principal exposure sources within this zone would be the ingestion of contaminated water or foods such as milk or fresh vegetables. The duration of potential exposures in this zone could range in time from hours to months. Therefore, protective actions for the Ingestion Exposure Pathway are planned for the extended time period. It is the intent of this planning effort to initiate protective actions at an early time period to prevent or minimize potential radiological contamination of milk or other agricultural products.

The second EPZ is the Plume Exposure Pathway, which is the area within (approximately) a ten-mile radius from the site. Although the radius for an EPZ implies a circular area, the actual shape would depend upon the physical and demographic features within that zone. The principal exposure sources within this zone are external whole body exposure to gamma radiation and exposure through the inhalation of radioactive materials.

The potential exposure within the Plume EPZ would depend on the duration of a release and meteorological conditions at that time and could range from one-half hour to any number of days.

The concept of these zones and their respective sizes represent a judgement on the kind and extent of planning which must be done and on the appropriate types of response activities needed for the effective protection of the public health. In a given emergency, protective actions might be restricted to a small part of either or both planning zones. Under other given circumstances, the emergency may extend outside these designated zones whereby discretion is permitted where natural and jurisdictional areas would receive little to no impact in an emergency.

3.3 Protective Action Guides

The concept of Protective Action Guides (PAGs) was introduced to radiological emergency response planning in order to assist public health and other governmental authorities in deciding how much of a radiation hazard in the environment constitutes a basis for initiating emergency protective actions. These guides (PAG's) are expressed in units of radiation dose (rem) and represent initiation (trigger) levels of preplanned protective actions should the projected future dose to be received by an individual exceed the designated level. These PAGs are used as the basis for initiating activities to minimize the potential exposure of individuals.

The PAG units represent such initiation levels as tools to be used as a decision aid to a response situation. They are not intended to represent "acceptable" radiation dose levels in other than emergency situations.

These guides are used in Section III of the Plan, entitled RESPONSE.

4.0 CONCEPT OF OPERATIONS

When considering radiological emergencies, Prevention/Mitigation, Response, and Recovery are responsibilities that are shared by all levels of government and the private sector. However, as stated in Executive Law, Sections 24 and 28, the affected counties have lead responsibility for carrying out emergency activities unless a "State Declaration of Disaster Emergency" is declared by the Governor.

4.1 Readiness

4.1.1 Private Sector

The Nuclear Facility Operator (NFO) provides training programs for public information and education in conjunction with all levels of government, establishes operator training, and provides specialized technical information and material to maintain an updated facility and response emergency plan. The operators are responsible for all aspects of this phase within site boundaries.

4.1.2 Local Government

Among the responsibilities of local government are the preparation and coordination of local preparedness plans, the development of a public information and education program, the development and maintenance of communication systems, and training of staff necessary to implement the plan.

4.1.3 State Government

The State assists local government by providing information and available expertise to enhance preparedness activities. In those instances where a county does not have the capability to implement all or part of its Radiological Emergency Preparedness Plan, or the Chief Executive of a county does not elect to put such a plan into effect, the State also shall take the necessary actions to respond. The DOH is designated as the lead agency.

4.1.4 Federal Government

The Federal Government, through the NRC, has the principal responsibility for regulating matters
regarding radiological health and safety. The FEMA provides assistance to New York State and its local governments in the preparation, review and testing of State and local radiological emergency plans.

4.2 Response

4.2.1 Private Sector

The first line of responsibility lies with the Nuclear Facility Operator, (NFO). The local and State response efforts begin if there is a potential hazard to the public. Responsibility for notification and initial assessment and evaluation lies with the nuclear facility operators.

4.2.2 Local Government

Upon notification, local government will activate its resources to respond to the emergency. At such time as their resources are no longer adequate, in addition to the technical assistance and evaluations normally provided by the State, the county may request State response assistance.

4.2.3 State Government

The DPC shall initiate the activation of State monitoring, assessment and evaluation personnel, equipment, and resources. The Commissioner of Health will then recommend protective action options on these evaluations. The DPC Chair/designee will coordinate the State resources needed to implement the protective action option and insure their continuity. New York State is organized along NIMS/ICS lines and adheres to incident command principles. State resources will supplement local resources in carrying out the necessary response activities to meet these option requirements. In those instances where a county does not have the capability to implement all or part of its Radiological Emergency Preparedness Plan, or the Chief Executive of a county does not elect to put such a plan into effect, State agencies under the direction of the DPC will implement the county's plan using State and local resources and personnel.

4.2.4 Federal Government

Upon State request, Federal resources will be activated in accordance with the (NRF). The NYSOEM Logistics Section Chief will coordinate the State effort to locate adequate facilities to support the federal response. The State Office of General Services will work directly with the Federal General Services Administration to find locations, equipment and supplies to assist the federal government in establishing a base of operations. The State Division of Military & Naval Affairs will also be tasked with examining their respective Air National Guard bases to determine their suitability to the needs of the federal response.

4.3 Recovery

4.3.1 Private Sector

The Nuclear Facility Operators (NFOs) will continue their activities as necessary. They will be responsible for ongoing on-and off-site monitoring.

4.3.2 Local Government

The recovery process encompasses the de-escalation of response activities. Local responsibilities and resource provisions will continue as necessary.

4.3.3 State Government

The DPC will provide the direction of State resources and recovery activities. The NYSOEM will act as the liaison for the Commission between local, State and Federal agencies and will coordinate State and Federal assistance programs. The State will continue off-site monitoring programs during the recovery phase.

4.3.4 Federal Government

The appropriate Federal agencies will remain for support and guidance through the Recovery phase. Federal financial assistance and recovery programs will be administered by the NYSOEM.

5.0 NUCLEAR POWER PLANT FACILITIES

Within New York State, there are three nuclear power plant sites that are briefly described below. The contiguous states of Connecticut, New Jersey, Vermont and Massachusetts, and the Province of Ontario have operating sites that could impact portions of New York State and therefore, are referenced in this plan.

5.1 New York State

5.1.1 Indian Point site

Indian Point site is located on the east bank of the Hudson River in the Village of Buchanan in Westchester County (Rockland, Putnam, and Orange Counties are in the EPZ. The site is 24 miles north of the New York City line; 2.5 miles southwest of Peekskill Center, three and three-tenths miles north of Montrose, and eight and three-tenths miles south of West Point, and is comprised of 239 acres containing three units of which two are operating. Indian Point Unit One and Unit Two are Pressurized Water Reactors (PWR) owned by Entergy Nuclear Northeast. Indian Point Unit One is not operable. Indian Point Unit Two produces 1020 megawatts of electricity. Indian Point Unit Three also owned and operated by Entergy Nuclear, Northeast is also a PWR which produces 1025 megawatts of electricity. Westinghouse Electric Corporation designed the two operating plants.

5.1.2 Robert E. Ginna site

Robert E. Ginna site is located on the south shore of Lake Ontario in Wayne County; it is a 338-acre area 20 miles east northeast of Rochester, 45 miles west southwest of Oswego. The reactor is a PWR, which produces 498 megawatts of electricity. It is owned and operated by Constellation Energy Group since 2004. Westinghouse Electric Corporation designed the plant.

5.1.3 Nine Mile Point site

Nine Mile Point site is located in Oswego County, on the south shore of Lake Ontario, in the Town of Scriba, it is seven miles northeast of the City of Oswego, and 36 miles northwest of Syracuse. It is an area of 1,500 acres and contains three operating Boiling Water Reactors (BWR). Nine Mile Point Unit One, owned by Constellation Energy Group, produces 621 megawatts of electricity. Nine Mile Point Unit Two, also owned by the Constellation Energy Group is on the same site and has operated since 1988. Nine Mile Point Unit Two produces 1135 megawatts of electricity. The James A. FitzPatrick Nuclear Power Plant, owned and operated by the Entergy Nuclear, Northeast produces 852 megawatts of electricity and has been operating since 1975.

5.2 Contiguous States or Provinces

5.2.1 Millstone

Millstone is on the Connecticut shore of Long Island Sound, on the east shore of the Niantic Bay, three miles west-southwest of New London City limits, and 39 miles southeast of Hartford. The main station area is located on a peninsula jutting into Long Island Sound, and is 7.5 miles northwest of Fishers Island and 8 miles north of Plum Island both of which are in Suffolk County. (Plum Island is a U.S. Department of Agriculture (USDA) Animal Disease facility.)

The Millstone site is 500 acres on which there are three reactors. Millstone Unit One is permanently shutdown. Millstone Unit Two is a PWR producing 882 megawatts of electricity, and has been operating since 1975. Millstone Unit Three (PWR) produces 1,155 megawatts of electricity. The reactors are primarily owned and operated by Dominion Nuclear Connecticut Inc.

The plume exposure EPZ responsibilities of New York State and Suffolk County/Town of Southold with respect to Fishers Island and Plum Island are described in each community's local radiological emergency response plan. The USDA's plan for Plum Island was directly submitted to the Federal Emergency Management Agency (FEMA). Both of these plans have been approved by FEMA as part of the State of Connecticut's submittal of Millstone site emergency response plans. Notification procedures, protective action recommendations and emergency response actions for Fishers and Plum Islands are in accordance with the Connecticut State Plan.

5.2.2 Vermont Yankee

Vermont Yankee is located in Vernon, Vermont and is 27 miles from the New York border. This reactor is a BWR, producing 506 megawatts of electricity and has been owned and operated by Entergy Nuclear Northeast.

5.2.3 Oyster Creek

Oyster Creek is located in Ocean County, New Jersey and is 45 miles from Staten Island. There is one BWR, producing 619 megawatts of electricity, which is owned and operated by AMERGEN.

5.2.4 Pickering Generating Station

Pickering Generating Station is located on Lake Ontario in Pickering, Ontario, Canada. It is approximately 20 miles northeast of the City of Toronto, approximately 18 miles from the New York State border and 36 miles from the New York State land area. There are currently six CANDU (Canadian Deuterium Uranium) reactors each with a gross electrical generating capacity of 431 megawatts. The Pickering site is owned and operated by Ontario Power Generator and has been operational since 1971.

6.0 LEGAL AUTHORITIES AND REFERENCE DOCUMENTS

6.1 New York State

New York State Executive Law – Sections 20 – 29 (Article 2-B)
Provides State and Local natural and man-made disaster preparedness. Establishes the existence of the Disaster Preparedness Commission and its powers and responsibilities. Provides the duties and responsibility of local Chief Executives.

New York State Public Health Law Section 201:
Provides the Commissioner of Health the responsibility for public health aspects in the use of ionizing radiation.

New York State Public Health Law Section 206:
Provides the Commissioner of Health broad authority for protecting the health and life of the people of New York State.

New York State Sanitary Code Part 16:
Implements the Public Health Law. Requires actions to be instituted to correct and prevent unnecessary exposure due to the release or any radiation installation of radiation sources or materials exceeding acceptable dose limits.

New York State Defense Emergency Act as enacted by Chapter 784 of the Laws of 1951:

Enacted in accordance with the Civil Defense Act to establish a Civil Defense Office in every county which also functions as the County disaster-coordinating agency. Provides for construction and utility of the EOC, development of communication and warning systems and the involvement of volunteer CD workers.

Interstate Civil Defense and Disaster Compact, Chapter 2 Section 9231 Unconsolidated Laws:
Provides mutual aid among contracting states in meeting an emergency.

Agriculture and Markets Law Article 17, Section 199-1 Prohibition as to adulterated or misbranded food:

Provides the Commissioner of Agriculture and Markets the ability to test food or foodstuffs for contaminants.

Environmental Conservation Title 6, Chapter IV, Subchapter C, Radiation Part 380:
Provides for the prevention and control of environmental pollution by radioactive materials.

New York State General Business Law Article 28D:
No person shall possess or use radioactive material without a valid license issued by the (Industrial) Commissioner except where the use or possession of radioactive material or radiation equipment are subject to the regulatory powers and jurisdiction of the State Department of Health or the Health Department of the City of New York.

Industrial Code Rule 38:
Every industrial installation and mobile source consisting of radiation equipment shall be registered with the Industrial Commissioner.

On State Civil Defense Emergency Act, Article 6, Section 9160 Closing or Restricting Use of Highways; Posting of Properties:
Provides the Commissioner of Transportation the authority to open or close highways, waterways, railroads, etc.

The New York State Comprehensive Emergency Management Plan:
This plan establishes the methods and procedures to cope with the effects of a disaster by comprehensive management of all private and public resources available in New York State.

NYS/NRC Letter of Agreement 10/62:
Sets up New York to assume some NRC responsibilities for licensing and inspection of some radiological by-products. (Signatories: Rockefeller and the Atomic Energy Commission)

Emergency Management Assistance Compact (EMAC)
EMAC is the Governor's interstate mutual aid compact that facilitates the sharing of resources, personnel and equipment across state lines during times of disaster and emergency. EMAC is formalized into law by member states. EMAC was adopted by NYS in September 2001.

6.2 Federal Government

Atomic Energy Act of 1954:
Requires that the NRC grant licenses only if the health and safety of the public is adequately protected.

Title 10 Code of Federal Regulations Part 50. Nuclear Regulatory Commission, Emergency Planning, Final Regulations NUREG-0654 - FEMA - REP-l Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants:

Requirements for licensee emergency plans for onsite and offsite emergency preparedness measures for nuclear reactors, fuel cycle facilities and certain other fuel cycle and materials licensees.

NRC/FEMA Memorandum of Understanding September 1993 Appendix A of 44CFR Part 354
Establishes a framework of cooperation in radiological emergency response planning.

Presidential Executive Order 12148:
Charges the FEMA Director with establishing policy for and coordinating all civil emergency planning and assistance functions for Executive agencies (section 2-101). The Director shall represent the President in working with State and local governments and the private sector to stimulate vigorous participation in civil emergency preparedness, mitigation, response and recovery programs (section 2-104).

Title 44 Code of Federal Regulations Part 350:
Establishes policy and procedures for review and approval of State and local emergency plans and preparedness for coping with the offsite effects of radiological emergencies at commercial nuclear power reactors by the Federal Emergency Management Agency.

Presidential Executive Order 11795 7/11/74:

Delegates disaster relief functions under PL 93-288, to Federal Agencies, primarily HUD, Secretary
of Agriculture, and the Secretary of Defense.

Title 24, Chapter XII, Part 2205 - Code of Federal Regulations:
Standards and procedures to be followed implementing PL 93-288.

Federal Civil Defense Act of 1950 (PL 81-890) as amended:
Established entire Civil Defense Program

Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288, as amended)

EPA 400-R-92-001 Manual of Protective Action Guides and Protective Actions for Nuclear Incidents

National Response Framework:
This document is a guide to how the Nation conducts all-hazards response. It is built upon scalable, flexible, and adaptable coordinating structures to align key roles and responsibilities across the Nation.

7.0 LISTING OF SUPPORTING PLANS

7.1 New York State Comprehensive Emergency Management Plan

7.2 Monroe County Radiological Emergency Preparedness Plan

7.3 Oswego County Radiological Emergency Preparedness Plan

7.4 Orange County Radiological Emergency Preparedness Plan

7.5 Putnam County Radiological Emergency Preparedness Plan

7.6 Rockland County Radiological Emergency Preparedness Plan

7.7 Wayne County Radiological Emergency Preparedness Plan

7.8 The Indian Point Radiological Emergency Preparedness Plan for Westchester County

7.9 Onondaga County Radiological Emergency Response Host Plan

7.10 Entergy Nuclear Northeast, Emergency Plan for Indian Point Units Nos. 1, 2 and 3

7.11 Constellation Energy Group for Nine Mile Point Nuclear Station Units 1 and 2

Emergency Plan

7.12 Constellation Energy Group, Ginna Station Radiation Emergency Plan

7.13 Entergy Nuclear Northeast, James A. Fitzpatrick Site Emergency Plan

7.14 Brookhaven Area Office, US Department of Energy
Radiological Assistance Program (RAP)

(NOT USED)

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
SECTION II: READINESS

TABLE OF CONTENTS

(NOT USED)

1.0 INTRODUCTION

Readiness is the first phase of an emergency preparedness program. Its primary purpose is to eliminate, or reduce, the effects of radiological emergencies. Readiness activities include logistical assistance, technical assistance, and off-site monitoring of potential radiological emergencies. Also included in this phase are public education, training, drills, and vulnerability studies of potentially hazardous radiological sources. These and similar activities, which attempt to negate or minimize the effects of a radiological emergency are essential to the protection of public health and environment from radiological exposure.

Specific agencies on the Federal, State, and local levels with individual roles and responsibilities to perform, combine their resources with those of the private sector to produce an efficiently functioning Readiness program.

2.0 OPERATIONS

The private sector can provide resources, such as specialized technical information, specialized material and equipment, and personnel to reduce the probability and effects of a radiological emergency.

State government, in cooperation with other levels of government, as well as the public, determines what resources are needed to mitigate the effects of an emergency.

All radiological emergency preparedness plans must be mutually supportive, to allow for all levels of government to recognize each others capabilities, responsibilities, and obligations.

2.1 State/Federal Role

The Federal Government's primary role in Readiness is to enact laws or rules that will ensure the safest possible operation of a nuclear power plant. Within the Federal government, the FEMA and the NRC are the primary agencies responsible for readiness for a radiological emergency. FEMA is responsible for assisting in and overseeing off-site emergency planning in accordance with Federal regulations. The NRC is responsible for the granting of nuclear power plant licenses and on-site emergency plans.

Federal agencies provide radiological emergency planning, guidance and related training to State and local governments. These agencies work with nuclear facility operators in developing emergency plans for the public protection and assist in developing agreements with government agencies, to provide early public warning and implementation of protective actions.

The State will continue to work closely with the Federal government in all aspects of emergency management and will continue its role of intermediary among the Federal government, local governments, and private citizens.

The Radiological Assistance Program (RAP) provides for preplanned emergency operations to assist State and local governments in assessing potential consequences of radiological emergencies of any kind. The National Response Framework (NRF) provides for the use of all available Federal capabilities for radiological monitoring and assessment.

2.2 State/Local Role

All levels of government have a role in the Readiness for a radiological emergency.

The State supports activities which will be carried out exclusively by the private sector or local government, such as vulnerability analysis, educational programs, and similar programs.

2.3 State/Lead Agency Role

State readiness activities are carried out before the emergency and are directed by the DPC to minimize any adverse impact on the public health. The NYSOEM is responsible for the development and implementation of these activities and programs. Examples of some of these readiness actions are the preparation of State plans and the statewide public education programs.

3.0 READINESS ACTIVITIES AND ASSIGNMENTS

In addition to the technical personnel in the DOH, personnel from other State agencies will be made available to provide technical assistance. These resource personnel will be required to possess various qualifications in such areas of expertise as health physics, laboratory analysis, environmental surveillance and monitoring, power plant systems and operations, and reactor hazards analysis.

Table 1, summarizes readiness activities carried out by the identified agencies. An "X" in an agency column indicates that the associated agency has responsibility for a program activity. The paragraphs following this chart will describe briefly the activities that support the "X" in an agency column.

TABLE I – READINESS
AGENCIES

ACTIVITIES	DOH	NYSOEM	Ag & Mrkts	NYS ERDA	DEC	PSC	OFPC	DSP	DOT	T-WAY
Administration		X								X
Logistics	X		X						X	
Monitoring Radiation Emergencies	X	X			X		X	X	X	
Plans, Policies, Program	X	X	X		X	X	X	X	X	X
Public Education	X	X	X	X						
Technical Assistance	X	X	X		X	X			X	
Training, Drills, Exercises	X	X	X	X	X	X	X	X	X	X

DOH = Department of Health
A&M = Agriculture and Markets
NYSERDA = State Energy Research and Development Authority
OFPC= Office of Fire Prevention and Control
DSP = Division of State Police
NYSOEM = State Office of Emergency Management
SED = State Education Department
DEC = Department of Environmental Conservation
PSC = Public Service Commission
T-Way = Thruway Authority
DOT = Department of Transportation

3.1 Administration

The responsibility for the administration of this Plan includes:

- providing for and controlling the Plan distribution, amendments, and updates;
- reviewing the status of New York State emergency response agencies capabilities and their procedures for implementing this Plan; and
- providing the mechanisms for and conducting an annual review and updating of this Plan through up-to-date information and the results of periodic drills and annual exercises, to certify that the Plan is current.

3.1.1 State Agencies

The Director of the NYSOEM is responsible for the development, publication, and distribution of the Plan and for the prompt distribution of amendments and plan updates to all concerned agencies; maintains the compatibility of this Plan with other relevant emergency plans; oversees the implementation procedures of State agencies having radiological emergency responsibility in this Plan; provides up-to-date radiological emergency planning information, relevant to the appropriate State agencies; and conducts an annual review, update, and certification of this Plan for the Commissioner of Health, the Disaster Preparedness Commission and the Governor.

3.1.2 County

Each county emergency management office is responsible for the administration of their respective county radiological emergency preparedness plan as outlined in that plan.

3.2 Logistical Assistance

The timely mobilization and efficient management of resources available for response operations is of the utmost importance in determining the effectiveness of dealing with radiological emergency. Three key Readiness activities are the identification, acquisition, and the maintenance of an up-to-date inventory of potentially useful emergency response resources that can be marshaled in the event of an emergency.

3.2.1 State Agencies

The NYSOEM provides guidance in the development of program needs.

NYSOEM is also the contact point for resource management and maintains a stockpile of water and power equipment available for loan to State and local agencies during emergencies, coordinates emergency communications systems, and maintains a cache of radiological instruments and supplies for plume and ingestion activities.

The Department of Environmental Conservation provides equipment and manpower to assist in communications and monitoring the environment.

The Department of Health assists local health agencies, provides laboratory services, and maintains monitoring equipment.

3.2.2 County

Each county emergency management office is responsible for logistical assistance as outlined in their respective radiological emergency preparedness plan.

3.3 Monitoring Potential Radiological Emergencies

The off-site radiological monitoring capabilities of State agencies in areas around nuclear facilities are primary to an adequate readiness program. Examples of fixed environmental monitoring equipment include air particulate monitors, I-131 monitors and radiation badges.

3.3.1 State Agencies

The NYSOEM has limited radiological capabilities and receives meteorological information which may be used to assist the Department of Health in the assessment and evaluation of a radiological emergency.

The Department of Health provides radiological capabilities and operates a Statewide Radiation Surveillance Network, which collects environmental samples to establish and monitor long-term environmental trends of radioactive pollutants.

The Department of Public Service and the Energy Research & Development Authority provide nuclear emergency support in the assessment & evaluation of a radiological emergency.

The Division of State Police relays reports regarding radiological emergencies received from the public to the NYSOEM staff.

The Department of Environmental Conservation staff can provide assistance in radiological monitoring.

3.4 Plans, Policies And Programs

Preparing plans is a Readiness activity. Many State agency planning programs influence local government activities.

3.4.1 State Agencies

The NYSOEM is responsible for the overall development of the REP plans, policies and programs.

The Department of Agriculture and Markets, through scheduled inspections, will monitor relevant farm activities and the food chain system.

The State Energy Research and Development Authority is the liaison with the NRC.

The Department of Environmental Conservation provides expert testimony/professional expertise in the siting of energy facilities.

The Department of Health assists local communities in radiological emergency planning, provides technical advice, laboratory assistance, and health advisory information, and conducts an environmental surveillance program near nuclear facilities.

The Public Service Commission has regulatory responsibilities over the rates and services of electric corporations. The Department of Public Service is the staff arm of the Public Service Commission.

In addition, under Article VIII of the Public Service Law, the Chairman of the Public Service Commission is also Chairman of the State Board on Electric Generation Siting and the Environment, which is responsible for licensing of major steam electric power plants in New York State. The support staff for the Siting Board is provided by the Department of Public Service.

3.4.2 County

Each county plan is a part of this State plan and the preparation of each is done at the county level with NYSOEM assistance.

3.5 Public Education

A key activity is the implementation of the statewide public education program, in conjunction with Federal and local agencies and the private sector, to provide information about radiological emergency planning. Included in this program is the preparation and distribution of pamphlets, discussion of such topics as potential problems associated with nuclear power plants, radiation and emergency response information.

Public understanding of potential hazards and the Readiness activities available to minimize the potential of an emergency is basic to the whole process of Public Education.

Public Education is a mitigative activity of all levels of government. An annual news media education program is conducted at each site to acquaint the news media with relevant radiological emergency plans, radiation information and public protective measures.

3.5.1 State Agencies

The NYSOEM coordinates and supervises public education efforts at the State level. NYSOEM will also assist local government and nuclear facility operators in the design and implementation of their public education programs and work cooperatively to ensure program continuity to the extent possible. NYSOEM will make radiological emergency information available to the general public.

The Department of Agriculture and Markets assists in education plans and the education of farmers and food processors regarding the control and inspection of milk and other food products to guard against radiological contamination and assists the NYSOEM in overall public education programs.

The Department of Education ensures that the education curricula for elementary and secondary schools includes an educational program that pertains to potential hazards during an emergency.

The Department of Health provides health advisory information about potential radiological emergencies and what steps must be taken to mitigate such emergencies.

3.5.2 County

Each county conducts public education and information activities, which are outlined in the respective radiological emergency preparedness plans.

3.5.3 Nuclear Facility Operator

Each nuclear facility operator conducts various public education and information activities.

3.6 Technical Assistance

State agency technical assistance to communities will be provided. Many State agencies have specialized capabilities (i.e., engineering and scientific expertise) and personnel to support local communities faced with potential radiological emergencies. Due to the cost of such services, local governments cannot always provide them independently. This assistance includes providing for the testing of radiological instruments, equipment, warning systems, and communication systems.

3.6.1 State Agencies

The NYSOEM will provide guidance and technical and planning assistance.

The Department of Health provides technical advice, laboratory assistance and health advisory information on potentially hazardous materials.

The Department of Agriculture and Markets provides technical assistance to farmers and food industries concerning the effects of radiation and what measures may be taken to mitigate the effects of a radiological emergency.

The State Energy Research and Development Authority and the Public Service Commission reviews and evaluates safety related materials, components, systems, programs, and procedures at nuclear facilities, to insure that the potential for accidents affecting the public health and safety is minimized, and provides technical support in the development of emergency plans for nuclear facilities.

The Department of Environmental Conservation provides technical guidance for cleanup and decontamination.

The Department of Transportation provides technical assistance on traffic and highway maintenance related matters.

3.7 Training, Drills, and Exercises

Radiological emergency preparedness plans require trained personnel to implement them. The NYSOEM will coordinate this training for emergency personnel and public officials. Training and retraining of State and local officials is provided through a variety of programs, such as formal courses, seminars, conferences, drills, exercises and experience gained in response to actual emergencies. An annual exercise will be conducted which will include emergency response agencies from the State and local level in conjunction with the Nuclear Facility Operators.
Provisions are made for a critique of training drills and each exercise by qualified observers. The results of the critiques will be the basis for improving the New York State Radiological Emergency Preparedness Plan.

3.7.1 State Agencies

The NYSOEM is responsible for the coordination of training including the development of curricula, training materials and handouts, and the delivery of training. NYSOEM is responsible for the development, organization and conduct of drills and exercises, and provides training support for REP courses as necessary including emergency operations and local and State radiological monitoring.

NYSOEM sponsors a continuing training program for State and local officials having disaster responsibilities which consists of conferences for public officials, and other related training activities. In drills/exercises emergency response requirements, actions, and methods are discussed and explained and tested under simulated emergency conditions. These activities are the same as may be required in a radiological emergency, with the exception of the technical response involved in evaluating radiation hazards. Courses dealing with the evaluation of and response to radiological emergencies are sponsored by the Federal government and Disaster Preparedness Commission (DPC).

The Department of Health assists NYSOEM in conducting radiological training for local public health officials and assists with the preparation and conduct of drills and exercises.

The Office of Fire Prevention and Control (Department of State) conducts specific courses in handling hazardous materials emergencies and in radiation safety for firefighters.

The Division of State Police, Department of Transportation, along with the Office of Fire Prevention and Control participate in training programs for radiological monitors, and assists NYSOEM in specialized training and drills.

3.7.2 County

The specific training courses and audience are specified in the Training Procedure in each respective County Radiological Emergency Preparedness Plan.

3.7.3 Nuclear Facility Operator

Provides periodic training and retraining for local emergency services located in the vicinity of the facility. Training and/or drills are typically provided on an annual basis for fire, hospital and ambulance personnel. The nuclear facilities provide instructors at various training sessions and provide staff to assist in preparation of scenarios used in drills and exercises.

(NOT USED)

TABLE OF CONTENTS

TABLE OF CONTENTS

SECTION III: Response (cont.) Page

Attachments

1.0 INTRODUCTION

The Response phase of a radiological emergency deals with the reaction to an emergency which encompasses the Federal, State, local and private sector response roles and how the activities of these organizations will be coordinated. This effort minimizes the impact of the emergency on the health and safety of those in the affected areas.

A nuclear power plant emergency is defined as a series of events at a nuclear power plant which leads to an actual or potential release of radioactive materials into the environment to warrant consideration of protective actions. Protective actions are those actions taken which are intended to minimize the radiation exposure of the general public.

1.1 Private Sector

The Response phase to a radiological emergency within a nuclear facility begins with the NFO. The NFO has the first line responsibility for assessing the magnitude of a radiological emergency and its potential consequences and for taking immediate actions to mitigate or terminate the emergency. This responsibility includes classifying the event and notifying State and local governments, as well as the NRC, on-site and off-site monitoring, sample collection and analysis. After the initial notification, technical personnel from the nuclear facility will remain in contact with the representatives of the State Commissioner of Health and local officials for consultation and ongoing assessment of the emergency.

1.2 Local Government

Each county has the primary responsibility for responding to a radiological emergency with their resources and, when necessary, for requesting additional assistance from other jurisdictions. These resources are contained in each county plan.

Local government response efforts will be based on information from the NFO and guidance from the DPC. Local resources will be made available for the effective implementation of the appropriate protective action response options.

1.3 State Government

Each respective local government has the primary responsibility for responding to a radiological emergency. State agencies are expected to provide necessary support to local government. However, upon a State Declaration of Disaster Emergency by the Governor, the DPC assumes direction and control of emergency response activities through the local Chief Elected Official. County agency duties and responsibilities are not changed. The State Declaration simply allows the State to mobilize additional resources and assume responsibility for action decisions, and coordination with the local Chief Elected Official.

The Department of Health, as the State lead agency in radiological emergencies, and by order of the

Commissioner of Health, under the auspices of the DPC, shall request necessary monitoring and activate assessment and evaluation personnel, equipment, and other resources. Upon evaluation and after consultation with the local Chief Elected Official, the Commissioner will recommend appropriate protective action response options. In those instances where more than one county is impacted, protective action decisions are coordinated between the State and affected counties via the Executive Hotline. The DPC will deploy to the respective nuclear power plant EOF, county(s) Emergency Operations Center(s), Joint Information Center (JIC) and other States or local EOCs as required. After a State Declaration of Disaster Emergency pursuant to Executive Law, Article 2B, section 28, the Commissioner may order appropriate protective actions. State agencies are responsible for support. The NYSOEM, as staff to the DPC, is the State coordinating agency of State and local operational resources and will perform this function from the State Emergency Operations Center (SEOC).

There will also be an ongoing exchange of information between local and State agencies.

After the initial notification of an emergency, disaster preparedness response activities will be coordinated through the NYSOEM. County Health Departments or Public Health offices will continue ongoing communication with the State DOH. County agencies will communicate through their State contacts and/or the NYSOEM liaison.

As previously stated, the DPC will have a representative in each county emergency management office, in the EOF, in the JIC and, with the DPC Chair at the State EOC to facilitate the proper implementation of the plan.

1.4 Federal Government

Management of the Federal response requires the coordination of a number of Federal agencies with each other and with the appropriate State and local authorities. The responsibility for the overall management of the Federal response is identified in the National Response Framework (NRF).

The NRC will be responsible for the on-site technical direction of the Federal response. "Technical" refers to all aspects of radiological monitoring, evaluation, assessment and reporting, the application of sophisticated technology to control or predict the impact of radiological contamination and the use of all available instrumentation to develop recommendations for protective action measures.

In accordance with the NRF, FEMA will serve as the primary point of contact for State officials and will coordinate and manage all non-technical aspects of the Federal response. "Non-technical" refers to all types of assistance to Federal and State/local organizations, such as transportation, communication, housing and assistance to State/local response activities. For Federal notification contacts refer to Procedure B, Attachment l1.

At the direction of the State Commissioner of Health or designee, the Department of Energy (DOE), through the Federal Radiological Monitoring and Assessment Center (FRMAC), will

coordinate all off-site monitoring, evaluation, assessment and report the activities of participating Federal agencies.

The NRC and DOE will coordinate their on-site and off-site data and will jointly advise the State Assessment and Evaluation staff on the Federal assessment and evaluation of the emergency and the availability of support.

The State Coordinating Officer at the State EOC is the designated State liaison to Federal agencies that have been requested to provide response support to the State. The U.S. Department of Agriculture has established an USDA Emergency Board in every State and county to coordinate USDA State or county disaster assistance efforts. All of the USDA agencies having major emergency responsibilities are represented on these boards. USDA emergency personnel are to establish continuing liaison with State and/or county agricultural agencies to insure coordination of assistance activities and damage assessments. For USDA contact, refer to Procedure B, Attachment 11.

2.0 GENERAL OPERATIONS

2.1 Response Activities and Assignments

Table 1 is a list of response activities assigned to State agencies, local governments, the private sector, and the Federal Government. This list is composed of those activities directly related to response to a radiological emergency. Those activities that are related to other types of emergencies that might occur in conjunction with a radiological emergency, such as flood, earthquake, snowstorm, etc., are found in Part III of the New York State Comprehensive Emergency Management Plan (CEMP).

2.1.1 Direction and Control

The activities within direction and control are to assign missions; make assessments and evaluations; direct and coordinate operations; supply special resources; and implement applicable laws and regulations. These activities will be directed by assigned agency representatives at the State EOC, 1220 Washington Avenue, Building #22, Suite 101, State Campus, Albany, using the NYSOEM communications system, which will be supported by the existing operational capability of other assigned agencies.

Local Government

At the county level, this direction and control activity will be implemented by local government agencies, with the county Chief Elected Official in charge. Operations will be directed from the county EOC's, using county communications (refer to Communication procedures in each appropriate county radiological emergency preparedness plan). In those instances where a county
does not have the capability to implement all or part of its Radiological Emergency Response Plan, or the Chief Elected Official of a county does not elect to put such a plan into effect, the Governor shall declare a State of Disaster Emergency for that county and direct State agencies to

implement those measures of the county's plan that may be appropriate and necessary under the direction of the DPC. State and local resources and personnel shall be utilized in carrying out these measures.

State Agencies

The Department of Health is designated the lead State agency for a radiological emergency. The Commissioner of Health or designee will provide guidance to local government agencies and will direct State agencies as to appropriate protective actions.

The DPC will position liaisons at the EOF, County EOC(s), JIC and other States and local EOCs as required. NYSOEM will coordinate the assistance furnished by various Federal and State agencies, emergency forces from political subdivisions and quasi-public and private organizations.

The Department of Agriculture and Markets controls the safety of food and livestock subjected to radiological contamination including such measures as seizure, embargo and salvage. It will also give advice to farmers on emergency problems including livestock and crop contamination. In cooperation with the DOH it will implement response programs for sampling milk and other agriculture products.

2.1.2 Communication

Communication activities include: notification of Federal, State, and county emergency organizations, and the news media; notification of the general population and special facilities within the plume exposure EPZ and reporting of radiological and meteorological information.

Local Government

Local communications will be activated at the local level using existing county emergency communications. (The specifics of these systems are set forth in the county Communication procedures.)

State Agencies

The NYSOEM has communications systems with both plume and ingestion exposure EPZ counties, NYSOEM field offices and the NFO to provide initial notification and ongoing communication during the emergency. These systems include dedicated telephone lines Radiological Emergency Communication System (RECS) and the Executive Hotline, commercial telephone and radio communications including the NYSOEM Notification System (Dialogistics). The Supervisor (Communications Technician 2) of the State Emergency Communications Center (SECC) is responsible for the on-going 24-hour operation of the Center. The supervisor is responsible for scheduling adequate NYSOEM SECC staff and also maintains a quarterly updated notification list of NYSOEM response personnel and of State Agency emergency contacts to ensure a 24-hour capability.

NYSOEM has the National Warning System (NAWAS). The NYSOEM SECC participates in twice daily communications tests with NAWAS at the Federal level and at the local level to selected counties and cities. NYSOEM also conducts twice daily communications tests with the National Weather Service (NWS). NYSOEM field offices have radio systems on State agency networks of the Department of Transportation, Department of Environmental Conservation, Department of State (Fire Prevention and Control), and the Division of State Police. NYSOEM is the lead agency for this response activity.

NYSOEM also manages NY-Alert, New York State's All-Hazards Alert and Notification . This web based portal offers one-stop shopping through which State agencies, county and local governments, emergency service agencies and institutions of higher learning can provide emergency information to a defined audience be it local, county, regional or statewide. Information provided can include information on protective actions ordered, road closures, etc. The portal will disseminate emergency information through EAS, blast faxing, cell bursting, emails to media, businesses and individuals, text messaging, press releases and postings on the NY-Alert website. NY-Alert can be accessed through www.nyalert.gov

The Division of State Police has a New York Statewide Police Information Network (NYSPIN) that allows intercommunication among local government emergency managers, the DPC/NYSOEM, law enforcement agencies and the National Weather Service. It routinely is used to transmit emergency traffic between these agencies. DSP also has a radio communications system consisting of fixed and mobile units that allows communications virtually anywhere in the state.

Radio cars and helicopters are equipped with public address systems. State of the art mobile communications vehicles with satellite communications capability have been developed and are operated for the DPC.

The Thruway Authority has a radio communication network, along the entire length of the Thruway, which allows Thruway personnel to coordinate movement of emergency vehicles and supplies. The Thruway radio system is available to assist in emergency situations within the parameters of its operating capabilities, which are approximately ten miles each side of the Thruway.

The Department of Environmental Conservation has a statewide radio system which connects regional headquarters to mobile units.

The Department of Health has mobile radio communications equipment which enables the Emergency Medical Services program to be in contact with local EMS personnel (ambulance, fire, rescue squads). The Bureau of Environmental Radiation Protection, Department of Health has an extension of the RECS.

The Division of Military and Naval Affairs can activate radio communications between armories. It has bullhorns and aircraft loudspeakers, and special communication units.

The Office of Parks, Recreation and Historical Preservation has bullhorn and loudspeaker communication capabilities within State parks and recreational facilities.

The Department of Transportation has a statewide system which connects regional headquarters to residencies and mobile units.

The Office of Fire Prevention and Control has radio equipment which can contact the Office's field representatives and County Fire Coordinator offices. Information can be relayed on the assigned State fire radio frequency from the county offices to all counties in the State. This is a back-up system to get information to the fire service in New York State if other systems are not functioning.

The Civil Air Patrol has a radio network for emergency backup to NYSOEM.

The American Red Cross provides communications from congregate care centers.

Radio Amateur Civil Emergency Services (RACES) operates a sophisticated radio system in the state on the HF and VHF bands. These volunteers routinely provide primary and back-up radio communications during emergencies.

The Nuclear Facility Operator is responsible for initiating the primary notification system via the RECS or backup utilizing backup radio or telephone.

2.1.3 Public Notification

The capability exists to provide a prompt notification signal to the public, followed by provisions for disseminating instructions to the public on the appropriate protective actions to be taken. Equipment and procedures are in place to ensure notification to the public in a timely fashion of the decision to issue a protective action recommendation (PAR). NY-Alert is also a component of the public notification system as described above.

Local Government

The activation and control of this public notification system will be implemented at the local level in coordination with the State DPC.

Initial Notification Requiring a Protective Action:

In the event an emergency requiring an initial notification to the State and affected county(ies) that a General Emergency has been declared (i.e. a fast breaking incident), the county (ies) will activate their public notification system and release a prearranged EAS message to the public prior to coordination with the State. NY-Alert may be utilized for initial notification purposes. In the case of multiple county involvement, a lead county has been selected to activate the EAS system and authorization and procedures to activate the siren system immediately. Procedures are contained in each county plan.

State Agencies

The NYSOEM will verify that public notification systems are activated, including the coordinated use of the EAS to include dissemination of information through NY-Alert. NYSOEM is the lead agency for this response activity.

The Division of State Police will assist, as directed, in the local program to alert the public.

The Department of Health will advise the public on the emergency impact and on what protective actions are necessary.

The Office of Parks, Recreation and Historical Preservation will notify populations in State parks and recreation facilities about the emergency and will issue instructions for appropriate protective actions to be taken.

2.1.4 Accident Assessment

Radiological and meteorological capabilities exist to provide information for assessing the public health impact of radiological emergencies. Accident assessment includes obtaining radiological and meteorological data and the use of such data in determining the actual or potential impact on public health in order to determine the appropriate protective action.

Local Government

Will make an assessment based on information from the NFO, the State Commissioner of Health, and their own resources.

State Agencies

The Department of Health assesses the magnitude and impact of an emergency on the public health and where appropriate provides calibrated portable survey instruments and manpower. DOH conducts epidemiological surveillance; provides laboratory analysis of air, water, and agricultural products samples; collects potable water samples; provides information on hospitals with radiological medical personnel and thyroid uptake scanners for screening potentially exposed populations; and provides meteorological evaluation for transport of airborne radioactive materials, using the United States Department of Energy National Atmospheric Release Advisory Capability system (NARAC) and the NFO's assessment system. DOH is the lead agency for this response activity.

The Department of Agriculture and Markets, in cooperation with the Departments of Health and Environmental Conservation, implements programs in sampling milk and other agricultural products for radiological contamination.

The Department of Environmental Conservation implements environmental monitoring programs, providing meteorological data from both the New York State Continuous Monitoring

Network and the National Weather Service locations and interpreting this information concerning the transport of airborne radioactive materials.

The State Office of Emergency Management provides technical support at the request of DOH with both radiological personnel and equipment and meteorological data.

Federal Agencies

Upon the request of the Commissioner of Health, through the Bureau of Environmental Radiation Protection, technical assistance will be provided through the Department of Energy, Brookhaven
Area Office RAP Team and the NRF/Nuclear Radiological Annex and the FRMAC for radiological assessment to support State and local agencies. This support includes the use of the United States Department of Energy National Atmospheric Release Advisory Capability (NARAC) system.

Nuclear Facility Operator (NFO)

The NFO provides the initial radiological and meteorological assessment and continues to provide this data throughout the emergency situation. The NFO also provides assessment and recommendations throughout the emergency to the DOH and local officials.

2.1.5 Protective Response Evaluation

Protective response options are determined following evaluation of all pertinent data so the most appropriate decisions in recommending protective action are made. (Refer to Attachment 1 for protective action decision rationale).

Local Government

Local governments evaluate information from the NFO, DOH, and their own resources before determining the appropriate protective action.

State Agencies

The Department of Health evaluates all pertinent data to provide guidance to local government and State agencies as to appropriate protective actions. DOH is the lead agency for this response activity.

The State Office of Emergency Management coordinates the collection and transfer of information needed for the evaluation process from appropriate State agencies and local governments.

The Department of Agriculture and Markets evaluates pertinent data regarding protection of food and livestock.

Federal Agencies

Evaluative input will be provided through Federal radiological and meteorological programs.

Nuclear Facility Operator

Initial and ongoing recommendations on appropriate protective actions to be taken will be provided by the NFO.

2.1.6 Radiological Exposure Control

Procedures will be established for controlling exposures of the public and emergency workers to radioactive materials.

Control of radiological exposure of local emergency workers and the public will be accomplished at the local level based on the existing situation and on the protective response actions recommended by the State Commissioner of Health.

State Agencies

The Department of Health recommends appropriate protective actions for controlling the exposure of the public to radiation. DOH has lead agency role for this response activity.

The State Office of Emergency Management provides radiological monitoring equipment to support the operation of State Emergency Worker Personnel Monitoring Centers (PMC). The Division of State Police, the Department of Transportation, the Department of Health and the Office of Fire Prevention and Control provide primary staffing for these State emergency worker PMCs.

2.1.7 Public Information

Public information includes a coordinated program to keep the public informed on the up-to-date status of a radiological emergency situation and to insure that there exist methods to advise the public of all recommended public protective measures. Also, a system shall exist to monitor all media coverage to insure that misinformation is not released. The public information program is under the supervision of the State Public Information Officer (PIO), typically a representative from NYSOEM. The State PIO will be the single source of information on State response activities and recommended public protective measures. The State PIO will ensure the establishment of a public inquiry center to receive questions from all sources. Once improper information is received it will be logged, evaluated and necessary corrective actions will be taken.

Local Government

The Governor, or designee and the local Chief Elected Official are responsible for issuing announcements on public health and safety relating to a radiological emergency. Public

information officials from the local jurisdiction and the State PIO will consult with one another to ensure that factual information will be available for reporting to the public in a timely manner at both State and local levels.

Nuclear Facility Operator

The NFO's information officer will consult with the State PIO and appropriate local information officials prior to the release of any information which may affect the general public.

State Spokesperson & Public Information Officer

The Chair, State Disaster Preparedness Commission will designate the lead spokesperson for radiological emergencies. This spokesperson, (typically identified as a representative from the Department of Health) will be the single, State agency source for official information during a radiological emergency. Various state agency public information personnel work in support of this function.

The State PIO coordinates news releases with appropriate local government PIO(s), the licensee information officer, and the Federal PIO(s).

2.1.8 Evacuation

Evacuation encompasses the movement of people out of a threatened area and the resources necessary to support this movement. Included are the movement of people from designated areas over designated routes; keeping these routes clear for travel; the identification of needs of special populations (e.g. mobility impaired, hearing impaired, school children, transportation dependent); and the care and support of evacuees (refer to each respective County Radiological Emergency Preparedness Plan).

Local Government

The evacuation plan will be implemented at the local level, using all available local resources, supplemented by available State resources.

State Agencies

The State Office of Emergency Management coordinates and provides technical assistance to the local governments.

The Division of State Police assists in notification and providing control with local law enforcement agencies, enforces emergency highway traffic regulations, and assists in ensuring the security of evacuated areas.

The Department of Transportation assists in keeping evacuation routes clear and in traffic control; supplies route designations for expedient movement and control mechanisms (signs,

road blocks, signals, etc.); as required, can waive restrictions on transportation systems and assists in locating buses for mass transit.

The Division of Military and Naval Affairs (DMNA) on order of the Governor, aids civil authorities with ground and air evacuation capabilities.

The Department of Corrections makes decisions on the movement of prisoners based upon their internal plans and procedures. State facilities may shift prisoners within the State system. There is no county authority to shift county prisoners into the State system. Upon the request of county officials, the State Commission on Corrections will advise the county and the Department of Corrections as to the protective action that is to be taken relative to incarcerated individuals.

2.1.9 Reception/Congregate Care Centers

The special needs of the evacuated population will be assessed and addressed. These needs include: monitoring, decontamination, reception/registration, lodging, feeding and clothing.
Local Government

Activities to register and monitor evacuees at Reception Centers and to house, feed and clothe them at Congregate Care Centers will be implemented by local agencies and the American Red Cross. These agencies share the primary responsibility for this response activity.

State Agencies

NYSOEM will, at the request of local government, coordinate State assistance for the monitoring of evacuating personnel.

The Office of Temporary and Disability Assistance (OTDA) will, at the request of local government, assist in the registration of evacuees at the reception centers. The department will also coordinate the activities of the Red Cross, Salvation Army, and other recognized organizations at the congregate care centers, as needed.

The State Human Services Branch coordinates State agency activities in this area.

Federal Agencies

In the event of a presidential disaster declaration the Federal government may provide mass shelters, emergency supplies and potable water, sell government-owned feed grains to livestock owners at reduced prices, assign personnel to screen contaminated food, and provide emergency clothing.

Voluntary/Private Agencies

Various voluntary organizations will assist local agencies in the operation of reception and congregate care centers. The Voluntary Organization Active in Disaster (VOAD) will coordinate private activities with the State Human Services Branch.

2.1.10 Human Services

Provision will be made for the needs of those affected by the emergency, including special populations.

Other services which will be available are crisis counseling, psychiatric counseling, information, legal, and referral service casework services, and other welfare services.

Local Government

Human Services activities will be implemented at the local level, with support from the State.

State Agencies

The Office of Temporary and Disability Assistance (OTDA) will support activities of the Red Cross, Salvation Army, and other recognized volunteer organizations, and is the lead agency for this response activity.

The Department of Health provides information and referral services, in coordination with local health jurisdictions. Twenty-five counties are served by State district health offices, which provide direct health services to communities without established health departments. The appropriate district office will advise the affected population.

NYSOEM coordinates efforts of various public and private human needs agencies.

American Red Cross will operate Congregate Care Centers to shelter and feed evacuees and assist government and other agencies responsible in the operation of reception centers.

The Human Services Branch coordinates volunteer agencies which carry out their traditional role in assisting disaster victims.

2.1.11 Public Health, Medical and Sanitation Services

Provision will be made for the continuation of basic public health services during radiological emergencies. Primary and emergency care and treatment for the ill and injured will also be provided, including radiation contaminated/injured patients. The movement or consolidation of patients, equipment, and personnel of hospitals, nursing homes, and other special facilities will be coordinated, as will the allocation of medical resources. Primary and backup hospitals for the treatment of contaminated injured individuals have been identified and are listed in Appendix F. An additional listing of public and private hospitals within New York State capable of providing medical support for radiologically contaminated injured individuals is also included in Appendix F. Annual training is provided to selected medical transportation providers in the vicinity of each nuclear power plant site for the safe and expeditious pre-hospital care and transportation of contaminated/injured individuals.

Local Government

Most of the activities dealing with health problems and protective actions will be implemented at the local level, with support supplied by the State.

State Agencies

The Department of Health provides laboratory testing of samples to assure safe food and water supplies and orders any protective actions; monitors potable water supplies; provides technical assistance and risk assessment; issues orders related to affected public water supply; and recommends alternatives regarding the above in concert with the Departments of Agriculture and Markets and Environmental Conservation. DOH is the lead agency for this response activity.

All other State Agencies activities will be implemented consistent with New York State CEMP through the NYSOEM.

Federal Agencies

Advice and technical assistance will be provided in accordance with the National Response Framework.

2.1.12 Public Security

The measures necessary to protect the public by the enforcement of normal and emergency laws will be provided.

Local Government

Public security measures will be implemented at the local level and will be supplemented by the State (refer to each Police/Law Enforcement procedure in the County Radiological Emergency Response Plans).

State Agencies

The Division of State Police provides staff and equipment to protect life and property; establishes ingress and egress control; maintains traffic and crowd control; closes highways; suppresses riots and disorders; investigates accidents; enforces laws, emergency orders, and curfews; arrests violators; secures evacuated areas; and coordinates these support activities with the Federal, other State agencies, and the local government efforts. DSP has lead agency role for this response activity.

The Division of Military and Naval Affairs, on orders from the Governor, will select military forces to assist civil authorities and law enforcement agencies in the prevention of looting, surveillance and in perimeter control, to maintain or restore law and order and to support traffic control operations.

The State Office of Homeland Security is responsible for coordinating and enhancing anti-terrorist efforts in the State, specifically with developing a comprehensive statewide strategy to detect, protect against, respond to, and prevent cowardly and murderous acts of terrorism.

2.1.13 Fire and Rescue Service

Manpower and equipment for fire protection, surveillance, and suppression will be provided for the affected emergency areas, including on-site assistance. Decontamination activities, and search and rescue operations including air, land, and water operations will also be provided.

Local Government

Local fire and rescue services will be utilized at the local level, with available support from the State.
State Agencies

The Office of Fire Prevention and Control activates the New York State Fire Mobilization and Mutual Aid Plan upon request. This involves coordination of independent local fire protection resources. They shall also provide available staff, communication vehicles and technical assistance to local fire departments and State agencies.

The OFP&C will provide to the NYSOEM:

- the OFP&C operational procedures manual for implementing the State Fire Mobilization and Mutual Aid Plan, including the assignment of OFP&C personnel;
- the Directory of Fire Service Communications in the State of New York, which includes essential radio information for all county fire coordinators and the approximately 1,850 local fire jurisdictions; and
- a basic inventory of the local fire service equipment and personnel resources available throughout the State.

The Division of State Police provides search and rescue capabilities, using boats, land vehicles, and helicopters, to locate missing persons and rescue stranded people.

The Department of Environmental Conservation provides search and rescue capabilities, using boats, land vehicles, and helicopters, to locate missing persons and rescue stranded people.

The Civil Air Patrol provides aircraft and personnel to conduct air search missions.

2.1.14 Engineering Services

The repairing of damaged roads, the clearing of obstructions on roadways, and the removal of impediments on designated evacuation routes will be provided.

Local Government

The engineering effort, providing personnel, expertise, and equipment in the affected area, will be a primary responsibility of the local jurisdiction(s) for their roads. State and Federal agencies will provide heavy equipment and manpower to operate equipment and will coordinate their activities with the local effort.

State Agencies

The Department of Transportation and the Thruway Authority provides available resources (equipment and manpower) and coordinates assistance from other agencies in the use of evacuation routes.

The Division of Military and Naval Affairs, on orders from the Governor, will provide aid in the evacuation process in the form of staff and equipment.

The Office of Parks, Recreation and Historical Preservation provides equipment and personnel to assist in keeping evacuation routes open.

2.1.15 Transportation

The transportation of the injured and of critical equipment, supplies, food, and emergency personnel will be provided.

Local Government

Vehicles to move emergency supplies and equipment to the affected areas will be provided, supplemented with available support from the State.

State Agencies

The Department of Transportation provides limited resources for the movement of equipment and supplies and supports the ingestion sampling teams.

The Division of Military and Naval Affairs on orders from the Governor, can provide helicopters and vehicles to support the State effort.

The Department of Environmental Conservation provides aircraft, boats, snowmobiles, and other vehicles to support the State effort.

The State Office of Emergency Management coordinates emergency transportation resources where local, State, and Federal governments are involved in a common overall effort.

The Division of State Police provides helicopters, boats, and vehicles to transport personnel, and radiological samples.

The Civil Air Patrol will provide transportation courier services.

Voluntary/Private Agencies

The Human Services Branch will provide limited transportation for emergency victims.

TABLE 1

AGENCY RESPONSE ACTIVITY ASSIGNMENT CHART

RESPONSE ACTIVITIES

AGENCIES	Direction and Control	Communication	Public Notification	Accident Assessment	Protective Response	Exposure Control	Public Information	Evacuation	Reception/Mass Care	Social Services	Public Health	Public Security	Fire and Rescue	Engineering Services	Transportation
Health (DOH)	P	X	X	P	P	P	P		X	X	P				X
NYSOEM	X	P	P	X	X	X	X	P	X	X					P
Ag and Markets	X			X	X										
Corrections								X							
Education	X	X			X		X	X	X						X
NYSERDA				X											
DEC		X		X											X
OGS															X
Mental Health										X					X
DMNA		X						X				X		X	X
Parks and Recreation		X	X											X	
OTDA								X	P	P					
Fire Prevention and Control		X											P		
NYS Police		X	X			X		X				P	X		X
Thruway Authority		X													X
Transportation (DOT)		X				X	X	X						P	X
Civil Air Patrol		X											X		X
County Government	X	X	X	PR	X	X	X	X	PR	X	X	X	X	X	X
Federal Government				X	X						X			X	
American Red Cross		X							PR	X			X		X
Salvation Army									X	X					
Human Services Group									X	X					
Nuclear Facility Operator		X		PR			X								

This chart reflects the previous descriptions of State, local and other agency responsibilities during an emergency.

Each “P” represents the State agency that has primary responsibility to assist local governments upon request and to have lead responsibility after a Gubernational Declaration.

Each “PR” represents organizations other than State agencies that share a primary role in that activity.

Each “X” represents involvement in an activity regardless of the level of involvement.

2.1.16 State Implementation of a County's Plan in Those Instances Where a County Does Not Implement the Plan Itself

The DPC assigns a representative to the County EOC to act at its direction in assigning missions and tasks, directing courses of action to control the situation, informing the public and acting in conjunction with other affected counties' Radiological Emergency Preparedness Plans and Procedures, the New York State Radiological Emergency Preparedness Plan and Procedures, and the NFO Site Emergency Plan and Procedures. These activities shall be carried out in accordance with the county's Radiological Emergency Preparedness Plan.

State Agencies

The State Office of Emergency Management assigns a REP liaison to the County EOC to provide advice and technical interpretation of information to the county Chief Elected Official and Emergency Manager. The liaison also provides direct reports to DPC command so as to provide "heads up" information on activities at the county level. NYSOEM will also send a representative to the County EOC to support, assist and coordinate as necessary with representatives of the DPC and of other State agencies assigned to the County EOC.

The Department of Health assigns a representative to the County EOC to act on behalf of the State Commissioner of Health and the DPC in directing the performance of protective actions to assure public health and safety, during a radiological emergency in accordance with the county's Radiological Emergency Preparedness Plan.

The Division of State Police assigns a representative to the County EOC to act on behalf of the DPC to direct activities to maintain law and order, insure citizen safety, protect public and private property, provide traffic direction and control, control access to radiologically affected areas and assist in the dissemination of emergency information and announcements in accordance with the county's Radiological Emergency Preparedness Plan.

The Office of Fire Prevention and Control assigns a representative to the County EOC to act on behalf of the DPC to coordinate fire service activities, including search and rescue efforts and the provision of assistance in emergency first aid and medical transport services, relating to the radiological emergency operations as discussed in the county's Radiological Emergency Preparedness Plan.

The Office of Temporary and Disability Assistance assigns a representative to the County EOC to act on behalf of the DPC to direct activities to provide aid to those people who have been affected by a radiological emergency, and organize and maintain reception centers, in accordance with the county's Radiological Emergency Preparedness Plan.

The Department of Transportation can assign upon request a representative to the County EOC to act on behalf of the DPC to direct public works, highway and engineering activities for the

construction, rehabilitation and repair of essential highways and facilities during a radiological emergency. The

Department of Transportation can also assign a representative upon request to the County EOC to act on behalf of the DPC to direct the utilization of public and private transportation resources for the provision of transportation services during a radiological emergency for people without transportation. The DOT representative will also interface with the Regional Transportation Management Center (TMC) to provide the latest information on traffic conditions in the impacted area. These activities shall be carried out in accordance with the County's Radiological Emergency Preparedness Plan.

The State Education Department assigns a representative to the County EOC to act on behalf of the DPC to coordinate and oversee and support the initiation and completion of each schools "disaster emergency" plans for early dismissal and the use of school buildings during the emergency.

2.2 Direction and Control

2.2.1 Emergency Operations Center

The State Emergency Operations Center (EOC), located at 1220 Washington Avenue, Bldg. #22, Ste 101, State Campus, Albany, NY will have representation from all assigned State agencies. From this location, State direction and control of emergency operations will be conducted. The NYSOEM also maintains an alternate State Emergency Operations Center (ASEOC) at the New York State Traffic Management Center (TMC) in Hawthorne, Westchester County.

2.2.2 New York State Emergency Communications Network

New York State Radiological Emergency Communications System (RECS): The New York State Radiological Emergency Communications System for Fixed Nuclear Facility notification is a dedicated telephone line between: (1) Indian Point Unit 2 and Unit 3 and State Emergency Communications Center (SECC), Albany; Westchester, Orange, Rockland and Putnam Counties; City of Peekskill; West Point; Region II NYSOEM, Poughkeepsie; State Department of Health, Troy. (2) Nine Mile Point Nuclear Station Units 1 & 2 and James A. Fitzpatrick Nuclear Power Plant and State Emergency Communications Center (SECC), Albany; Oswego County, Fulton; State Department of Health, Troy. (3) Ginna Nuclear Station and State Emergency Communications Center (SECC), Albany; Wayne County, Lyons; Monroe County, Rochester.

The Radiological Staff of the DOH will receive notification and follow-up and verify information with the NFO and obtain additional details of the potential or actual emergency.

The Executive Hotline Emergency Communications System is a dedicated telephone line between: (1) The DPC command room in Albany, and the command rooms in Westchester, Rockland, Orange and Putnam counties for the Indian Point Site; (2) The DPC command room in Albany and the command rooms in Monroe and Wayne counties for the Ginna Site.

The DPC command room in Albany and the command room in Oswego County use commercial telephone conference calling for the Nine Mile Point site. Radio, NYSPIN and NAWAS will be used as backup to telephone systems. Communications/Warning operating procedures are contained in Procedure B.

2.2.3 Joint Information Centers

The DPC PIO will be located at the JIC which has been established to serve the affected nuclear reactor site. (refer to Procedure C)

JICs will be accessible to all media sources. These centers will be manned by pre-designated personnel from the licensee, local, State and Federal governments.

The purpose of this center is to provide a central facility for the accurate release of all information to the news media and the public. Joint news conferences and briefings will be held. Details of each center are found in the respective JIC Procedures and Workplan for each site.

2.3 Initiation of Response Activities

The emergency response phase is initiated upon the identification by the NFO of a radiological emergency which falls into any one of the four emergency classes as defined by the NRC. The identification of an emergency is promptly followed by notification of State and local authorities, confirmation of the occurrence, activation of emergency personnel and equipment, and verification of the readiness of these State and local personnel.

2.3.1 Emergency Classification

The NRC has established, and this Plan adopts, four emergency classification levels (ECLs) for nuclear power plants. The NRC requires that, when an initiating condition for any of the four emergency classification levels exists, the NFO shall provide early and prompt notification to both State and local officials. The four emergency classification levels are:

Notification of Unusual Event (NUE)

Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

Alert

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of intentional malicious dedicated efforts of a hostile act. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

Site Area Emergency (SAE)

Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or security events that result in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or (2) prevents effective access to equipment needed for the protection of the public. Any releases are not expected to exceed EPA Protective Action Guideline exposure levels except near site boundary.

General Emergency

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or security events that result in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

The rationale for the Notification of Unusual Event and Alert classifications is to provide early and prompt notification of minor events, which could lead to more serious consequences, given operator error or equipment failure, or which might be indicative of more serious conditions, which are not yet fully realized. A gradation is provided to assure complete response preparations for more serious indicators.

The Site Area Emergency classification reflects conditions where radiological releases are possible but where a core-melt situation is not indicated, based on current information. The General Emergency classification involves actual or imminent substantial core degradation or melting with the potential for loss of containment resulting in a radiological release to the environment. For both Site Area Emergency and General Emergency, full mobilization of emergency personnel in the near-site environs is indicated. For a General Emergency immediate public protective actions may be necessary.

The State Commissioner of Health, based on information obtained from the NFO and other sources and the Commissioner's own understanding of events and circumstances, may recommend to State and local agencies protective actions different from that recommended by the NFO.

If the initial EAL communicated from the nuclear station includes a reference to a security based event, additional response actions/precautions may be undertaken by State agencies beyond those of a typical EAL response. The Division of State Police will assume the lead role for the State in responding to this type of event. DSP will coordinate all activities with the respective local law enforcement agency. A State Police Public Information Officer will also be assigned to the Joint Information Center to act as lead spokesperson for security related matters.

2.3.2 Notification

Plume Exposure Emergency Planning Zone

Upon detection of an initiating condition for any of the four ECLs, the NFO will immediately notify the State and counties within the plume exposure EPZ. The notification from the NFO shall be by communications network described in Procedure B, and the County Radiological Emergency Response Procedures. The State and County Warning Points are manned on a 24-hour per day basis (detailed procedures are set forth in Communication/Warning Procedures, Procedure B)

The initial notification message from the NFO will contain:

- Date/time of incident
- Name and location of the facility, or location of incident
- Class of emergency
- Whether a release is taking place or not;
- Potentially affected population;
- Protective action recommendation
- Brief event description
- Weather conditions, wind speed and direction

The SECC will ensure that the notification message is received by the State DOH and the NYSOEM, according to the State Communication/Warning Procedures.

The State DOH will contact the NFO via commercial telephone to confirm initial notification and obtain additional emergency information.

Subsequent information available from the NFO includes:

- Estimate of quantity of radioactive material released or being released and the points and height of releases;
- Chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines and particulates;
- Meteorological conditions at appropriate levels (wind speed, direction (from), indicator of stability and precipitation, if any);

- Actual or projected dose rates at site boundary; projected integrated dose at site boundary;
- Projected dose rates and integrated dose at the projected peak and at 2, 5, and 10 miles, including ERPAs (Emergency Response Planning Areas/Protective Action Areas) affected.
- Estimate of any surface radioactive contamination onsite or offsite;
- Recommended emergency actions, including protective measures;
- Prognosis for worsening or termination of event based on plant information.

Upon the direction of the Commissioner of Health, the State Emergency Communications Center (SECC) will advise appropriate State and local agencies. If warranted, the NYSOEM will activate the State EOC and notify the appropriate State agency personnel and the NYSOEM field staff. County warning points will notify the appropriate county officials according to their procedures. For emergencies classified as Alert, Site Area Emergency or General Emergency, FEMA Region II will be notified for information by the SECC. If Federal radiological monitoring and assessment assistance is needed, it will be requested by the Commissioner of Health or designee in accordance with the radiological assistance procedure of the Brookhaven Area Office, USDOE. If specific assistance from EPA is required, the assistance will be requested either directly by the Bureau of Environmental Radiation Protection or through USDOE and in accordance with the National Response Framework (NRF), Nuclear Radiological Annex.

Ingestion Pathway Emergency Planning Zone

The NYSOEM SECC will notify potentially affected counties within the Ingestion Pathway EPZ and FEMA at the Alert ECL for information purposes only. This notification will be made to County warning points by means of commercial telephone and/or the NYSOEM Communicator. In critical situations, the National Warning System (NAWAS) in the NYSOEM will be available for notification to affected counties' warning points. The county warning points will notify the appropriate county officials. NYSOEM and FEMA will notify any affected States and Canadian Provinces within the ingestion pathway EPZ.

2.3.3 Activation

State

For a Notification of Unusual Event classification, all involved State agencies will utilize their normal working quarters for response activities.

For an Alert, Site Area Emergency, and General Emergency classification, the NYSOEM will, according to its alerting procedures, notify specific pre-designated State agency personnel to report to the State EOC in Albany for response activities (refer to Procedure D).

For an Alert, Site Area Emergency and General Emergency classification, predesignated State personnel from the DPC may report to the NFO's Emergency Operations Facility (EOF), the affected States, Counties, local EOCs and the JIC.

County

Counties may choose to activate limited staff at the NUE if circumstances so require. For emergencies classified as alert or higher there maybe full activation of County EOCs within the plume exposure EPZ. Host counties may also activate at this ECL.

For an Alert, Site Area Emergency and General Emergency classification, plume exposure EPZ County predesignated personnel may report to the NFO's EOF.

2.3.4 Verification

Upon activation of the State EOC, appropriate County EOC's, and the NFO's EOF will communicate with each other and confirm that each emergency response facility has been activated and is operational.

2.3.5 Initial Release of Public Information

Upon direction of the State Commissioner of Health, the State PIO will issue a press release containing specific information on the emergency and a description of State emergency response actions to date. This press release will shared with the affected County (ies) PIO(s) and the NFO information officer (refer to Procedure C). Press releases specifically pertaining to the ingestion pathway EPZ will be issued jointly by the DPC.

2.4 Assessment and Evaluation

The NFO has the primary responsibility for the initial assessment of the magnitude and consequences of radiological accidents at fixed nuclear facilities. This responsibility includes requirements for on-site and off-site monitoring, sample collection and analysis, classification of the emergency based upon predetermined emergency action level criteria, and notification of appropriate Federal, State, and local officials. The Planning Section, Assessment and Evaluation (A&E) Branch also obtains real-time data from each NFO which permits independent, parallel, evaluation of potential problems.

After the initial notification, technical personnel from the NFO will remain in continual contact with technical personnel from the State A&E staff for consultation and continued assessment and evaluations of the accident consequences. The Commissioner of Health is responsible for determining appropriate protective actions to accomplish the objectives of this plan and will recommend the implementation of such actions to the DPC.

In an emergency, when the nuclear facility's EOF is activated, technical personnel from the DPC will be dispatched to the NFO's appropriate EOF. This will provide the State with on-the-scene staff for liaison and coordination of the assessment and evaluation activities.

Radiological releases have direct effects on the population. Inhalation of radioactive material by individuals causes internal radiation exposure to various organs of the body. Contamination of milk, potable water, or agriculture products that may enter the food chain and are ingested also causes internal radiation exposure. If no remedial actions are taken, the relative dose to an individual from ingestion of contaminated food products (primarily milk) may be of much greater significance from the passing plume than exposure due to inhalation and whole body exposure.

Radiological emergencies at nuclear power reactors in other States, may require significant assessment and evaluation activities as well as response actions to protect the public from exposure from the ingestion pathways.

Planning must take into consideration all possible accident scenarios. The procedures in this plan provide flexibility for responding to a continuum of situations, from those requiring only notification; to those requiring increased environmental surveillance; to those requiring milk, food

and water control, to those radiological emergencies that may require extensive evacuation or sheltering.

2.4.1 Assessment

The State Assessment and Evaluation (A&E) Branch has four primary resources to use during the assessment phase:

- previously developed accident analysis data and information
- relayed data on the prevailing radiological release rates and on-site meteorological conditions and real-time plant parameters
- radiological laboratory analysis
- on-going assessments from nuclear safety specialists from the NFO, NRC, and State agencies.

(Additional information on assessment procedures is contained in Procedure H).

Previously Developed Data (See Procedure H)

Included in the previously developed data, available for use by the State A&E Branch, are the following:

- Dose-distance procedures have been developed by the NFO for different radiological release and meteorological conditions, which will correlate the expected doses at various down-range distances to the duration of the incident.

- In addition to the accident analysis data, assessment of the potential impact on livestock distribution, water supply data, land use tables, and marketing practices is available for review at the State EOC.

- Marketing practices will include discussion of critical time periods; for raw milk to processor to retail market; for harvest to processor to retail market; for storage capacity; and for product distribution.

- Population distribution by sector and distance as well as by Emergency Response Planning Area (ERPA) or Protective Action Area (PAA) around commercial nuclear power reactors is shown in the appropriate sections of each County REPP.

- Evacuation timetables including consideration of various contingencies, such as adverse weather conditions or time of day, will be used by the assessment teams. Evacuation time estimates for a variety of scenarios have been made for the general population and for special facilities. These are given in appendices to each County REPP.

Relayed Real-Time Radiological and Meteorological Data

Relayed data from meteorological monitors at the reactor sites will be available to the State A & E branch. This information, when integrated with data from the National Weather Service, can be used to determine the actual and projected meteorological conditions for the area of concern.

The State will receive relayed data from numerous fixed radiation monitors wherever available. The State may also receive relayed real-time data derived from NFO plant data so as to enable the State to make an independent, but parallel, evaluation.

Mobile radiation monitoring teams will be deployed by the NFO and by Federal resources primarily through Radiological Assistance Program (RAP) administered by the Brookhaven Area Office of the U.S. Department of Energy. Initial monitoring during the plume phase will be conducted by the risk county and the NFO. Additional radiation surveillance resources of the State and local agencies will work cooperatively with the NFO and Federal field assessment teams and will be made available for assistance in determining and verifying off-site consequences. All data will be transmitted to the State EOC in Albany. NFOs have mutual agreements where monitoring assistance will be afforded each other in the event of an emergency.

Weather conditions permitting, sophisticated aerial monitoring and surveillance aircraft of the Aerial Measuring System (AMS) from the U.S. Department of Energy will delineate potential areas of deposition of radioactive material as well as provide an isotopic analysis of the deposited and airborne radionuclides. Aerial surveillance provides the means for fairly rapid survey of large areas at large downwind distances from the nuclear facility.

Data from environmental monitoring systems operated by the State DOH, and the air samples provided by the State Department of Environmental Conservation will be available to the State A&E branch. The NFO will also provide data from their monitoring systems. The primary functions of the environmental radiological monitoring system are to establish the preoperational background levels, detect any gradual buildup of long-lived radionuclides, and verify that

operation of the plant has no detrimental effect on the health and safety of the public or the environment. Sampling media from the environmental monitoring locations will be used to obtain valuable assessment data in the event of an accident involving the release of radioactive material.

Radiological Laboratory Analysis

The Wadsworth Center Laboratory of Inorganic and Nuclear Chemistry, State DOH, located at the Empire State Plaza in Albany, provides extensive radiological laboratory analysis and support services. All samples collected by State and local personnel will be delivered to the Wadsworth Center for analysis (analytical equipment and staff are listed in Appendix G). In the event of a major emergency at the nuclear facility, additional laboratory analysis will be available from the Environmental Protection Agency, Food and Drug Administration, Department of Energy, NRC and the NFO. The Director of the Wadsworth Center will coordinate the laboratory analysis activities of the various agencies.

Ongoing Assessments From Nuclear Safety Specialists

The State A&E branch will be assisted in assessing the emergency by reactor safety specialists from the NFO, and NRC, as well as other State agencies, and will provide an on-going diagnosis and prognosis of the emergency. This assessment will identify events which are in progress or have occurred that involve likely and imminent major failures of plant functions needed for protection of the general public. In addition, assessment of the ingestion pathway will include input from the State DOH, Agriculture and Markets, and Environmental Conservation.

2.4.2 Evaluation

The State A&E branch will evaluate the assessment data to determine whether implementation of one or more of the protective action response options should be recommended to the State Commissioner of Health.

Under most circumstances, the State Commissioner of Health recommends implementation of protective actions for the plume pathway (Early Phase) to the Chief Elected Official of the affected counties.

Directing implementation of protective actions for the ingestion pathway, deposited radionuclides, and recovery phase (Intermediate and Late Phases) of the emergency will be accomplished by the State Commissioner of Health. Implementation of the protective actions so ordered for the Intermediate and Late Phases is the responsibility of the Departments of Agriculture and Markets and DOH (e.g. Agriculture and Markets - milk and food products, Health - public water supplies, relocation of the public and decontamination).

Protective Action Guides (PAGs)

During the evaluation phase, the protective action response options which will be recommended for implementation are determined in order to execute the mission of this plan. This plan provides Protective Action Guides (PAGs) for determining appropriate responses during the Early, Intermediate and Late Phases of radiological emergencies. The PAGs for these three phases are given in Procedure H and are briefly described below.

Plume Exposure (Early Phase) Protective Action Guides

This plan adopts the PAGs, developed by the EPA for determining appropriate responses during radiological emergencies involving plume exposure pathways. In keeping with the objective of preventing or minimizing radiation exposure of the population in the event of a radiological emergency, the State Health Commissioner may recommend protective actions for projected doses lower that the EPA PAGs.

In evaluating which of the protective action response options to implement during the Early Phase of the emergency, the State A & E branch will integrate the following input data and boundary

conditions to establish a basis for the decision-making process:

- EPA PAGs;
- Implementation time requirements for the protective action response options, including analysis of the applicable Evacuation Time Estimates (ETE);
- Current status of road and meteorological conditions;

and site prognosis via the NFO and NRC.

The PAGs for evacuation, or as an alternative in certain cases shelter-in-place, are expressed in terms of the projected sum of the effective dose equivalent from external radiation and the committed effective dose equivalent incurred from inhalation of radioactive materials from exposure and intake during the Plume or Early Phase.

Evacuation of the general public will usually be justified when the projected total effective dose equivalent (TEDE) savings to an individual is one (1) rem, or the projected committed dose equivalent (CDE) savings to the thyroid is five (5) rem. (see Table 2)

TABLE 2

PAG's for the Early Phase of a Nuclear Incident

Protective Action	PAG (projected dose)	Comments
Evacuation (or Sheltering-in-Place)	1-5 rem [b]	Evacuation (or for some situations, Sheltering-in-Place [a] should normally be initiated at 1 rem
Administration of Stable Iodide [d]	5 rem [c]	Requires approval of NYS of Health

[a] Sheltering –In-Place may be the preferred protective action when it will provide protection equal to or greater than evacuation, based on consideration of factors such as source term characteristics, and temporal or other site-specific conditions.

[b] The sum of the effective dose equivalent resulting from exposure to external sources and the committed effective dose equivalent incurred from all significant inhalation pathways during the early phase. Committed dose equivalents to the thyroid and to the skin may be 5 and 50 times larger, respectively.

[c] Committed dose equivalent to the child thyroid from radioiodine.

[d] Recommendation will be made at the General Emergency ECL.

Ingestion Exposure Pathway (Intermediate Phase) Protective Action Guides

This plan adopts PAGs, for use in the event of accidental radiation contamination of milk, other food and water, developed by the Food and Drug Administration (FDA) for the ingestion pathway.

The 1982 FDA recommendations were developed from the prevailing scientific understanding of the relative risks associated with radiation as described in the 1960 and 1961 reports of the Federal Radiation Council (FRC 1960, 1961). Since 1982, FDA and the other federal agencies in the United States have adopted the methodology and terminology for expressing radiation doses provided by the International Commission on Radiological Protection (ICRP) in 1977 (ICRP 1977, ICRP 1984a, EPA 1987). The ICRP's dose quantities for radiation protection purposes include effective dose equivalent, committed effective dose equivalent, dose equivalent for a specific tissue, and committed dose equivalent for a specific tissue.

These current recommendations replace the Preventive and Emergency PAG's with one set of PAG's for the ingestion pathway. The PAG's are 5 mSv (0.5 rem) for committed effective dose equivalent or 50 mSv (5 rem) committed dose equivalent to an individual tissue or organ, whichever is more limiting. These correspond to the "intervention levels of dose" consensus values set by international organizations. Intervention levels of dose are radiation doses at which introduction of protective actions should be considered (ICRP 1984b). The FDA guidance retains use of the term Protection Action Guide (PAG) for consistency with the U.S. federal and state needs.

Deposited Radioactive Materials (Intermediate Phase) PAGs

External gamma radiation exposure from deposited radioactive materials (groundshine) is a potential exposure pathway for the general public following a nuclear accident. Furthermore, internal radioactive exposure from inhalation of resuspended radioactive materials is an additional potential pathway in the Intermediate Phase of an accident. This plan adopts PAGs, for use in the event of extensive deposition of radioactive materials, developed by the Environmental Protection Agency. In keeping with the objective of preventing or minimizing radiation exposure of the population in the event of a radiological emergency, the State Health Commissioner may recommend protective actions for projected doses lower that the EPA PAGs. The major relevant protective action during this phase is relocation of the public to areas of lesser radiological exposure. Projected doses for the second year and total 50 year dose are also determined to ascertain whether protective actions other than relocation are required.

The established PAGs for deposited radioactive materials are expressed in terms of the projected doses, over a one year period of time, above which specified protective actions may be warranted. The PAGs should be considered mandatory only for use in planning purposes. During the course of a radiological emergency, because of unanticipated local conditions and constraints and because the immediacy of the emergency has passed, application of these PAGs should be considered flexible.

These exposure pathways have a single Protective Action Guide. If the exposure to the public in any given area, based on isotopic soil samples, equals or exceeds 2 rem (= or >) projected for a 1 year

exposure period, relocation of the public from that area is recommended. For projected 1 year exposures of less than 2 rem (<) simple dose reduction techniques for the general public are recommended. These techniques can include decontamination techniques such as scrubbing or flushing of hard surfaces, soaking or plowing of the soil, or minor removal of soil in areas where radioactivity is concentrated. Simply spending more time indoors or in other low exposure areas is also an effective dose reduction technique.

Critical Time Frames

Once the input parameters and boundary conditions have been established, the State A & E branch will identify the critical time frames necessary to complete the missions of this Plan for a particular emergency. Specifically, the critical time frames to be identified for a particular emergency are the implementation time frames for the various protective action response options and the time frame until the safe termination of the emergency.

The implementation time frame for a particular protective action has three components - notification time, preparation/mobilization time and execution time.

Notification time refers to the time required to notify the population-at-risk. Preparation/mobilization time is the time needed by that population to begin to take the recommended protective action and to deploy whatever emergency services personnel and equipment are necessary for the particular protective action response option(s) ordered. Execution time refers to the time, after notification and preparation/mobilization is completed, required for the completion or full execution of that particular protective action.

Other critical time frames for evaluation include the projected time before any release is initiated, the time period that any release is projected to persist, and the time for the arrival of the plume at various distances.

Additional time factors must be considered in determining appropriate ingestion protective actions. Examples of these time factors include time period for peak concentration in milk after ingestion of contaminated feed, critical period for harvesting, time period for agricultural products to go through the processor to the retail market, and storage time.

For deposited radionuclides, a one year time period is the minimum time frame that must be considered when estimating radiological exposure to the general public when relocation of the public may be necessary. Two and fifty year cumulative dose time frames are also considered to ensure that the public is not exposed to excessive doses of radiation.

Projected Doses

After the decision bases and critical time frames have been established, the A & E branch in coordination with County A & E branch will determine the projected doses for the particular emergency response planning areas by extrapolating projected dose rates and projected depositions

over the critical time frames, for the various protective action response options and for the estimated duration of the emergency. These values represent the projected dose for the particular emergency planning area for the time frame of interest. Projected doses approaching the appropriate PAG levels are indications of the increasing desirability of implementing one or more of the protective actions in this plan and local plans.

Decision Process

The output of the assessment activity, input parameters and boundary conditions, critical time frames, and projected doses will be evaluated for determining which protective action should be implemented. (Detailed in Procedure H).

2.5 Plume Pathway (Early Phase) Protective Action Options

The protective action options have been developed to provide the State Commissioner of Health the capability to execute the primary mission of the State Plan. The State Commissioner of Health may recommend more than one of the protective action response options at the same time for a particular radiological emergency. In addition, the State Commissioner of Health can recommend implementation of the protective action response options for the specific population-at-risk. This flexibility will tend to maximize the effectiveness of the protective action response options. The options consist of plume exposure pathway actions, ingestion pathway actions and soil deposition actions. A section of each county plan also specifies actions necessary to protect special populations and special facilities.

2.5.1 Plume Exposure (Early Phase) Protective Action Response Options

In this section the following plume exposure protective action response options are described:

Initial Precautionary Options;
Shelter-In-Place;
Evacuation;
Thyroid Blocking Agents.

Initial Precautionary Options

The Initial Precautionary Option has been developed to provide an effective initial protective action which can be relatively easily implemented and which will facilitate the implementation of the other protective action response options, if they become necessary.

The implementation of the Initial Precautionary Option will require a minimal commitment of emergency resources and will cause a minimal amount of inconvenience for the general public while yielding maximum benefits, such as simplifying and facilitating the implementation of the other protective action options. Also, the implementation of this option will effectively decrease the number of individuals who have to be addressed under other protective action options, as well as

effectively increasing the number of available emergency response personnel.

The implementation and execution of the initial Precautionary Option may include the following:

- the temporary closing of tourist areas, such as parks and campgrounds, within the appropriate EPZ;
- the temporary closing of elementary, secondary schools and day care centers within the appropriate EPZ;
- the temporary suspension of noncritical patient admissions at hospitals within the appropriate EPZ;
- the establishment of access control traffic check points for all major routes into the plume exposure EPZ; and
- the activation of the State EOC and the appropriate field and county EOC's.

Shelter-In-Place

In general, protective actions will be taken in accordance with the EPA PAG guidelines. The Commissioner of Health may recommend protective actions at projected doses below these guidelines to minimize radioactive exposure to particular groups such as individuals who could not be safely evacuated, if an evacuation were recommended. This would include individuals who have been designated medically unable to withstand the physical and/or psychological stress of an evacuation, as well as those individuals who require constant, sophisticated medical attention.

The implementation and execution of the Shelter-In-Place Option will include the following:

- the appropriate local health officer, in conjunction with the special facilities administrators and other local officials will make an initial determination of the number of those individuals unable to evacuate and their medical care requirements. This will be compared with the sheltering and medical capabilities otherwise available to these individuals;
- if this preliminary disposition indicates that additional medical personnel, equipment, and/or supplies are needed, local and State officials will assist in acquiring whatever is needed;

- the local health officer will conduct an on-going assessment as to the possibility and desirability of evacuation for those persons initially determined to be. This assessment would be based on the availability of evacuation capabilities, which would minimize the medical risk to those persons; and

- when the projected dose rates outside any facility reach the various protective action levels, the local health officer will notify the facility and other local officials, who will begin the

- immediate implementation of sheltering for these persons.

For actual or projected off-site doses of 1 to 5 rem TEDE, the protective action option shelter-in-place may be implemented for the general public in the affected areas of the plume exposure EPZ. This response option can also be implemented for puff-type releases of low doses, as a precautionary measure. For doses where evacuation would be indicated, but where evacuation cannot be implemented because hazardous weather and/or impediments to highway movement, shelter-in-place may be implemented in lieu of evacuation.

Shelter-in-place will be implemented by the local Chief Elected Official, following consultation with and upon the recommendation of the State Commissioner of Health.

Instructions to shelter-in-place are provided for each household, school, special facility, and place of business in the plume exposure EPZ. These instructions are contained in the emergency public information brochure or calendar distributed annually to the plume exposure EPZ population.

Shelter-in-place information is initiated by the county public notification system with explicit directions over the EAS. Implementation can be affected for various Emergency Response Planning Areas or Protection Action Areas (a subdivision of the plume exposure EPZ) or for the entire EPZ. Instructions to the public include directions to stay indoors; close all doors and windows; turn off air conditioners and other ventilation systems, extinguish fires in fireplaces and then close flues; and stay off the roads. (Goal is to minimize air exchange where possible). Members of the public will also be directed to take KI in concert with this protective action. The seven nuclear counties have all implemented a plan to pre-distribute KI within the 10 mile EPZ. Directions for post event distribution of KI will be included in EAS follow- on message.

Evacuation

For actual or projected off-site dose levels of 1 to 5 rem TEDE, the protective action evacuation may be implemented for the affected areas of the plume exposure EPZ. Members of the public will also be directed to take KI in concert with this protective action. The seven nuclear counties have all implemented a plan to pre-distribute KI within the 10 mile EPZ. Directions for post event distribution of KI will be included in EAS follow- on message.

Upon declaration of a General Emergency by the NFO, evacuation of an area 2 miles in radius and 5 miles downwind will be immediately considered.

Evacuation will be implemented by the local Chief Elected Official, following consultation with or upon the recommendation of the State Commissioner of Health. Each County within the plume exposure EPZ has a detailed evacuation plan and maps showing evacuation routes. Emergency Response Planning Areas/Protective Action Areas, Reception Centers and Congregate Care Centers are also shown in County Plans.

Telephone numbers may be announced through the news media which will inform mobility impaired

on how to obtain transportation assistance. In addition, these impaired persons may be identified in advance by the submission of a mail-in postcard furnished as part of the emergency public information brochure and calendar distributed annually to the plume exposure EPZ population.

These public information mailings also provide instructions on evacuation for each household, school, special facility, and place of business.

Implementation of evacuation is initiated by the county public notification system, with explicit direction over EAS. Implementation can be effected for various ERPA's or for the entire EPZ.

Public transportation will be provided to persons without transportation. Special traffic control procedures and mechanisms will be implemented to insure an efficient vehicle flow. Congregate Care Centers will be provided in host areas, including provisions for feeding, lodging, and medical care. Special facilities, including hospitals and nursing homes, have specific evacuation procedures, including the acquisition of special transport vehicles. Each NFO has evacuation plans for onsite personnel. NFOs will coordinate evacuation procedures with local authorities to insure coordination of evacuation activities. Normally, on-site personnel will use the evacuation routes that are used by the public in the ERPA where the nuclear power plant is located. Evacuation plans with detailed evacuation routes are shown in the County Plans.

Harriman/Bear Mountain State Park Evacuees

The Harriman and Bear Mountain state parks are located in Rockland and Orange Counties north and west of the Indian Point Nuclear Power Plant Station. It is the policy of the State and local governments as a precautionary option to close the parks at the Alert classification of an emergency at Indian Point. In the event of an immediate General Emergency involving a release of radioactive materials, the counties may require supplemental monitoring assistance to assist with the monitoring of the park transients.

Thyroid Blocking Agents

Potassium Iodide (KI) in water soluble table form (65mg & 130 mg) or liquid form is recommended as an appropriate thyroid blocking agent for use by emergency workers, and captive populations and the general public including school children.

Distribution of KI will be in accordance with Appendix K.

2.6 Ingestion Pathway (Intermediate Phase) Protective Action Options

The Ingestion Pathway Protective Action Options enable the State Commissioner of Health to recommend effective actions to ensure that the potential for the general population to receive radiation doses in excess of recommended limits through the various ingestion pathways is minimized.

These options may involve restricting public consumption of contaminated drinking water and agricultural products. Routine operations would be resumed in those areas cleared for unrestricted use.

2.6.1 Environmental Surveillance

Contaminated lands and water supplies will be identified through environmental surveillance consisting of aerial and ground monitoring. Milk and agricultural sampling is to be performed in a manner which permits sufficient time for action to be taken at an appropriate stage in the farm-processor-retail market cycle. Methods of radionuclide measurement will include complex laboratory methods, rapid analytical methods employing simple laboratory or modified field techniques, and field methods using conventional radiation survey instruments and the DOE's Aerial Measuring System (AMS). In general, these analyses will be the basis for implementing other ingestion pathway protective action options.

Implementing the environmental surveillance response option will include the following:

- Utilizing aerial monitoring (DOE AMS) to establish general patterns of exposure rates from deposited radioactive material;
- increasing the frequency of air sampling;
- undertaking field survey readings;
- and additional sampling of water, milk, and vegetation.

2.6.2 The Milk Pathway

The pathway now has one set of FDA Protective Action Guides (PAGs) for milk and dairy products:

- 0.5 REM Committed Effective Dose Equivalent (CEDE).
- 5.0 REM Committed Dose Equivalent (CDE) to an individual organ, which ever is more limiting.

The primary protective action option prerequisite for the Milk Pathway is to place milk animals on stored feed and water to limit their intake of any radioactive contaminants. Other protective action response options include:

- ♦ establishing liaison with the industry receiving milk from the affected area;
- ♦ acceptance of milk produced by cattle on stored feed;
- ♦ condemnation of milk produced from all other animals in the affected area.
- ♦ laboratory analysis of milk samples taken from, in and around the affected area.
- ♦ diversion of whole milk potentially contaminated with short-lived radionuclides to products with a long shelf life to allow radioactive decay of the radioactive material.

Initial precautionary directives to place lactating animals on stored feed to prevent contamination of the milk chain will usually be prescribed in the early phase of the radiological emergency.
If laboratory analysis of milk and dairy products indicates that the projected dose may equal or exceed the PAG, the Commissioners of Health and Agriculture and Markets will order the following protective action:

- ♦ condemnation of milk and/or milk products and their destruction.

2.6.3 Other Agricultural Products

This response option has the same FDA PAG's covered in the preceding section (2.6.2). This option provides for:

- ■ establishing liaison with the industry receiving products from the affected area;
- ■ determining types of products produced in the affected area;
- ■ embargoing food pending evaluation;
- ■ a sampling program; and
- ■ procedures for collecting and disposal of contaminated products.

If analysis indicates the projected dose equals or exceed the PAG 0.5R CEDE or 5REM CDE, one or more of the following actions will be ordered:

- ♦ for livestock: move livestock to uncontaminated habitat; remove milk producing animals and other livestock used for meat production from pasturage to uncontaminated stored feed; substitute source of uncontaminated water.

- ♦ for consumable fruits and vegetables: advise home gardeners to remove potential surface contamination by washing, brushing, scrubbing, peeling or processing; advise against public consumption; use substitute sources of specific food items; and remove from marketplace and destroy.

- ♦ for meat and meat products: use substitute source of specific food item; advise against public consumption; divert to non-human, non-food pathway use; and remove from marketplace and destroy.

- ♦ for grains: mill whole grains, remove the bran from wheat and polish rice; use substitute sources; advise against public consumption; divert to non-human, non-food chain use;

and condemn and destroy.

- ♦ for animal feeds: prohibit use by livestock; preserve and store for radionuclide decay; use alternate feed sources; divert to non-livestock, non-food chain use; increase time between deposition and harvest, to maximize time for weathering, plant growth, dilution, and radioactive decay; and condemn and destroy.

- ♦ for agricultural land: alter use of land to allow radioactive decay of short-lived radionuclides; remove contaminated surface crops and destroy; for grasses, cutting and rolling sod, raking and removing mulch; removal of surface soil, allow natural surface erosion, or irrigate and leach; and isolate and prohibit land use.

Additionally, the following action may be ordered:

- ♦ for all of the above agricultural products, immediate action will be taken to isolate these contaminated products and prevent their introduction into commerce. The following factors will be taken into consideration when an embargo of these foodstuffs may be called for; availability of other protective actions, relative proportion represented by the item in the diet, importance of the foodstuff in the diet and available substitutes, relative contribution of other foods to the total dose and time and effort to effect the necessary corrective actions.

2.6.4 Water Sources

10 NYC RR Part 5 (New York Commissioners Rules & Regulations) has regulations regarding limits on radionuclides in water sources that may be utilized for human consumption, directly or via the food chain. This response option provides for:

- ■ identifying public water sources that may be affected by the release;
- ■ establishing liaison with the water supply operators;
- ■ collecting and analyzing representative samples; and
- ■ alerting individuals and water supply operators using water sources that may be contaminated.

One or more of the following protective actions will be ordered for implementation when the projected dose for ingestion of water sources, equals or exceeds the PAG:

- ♦ advise the reduction in population daily intake.

- ♦ use alternate drinking water sources and supplies and restrict use of the contaminated water sources for sanitary and fire-fighting purposes;

- ♦ use of typical water treatment; coagulation, settling, and filtration;

- ♦ use of special water treatment removal techniques; sand, filters, ion exchange, and

lime-soda ash softening;

- ♦ alter use to allow radioactive decay of short-lived radionuclides; and

- ♦ prohibition of water supply use.

2.6.5 Coordination with Government Agencies Outside of New York State

If a serious emergency occurred, that could result in the contamination of milk or food products that may be shipped into New York State, the Departments of Agriculture and Markets and Health will initiate the following actions as appropriate:

- ♦ establish liaison with their counterpart in the federal government and in the state(s) where milk or food products may have been contaminated;
- ♦ estimate the type and amount of milk, dairy products, or other agricultural products being shipped into the State from the affected area;

- ♦ determine the surveillance and controls being exercised to ensure that products contaminated in excess of acceptable limits will not be shipped into the State; and

**Note:* The data (e.g., maps, regional and statewide listings of water sources, dairies, food processing plants, etc.) used in making the technical decisions is on file in the State ECC.

- ♦ provide recommendations for a sampling program for surveillance of milk and food shipped into New York State.

The U.S. Department of Agriculture has established an USDA Emergency Board in every State and county to coordinate USDA State or county disaster assistance efforts. All of the USDA agencies having major emergency responsibilities are represented on these councils. USDA emergency personnel are to establish continuing liaison with State and/or county agricultural agencies to insure coordination assistance activities and damage assessments.

2.7 Emergency Personnel - Radiological Exposure Control

The Radiological Exposure Control procedure (Procedure G) has been developed to provide the State Commissioner of Health with the capability of controlling and minimizing the radiological exposure of emergency response personnel. Emergency response personnel include individuals engaged in accident assessment, rescue of endangered or injured personnel, lifesaving activities, evacuation of affected populations, and protection or prevention of property damage or loss within the 10 mile emergency planning zone.

Emergency activities may be necessary to protect lives and reduce escalation of the radiological problem. It is possible that involved emergency workers may be exposed to radiation and become contaminated while carrying out their duties. The underlying radiation protection principle is to limit their exposure to as low as reasonably achievable, within the whole body limits prescribed for radiation workers, which is 5 rem total effective dose equivalent per year. In an emergency situation, these guidelines may not provide the flexibility required for essential

emergency operations. In these cases, all possible measures will be taken to limit radiation exposure of emergency workers. Specific exposure guidance, when lifesaving actions or extraordinary emergency operations are required, is provided below. If possible, volunteers should be used for emergency operations which are projected to exceed established guidelines.

Exposure control procedures for emergency response personnel include the following:

- instructing emergency response personnel to wear their personnel dosimetry to include permanent record dosimeters and direct reading dosimeters);
- issuing emergency response personnel direct-reading dosimeters and chargers, upon activation for field operations;
- emergency workers have been supplied potassium iodide (KI) as a thyroid blocking agent.
- instructing each person performing emergency service functions inside affected areas of the 10 mile EPZ following a release to take dosimeter readings at 15 to 30 minute intervals. Should an indicated exposure exceed 1R of accumulated dose at any time during the shift, a report will be made to the individual's immediate supervisor or team leader. If an accumulated exposure of 3R is registered, personnel will immediately report the reading to the individual's supervisor or the appropriate EOC and request instructions. Doses in excess of 5 rem TEDE or 25 rem CDE Thyroid must be authorized by the Commissioner of the NYS DOH; (different limits for reporting dosimeter readings may be provided based on the specific type(s) of radioactive materials released)
- instructing decontamination personnel who perform a decon function to remain upstream of any water spray utilized in decontamination activities;
- establishing provisions for obtaining whole body counts or bioassays for radiological evaluation of emergency personnel, including identification of medical service facilities equipped to evaluate and/or treat contaminated/injured individuals;
- allowing female emergency workers the opportunity to declare pregnancy;
- recording the radiological doses received by all exposed emergency workers;
- establishing facilities for the monitoring and decontamination of emergency personnel;
- selecting emergency personnel for lifesaving actions or protection of large populations using the following criteria, if practical:

    emergency personnel for needed lifesaving actions should be volunteers and preferably professional rescue personnel;

emergency personnel should be familiar with the consequences of radiological exposure;

pregnant women or women capable of reproduction should not take part in these actions;

volunteers above the age of 45 should be selected.

- maintaining emergency worker dose limits as outlined in Table 3 as follows:

- The Department of Health A & E branch leader will activate the State Emergency Worker PMC's at the Site Area Emergency Classification Level (SAE ECL) or when emergency workers have been assigned in the 10 mile EPZ.

- providing expert medical treatment, consultation, and service to emergency personnel receiving radiation doses equal to or in excess of those indicated above (25 Rem or more TEDE).

TABLE 3

Guidance on Dose Limits for Emergency Workers

Dose limit [a] (rem)	Activity	Condition
5	All	
10	Protecting valuable property	Lower dose not practicable
25	Life saving or protection of large populations	Lower dose not practicable
>25	Life saving or protection of large populations	Only on a voluntary basis to persons fully aware of the risks involved

[a] Sum of external effective dose equivalent and committed effective dose equivalent to nonpregnant adults from exposure and intake during an emergency situation. Workers performing services during emergencies should limit dose to the lens of the eye to three times the listed value and doses to any other organ (including skin and body extremities) to ten times the listed value. These limits apply to all doses from an incident, except those received in unrestricted areas as members of the public during the intermediate phase of the incident.

2.8 Response Organization Structures

The State responds to any emergency situation of localized scope with no special organizational change. State Agencies, working through the NYSOEM will provide initial emergency assistance to one or more affected counties. When conditions become serious enough to require the Governor to execute a "State Declaration of Disaster Emergency" the Executive Law provides, under Article 2-B, section 21, that the DPC consider creating a temporary organization to manage the necessary response efforts. In a radiological emergency the DOH has been pre-designated as the "lead agency". For assessment and evaluation the Commissioner of Health will act as the head of this temporary organization. The integration and coordination of the organizations implementation responsibilities will be directed by the NYSOEM under the auspices of the DPC.

The following charts reflect these interrelationships:

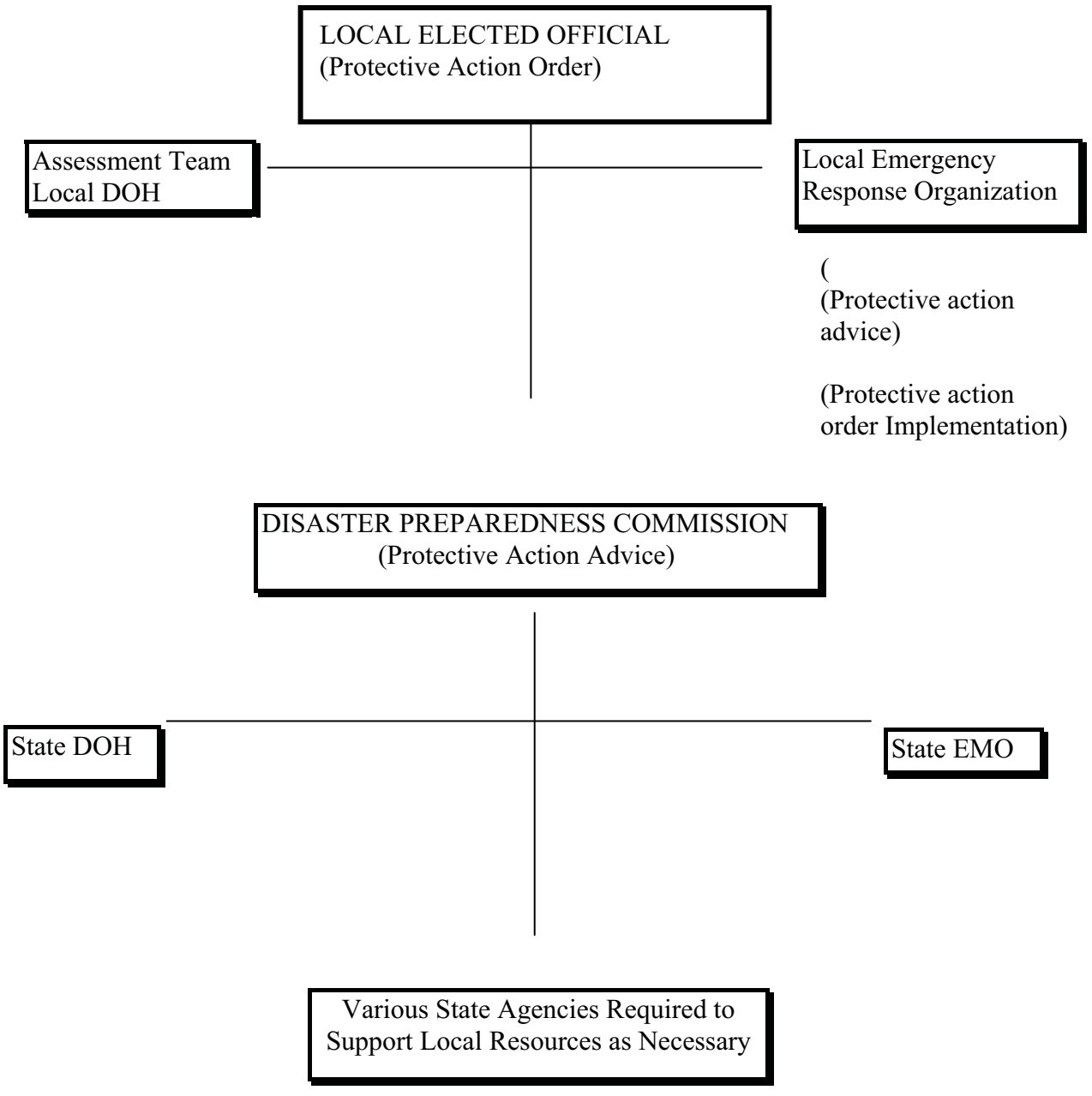
A. PRIOR TO GUBERNATORIAL "STATE DECLARATION OF DISASTER EMERGENCY"

B. AFTER GUBERNATORIAL "STATE DECLARATION OF DISASTER EMERGENCY"

C. ACTIVATION OF EMERGENCY OPERATIONS CENTERS

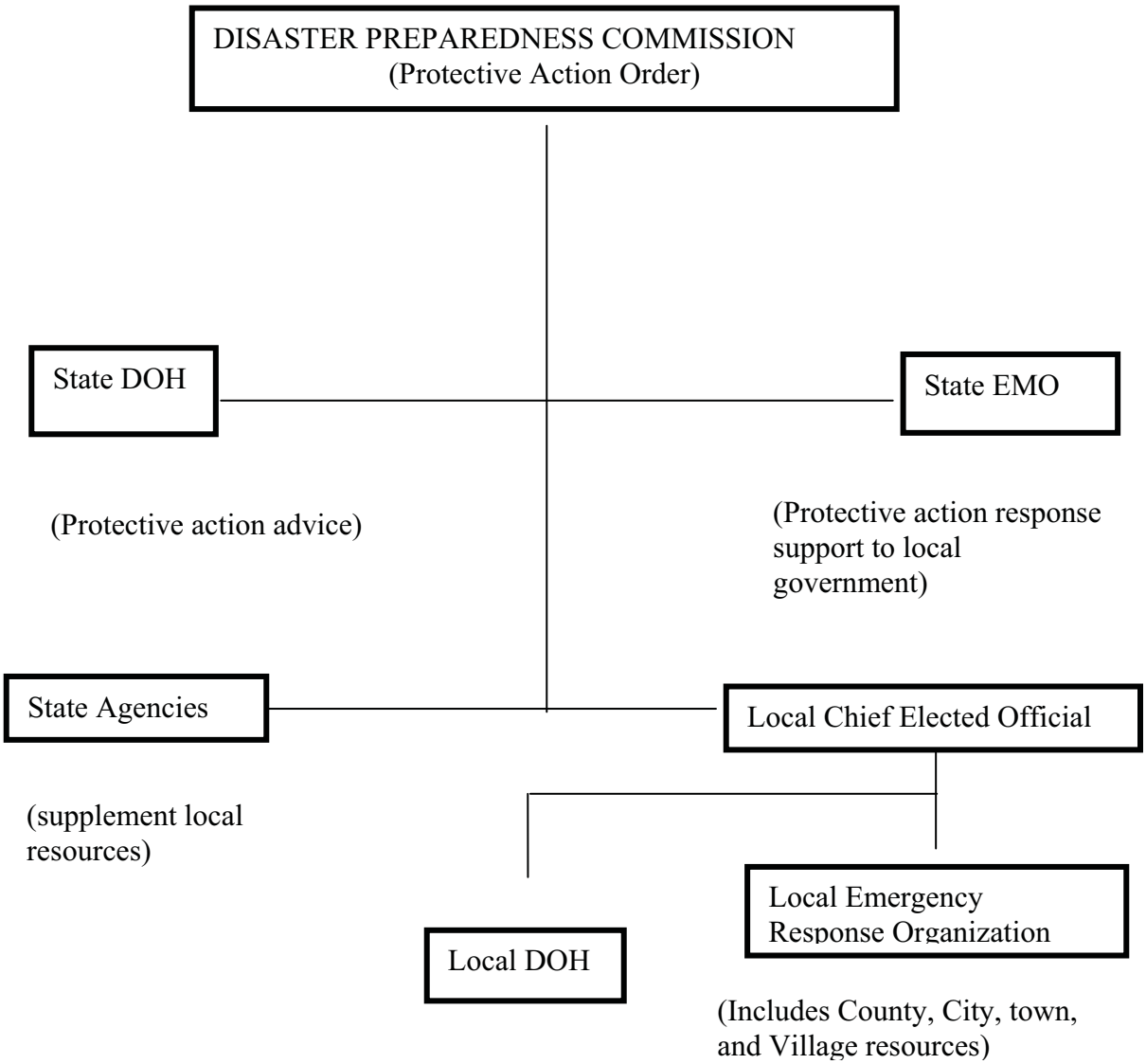
A. RESPONSE ORGANIZATION STRUCTURE
LINES OF AUTHORITY

Prior to State Declaration of Disaster Emergency



B. RESPONSE ORGANIZATION STRUCTURE
LINES OF AUTHORITY

State Declaration of Disaster Emergency



C. ACTIVATION OF EMERGENCY OPERATIONS CENTERS

1. Emergency Classification- Notification of Unusual Event (NUE)

State Activation	10 Mile EPZ County Activation	50 Mile EPZ County Activation
All involved State agencies will utilize their normal working areas for response activities.	All involved County agencies will utilize their normal working areas for response activities.	All involved County agencies will utilize their normal working areas for response activities.

2. Emergency Classification- Alert

State Activation	10 Mile EPZ County Activation	50 Mile EPZ County Activation
Notify appropriate State agency personnel to report to State ECC. (See Procedure B, attachment 10) Send NYSOEM liaisons to affected counties, States, or local EOCs, JIC and the DPC rep to EOF.	Full activation of County EOC. Send designated County liaison officer to. EOF.	County agency personnel to report to county EOC if required.

3. Emergency Classification- Site Area Emergency (SAE)

State Activation	10 Mile EPZ County Activation	50 Mile EPZ County Activation
Full activation of State EOC. (See Procedure B Attachment 10) Send NYSOEM liaisons to affected counties, States, or local EOCs, JIC and the DPC rep to EOF	Full activation of County EOC.	County agency personnel to proceed to County. EOC, if required

4. Emergency Classification- General Emergency (GE)

State Activation	10 Mile EPZ County Activation	50 Mile EPZ County Activation
Full activation of State EOC (See Procedure B Attachment 10) Send NYSOEM liaisons to affected Counties, States, local EOCs, JIC and the DPC rep to the EOF.	Full activation of County EOC.	Advise specific County agency personnel to proceed to County EOC, if required

New York State
Nuclear Emergency Preparedness Subcommittee
Technical Issues Task Force

Alignment of Public Protective Actions for Nuclear Power Plant Incidents with Updated Guidance

November 2005

The following individuals and organizations participated in the development of this position paper, and agree to its purpose and contents. All participants agree to implement the guidance contained herein, to the extent possible.

Constellation Energy Group (Nine Mile Point)

_____ _____
James Jones, Director of Emergency Programs Date

Entergy Nuclear Northeast (J.A. FitzPatrick and Indian Point Energy Center)

_____ _____
Michael J. Slobodien, Director, Emergency Programs Date

Constellation Energy Group (R.E. Ginna Station)

_____ _____
Timothy Laurson, Date
Director of Nuclear Emergency Preparedness and Training Support

New York State Emergency Management Office

_____ _____
Andrew Feeney, First Deputy Director Date

New York State Health Department

_____ _____
Adela Salame-Alfie, Ph.D., Director, Date
Bureau of Environmental Radiation Protection

Executive Summary

The purpose of this position paper is twofold. First, it reconciles different terminology used by Licensees, State and County officials when issuing protective action recommendations during a radiological emergency at a nuclear power plant, and second, it establishes a consistent criteria that can be used for making such recommendations. This issue was prompted by the issuance of NRC Regulatory Information Summary (RIS) 2004-13, "Consideration of Sheltering in Licensee's Range of Protective Action Recommendations", and the identification of inconsistent definitions of protective actions within the Licensee, State and County emergency plans.

The table below summarizes the agreed upon definitions for the protective actions.

Decision/Protective Action	Expected Public Response
No Need for Protective Actions	No action
Evacuate specified ERPAs	Evacuate if located in the specified ERPAs
Shelter-in-place specified ERPAs or designated populations	Shelter-in-place if located in the specified ERPAs or designated populations: • Go indoors • Limit outside sources of air • Make preparation to evacuate • Listen to EAS
Monitor the EAS	Continue listening to EAS for additional information
Implement the KI plan	Follow provided direction regarding the use of KI

1. Purpose

The terminology used in the protective actions recommended by nuclear power plant licensees differs from that recommended by current regulatory guidance. In addition, definitions of certain protective actions vary between Licensee, State and county emergency plans. The purpose of this position paper is to recommend a strategy that will align the protective actions and terminology used by the Licensee, State, and counties.

2. Regulatory Requirements and Guidance

2.1 10 CFR 50.47(b)(10) states that licensees are to develop a range of protective actions for the public in the plume exposure pathway Emergency Planning Zone (EPZ) and that in developing this range of protective actions, consideration is to be given to sheltering (Ref. 1).

2.2 NUREG-0654 FEMA-REP 1 section J.9 states that "Each state and local organization shall establish a capability for implementing protective measures based upon protective action guides and other criteria. This shall be consistent with the

recommendations of the EPA regarding exposure from the passage of radioactive plumes…"(Ref. 2).

2.3 NUREG-0654 FEMA-REP 1 Supplement 3 states that an actual or projected severe core damage or loss of control of the facility should require a recommendation to evacuate a 2-mile radius and 5 miles downwind unless conditions make evacuation dangerous, and advise the remainder of plume EPZ to go indoors to monitor EAS broadcasts. Notes: (3) If there are very dangerous travel conditions initially shelter rather than evacuate the population until conditions improve, (4) Transit-dependent persons should be advised to remain indoors until transportation resources arrive if possible, (5) Shelter may be the appropriate action for controlled releases of radioactive material from the containment if there is assurance that the release is short term (puff release) and the area near the plant cannot be evacuated before the plume arrives (Ref. 3).

2.4 NRC Regulatory Information Summary (RIS) 2004-13, "Consideration of Sheltering in Licensee's Range of Protective Action Recommendations," states that sheltering may be the appropriate action for controlled releases of radioactive material from the containment, if there is assurance that the release is short term (puff release) and the area near the plant cannot be evacuated before the plume arrives. Also sheltering may be appropriate (when available) for areas not designated for immediate evacuation because: (1) it positions the public to receive additional instructions; and (2) it may provide protection equal to or greater than evacuation. Additionally, a licensee's emergency plan, implementing procedures, and notification forms need to include the consideration of sheltering consistent with Federal guidance (Ref. 4).

2.5 NRC RIS 2004-13, Supp. 1, "Consideration of Sheltering in Licensee's Range of Protective Action Recommendations" confirms NRC's position that licensees must develop a range of protective actions that includes the consideration of sheltering and states that NRC will begin evaluating the use of enforcement action for licensees in noncompliance (Ref. 5).

2.6 Nuclear Energy Institute (NEI) Guidance, "Range of Protective Actions for Nuclear Power Plant Incidents" describes the industry perspective on protective actions (Ref. 6).

2.7 NRC RIS 2005-08, Endorsement of NEI Guidance "Range of Protective Actions for Nuclear Power Plant Incidents" states the NRC's endorsement of NEI's recommendations for use of specific protective actions, including sheltering as an alternative to evacuation for short term releases or when impediments to evacuation exist (Ref. 7).

2.8 EPA 400-R-92-001 "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents" states that sheltering may be appropriate (when available) for areas not designated for immediate evacuation because: 1) it positions the public to receive

additional instructions; and 2) it may provide protection equal to or greater than evacuation (Ref. 8).

3. **Definitions**

3.1 A "**General Emergency"** is defined as actual or projected severe core damage or loss of control of the facility.

3.2 **"** All remaining ERPAs monitor the Emergency Alert System (EAS)**" is an action that:**

- ♦ Will always and only be used in conjunction with a recommendation for evacuation or shelter-in-place
- ♦ Is not intended to provide dose reduction
- ♦ May involve a variety of actions, including:
  - Listening to EAS
  - Collecting medications, important papers, etc.
  - Packing (in case it is later recommended to evacuate)
- ♦ Does not mean shelter-in-place
- ♦ Although it may be advisable to go indoors to monitor EAS in order to minimize traffic and other outdoor congestion, it is not required that the public go indoors in order to monitor EAS

3.3 **"Shelter-in-place"** is an action that:

- ♦ May be recommended by the licensee for short duration releases (defined as a release of one hour or less duration) during a General Emergency
- ♦ May be recommended by offsite response agencies for persons who should be evacuated but cannot because of impediments such as:
  - Transportation resource shortfalls
  - Dangerous travel conditions
  - Long mobilization times (special populations such as prisons, nursing homes, etc.)
- ♦ Would only be recommended during a General Emergency
- ♦ Would be taken for the purpose of reducing dose
- ♦ May involve a variety of actions, including:
  - Going indoors
  - Limiting outside sources of air
  - Making preparation to evacuate
  - Listening to EAS

3.4 "**Evacuation**" is an action that:

- ♦ Is defined as the urgent removal of people from an area to avoid or reduce high-level, short-term exposure, usually from the plume or deposited activity

- ♦ Would only be recommended during a General Emergency

- ♦ Would be taken for the purpose of reducing dose

3.5 "**Short-Duration Release**" is defined as a release of radioactive materials, less than one hour in duration.

4. Implementation Considerations

This section provides suggestions for aligning the protective actions described above.

4.1 Licensee actions

- ♦ The New York State Radiological Emergency Data Form, Part 1, item 6 should be modified to read as follows (See Appendix C):
  - A. No Need for Protective Actions outside the site boundary
  - B. Evacuate and implement the KI Plan for the following ERPAs and all remaining ERPAs monitor the Emergency Alert System …
  - C. Shelter-in-place and implement the KI Plan for the following ERPAs and all remaining ERPAs monitor the Emergency Alert System …
  - A "Note" should be added to 6B which states that "Offsite authorities should consider 'shelter-in-place and take KI' if evacuation is not feasible." This statement acknowledges that during an emergency, licensees are typically unaware of emergent impediments to evacuation because that information is obtained and acted upon by offsite officials.

- ♦ Licensee emergency plans should be revised to include the protective action recommendation of "shelter-in-place" for short duration releases during a General Emergency. A short duration release is defined as a release of radioactive materials less than one hour in duration.

- ♦ Licensee emergency plans may be revised to reflect arrangements that have been made with State and/or county officials to identify and accommodate special evacuation circumstances.

- ♦ Licensees may consider additional actions for long-term impediments to evacuation per their site emergency plan and procedures.

4.2 County and State actions

- ♦ Emergency plans should be revised to include:

  - Shelter-in-place as a protective action for the public.

- Implementation of the shelter-in-place protective action when persons who should be evacuated cannot. See decision tree in Appendix B for additional information.

- A concurrent recommendation to ingest KI will be made if the public is directed to shelter-in-place during a General Emergency.

♦ Public information plans should be revised as follows:

- Incorporate information on the purpose of monitoring EAS, and actions to take while monitoring EAS into public education materials and press releases.

- Incorporate "Monitor the EAS" into EAS follow-up messages.

- Incorporate the purpose of shelter-in-place, and actions to take in order to shelter-in-place, into public education materials. See Appendix D for references for additional information on recommended actions.

- Incorporate shelter-in-place protective action details into EAS follow-up messages and press releases.

- Incorporate KI protective action details, as they relate to a recommendation to shelter-in-place, into public information materials, press releases, and EAS follow-up messages.

5. References

(Ref 1)10 CFR 50.47(b)(10): A range of protective actions including sheltering, evacuation and prophylactic use of iodine have been developed for the plume exposure pathway EPZ for emergency workers and the public. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place and protective actions for ingestion pathway EPZ appropriate to the locale have been developed.

(Ref 2) NUREG 0654 FEMA REP 1: Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants-Criteria for Protective Action Recommendations for Severe Accidents, Appendix I Emergency Action Level Guidelines (November 1980).

(Ref 3) NUREG 0654 FEMA REP 1 Supplement 3: Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants-Criteria for Protective Action Recommendations for Severe Accidents (July 1996).

(Ref 4) NRC Regulatory Information Summary RIS 2004-13: Consideration of Sheltering in Licensees Range of Protective Action Recommendations (August 2004).

(Ref 5) NRC Regulatory Information Summary RIS 2004-13, Supplement 1: Consideration of Sheltering in Licensees Range of Protective Action Recommendations (March 2005).

(Ref 6) Nuclear Energy Institute (NEI) Guidance "Range of Protective Actions for Nuclear Power Plant Incidents" (April 2005).

(Ref 7) NRC Regulatory Information Summary RIS 2005-08: Endorsement of Nuclear Energy Institute (NEI) Guidance "Range of Protective Actions for Nuclear Power Plant Incidents" (June 2005).

(Ref 8) EPA 400-R-92-001: Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (October 1991).

6. Appendices

Appendix A - Protective Action Decision Tree for Licensees

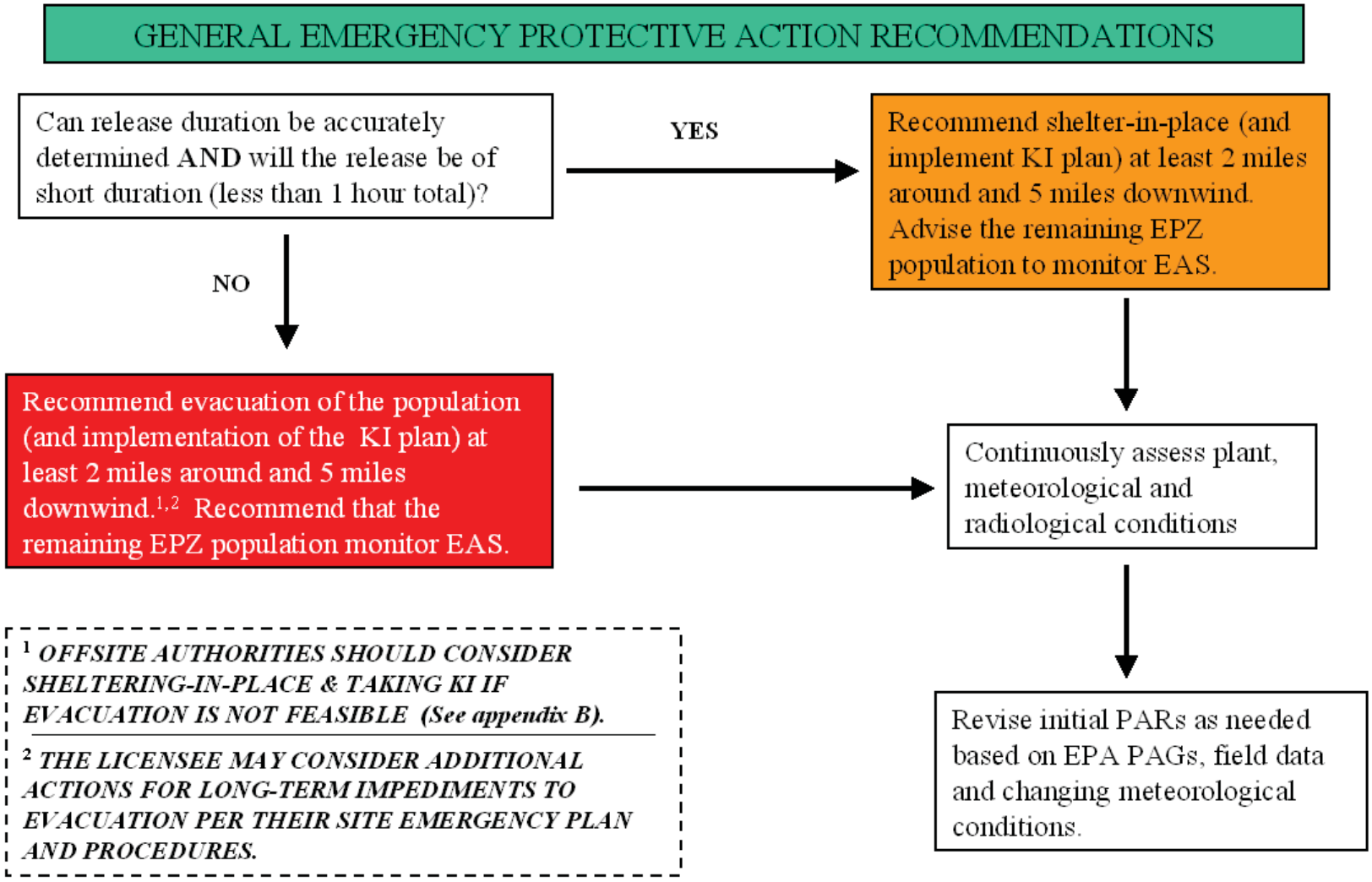
Appendix B - Protective Action Decision Tree for Off-site Response Agencies

Appendix C - New York State Radiological Emergency Data Form, Part 1 (Rev. 9/05)

Appendix D – References for Shelter-in-Place Recommended Actions

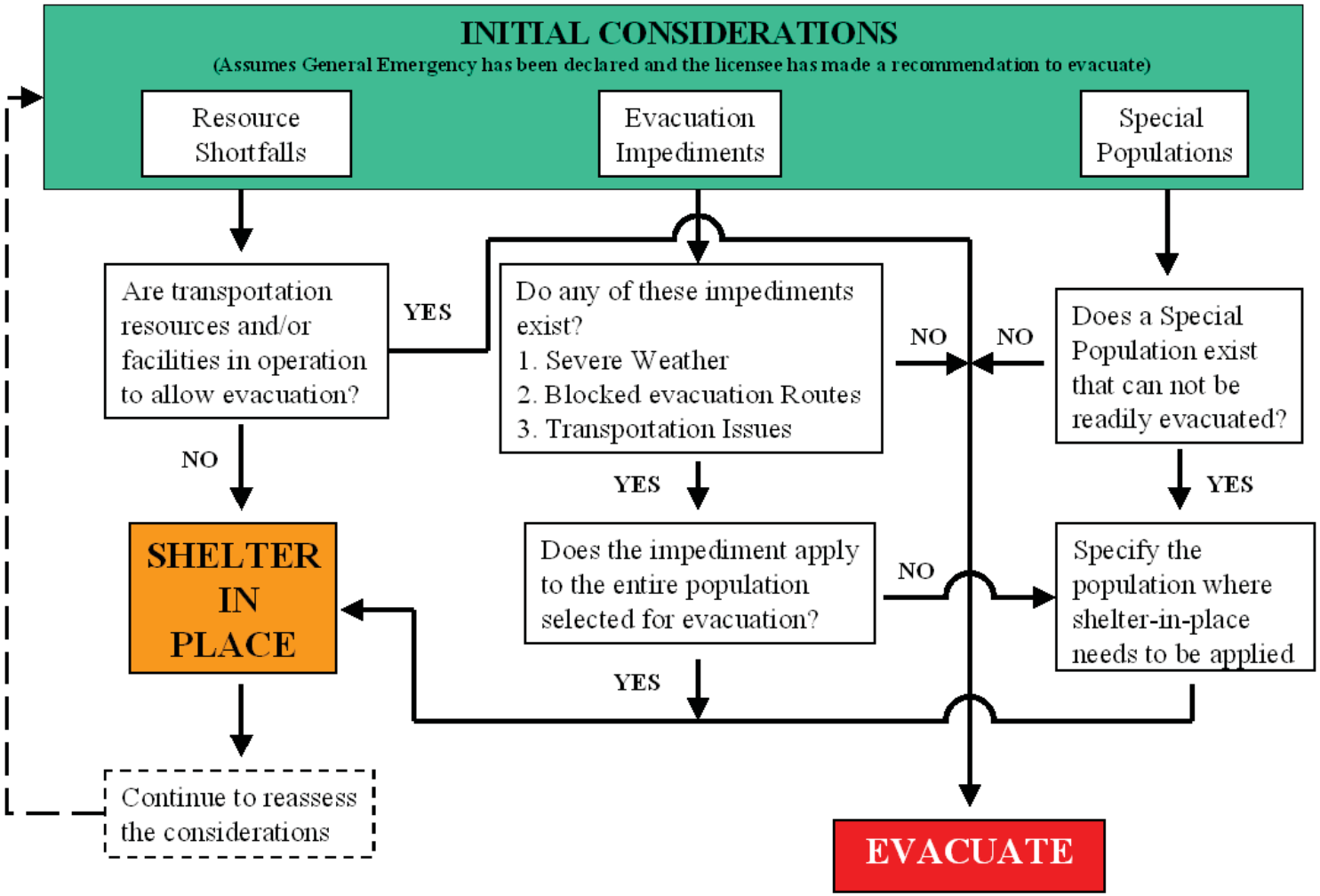
APPENDIX A

Protective Action Recommendation Decision Tree for Licensees



APPENDIX B

Protective Action Decision Tree for Off-Site Response Agencies



APPENDIX C
New York State Radiological Emergency Data Form, Part 1

NEW YORK STATE

RADIOLOGICAL EMERGENCY DATA FORM

PART 1 Notification # _____

This is to report an incident at_____ , Standby for roll call:

1. This message is being transmitted on: _____ at _____ Via: **A**. RECS
(date) (time-24 hr clock) **B**. Other _____

2. This is :
A. An Actual Emergency **B**. An Exercise

o 3. The Emergency Classification is:
A. UNUSUAL EVENT **C**. SITE AREA EMERGENCY **E**. EMERGENCY TERMINATED
B. ALERT **D**. GENERAL EMERGENCY **F**. Other_____

4. This Emergency Classification declared on: _____ at_____
(date) (time-24 hr clock)

o 5. Release of Radioactive Materials due to the classified event:
A. No Release

B. Release **BELOW** federal limits
□ To Atmosphere □ To Water
C. Release **ABOVE** federal limits
□ To Atmosphere □ To Water
D. Unmonitored release requiring evaluation

o 6. The following Protective Actions are recommended to be implemented as soon as practicable:

A. **NO NEED for PROTECTIVE ACTIONS** outside the site boundary

B. **EVACUATE** and **IMPLEMENT the KI PLAN** for the following ERPAs and
All remaining ERPAs **MONITOR the EMERGENCY ALERT SYSTEM**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 **W1 W2 W3 W4 W5 W6 W7 M1 M2 M3 M4**
M5 M6 M7 M8 M9

NOTE: OFFSITE AUTHORITIES SHOULD CONSIDER SHELTER-IN-PLACE + TAKE KI IF EVACUATION IS NOT FEASIBLE

C. **SHELTER–IN-PLACE** and **IMPLEMENT the KI PLAN** for the following ERPAs and
All remaining ERPAs **MONITOR the EMERGENCY ALERT SYSTEM**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 **W1 W2 W3 W4 W5 W6 W7 M1 M2 M3 M4**
M5 M6 M7 M8 M9

7. **EAL #** _____

Brief Event Description & Other Significant Information _____

o 8. Reactor Shutdown: **A**. Not Applicable **B.** _____ at_____
(date) (time 24 hr clock)

o 9. Wind Speed: **A**._____ Miles/Hour at elevation _____ Feet
B._____ Miles/Hour at elevation _____ Feet
C._____ Meters/Sec. at elevation _____ Meters

o 10. Wind Direction: **A**. (From) _____ Degrees at elevation _____ Feet or Meters (Circle one)
B. (From) _____ Degrees at elevation _____ Feet

o 11. Stability Class: Unstable - A B C Neutral - D Stable - E F G

o 12. Reported By - Communicator's name: _____ Telephone # _____

✓ in o indicates change in this item from previous Notification # REV. 10/05

APPENDIX D

References for Shelter-in-Place Recommended Actions

http://www.redcross.org/services/disaster/beprepared/shelterinplace.html

http://www.nationalterroralert.com/readyguide/shelterinplace.htm

http://www.cfrpc.org/shelter.html

http://www.bt.cdc.gov/radiation/shelter.asp

http://www.ci.west-sacramento.ca.us/cityhall/departments/fire/sip.cfm

http://www.pep-c.org/shelter1in1place/

http://www.fema.gov/hazards/nuclear/radiolo.shtm

TABLE OF CONTENTS

(Not Used)

1.0 INTRODUCTION

The intermediate phase of an accident at a nuclear power plant is defined as that period beginning after the source and releases have been brought under control and environmental measurements are available for use as a basis for decisions on protective actions.

During this phase the primary source of exposure to the population is assumed to be due to deposited radionuclides which include the following pathways:

- external gamma radiation from deposited radioactive materials or groundshine which is expected to be the dominant source;
- internal exposure from inhalation of resuspended materials;
- ingestion of food and water (covered in Section III);
- beta radiation; and
- direct ingestion of contaminated soil.

During this phase of an accident, protective action responses will include restrictions on food and/or water (covered in Section III); and relocation. It is expected that this phase of an accident might last from weeks to many months.

The late phase of a nuclear power plant accident consists of recovery activities aimed at reducing radiation levels in the environment so as to permit unrestricted, long-term use of property. This phase of the accident, which may last from months to many years, ends when all recovery activities have been completed.

As provided by the New York State Comprehensive Emergency Management Plan, a Recovery Committee (here after referred to as The Committee) having authority and major responsibilities to make decisions relating to intermediate and late phase activities will be appointed by the DPC. This committee will be comprised of representatives of the Commission's membership, and such other agencies as the Commission Chairman may designate. Specifically included will be representatives of the Departments of Agriculture and Markets, Office of Economic Development, Health, Environmental Conservation, Labor, Temporary & Disability Assistance, State, Transportation, Office of General Services, New York State Energy Research and Development Authority, Public Service Commission, Division of State Police and Division of Military and Naval Affairs and NYSOEM. Response organizations will be notified that recovery activities are being initiated. This will be accomplished utilizing the Executive Hotline, the RECS line, EOC briefings, conference calls and press releases.

2.0 RESPONSIBILITIES

The Committee is responsible for directing State resources and intermediate and late phase activities and for assisting in the total cooperative effort involving any or all of the other organizations having recognized roles in intermediate and late phase operations. During intermediate and late phase operations the Committee is responsible for developing practical time parameters and activities consistent with this plan, and insures that there are adequate communications systems and processes for all State activities. The Committee reports to the DPC and keeps it appraised of all matters relating to the recovery effort.

The New York State Commissioner of Health continues to have the primary responsibility for recommending protective actions i.e. relocation; for overseeing the total related radiological program including recovery activities; for modifying, and relaxing protective actions including allowing the reentry of evacuated or restricted areas; and discontinuing protective actions allowing the return of the evacuated population.

The Director of the State Office of Emergency Management (NYSOEM) coordinates State and Federal assistance and programs in support of the local jurisdictions.

Local Chief Elected Officials assess the needs of their affected areas in conjunction with the State Office of Emergency Management. They direct intermediate and late phase operations in their jurisdictions. State directed intermediate and late phase operations and protective actions are coordinated with the respective jurisdictions.

3.0 RELOCATION AND RETURN OPERATIONS

3.1 Before assessing relocation and/or reentry of the public, it is necessary to ensure that the source of the release or the threat of a release is under control. The Planning Section, Assessment & Evaluation (A & E) Branch considerations include:

- ♦ whether there is a radioactive material inventory capable of being released offsite;
- ♦ if barriers to a release are threatened by fire, facility control, the presence of hydrogen or other explosive gas, core melt through, pressure build up (decay heat), direct containment heating (high pressure melt through), or isolation failure;
- ♦ whether the reactor is shutdown (subcritical) and whether or not it can go critical; and
- ♦ whether the core is being cooled.

3.2 Based on analysis of survey results including aerial monitoring data, Aerial Measuring System (AMS), ground monitoring (Federal, State, County and NFO field team data), and sample isotopic analysis, the A & E branch will determine the location of the isodose line

corresponding to the relocation PAG [> (greater than) or = 2 rem projected dose in the first year]. Relocation PAGs are outlined in Table 1.

3.3 Based on A & E branch recommendations, and in consultation with local officials, the Commissioner of DOH will order the establishment of a restricted zone which will include that area in excess of the relocation PAG and an appropriate buffer zone. Buffer zone considerations include geopolitical boundaries, major roads and landmarks, neighborhood boundaries, as well as the potential for transport of the deposited radionuclides.

3.4 Division of State Police in conjunction with county and local police agencies will identify control points necessary to control access to the restricted zone.

3.5 The Committee, and specifically the Human Services Branch, in coordination with appropriate federal, county and local agencies, will implement the relocation order and address the various needs of the relocating population including short and long term housing, job loss, replacement of belongings, and any special needs that may arise. To the extent possible, human need services, federal disaster assistance, and NFO insurance assistance will be coordinated at Disaster Assistance_Service Centers located as to be convenient to the relocating population. Priority will be given to relocation of persons in the highest exposure rate areas. Persons previously evacuated from areas now determined to be restricted will be designated as relocated.

3.6 Persons previously evacuated from areas which have not been contaminated will be allowed to return. Return orders will be formulated in conjunction with the local chief elected officials and shall be issued via media releases and announcements at reception centers and congregate care centers. Transportation for transit dependent members of the returning population will be arranged.

3.7 Persons evacuated from contaminated areas outside the restricted zone will be allowed to return on gradual basis as confidence is gained from sample analysis and field measurements that relocation PAGs (Table 1) will not be exceeded.

3.8 Factors being considered prior to allowing the return of evacuees include:

- sampling and monitoring results
- status of decontamination activities
- public safety status including police, fire and EMS capabilities
- availability and operability of public utilities including electric power, gas, telephone, water and sewer;
- adequacy of transportation systems and network; and any other needs identified by the State

Human Services Branch.

3.9 Additional monitoring/decontamination stations will be established to support control of the restricted zone.

4.0 REENTRY OPERATIONS

4.1 Following the establishment of a restricted area, it may be deemed prudent by the Commissioner of DOH, in conjunction with local officials, to allow temporary reentry into the restricted zone. Reentry can be allowed for any of the following reasons:

- retrieval of personal belongings or property by members of the population being relocated from the restricted zone;
- security patrols;
- the reestablishment or operation of vital services including fire department operations, EMS, water or sewage control facilities, utility operations, or critical businesses or industries; and
- care and feeding of livestock;

4.2 Restricted zone perimeter access control points will be established prior to allowing reentry.

4.3 Monitoring and decontamination centers will be established to support reentry operations.

4.4 Efforts will be undertaken utilizing state and local resources to decontaminate access ways and facilities.

4.5 Persons allowed to reenter the restricted zone will be issued permanent record dosimetry, and may be issued direct reading dosimetry, and will be advised to control their exposure and limit the spread of contamination. Persons will be instructed to periodically read their direct reading dosimeters and report any unusual or unexpected levels. Known areas of high exposure rate will be previously identified, and appropriate exposure control guidance will be issued.

4.6 Persons and equipment exiting the restricted zone will be monitored and decontaminated as required.

4.7 Exposures to persons reentering the restricted zone will be limited to normal occupational limits for workers exposed to radiation (see Table 2).

5.0 RECOVERY OPERATIONS

5.1 The Committee, in conjunction with local officials, will establish a long-term plan for the decontamination of contaminated areas. Decontamination efforts will include:

- ♦ scrubbing and/or flushing of hard surfaces; and
- ♦ soaking, plowing and/or removal of soil.

5.2 The State Commissioner of Health will establish a radiation-monitoring program for contaminated areas. This monitoring program may be long term depending upon the type, levels, and extent of the contamination. The monitoring will also take into account the nature of the contamination as well as the area affected. Future activities affecting release of radiation (venting, etc.) will also require monitoring. Other Federal and State agencies will cooperate and assist the Department of Health in monitoring for long-term effects. Monitoring programs initiated during the response phase will continue during recovery until acceptable levels are reached.

5.3 As efforts are completed it may be possible to reduce the size of the restricted zone as recommended by the Commissioner of DOH.

6.0 PUBLIC INFORMATION

6.1 Dissemination to the public of information pertaining to intermediate and late phase actions commences after consideration has been given to the following factors:

- ❖ Status of the services and conditions enumerated in the preceding portion of this plan. This includes information and guidance on methods the public should employ to overcome existing deficiencies, i.e., sources of uncontaminated water supplies, restrictions on use of all non- canned foodstuffs, etc.
- ❖ Consistency of public announcements between all levels of government; the State, County and Licensee PIO's coordinate such releases with each other before they are issued.
- ❖ The methods by which these announcements are made depend on the existing situation and the affected areas. Television and commercial radio broadcasts are the primary means of dissemination. Follow-up newspaper articles are also used. In special cases printed handouts and voice communications are used for Congregate Care Centers and similar facilities.

7.0 NONTECHNICAL ASSISTANCE

7.1 State and Federal assistance can be made available to assist affected counties in recovering from the effects of a radiological emergency.

Article 2-B of the New York State Executive Law provides that when the Governor declares a disaster emergency for an affected area he may direct any and all agencies of the State government to provide assistance under the coordination of the DPC. Such State assistance may include:

- utilizing, lending, or giving to political subdivisions, with or without compensation therefor, equipment, supplies, facilities, services of State personnel, and other resources, other than the extension of credit;

- distributing medicine, medical supplies, food and other consumable supplies through any public or private agency authorized to distribute the same;

- making such other use of their facilities, equipment, supplies and personnel as may be necessary.

7.2 The Chief Elected Official of any affected county which has need of Federal disaster assistance accumulates and submits through NYSOEM data as required by Public Law 93-288 and appropriate regulations. This data will be submitted to the Governor through the Recovery Committee and the Chairman of the Disaster Preparedness Commission with a recommendation as to whether the Governor should request the President to declare an Emergency or Disaster as defined by Public Law 93-288. If such a request is made and granted, the Federal assistance would be administered by the Director, NYSOEM, for the Recovery Committee.

In instances where a Presidential declaration is either not requested or granted, specific types of Federal assistance may be provided by individual Federal agencies acting within their own statutory authorities. The Governor may request such assistance, based on recommendations of the Director of the NYSOEM and the Committee which will be submitted through the Chairman of the DPC.

7.3 Medical follow-up to monitor the effects of radiation on the public and emergency workers will be established. Currently, the State Department of Health conducts an ongoing study of selected health statistics for counties with and without nuclear facilities as part of its epidemiological program. This program will be enhanced in the event of a radiological emergency.

TABLE 1

Protective Action Guides for Exposure to Deposited Radioactivity
During the Intermediate Phase of a Nuclear Accident

Protective Action	PAG (projected dose)*	Comments
Relocate the general Public. **	> or = 2 rem	Beta dose to skin may be up to 50 times higher
Apply simple dose reduction techniques.***	< 2 rem	These protective actions should be taken to reduce doses to as low as practicable levels.

* The projected sum of effective dose equivalent from external gamma radiation and committed effective dose equivalent from inhalation of resuspended materials, from exposure or intake during the first year. Projected dose refers to the dose that would be received in the absence of shielding from structures or the application of dose reduction techniques. These PAGs may not provide adequate protection from some long-lived radionuclides, therefore, 1) doses in any single year after the first will not exceed 0.5 rem, and 2) the cumulative dose over 50 years (including the first and second years) will not exceed 5 rem.

** Persons previously evacuated from areas outside the relocation zone defined by this PAG may return to occupy their residences. Cases involving relocation of persons at high risk from such action (e.g., patients under intensive care) should be evaluated individually.

*** Simple dose reduction techniques include scrubbing and/or flushing hard surfaces, soaking or plowing soil, minor removal of soil from spots where radioactive materials have concentrated, and spending more time than usual indoors or in other low exposure rate areas.

Source EPA 400-R-92-001, p.4-4

TABLE 2

Radiation Exposure Limits For Persons Entering the Restricted Zone	
Total Effective Dose Equivalent (TEDE)	5 rem/year (0.05 Sv/year)
Lens of the eye	15 rem/year (0.15 Sv/year)
Dose to any individual organ or tissue (deep dose equivalent + committed dose equivalent)	50 rem/year (0.5 Sv/year)
Shallow Dose Equivalent (to skin or any extremity)	50 rem/year (0.5 Sv/year)

Sources: EPA 400- R-92-001, p E-19
10 NYCRR Part 20

APPENDIX A

DEFINITIONS

Access Control: All activities accomplished for the purpose of controlling entry or re-entry into a restricted zone to minimize the radiation exposure of individuals. This function is needed to prevent the general public from entering the restricted zone and permitting only emergency workers with essential missions and limited members of the general public to enter a restricted zone.

Activation: A process by which a facility is brought up to emergency mode from a normal mode of operation. Activation is completed when the facility is ready to carry out full emergency operations.

Aerial Measuring System (AMS): Department of Energy (DOE) operated aerial radiation surveillance program which may be used for plume verification and ground deposition monitoring.

Airborne Radioactive Material: Any radioactive material dispersed in the air in the form of dusts, fumes, mists, vapors or gases.

Alert: Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of intentional malicious dedicated efforts of a hostile act.. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

Assessment: The compilation and analysis of all available accident data and information in order to determine actual and projected radiation doses to the affected population that may result from the accident.

Background Radiation: Radiation arising from man's natural environment including cosmic rays and radiation occurring from the natural radioactive elements.

Buffer Zone: An area adjacent to a restricted zone, to which residents may return, but for which protective measures are recommended to minimize exposure to radiation.

Chain-of-Custody Form: The documentation of the transfer of samples from one organization/individual to another with respect to the name of the organization/individual and dates of acceptance and/or transfer of samples.

Check Source: A radioisotope with a relatively fixed activity level used to determine the responsiveness of survey instruments.

APPENDIX A

Chief Elected Official: A County Executive, the Chairman or other presiding Officer of the county legislative body, the Mayor of a city or village, or the Supervisor of a town.

Committed Dose Equivalent (CDE): The dose equivalent to a single organ from an intake of radioactive material during the 50 year period following the exposure.

Committed Effective Dose Equivalent (CEDE): The sum of the weighting factors applicable to each of the organs of tissue that are irradiated and the CDE to each of these organs or tissues.

Congregate Care Center: A facility where short-term housing feeding would be provided for evacuees.

Contaminated, injured, or exposed individuals: individuals who are; contaminated, contaminated and otherwise physically injured, or exposed to levels of radiation.

Contamination (Radioactive): Deposition of unwanted material on the surfaces of structures, areas, objects, or personnel.

Declared Pregnant Woman: A woman who has voluntarily notified her employer in writing, of her pregnancy.

Decontamination: The reduction or removal of unwanted radioactive material from a structure, area, object or person.

Direction and Control: The management of emergency functions within particular context (e.g., emergency operations center) through leadership and use of authority.

Derived Intervention Levels (DIL): The DILS are limits on the concentrations of various radionuclides permitted in human food distributed in commerce for human consumption.

Disaster Field Office: The temporary operations facility for the coordination of federal response and recovery activities.

Division of Homeland Security and Emergency Services (DHSES): New York State agency created following a 2010 reorganization that now includes the New York Office of Emergency Management.

Dose: A generic term that means absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, or total effective dose equivalent.

Dose Equivalent: The product of the absorbed dose in tissue, factor, and all other necessary modifying factors at the location of interest. The unit for dose equivalent is the Rem (R).

APPENDIX A

Dose Limits for Emergency Workers: The allowable accumulated during the entire period of the emergency. Action to avoid exceeding the limit is taken based on actual measurements of integrated gamma exposure. In contrast, protection action guides are trigger levels of projected dose at which actions are taken to protect the public. These actions are taken prior to the dose being received.

Dose Rate: The radiation dose delivered per unit of time. Measured, for example, in Rem per hour.

Dosimeter: A personal monitoring instrument that measures radiation exposure to gamma or X-Ray Radiation. (Direct Reading or Permanent Record)

Drill: An event involving organizational responses to a simulated accident to develop, test, and monitor specialized emergency skills that constitute one or more components of an emergency plan and procedure.

Effective Dose Equivalent (EDE): The dose to the body from external radiation sources (assumed to be uniform over the body).

Embargo: A legal order which restricts the movement, distribution, and/or sale of food stuffs.

Emergency Alert System (EAS): A system which uses commercial radio and television stations to furnish an expedited means of furnishing real time communications to the public in the event of an emergency (i.e., storm warning, local crises, etc.).

Emergency Operations Center (EOC): A secure area with a wide range of communications capability that provides an operating area for those agencies involved in emergency response to man-made or natural disasters.

Emergency Operations Facility (EOF): A facility operated by the licensee for the purpose of evaluating and controlling emergency situations and coordinating responses.

Emergency Operations Plan: A plan which provides comprehensive emergency management for all types of emergencies within the State. The Radiological Emergency Preparedness Plan is an integral part of the State Emergency Operations Plan.

Emergency Planning Zone (EPZ): The area surrounding a nuclear power plant site for which offsite planning is required. For nuclear power plants, the EPZ is defined as an area with a radius of about ten (10) miles for the plume exposure pathway and a radius of about fifty (50) miles for the ingestion exposure pathway.

Emergency Response Planning Area (ERPA): A subdivision of the plume exposure (10-mile) emergency planning zone.

Emergency Worker: An individual who has an essential mission within or outside the plume exposure pathway emergency planning zone to protect the health and safety of the public who could be exposed to ionizing radiation from the plume or from its deposition. Some examples of emergency workers are: radiation monitoring personnel; traffic control personnel; evacuation; vehicle drivers; fire and rescue personnel, including ambulance crews; medical facilities personnel; emergency operations center personnel; personnel carrying out backup alerting procedures; and essential services or utility personnel.

Evacuation: The removal of the public from an area.

Evacuation Time Estimate: An estimate, contained in emergency plans, of the time that would be required to evacuate general and special populations within the plume pathway emergency planning zone under emergency conditions.

Exercise: An event involving organizational response to a simulated commercial nuclear power plant accident with radiological and other offsite consequences. The purpose of an exercise is to test the integrated capabilities of involved organizations to implement emergency functions set forth in plans and procedures.

Exposure: A measure of the ionization produced in air by X-ray or gamma radiation. The Roentgen (R) is the unit of exposure. The term "dose", sometimes used interchangeably with exposure, actually refers to absorbed radiation.

Exposure Rate: The amount of gamma radiation that an individual would receive in one hour as measured in air (typically expressed in units of milliroentgens per hour or Roentgens per hour).

Federal Radiological Monitoring Assessment Center (FRMAC): This center is usually located at an airport near the scene of a radiological emergency from which the DOE offsite FRMAC Director coordinates radiological monitoring and assessment assistance to the affected area. This center need not be located near the onsite or Federal-State centers as long as its operations can be coordinated with them.

Fixed Contamination: Contamination that remains after loose contamination has been removed by decontamination.

Geiger-Mueller Detector: A type of radiation detector that can be used to measure the gamma, or detect beta plus gamma radiation depending on whether the detector is covered by a beta shield.

General Emergency: Indicates that events are in process or have occurred that involve actual or imminent substantial core degradation or melting, with potential for loss of containment integrity or security events that result in an actual loss of physical control of the facility. Releases can reasonably be expected to exceed EPA PAG exposure levels offsite, beyond the immediate site

area.

General Population: All people in the plume exposure emergency planning zone including residents and transients but not special facility populations in schools, camps, parks.

Host Area: A geographical area outside the plume pathway emergency planning zones where functions such as congregate care, radiological monitoring, decontamination, and registration are conducted.

Ingestion Emergency Planning Zone: For planning purposes, the area surrounding a site, where the principal exposure from an accident would be from the ingestion of contaminated water or foods. For nuclear power plants the ingestion EPZ is an area of about a fifty (50) mile radius around a nuclear plant.

Initial Notification: The first notification by a Nuclear Facility Operator to State and local agencies and the Nuclear Regulatory Commission of one of the four event classifications.

Initial Precautionary Options: A response action taken on the basis of the potential for a release of radioactive materials.

Ionizing Radiation: Any radiation capable of displacing electrons from atoms or molecules, thereby producing ions. (For example, radiation produced by x-ray equipment.)

Joint Information Center The facility used as the central point for dissemination of information by county, State and licensee representatives to the news media. This facility is located offsite, and is the only location which allows media access during an emergency.

KI (potassium iodide): A prophylactic drug that can be used effectively to block the uptake of radioiodine by the thyroid gland.

Local Government: For the purposes of the Plan any County, City, Town or Village.

Millirem (mRem): One-thousandth (1/1000) of a rem.

Mitigation: The emergency phase that is aimed at eliminating or reducing the probability of the occurrence of a radiological emergency, and in minimizing the impact of a radiological emergency on public health and property.

Monitoring: The measurement of radiation levels, usually with a portable survey instrument.

National Atmospheric Release Advisory Capability (NARAC): Atmospheric computer modeling system based at Lawrence Livermore National Laboratory - can be utilized for making dose projections.

New York State Office of Emergency Management (NYSOEM): New York State agency replacing former SEMO.

National Response Framework (NRF): This document establishes a comprehensive all-hazards approach on how the federal government coordinates with state, local and tribal governments and the private sector during incidents.

Noble Gases: The chemically inert radioactive gases that are released during an accident at a nuclear power plant.

Notification of Unusual Event: Unusual events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

Nuclear Facility Operator (NFO): The entity licensed by the Nuclear Regulatory Commission to operate a nuclear facility.

Nuclear Reactor: A device in which nuclear fission may be sustained and controlled in a self-supporting nuclear reaction.

Off-Site: Area outside the site boundary of a particular nuclear power plant facility.

On-Site: Area inside the site boundary of a nuclear power plant facility.

Optically Stimulated Luminescence Dosimeter (OSLD): A dosimetry badge used to measure possible exposure to ionizing radiation. Replaces Thermoluminescent Dosimeter (TLD) (Permanent record - requires processing to read.)

Personnel Monitoring Center (PMC): Those facilities or locations where emergency workers, vehicles and equipment will be monitored for radioactive contamination and decontaminated if necessary.

Plume Exposure Pathway: For planning purposes, the area surrounding a site where the principal exposure sources are: (a) whole body exposure to gamma radiation from the plume and from deposited material, and (b) inhalation exposure from the passing radioactive plume. For nuclear power plants the plume EPZ is defined as an area with a radius of about ten (10) miles.

Portal Monitor: A radiation monitor consisting of several radiation detectors arranged in a fixed position within a frame that forms a passageway for individuals being monitored.

Projected Dose: The estimated or calculated amount of radiation dose to an individual from exposure to the plume and/or deposited materials, over a period of time, in the absence of protective action.

APPENDIX A

Protective Action: Any action taken to protect the public health in response to a radiological emergency.

Protective Action Area: A subdivision of the plume exposure (10-mile) emergency planning zone around the Indian Point Energy Center.

Protective Action Guide (PAG): Projected dose to an individual in the general population that warrants the implementation of protective action. Specific PAGs have been recommended in terms of the level of projected dose that warrants the implementation of evacuation/sheltering, relocation, and limiting the use of contaminated food, water, or animal feed.

Protective Action Recommendation (PAR): NFO recommended protective actions.

Radioactivity: The property of certain nuclides of spontaneously emitting nuclear particles or gamma or X-ray radiation, or of undergoing spontaneous fission.

Radioactive Materials: Material containing atoms having excess energy. It contains excited, unstable atoms that are disintegrating, emitting radiation.

Radioiodines: A family of radioactive iodines - I-131, I-132, I-133 and I-135 - these are the radioiodines of primary significance for radiological emergencies involving nuclear power plants.

Radiological Emergency: A situation which may result in the loss of control of a radiation source causing a hazard, or potential hazard, to health or property.

Radiological Monitoring: The detection and measurement of ionizing radiation from radiological releases by means of survey instruments.

Reception Center: A predesignated location outside the Plume Exposure Pathway through which evacuees will pass to receive assistance which may include registration, first aid, radiation monitoring and direction to a Congregate Care Center or medical facility.

Recovery: The emergency phase in which efforts are carried out to return to pre-emergency conditions.

Re-entry: Temporary entry of individuals into a restricted zone under controlled conditions.

Release: Escape of radioactive materials into the environment.

Relocation: A protective action, taken in the pose-emergency phase, through which individuals not evacuated during the emergency phase are asked to vacate a contaminated area to avoid chronic radiation exposure from deposited radioactive material.

Rem: The unit of dose equivalent in body tissue. It is a measure of radiation exposure that indicates the potential impact on human cells.

Response: The emergency phase in which public protective actions are carried out.

Restricted Zone: An area of controlled access from which the population has been evacuated or relocated.

Return: Reoccupation of areas cleared for unrestricted residence or use by previously evacuated or relocated populations.

Roentgen (R): The unit of radiation exposure in air. Roentgens are the units for quantities of X-ray or gamma radiation measured by detection and survey meters. (For planning purposes 1 Roentgen is equivalent to 1 Rem).

Sampling: Collecting specimens of materials (e.g. soil, vegetation, or radioiodine in the air) at field locations.

Shelter-In-Place An action taken to minimize exposure to radiologically contaminated air by going indoors and limiting the intake of outside air.

Site Area Emergency: Indicates that events are in process or have occurred that involve actual or likely major failures in the plant functions needed for protecting the public or security events that result in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or (2) prevents effective access to equipment needed for the protection of the public. Releases are not expected to exceed EPA PAG exposure levels, except near the site boundary.

Special Facility: Institution or location with a special population.

Special Populations: Groups or individuals that may need assistance when protective actions are implemented.

New York State Warning Point (NYSWP) A location established at the New York State Office of Emergency Management for the purposes of receiving and promulgating warning information 24 hours a day, 7 days a week, aka Warning Point.

Survey Meter: A portable instrument used to detect and measure ionizing radiation.

Thyroid Blocking Agent: A chemical compound taken to prevent or reduce the absorption by the thyroid of radioiodine. Potassium iodide (KI) is the typical blocking agent used in the United States.

Thyroid Exposure: Exposure of the thyroid gland to radioactive isotopes of iodine which have been either inhaled or ingested.

Total Effective Dose Equivalent (TEDE): The sum of the external and internal exposures; i.e. TEDE = EDE + CEDE.

Traffic Control: All activities accomplished for the purpose of facilitating the evacuation of the general public in vehicles along specific routes.

APPENDIX A

(Not Used)

Abbreviations and Acronyms

ACP - Access Control Points

Ag & Mkts. - New York State Department of Agriculture and Markets

AMS - Aerial Measuring System

ARC - American National Red Cross

BERP - Bureau of Environmental Radiation Protection

BWR - Boiling Water Reactor

CEDE - Committed Effective Dose Equivalent

CFR - Code of Federal Regulations

CPM - Counts Per Minute

DEC - New York State Department of Environmental Conservation

DHS- U.S. Department of Homeland Security

DHSES – Division of Homeland Security and Emergency Services

DIL – Derived Intervention Level

DMNA - New York State Division of Military and Naval Affairs

DOE - United States Department of Energy

DOH - New York State Department of Health

DOT - New York State Department of Transportation

DPC - Disaster Preparedness Commission

DRL – Derived Response Level

DSP - New York State Division of State Police

EAL - Emergency Action Level

EAS - Emergency Alert System

ECL - Emergency Classification Level

EOC - Emergency Operations Center

EOF - Emergency Operations Facility

EPA - United States Environmental Protection Agency

EPZ - Emergency Planning Zone

ERPA - Emergency Response Planning Area

ETE - Evacuation Time Estimate

FDA - United States Food and Drug Administration

FEMA - United States Federal Emergency Management Agency

FRMAC - Federal Radiological Monitoring & Assessment Center

FSAR - (Licensee) Final Safety Analysis Report

GE - General Emergency

GIS – Geographic Information System

JIC - Joint Information Center

KI - Potassium Iodide

LLNL - Lawrence Livermore National Laboratory

LOA - Letter of Agreement

LOCA - Loss of Coolant Accident

MOU - Memorandum of Understanding

mR – Milliroentgen

NARAC – National Atmospheric Release Advisory Capability

NRF – National Response Framework

NAWAS - National Warning System

NFO - Nuclear Facility Operator

NRC - United States Nuclear Regulatory Commission

NYSERDA - New York State Energy Research and Development Authority

NYSOEM – New York State Office of Emergency Management

NYSWP – New York State Warning Point

NYSPIN - New York Statewide Police Information Network

NUE - Notification of Unusual Event

OHC- New York State Office Of Counter Terrorism

OGS - New York State Office of General Services

OSLD- Optically Stimulated Luminescence Dosimeter

PAA- Protective Action Area

PAD – Protective Action Decision

PAG - Protective Action Guide

PAR - Protective Action Recommendation

PIO - Public Information Officer

PMC- Personnel Monitoring Center

PWR - Pressurized Water Reactor

R - Roentgen

RAC - Regional Assistance Committee

RACES - Radio Amateur Communications Emergency Service

RAP - Radiological Assistance Plan

RECS - Radiological Emergency Communications System

REM - Roentgen Equivalent Man

REPP - New York State Radiological Emergency Preparedness Plan

SAE - Site Area Emergency

SEOC- New York State Emergency Operations Center

TEDE - Total Effective Dose Equivalent

TSC - Technical Support Center

TCP - Traffic Control Point

USDA - United States Department of Agriculture

(NOT USED)

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
APPENDIX C

PERSONNEL MONITORING CENTER RESOURCES

New York State Emergency Worker Personnel Monitoring Centers (PMCs) are pre-established and pre-stocked facilities used for the monitoring and decontamination of State emergency workers, vehicles and equipment in the event of an incident at a commercial nuclear power plant.

The DOH Bureau of Environmental Radiation Protection (BERP), in consultation with the NYSOEM, will place all personnel having responsibility at PMCs on standby at the Alert emergency classification.

In accordance with the operational procedures contained in Procedure G of this plan, and the 2008 PMC Manual (on file at the State EOC), the BERP, in consultation with NYSOEM will activate the State PMC's at the Site Area Emergency and they will be staffed by appropriate radiologically trained personnel from the Division of State Police, State Department of Transportation, New York State Office of Emergency Management, Office of Fire Prevention & Control, Department of Health and other DPC agencies as requested. Once activated, PMC personnel will be required to provide the State EOC with information on initial findings of contamination and also periodic periodic updates. It is estimated that between 50 to 100 State Emergency Workers per shift could be within the 10 mile Emergency Planning Zone during a nuclear power plant incident, and be in need of monitoring for radiological contamination.

State PMC's will remain operational until such time that the State BERP, in coordination with NYSOEM, advises that operations can be terminated.

Predesignated State Emergency Worker PMC's for each nuclear facility site are located at the following installations:

A Ginna Site

A NYS Department of Transportation
Equipment Management Shop
Pittsford

A NYS Department of Transportation
Wayne Residency
Newark

B Indian Point Site

B NYS Department of Transportation
Dutchess South-Putnam Residency
Lake Carmel

B Westchester DES Emergency
Support Services Building
Valahlla

B	NYS Department of Transportation Monroe Sub-Residency Monroe	**B**	NYS Department of Transportation Townline Sub- Residency W. Nyack, NY

C Nine Mile/FitzPatrick

C	NYS Department of Transportation Sub-Residency Fulton	**C**	NYS Department of Transportation Mapleview Sub-Residency Maple View

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
APPENDIX D

RESOURCES AND FACILITIES TO SUPPORT THE FEDERAL RESPONSE

Designated FRMAC Facilities

New York State will coordinate with the federal family of agencies to locate facilities suitable for a FRMAC operation working through the Logistics Section Chief at the State EOC. Specifically, the New York State Office of General Services will work with the Federal General Services Administration to locate available space near the affected site. New York State Office of Emergency Management will coordinate with the State Division of Military & Naval Affairs to locate possible Air National Guard airbases which may be usable as entry ports for equipment and supplies to support the federal effort. NYSOEM will also coordinate all logistical arrangements with the affected county.

(NOT USED)

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
APPENDIX E

NEW YORK STATE

List of Letters of Agreement

1. James A. Fitzpatrick - March 2010

2. Nine Mile Point – April 2009

3. Indian Point Energy Center – October 2010

4. R.E. Ginna- January 2011

Copies of current LOAs are on file at the New York State Office of Emergency Management .

New York State agencies will respond in accordance with procedures contained within the State REP Plan. The authority to respond as identified is found in Article 2B of the New York State Executive Law. No letters of agreement are necessary between NYS and its Counties or between NYS and its Agencies.

(NOT USED)

DEPARTMENT OF HEALTH

Division of Health Facility Planning

MS-1 HOSPITAL LISTING

Following are three lists of hospital facilities in upstate New York State submitted in compliance with FEMA Guidance Memorandum MS-l, Medical Services.

The first listing denotes designated primary and backup MS-l hospital facilities (L.1.). Written agreements have been obtained with these hospitals for the treatment of radiologically contaminated injured individuals.

The second listing denotes hospitals within upstate New York State capable of providing support for radiologically contaminated injured individuals (L.3.). These hospitals are licensed under Part 16 of the New York State Sanitary Code (Ionizing Radiation) as having diagnostic Nuclear Medicine Departments and therefore have procedures, trained personnel and equipment to deal with radiological contamination.

The third list denotes additional military and federal hospitals that could also provide assistance for contaminated injured individuals.

Footnotes:

1 Ambulatory capacity is based upon average daily ED visits.

2 Non Ambulatory capacity is based upon certified bed capacity

Key:

* - No Emergency Department

DESIGNATED PRIMARY AND BACKUP MS-l HOSPITAL FACILITIES IN NEW YORK STATE

(Locations and Contact Listings Available At NYSOEM)

HOSPITALS WITHIN NEW YORK STATE
CAPABLE OF PROVIDING MEDICAL SUPPORT FOR
RADIOLOGICALLY CONTAMINATED INJURED INDIVIDUALS

County/Hospital	**Phone**	**Ambulatory Capacity[1]**	**Non Ambulatory Capacity[2]**
Albany County			
Albany Medical Center Hospital 43 New Scotland Avenue Albany 12208	(518) 262-3125	117	631
Albany Memorial Hospital 600 Northern Blvd Albany 12204	(518) 471-3221	81	165
St. Peters Hospital 315 South Manning Boulevard Albany 12208	(518) 454-1550	94	442
Allegany County			
Jones Memorial Hospital 191 North Main Street Wellsville 14895	(585) 593-1100	33	70
Broome County			
United Health Services Hospitals Inc. Binghamton General Hospital Division 10-42 Mitchell Avenue Binghamton 13903	(607) 762-2200	71	220
Our Lady of Lourdes Memorial Hospital Inc. 169 Riverside Drive Binghamton 13905	(607) 798-5111	89	267

United Health Services Hospitals Inc. Wilson Hospital Division 33-57 Harrison Street Johnson City 13790	(607) 763-6000	74	280

Cattaraugus County

Olean General Hospital 515 Main Street Olean 14760	(716) 373-2600	26	186

Cayuga County

Auburn Memorial Hospital 17 Lansing Street Auburn 13021	(315) 255-7011	72	226

Chautauqua County

Brooks Memorial Hospital 529 Central Avenue Dunkirk 14048	(716) 366-1111	35	99
Woman's Christian Association 207 Foote Avenue Jamestown 14701	(716) 487-0141	83	254
TLC Health Network Lake Shore Health Care Campus 845 Routes 5 & 20 Irving 14081	(716) 951-7000	35	62

Chemung County

Arnot-Ogden Medical Center 600 Roe Avenue Elmira 14905	(607) 737-42300	60	216
St. Josephs Hospital 555 East Market Street Elmira 14902	(607) 733-6541	81	224

Chenango County

Chenango Memorial Hospital 179 North Broad Street Norwich 13815	(607) 335-4111	33	58

Clinton County

Champlain Valley Physicians Hospital Medical Center 75 Beekman Street Plattsburgh 12901	(518) 561-2000	90	341

Columbia County

Columbia Memorial Hospital 71 Prospect Avenue Hudson 12534	(518) 828-7601	56	192

Cortland County

Cortland Memorial Hospital Inc 134 Homer Avenue Cortland 13045	(607) 756-7525	75	181

Delaware County

(None Listed)

Dutchess County

Northern Dutchess Hospital 6511 Springbrook Avenue Rhinebeck 12572	(845) 871-3001	33	68
St. Francis Hospital 241 North Road Poughkeepsie 12601	(845) 471-2000	104	300

Vassar Brothers Medical Center 1 Reade Place Poughkeepsie 12601	(845) 454-8500	122	315

Erie County

Bertrand Chaffee Hospital 224 East Main Street Springville 14141	(716) 592-2871	30	49
Buffalo General Hospital 100 High Street Buffalo 14203	(716) 859-5600	77	501
The Childrens Hospital of Buffalo 219 Bryant Street Buffalo 14222	(716)878-7000	134	200
Erie County Medical Center 462 Grider Street Buffalo 14215	(716) 898-3000	126	550
Kenmore Mercy Hospital 2950 Elmwood Avenue Kenmore 14217	(716) 447-6100	80	184
Mercy Hospital of Buffalo 565 Abbott Road Buffalo 14220	(716) 826-7000	136	364
Millard Fillmore Hospital 3 Gates Circle Buffalo 14209	(716) 887-4600	57	189
Millard Fillmore Suburban Hospital 1540 Maple Road Williamsville 14221	(716) 568-3600	68	201
Roswell Park Cancer Institute Elm and Carlton Streets Buffalo 14263	(716) 845-2300	*	133

Sheehan Memorial Hospital 425 Michigan Avenue Buffalo 14203	(716) 848-2000	34	109
Sisters of Charity Hospital 2157 Main Street Buffalo 14214	(716) 862-1000	89	413
St. Joseph Hospital of Cheektowaga 2605 Harlem Road Cheektowaga 14225	(716) 891-2400	22	208
Franklin County			
Adirondack Medical Center-Saranac Lake Site 2233 State Route 86 Saranac Lake 12983	(518) 891-4141	22	95
Alice Hyde Medical Center 115 Park Street Malone 12953	(518) 483-3000	38	76
Fulton County			
Nathan Littauer Hospital 99 East State Street Gloversville 12078	(518) 725-8621	69	124
Genesee County			
United Memorial Medical Center 127 North Street Batavia 14020	(585) 343-6030	45	70
Herkimer County			
Little Falls Hospital 140 Burwell Street Little Falls 13365	(315) 823-1000	36	100

Jefferson County

Samaritan Medical Center 830 Washington Street Watertown 13601	(315) 785-4000	73	287

Lewis County

Lewis County General Hospital 7785 North State Street Lowville 13367	(315) 376-5200	30	54

Livingston County

Nicholas H. Noyes Memorial Hospital 111 Clara Barton Street Dansville 14437	(585) 335-6001	36	72

Madison County

Community Memorial Hospital, Inc. 150 Broad Street Hamilton 13346	(315) 824-1100	28	40
Oneida Healthcare Center 321 Genesee Street Oneida 13421	(315) 363-6000	43	101

Monroe County

Highland Hospital 1000 South Avenue at Bellevue Drive Rochester 14620	(585) 473-2200	41	261
Lakeside Memorial Hospital 156 West Avenue Brockport 14420	(585) 637-3131	54	61
University of Rochester Strong Memorial Hospital 601 Elmwood Avenue Rochester 14626	(585) 275-2100		

Unity Hospital 1555 Long Pond Road Rochester 14626	(585) 723-7012	65	256
Rochester General Hospital 1425 Portland Avenue Rochester 14621	(585) 338-4000	142	528
Montgomery County			
St. Mary's Hospital at Amsterdam 427 Guy Park Avenue Amsterdam 12010	(518) 842-1900	80	143
Nassau County			
North Shore University Hospital at Plainview 888 Old Country Road Plainview 11803	(516) 681-8900	66	276
North Shore University Hospital at Glen Cove 101 St. Andrews Lane Glen Cove 11542	(516) 674-7580	76	265
Franklin Hospital Medical Center 900 Franklin Avenue Valley Stream 11580	(516) 256-6000	93	305
Long Beach Medical Center 455 East Bay Drive Long Beach 11561	(516) 897-1000	47	203
Mercy Medical Center 1000 North Village Avenue Rockville Centre 11570	(516) 255-2780	85	387
St. Joseph Hospital 4295 Hempstead Turnpike Bethpage 11714	(516) 520-2301	73	223

Nassau University Medical Center 2201 Hempstead Turnpike East Meadow 11554	(516) 572-6011	222	631
North Shore University Hospital 300 Community Drive Manhasset 11030	(516) 562-4050	135	731
South Nassau Communities Hospital One Healthy Way Oceanside 11572	(516) 763-3999	99	435
St. Francis Hospital 100 Port Washington Boulevard Roslyn 11576	(516) 562-6903	36	279
North Shore University Hospital at Syosset 221 Jericho Turnpike Syosset 11791	(516) 496-6401	45	116
Winthrop-University Hospital 259 First Street Mineola 11501	(516) 663-2200	100	591
Niagara County			
Kaleida Health - Degraff Hospital 445 Tremont Street North Tonawanda 14120	(716) 694-4500	68	70
Mount St. Mary's Hospital and Health Center 5300 Military Road Lewiston 14092	(716) 297-4800	43	175
Niagara Falls Memorial Medical Center 571 Tenth Street Niagara Falls 14301	(716) 278-4301	95	195
Lockport Memorial Hospital 521 East Avenue Lockport 14094	(716) 514-5700	40	134

Inter-Community Memorial Hospital at Newfane, Inc. 2600 Williams Street Newfane 14108	(716) 778-5111	25	71

Oneida County

Faxton – St. Luke's Healthcare Faxton Division 1676 Sunset Avenue Utica 13502	(315) 738-6200	88	166
Rome Memorial Hospital Inc. 1500 N James Street Rome 13440	(315) 338-7000	59	144
St. Elizabeth Medical Center 2209 Genesee Street Utica 13501	(315) 798-8100	69	201
Faxton – St. Luke's Healthcare St. Luke's Division 1656 Champlain Avenue Utica 13503	(315) 798-6001	73	266

Onondaga County

Community-General Hospital of Greater Syracuse 4900 Broad Road Syracuse 13215	(315) 492-5011	21	306
Crouse Hospital 736 Irving Avenue Syracuse 13210	(315) 470-7111	105	576
St. Josephs Hospital Health Center 301 Prospect Avenue Syracuse 13203	(315) 448-5111	114	431
University Hospital SUNY Health Science Center 750 East Adams Street Syracuse 13210	(315) 464-5540	117	366

Ontario County

Clifton Springs Hospital and Clinic 2 Coulter Road Clifton Springs 14432	(315) 462-1311	24	154
F F Thompson Hospital 350 Parrish Street Canandaigua 14424	(716) 396-6527	49	113
Geneva General Hospital 196-198 North Street Geneva 14456	(315) 787-4000	47	132

Orange County

Orange Regional Medical Center – Goshen Campus 4 Harriman Drive Goshen 10924	(845) 294-5441	65	174
St. Luke's Cornwall Hospital / Cornwall 19 Laurel Avenue Cornwall 12518	(845) 534-7711	48	125
Orange Regional Medical Center – Middletown Campus 60 Prospect Avenue Middletown 10940	(845) 343-2424	95	276
Bon Secours Community Hospital 160 East Main Street Port Jervis 12771	(845) 856-5351	48	141
St. Anthony Community Hospital 15-19 Maple Avenue Warwick 10990	(845) 986-2276	34	73
St. Luke's Cornwall Hospital / Newburgh 70 Dubois Street Newburgh 12550	(845) 561-4400	112	242

Orleans County

Medina Memorial Hospital 200 Ohio Street Medina 14103	(716) 798-2000	19	71

Oswego County

Oswego Hospital 110 W. Sixth Street Oswego 13126	(315) 349-5511	47	132

Otsego County

Aurelia Osborn Fox Memorial Hospital One Norton Avenue Oneonta 13820	(607) 432-2000	56	128
Mary Imogene Bassett Hospital One Atwell Road Cooperstown 13326	(607) 547-3456	37	180

Putnam County

Putnam Hospital Center 670 Stoneleigh Avenue Carmel 10512	(845) 279-5711	53	164

Rensselaer County

Samaritan Hospital 2215 Burdett Avenue Troy 12180	(518) 271-3300	79	238
Seton Health System -St. Mary's Campus 1300 Massachusetts Avenue Troy 12180	(518) 268-5000	57	201

Rockland County

Good Samaritan Hospital of Suffern 255 Lafayette Avenue Suffern 10901	(845) 368-5000	76	370
Nyack Hospital 160 North Midland Avenue Nyack 10960	(845) 348-2000	86	375

St. Lawrence County

Canton-Potsdam Hospital 50 Leroy Street Potsdam 13676	(315) 265-3300	47	94
Claxton - Hepburn Medical Center 214 King Street Ogdensburg 13669	(315) 393-3600	37	130
E. J. Noble Hospital of Gouverneur 77 West Barney Street Gouverneur 13642	(315) 287-1000	30	47
Massena Memorial Hospital 1 Hospital Drive Massena 13662	(315) 764-1711	38	50

Saratoga County

Saratoga Hospital 211 Church Street Saratoga Springs 12866	(518) 587-3222	83	171

Schenectady County

Ellis Hospital 1101 Nott Street Schenectady 12308	(518) 243-4000	100	368

Steuben County

Corning Hospital 176 Denison Parkway East Corning 14830	(607) 937-7200	49	99
St. James Mercy Hospital 411 Canisteo Street Hornell 14843	(607) 324-8000	42	157

Suffolk County

Brookhaven Memorial Hospital Medical Center Inc. 101 Hospital Road Patchogue 11772	(631) 654-7100	112	321
Peconic Bay Medical Center 1300 Roanoke Avenue Riverhead 11901	(631) 548-6064	66	154
Eastern Long Island Hospital 201 Manor Place Greenport 11944	(631) 477-1000	19	80
Good Samaritan Hospital Medical Center 1000 Montauk Highway West Islip 11795	(631) 376-3000	126	431
Huntington Hospital Association 270 Park Avenue Huntington 11743	(631) 351-2000	118	398
J.T. Mather Memorial Hospital of Port Jefferson 75 North Country Road Port Jefferson 11777	(631) 473-1320	85	248
Southampton Hospital 240 Meeting House Lane Southampton 11968	(631) 726-8555	61	168
Southside Hospital			

301 East Main Street Bay Shore 11706	(631) 968-3000	113	371
St. Charles Hospital 200 Belle Terre Road Port Jefferson 11777	(631) 474-6600	52	289
St. Catherine of Siena Hospital 50 Route 25A Smithtown 11787	(631) 862-3000	88	311
University Hospital SUNY Health Science Center Nicolls Road Stony Brook 11794	(631) 444-6000	220	504
Sullivan County			
Catskill Regional Medical Center 68 Harris-Bushville Road Harris 12742	(845) 794-3300	128	174
Tompkins County			
Cayuga Medical Center at Ithaca 101 Dates Drive Ithaca 14850	(607) 274-4011	70	204
Ulster County			
Benedictine Hospital 105 Mary's Avenue Kingston 12401	(845) 338-2500	78	222
Ellenville Regional Hospital Route 209 Ellenville 12428	(845) 647-6400	29	51
The Kingston Hospital 396 Broadway Kingston 12401	(845) 331-3131	42	160
Warren County			

Glens Falls Hospital 100 Park Street Glens Falls 12801	(518) 926-1000	115	410

Wayne County

Newark-Wayne Community Hospital 111 Driving Park Avenue Newark 14513	(315) 332-2223	41	120

Westchester County

Lawrence Hospital Center 55 Palmer Avenue Bronxville 10708	(914) 787-1000	70	291
Mount Vernon Hospital 12 North 7th Avenue Mount Vernon 10550	(914) 664-8000	76	228
Sound Shore Medical Center of Westchester 16 Guion Place New Rochelle 10802	(914) 632-5000	84	321
Northern Westchester Hospital Center 400 East Main Street Mount Kisco 10549	(914) 666-1303	60	233
Hudson Valley Hospital Center 1980 Crompond Road Cortlandt Manor 10567	(914) 737-9000	56	128
Phelps Memorial Hospital Center 701 North Broadway Sleepy Hollow 10591	(9l4) 366-3000	67	235
St. John's Riverside Hospital – St. John's Division 967 North Broadway Yonkers 10701	(914) 964-4200	70	262
St. Josephs Medical Center			

127 South Broadway Yonkers 10701	(914) 378-7000	71	194
Westchester Medical Center Grasslands Reservation Valhalla 10595	(914) 493-7000	71	635
White Plains Hospital Center 41 East Post Road White Plains 10601	(914) 681-0600	70	313

Wyoming County

Wyoming County Community Hospital 400 North Main Street Warsaw 14569	(585) 786-2233	28	102

APPENDIX F

Military/Federal Facilities County/Hospital	Phone	Ambulatory Capacity	Non- Ambulatory Capacity
Albany VA Medical Center: Samuel Stratton 113 Holland Avenue Albany, NY 12208	(518) 626-5000		156
Bath VA Medical Center 76 Veterans Avenue Bath, NY 14810	(607) 664-4000		440
Canandaigua VA Medical Center 400 Fort Hill Avenue Canandaigua, NY 14424	(585) 394-2000		256
Syracuse VA Medical Center 800 Irving Avenue Syracuse, NY 13210	(315) 425-4400 (800) 792-4334		235
VA Western New York Healthcare System at Batavia 222 Richmond Avenue Batavia, NY 14020	(585) 297-1000		112
VA Western New York Healthcare System at Buffalo 3495 Bailey Avenue Buffalo, NY 14215	(716) 834-9200 (800) 532-8387		199

APPENDIX F

(NOT USED)

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
APPENDIX G

NEW YORK STATE RESOURCES

TABLE OF CONTENTS

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
APPENDIX G

(Not Used)

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
APPENDIX G

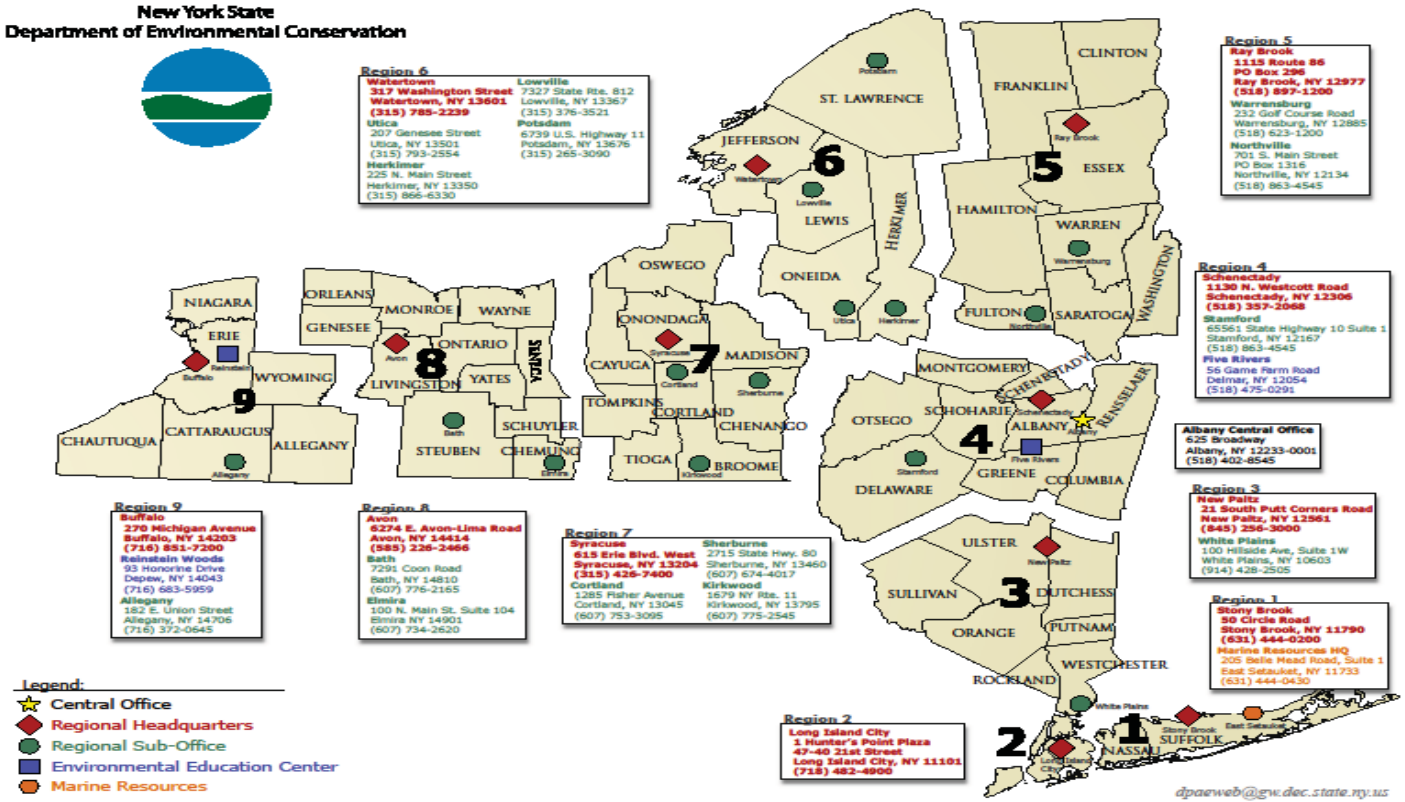
DEPARTMENT OF AGRICULTURE AND MARKETS
DAIRY FARM AND AGRICULTURE RADIOLOGICAL CONTROL
RESOURCES LIST

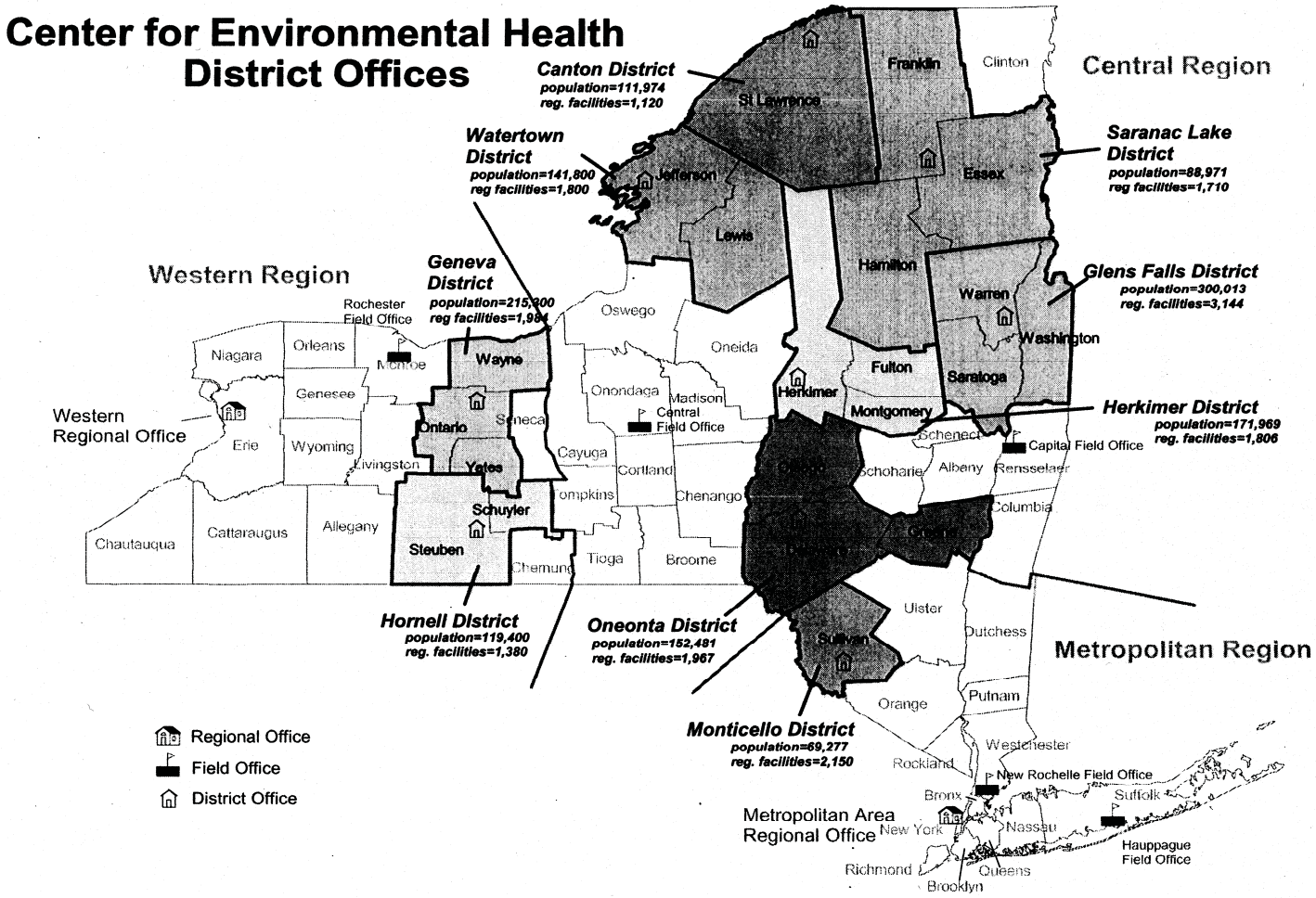
EDP listings of many types of food establishments which generally indicate names and addresses and in some cases inspection information are on file in Agriculture and Markets and/or in the Bureau of Environmental Radiation Protection, Department of Health. The types of establishments for which there are computer files are as follows:

Dairy Farms	Beef Farms
Sheep Farms	Egg Producers
Stores	Bakeries (wholesale)
Food Manufacturers	Food Warehouses
Beverage Plants	Packers
Food Processing Plants	Milk Processing Plants
Nursery Dealers	Nursery Greenhouses
Produce Farms	

The computer listings of facilities and procedures are available at the Departments of Agriculture and Markets and at the State EOC, Albany.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION REGION JURISDISCTION




Center for Environmental Health
District Offices
Canton District
population=111,974
reg. facilities=1,120
Watertown District
population=141,800
reg facilities=1,800
Geneva District
population=215,200
reg facilities=1,984
Hornell District
population=119,400
reg. facilities=1,380
Oneonta District
population=152,481
reg. facilities=1,967
Monticello District
population=69,277
reg. facilities=2,150
Saranac Lake District
population=88,971
reg facilities=1,710
Glens Falls District
population=300,013
reg. facilities=3,144
Herkimer District
population=171,969
reg. facilities=1,806
Western Region
Central Region
Metropolitan Region
Western Regional Office
Rochester Field Office
Central Field Office
Capital Field Office
New Rochelle Field Office
Hauppague Field Office
Metropolitan Area Regional Office
Regional Office
Field Office
District Office
St Lawrence
Franklin
Clinton
Jefferson
Lewis
Essex
Hamilton
Warren
Washington
Saratoga
Fulton
Herkimer
Montgomery
Oswego
Oneida
Onondaga
Madison
Cayuga
Cortland
Chenango
Broome
Tioga
Chemung
Schuyler
Steuben
Yates
Ontario
Seneca
Wayne
Monroe
Orleans
Niagara
Genesee
Wyoming
Livingston
Erie
Chautauqua
Cattaraugus
Allegany
Schenectady
Schoharie
Albany
Rensselaer
Columbia
Greene
Ulster
Sullivan
Dutchess
Orange
Putnam
Rockland
Westchester
Bronx
New York
Nassau
Suffolk
Richmond
Queens
Brooklyn

County	Commisioner &/or PH Director	Address	Environmental Health Director/Responsibility	EH Phone	EH Fax	EH Email
Albany	James B Crucetti, MD, MPH	175 Green St, Albany 12201-0678	Marcia Lenehan, M.S. Thomas Brady, Asst. Director EH	518-447-4620	518-447-4501	mlenehan@albanycounty.com tbrady@albanycounty.com
Allegany	Loreen Ballenge, MS, Interim Director	Co Office Bldg, 7 Court St, Belmont 14813-1076	Thomas Hull, MS	585-268-9250-dl 585-268-9254	585-268-9712	ballenl@alleganyco.com hullte@alleganyco.com
Broome	Claudia Edwards	225 Front St, Binghamton 13905	Chris Coddington, Sr. PHS, Interim Director	607-778-2887 607-778-2895-dl	607-778-3912	ccoddington@co.broome.ny.us
Cattaraugus	Kevin Watkins, M.D. MPH, Director	1 Leo Moss Dr, Suite 4010, Olean 14760-1154	Eric W Wohlers, PE	716-373-8050 x3437	716-701-3737	kdwatkins@cattco.org ewwohlers@cattco.org
Cayuga	Elaine Daly, RN, BSN	160 Genesee St, PO Box 219, Auburn 13021	Eileen O'Connor, PE	315-253-1405	315-701-3737	eileen.o'connor@dfa.state.ny.us
Chautauqua	Christine Schuyler, PH Dir.	Hall R Clothier Bldg, 7 N Erie St, Mayville 14757	Mark Stow	716-753-4769	716-753-4344	stowm@co.chautauqua.ny.us
Chemung	Robert E Page	103 Washington St, PO Box 588, Elmira 14902-0588	Thomas G Kump, PE	607-737-2019	607-737-2059	tkump@co.chemung.ny.us
Chenango	Marcas W Flindt	County Office Bldg, 5 Court St, Norwich 13815	Glenn Kaiser	607-337-1673	607-337-1720	glennk@co.chenango.ny.us
Clinton	Paula Calkins Lacombe, RN	133 Margaret St, Plattsburgh 12901	John Kanoza, PE	518-565-4870	518-565-4843	kanozaj@co.clinton.ny.us
Columbia	Nancy A Winch, RN, MS	325 Columbia St, Hudson 12534	Mike DeRuzzio, Interim Director	518-828-3358	518-828-2666	mderuz@govt.co.columbia.ny.us
Cortland	Catherine Feuerherm, PH Director	60 Central Ave-Cortland Co Office Bldg, Cortland 13045-2746	John Helgren, PE, P.H. Engineer	607-753-5035	607-758-5578	jhelgren@cortland-co.org
Dutchess	Michael C Caldwell, MD, MPH	387 Poughkeepsie 12601-3316	W Stephen Capowski	845-486-3471-dl 845-486-3404	845-486-3545	scapowski@co.dutchess.ny.us
Erie	Anthony Billittier IV, MD, FACEP	Rath Bldg, 95 Franklin St, Buffalo 14202 (Billitier) 503 Kensington Ave, Buffalo 14214 (Zimmerman)	Scott.Zimmerman, PhD, Dir EH Mark Kowalski, Asst. Dir. EH Melanie Desiderio, Engineering Thomas Casey, PE. Dir PH Dolores Funke, PE Sr. PH	716-898-6105 716-961-6895 716-961-6800	716-961-6880	scott.zimmerman@erie.gov desiderm@erie.gov caseyt@erie.gov, funked@erie.govkowalskm@erie.gov
Genesee	Randy Garney, Director	3837 W Main St Rd, Batavia 14020-9406	Randy Garney, Dir Dave Whitcroft, SrPH Sanitarian	585-344-2580 x5499	585-344-4713	rgarney@co.genesee.ny.us dwhitcroft@co.genesee.ny.us
Livingston	Joan H Ellison, RN	2 Murray Hill Rd, Mt Morris 14510-1691	James Mazurowski	585-243-7280	585-243-7287	jmazurowski@co.livingston.ny.us
Madison**	Eric Faisst, MS, RES	Public Hlth Bldg #5, PO Box 605, Wampsville 13163	Geoffrey Snyder Aaron Lazzara, Asst. Dir, Div of EH	315-366-2526 315-366-2525 -dl	315-366-2207	geoffrey.snyder@co.madison.ny.us aaron.lazzara@co.madison.ny.us
Monroe	Andrew Doniger, MD, MPH	PO Box 92832, 111 Westfall Rd, Rochester 14692	John Felson	585-753-5564-dl 585-753-5461	585-753-5098	jfelsen@monroecounty.gov

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN

APPENDIX G

County	Commisioner &/or PH Director	Address	Environmental Health Director/Responsibility	EH Phone	EH Fax	EH Email
Nassau	Maria Torroella-Carney, MD, Comm	106 Charles Lindbergh Blvd, Uniondale 11553	Sue King, RS	516-227-9723	516-227-9611	susan.king@hhsnassaucountyny.us
Niagara	Dan Stapleton, PH Dir	5467 Upper Mountain Rd, Suite 100, Lockport 14094-1899	James J Devald, PE	716-439-7444 716-439-7453-dl	716-439-7427	dan.stapleton@niagaracounty.com james.devald@niagaracounty.com
Oneida	Gayle Jones, PhD,MPH. Comm	185 Genesee St, 4th Floor, Utica 13501	Daniel W. Gilmore Susan Batson, Supervising Sanitarian, Div. of EH	315-798-5064	315-798-6486	gjones@ocgov.net sbatson@ocgov.net
Onondaga	Cynthia B Morrow, MD, MPH	421 Montgomery St, Syracuse 13202	Kevin Zimmerman	315-435-6623	315-435-6606	KevinZimmerman@ongov.net
Orange	Jean M Hudson, MD, MPH	124 Main St, Goshen 10924-2199	Matthias Schleifer, PE, Asst Comm Ed Sims, Dir, Bur Sanitary Eng	845-291-2331	845-291-4078	mschleifer@co.orange.ny.us esims.@co.orange.ny.us
Orleans	Paul Pettit, Director	14012 Route 31 West, Albion 14411	Todd Shervin, PH Sanitarian	585-589-3250 585-589-2770	585-589-6647	ppettit@orleansny.com tshervin@orleansny.com
Oswego	Dennis Norfleet, PH Dir	70 Bunner St, PO Box 3080, Oswego 13126	Natalie J Roy, Assoc PHS	315-349-3557	315-349-3228	natalie@oswegocounty.com
Putnam	Sherlita Amler, MD	1 Geneva Road, Brewster 10509	Robert Morris, PE	845-808-1390 x2166	845-278-7921	robert.morris@putnamcountyny.gov
Rensselaer	Mary Fran Wachunas	Health Bldg, 1600 Seventh Ave, Troy 12180	Richard Elder	518-270-2632	518-270-2638	relder@rensco.com
Rockland	Joan Facelle, MD	50 Sanitorium Rd, Building D, Pomona 10970-9990	Judi Hunderfund, P.E. Acting Dir. Daniel Miller, Geologist II Div. of EH	845-364-2608 845-364-2609-dl	845-364-3634	hunderfj@co.rockland.ny.us millerd@co.rockland.ny.us
Schenectady	David S. Pratt MD,MPH	107 Nott Terrace, Suite 306, Schenectady 12308-3170	Andrew Suflita	518-386-2818	518-386-2822	andrew.suflita@schenectadycounty.com
Schoharie	Kathleen Farrell Strack	276 Main St, PO Box 667, Schoharie 12157-0667	Michael Cole	518-295-8382	518-295-8453	colem@co.schoharie.ny.us
Seneca	Vickie Swinehart, RN	31 Thurber Dr, Waterloo 13165-1660	Sara Brown Ryan	315-539-1925 315-539-1948-dl	315-539-4745	vswinehart@co.seneca.ny.us sryan@co.seneca.ny.us
Suffolk	Dr. James Tomarken Commissioner	225 Rabro Dr East, Hauppauge 11788-4290 (Graham) 360 Yaphank Ave, Suite 2b, Yaphank 11980 (Minei)	Christopher Sortino. Chief, Bureau of PH Protection Walter Dawydiak,, Jr. PE,JD Chief Public Engineer	631-852-5800 631-853-3058 631-853-5804	631-852-5825 631-853-2927 631-853-3075	james.tomarken@suffolkcountyny.gov christopher.sortino@suffolkcountyny.gov walter.dawydiak@suffolkcountyny.gov
Tioga	Johannes A Peeters	1062 State Rt 38, PO Box 120, Owego 13827-0220	Erica Gifford	607-687-8565	607-687-6041	gifforde@co.tioga.ny.us
Tompkins	Brenda Grinnell Crosby, Interim PH Director	55 Brown Rd, Ithaca 14850	Elizabeth Cameron, PE, Div. of EH	607-274-6688	607-274-6695	bcrosby@tompkins-co.org lcameron@tompkins-co.org
Ulster	LaMar Hasbrouck MD,MPH Nereida Veytia, RN MSN	300 Flatbush Ave, Kingston 12401	Kevin DuMond, EH Director	845-340-3010 845-340-3037-dl	845-340-3045	lhas@co.ulster.ny.us nvey@co.ulster.ny.us kdum@co.ulster.ny.us

County	Commisioner &/or PH Director	Address	Environmental Health Director/Responsibility	EH Phone	EH Fax	EH Email
	Act PH Dir					
Westchester	Cheryl Archbald, MD, MPH Deputy Commr Secretary-Jenny Krowe	145 Huguenot St, 8th Fl, New Rochelle 10801	Rick Morrisey, Deputy Comm. EH Frank Guido, Asst Comm PH Paul Kutsky, Asst Comm EH Qual	914-813-5171	914-813-5158	fjm1@westachestergov.com caa9@westchestergov.com jxk2@westchestergov.com faq1@westchestergov.com pjk3@westchestergov.com
Wyoming	Gregory Collins, DO	5362 Mungers Mill Rd, Silver Springs 14550	Stephen Perkins	585-786-8894	585-786-8187	sperkins@wyomingco.net
New York City	Thomas Farley MD MPH Secretary- Shanita Thigpen	125 Worth St, Rm 331, CN 28 New York 10013		212-788-5261 In NYC: 311 212-676-1520	212-964-0472	sthigpen@health.nyc.gov
		125 Worth St, Rm 616, CN 32, New York 10013	Dan Kass, Act Depy Comm	212-788-4646 212-788-4641	212-788-2159	dkass@health.nyc.gov
		125 Worth St, Rm 616, CN 32, New York 10013	Allan H. Goldberg, Asst Comm	212-788 4646 212-788 4645	212-788-2159	agoldber@health.nyc.gov
		2 Lafayette St, 22nd Fl, CN 68 New York 10007	Elliott Marcus, Assoc Comm BFS&CS	212-676-2433	212-676-2424	emarcus@health.nyc.gov
		253 Broadway, 13th Fl, CN 59A, New York	Robert D. Edman, Asst Comm	212-676-1654	212-676-1666	redman@health.nyc.gov
		2 Layfayette St, 11th Fl CN 56, New York 10007	Christopher H. Boyd, Asst Comm	212-442-5222	212-676-1517	cboyd@health.nyc.gov

REGIONAL OFFICES

REGION	STAFF	ADDRESS	TELEPHONE
WESTERN REGION (W)	Salvatore Page - Associate Commissioner (SWP01)	584 Delaware Avenue, Buffalo 14202	(716) 847-4505 Fax # (716) 847-4661
-- *Rochester Field Office*	Michael Linse - Asst. Regional Director(retiring 8/31/04) (Western Region) (MGL01) Diane Fox-Knoll (DLK02), Administrative Assistant	Triangle Building, 335 East Main Street, Rochester 14604-2127	(585) 423-8041 Roc. (Secx8067) Fax # (585) 423-8099 (516) 847-4398 Buffalo Office (585) 423-8042
	Ralph VanHouten- Reg. Env. Health Program Dir. (RRV01) Veleta Muhs, secretary (vgm01)	Triangle Building, 335 East Main Street, Rochester 14604-2127	(585) 423-8072 (585) 423-8067 (Fax (585) 423-8128)

	Field Coordinators		
	Robert Snyder – Regional Sanitarian (RWS06)	Triangle Building, 335 East Main Street, Rochester 14604-2127	(585) 423-8066
	Ralph Harstad – Sr. Sanitary Engineer (REH03)	Triangle Building, 335 East Main Street, Rochester 14604-2127	(585) 423-8070
	Kevin Watz, Assistant Sanitary Engineer (KMW04)	584 Delaware Avenue, Buffalo, 14202	(716) 847-4500
	April Steenburgh, Public Health Specialist I (ALS03)	584 Delaware Avenue, Buffalo, 14202	(716) 847-4558 (Fax (716) 847-4333)
	Jeff Booth – Principal Sanitarian (JWB03)	584 Delaware Avenue, Buffalo, 14202	(716) 847-4500 (Fax (716) 847-4333)
METROPOLITAN NEW YORK REGIONAL OFFICE (M)	Celeste M. Johnson, Director (CMJ01) Geraldine Neal, Secretary (GXN02) Annette Larke-Griffith, Secretary – for NYC Conf Rooms	5 Penn Plaza, Rm. 401, New York 10001	(212) 268-7185(Fax (212) 268-7212)
	Patricia Jones, Deputy Director	5 Penn Plaza, Rm. 401, New York 10001	(212) 268-7055
	Brian Devine, Reg. Env. Health Program Director (BDD02) Ellen Salovich (ERS04), Secretary	50 North Street, Suite 2, Monticello, NY12701	(845) 794-2045 (Fax (845) 794-3165)
	Field Coordinators		
	Judyth Niconienko – Prin. Sanitarian (JAN07)	50 North Street, Suite 2, Monticello, NY12701	(845) 794-2045 (Fax (845) 794-3165)
	Anna Stamm - Sr. Sanitary Engineer (AXS06)	5 Penn Plaza, New York 10001	(212) 268-7041 (Fax (212) 268-7218)
	George Philip – Sr. Sanitary Engineer (GXP04)	320 Carlton Ave., #5000, Central Islip, 11722	(631) 851-3082 (Fax (631) 851-4319)
CENTRAL NEW YORK REGION OFFICE (CNY)	Ronald Heerkens – Associate Regional Director (RHH01) Director of Environmental Health Maureen Barr, Secretary (MMB10)	217 S. Salina Street, Syracuse 13202	(315) 477-8484 (Fax (315) 477-8588) (315) 477-8100 (main number)

	Field Coordinators		
	Thomas Okoniewski - Reg. Sanitarian (TEO01)	217 S. Salina Street, Syracuse 13202	(315) 477-8152
	Maggie Deitrich – Reg. Sanitarian (MAD07)	217 S. Salina Street, Syracuse 13202	(315) 477-8144
	John Strepelis - Sr. Sanitary Engineer (JXS06)	217 S. Salina Street, Syracuse 13202	(315) 477-8150 (Fax (315) 477-8581)
	Erin Spier – Assistant Sanitary Engineer (EMS14)	217 S. Salina Street, Syracuse 13202	(315) 477-8149 (Fax (315) 477-8581)
	Gregor Smith – Jr. Engineer (GKS01)	217 S. Salina Street, Syracuse 13202	(315) 477-8515 (Fax (315) 477-8581)
CAPITAL DISTRICT REGION OFFICE (CD)	Geraldine Bunn, Associate Director (GAB02)	Frear Building, One Fulton Street, Troy12180-3281	(518) 408-5277 (Fax (518) 408-5280)
	J. Patrick Trapp, Reg. Env. Health Program Dir. (JPT01) Lynn Schriner (Secretary) (LAS17)	Frear Building, One Fulton Street, Troy12180-3281	(518) 408-5423 (main number) (Fax 408-5309)
	Field Coordinators		
	Mara Holcomb – Principal Sanitarian (MEH12)	Frear Building, One Fulton Street, Troy12180-3281	(518) 408-5423
	Tim Vickerson - Sr. Sanitary Engineer (TEV01)	Frear Building, One Fulton Street, Troy12180-3281	(518) 408-5423
	Kristen Sayers – Pub. Health Spec. 3 (Env) (KMS15)	41St. Bernard St., Saranac Lake 12983-1839	(518) 891-1800 (Fax 891-5895) (518) 891-7173 (Kristen VoiceMail)

DISTRICT	COUNTIES SERVED	ADDRESS	DIRECTOR	TELEPHONE	FAX #
CANTON (N) (B0642)	St. Lawrence	58 Gouverneur Street, Canton 13617-3200	Victor Pisani (vep01@health.state.ny.us) Ann Basmajian (Secretary)	(315) 386-1040	(315) 386-1043
GENEVA (W)	Ontario, Wayne, Yates	624 Pre-Emption Road, Geneva 14456-1334	Dwight Burden (dlb09@health.state.ny.us)	(315) 789-3030	(315) 781-0831

(B0637)			Janice Bastian (Secretary)		
GLENS FALLS (N) (B0646)	Saratoga, Warren, Washington	77 Mohican Street, Glens Falls 12801-4429	Anita Gabalski (amg02@health.state.ny.us) Kay Bromley (Secretary)	(518) 793-3893	(518) 793-0427
HERKIMER (N) (B0640)	Fulton, Herkimer, Montgomery	5665 State Route 5, Herkimer 13350-9721	Donald Van Patten (ddv01@health.state.ny.us) Dawn Hill (Secretary)	(315) 866-6879	(315) 866-8192
HORNELL (W) (B0638)	Schuyler, Steuben	107 Broadway, Room 105, Hornell 14843-0430	Tomas Klaseus (tgk02@health.state.ny.us) Denise Lang (Secretary)	(607) 324-8371	(607) 324-5121
MONTICELLO (M) (B0649)	Sullivan	50 North Street, Suite 2, Monticello 12701-1711	Mark Knudsen (mdk02@health.state.ny.us) Virginia Connell (Secretary)	(845) 794-2045	(845) 794-3165
ONEONTA (N) (B0644)	Delaware, Greene, Otsego	28 Hill Street, Suite 201, Oneonta 13820-9804	Robert Pierce (rap02@health.state.ny.us) Carla Huntington (Secretary)	(607) 432-3911	(607) 432-0089
SARANAC LAKE (N) (B0647)	Essex, Franklin, Hamilton	41 St. Bernard Street., Saranac Lake 12983-1839	William Amberman (wra01@health.state.ny.us) Vivian Manny (Secretary)	(518) 891-1800	(518) 891-5895
WATERTOWN (N) (B0641	Jefferson, Lewis	Dulles State Office Building, 317 Washington Street, 13601-3741	Thomas Boxberger (teb03@health.state.ny.us) Lisa Hartle (Secretary)	(315) 785-2277	(315) 785-2600

DISTRICT OFFICES L:\dehp\County Telephone List.doc

DOH/CEH/Bureau of Environmental Radiation Protection Equipment

Emergency Kits:

Central Office – 3, Syracuse – 1, Buffalo – 1, Rochester – 1, MARO – partial

Ludlum Model 14C GM meter with pancake probe or equivalent

Inovision 451P pressurized ion chamber meter OR

Bicron Micro Rem survey meter or Ludlum Model 19 or Model 12S MicroR meter

Cesium-137 check source

Direct Reading Dosimeters and charging unit

ADAC portable air sampler and supplies

Wipe/Swipe sampling supplies

Water sampling supplies

Soil sampling equipment and supplies

Plastic bags

Basic tools including flashlight, pliers, screw drivers, tape measure, etc.

Tyvek coveralls, disposable gloves, shoe covers and dust masks

Potassium Iodide tablets (KI)

RAD warning signs and tape, general purpose tape and light-weight rope

Commercial decon solution and related supplies

NYS Radiological Rapid Response Card

NYS RAD-320 contact list and notification procedure

Nuclear Power Plant Notification Procedures

Also, Exploranium GR-135M Identifier (hand-held gamma spectrometer) – in a dedicated hard case. Currently there are 2 in the Central Office and 1 in each regional office for a total of 6 units.

DOH/CEH/Bureau of Environmental Radiation Protection Equipment (continued)

General Purpose Equipment:

Additional equipment is available through the DEC Radiation program if needed and can be fielded by their staff."

12 - Victoreen ionization chamber meters, Model 470-A

12 - Inovision 451P pressurized ion chamber meters

1- Ludlum Model 17 ionization chamber meter

GM Survey Meters
- 27- Ludlum Model 14C with Model 44-9 pancake probes
- 6 - Ludlum Model 3 with Model 44-9 pancake probes or end-window probes

5 - Ludlum Model 19 MicroR meters

6 - Ludlum Model 12S MicroR meters

4 - Bicron MicroRem Meters

7 - Eberline ESP-1 Smart Portable meters with associated probes for alpha, beta and/or beta-gamma

1 - Eberline ASP-1 Analog Smart Portable meters with associated probes

6 - Ludlum Model 2221 scaler rate meters

2 - Ludlum Model 2224-1 single channel analyzer/scaler rate meters

1 - Eberline ASP-1 Analog Smart Portable with Eberline NRD neutron ball

2 - Thermoelectron Model FH 40G-L dose rate meters with Model FHT 752 SH neutron probes

2 - Bicron FIDLER Model G5LB meters

1 - Bicron FIDLER Model G5-BER meter

Various probes: AC-3-7 alpha scintillation probe, HP-177C thick-window beta/gamma probe, HP-190 thin-window beta/gamma probe, PG-2 low-energy gamma scintillation probe, and SPA-3 high-

sensitivity gamma scintillation probe

Equipment is stored and maintained in the Central Office (Troy) and DOH Regional Offices in Buffalo, Rochester, Syracuse and the Metro Regional Office. All equipment is inventoried and calibrated on an annual basis or as needed. The items and instruments in the emergency kits are inventoried and operationally checked according to the Threat Level issued by the US Dept of Homeland Security (GREEN – routine, annual inventory and check, YELLOW – monthly check, ORANGE – immediate function check on all instruments in the kits, and RED – immediate function check and set-up of the Exploranium GR-135M.
Attachment

Emergency Workers Kits

1- Dose Gard Electronic Dosimeter (ED)
1- Radiation Badge
1- One packet of potassium iodine (KI) - 14 tablets
1- Exposure Card
1- Exposure Control Information Card
1- Form Letter for Declaring Pregnancy
1- Lanyard

DOH/Wadsworth Center/ Inorganic and Nuclear Chemistry Laboratory Equipment

(6) Intrinsic Germanium gamma spectrometry systems

(2) Tennelec Series 5 alpha/beta gas-flow proportional counters

(2) Packard Tri-Carb Liquid Scintillation Counters, Model 2900TR & Model 3170TR/SL

(2) Silicon surface barrier alpha spectrometry systems

(1) 2"x 2" Sodium iodide detector, dedicated for iodine bioassay/thyroid measurements

DOH/Wadsworth Center/ Inorganic and Nuclear Chemistry Laboratory Personnel

Laboratory Director

Nuclear Chemistry Staff

5-Research Scientists

5-Laboratory Technicians

1-Data Processing Technician

2-Clerical/Secretarial staff

Inorganic Chemistry Staff

16-Research Scientists, Analytical Chemists & Lab Technicians

DOH/Wadsworth Center/ Radiation Safety Office

Radiation Safety Officer

Radiation Safety Technician

DEPARTMENT OF HEALTH
CENTER FOR ENVIRONMENTAL HEALTH
BUREAU OF WATER SUPPLY PROTECTION
547 RIVER STREET (FLANIGAN SQUARE)
TROY, NY 12180

The following information can be made available upon short notice through Department of Health resources. Information resources include the GIS based Critical Infrastructure database; the Safe Drinking Water Information System (SDWIS) database; and paper based files and maps. These information resources can be rapidly accessed from the Health Operations Center in Menands; from the Bureau of Water Supply Protection in Troy; from Regional offices in New York City, Troy, Syracuse, and Buffalo/Rochester. The nine State District offices and the 36 full service County Health Department offices have access to this information for systems found within their jurisdiction.

The Critical Infrastructure GIS and SDWIS databases are also available remotely via secure internet portals for authorized Bureau and Regional staff with emergency and public health response roles.

Information that is available for Community Water Systems includes:

- Water System Name
- Water System Location (mailing addresses)
- Contact Information for:
  - Emergencies (name, phone, some e-mail addresses)
  - Owners (name, address, phone, some e-mail addresses)
  - Responsible Operator in Charge (name, address, phone, some e-mail)
- Service Area (by geo-political division, or by area coverage using GIS)
- Population Served
- Source Type
- Source Location(s) (by lat/long and by GIS)
- Emergency Water Source(s)
- Treatment Processes
- Water Delivery Capacity

Most of this information is also available for non-community water systems.
Emergency Response Plans, including vulnerability assessments, have been completed by all community water systems that serve more than 3,300 people. Copies of the Emergency Response Plans for these systems are available at each water system, at the District or County office having jurisdiction, and at the Bureau of Water Supply Protection in Troy. For security reasons, the vulnerability assessment components of these plans are available only at the water system and in locked files in the Bureau of Water Supply Protection in Troy.

Many smaller systems have also completed Emergency Plans, these are available at the water system and at District and County offices.

New York Office of Emergency Management Regional Facilities

Rev. 3/11

STATE HEADQUARTERS

NY State Office of Emergency Management
1220 Washington Avenue
Bldg#22, Ste 101
Albany, NY 12226-2251
518-292-2200

Regional Facilities

Region I
Suffolk State Office Building
250 Veteran's Memorial Highway
Room 4A7
Hauppauge, NY 11788-5506
518-292-2411

Region 2
171 Cheney Drive
Poughkeepsie, NY 12601-1011
518-292-2421

Region 3
5 Fox Farm Road
Queensbury, NY 12804-1107
518-292-2430

Region 4
10 Adler Dr. Suite 103
East Syracuse, NY 13057
518-292-2441

Region 5
1144 East Union Street
Newark, NY 14513-9802
518-292-2451

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
APPENDIX G

EQUIPMENT SUMMARY
NYSOEM - RADIOLOGICAL INSTRUMENT FACILITY
STATEWIDE INVENTORY (See 12/2010 Updated Inventory)

SURVEY METERS AND EQUIPMENT		**SOEM**	**AGENCIES**	**TOTAL**
CDV - 700	Geiger Survey Meter	1392	684	2076
CDV – 700M	Geiger Survey Meter	10		10
CDV - 718	Survey Meter	9	1	10
CDV - 715	Ionization, Survey Meter	531	0	531
Ludlum 3-98	Survey Meter & 44-3/44-10 probe	4		4
Bicron	Micro R meter	3		3
Ludlum 19	Micro R Meter	3		3
Ludlum 14-C	Survey Meter	22	32	54
Eberline E-140N	Survey Meter with HP-210 probes	3		3
Eberline E-140	Survey Meter HP-210L probe	1		1
Eberline RO-2A	Ion Chamber Survey Meter	6		6
Eberline RO-20	Ion Chamber Survey Meter	1		1
Radeco 809C	Air Pump with sampling head	3		3
TTPM 903B	Portal Monitor	1		1
DOSIMETRY AND EQUIPMENT				
CDV - 138	0-200mr Dosimeter	2176	28	2204
CDV - 730	0-20R Dosimeter	599	661	1260
CDV - 742	0-200R Dosimeter	13400	1300	14700
FEMA-730	0-20R Dosimeter	70	0	70
DC 611	Dosimeter Corp. 0-5R Dosimeter	293	200	493
AT-725	Arrow Tech 0-5R Dosimeter	400	1300	1700
CDV - 750	Dosimeter Charger	650	325	975
CDV- 750-6	Handheld Piezoelectric Charger	123	125	248
OSL	Optically stimulated luminescence Permanent record badges	164	1136	1300

Note:
1. Radiological equipment is distributed to those State agencies having radiological responsibilities under this plan (e.g. State Police, DOT, NYSOEM). Additionally, equipment is distributed to the nine State Personnel Monitoring Centers throughout the State and supplied to the Ingestion Pathway Kits. All the above equipment is maintained and serviced through the NYSOEM Radiological Instrument Facility and private contractors.

2. Instrument maintenance and calibration is performed according to the NYSOEM manual RDAM 6-1 and manufacturer's recommendation.

PERSONNEL MONITORING CENTERS:

Equipment Description		**Quantity**
Ludlum 14C	Survey meters and model 44-9 probe	4
CDV-700	Survey meter	6
DC-611	0-5R Dosimeter	25
CDV-742	0-100R Dosimeter	25
CDV-750-6	Piezoelectric dosimeter charger	2
CDV-750	Dosimeter charger with battery	3
CDV-705	Speaker for CDV-700	6
OSL	Permanent record badges-gamma , beta	25
KI	Potassium Iodide, 130mg per tablet, 14 tablets per packages	25
Batteries	1.5volts, size D	72

INGESTION PATHWAY KITS:

Equipment Description		**Quantity**
Ludlum 14C	Survey meter and model 44-9 probe	2
Bicron Meter	micro Rem meter or Ludlum Modes 19 survey meter	1
Eberline E 140N	Survey Meter with HP210 Probe	1
Eberline RO-2A	Ion Chamber Survey Meter	1
Radeco 809C	Air Pump with sampling head	1
Silver Zeolite	Sampling Cartridges	0
Charcoal	Sampling Cartridges	8
OSLD	Luminescent Dosimeter-gamma, beta	1
DC 611	0-5R Dosimeter	1
FEMA 730	0-20R Dosimeter	1
CDV-742	0-200R Dosimeter	1
CDV-750-6	Pizeoelectric Charger	1
CDV-750	Dosimeter Charger	1
Cs-137	Check Source, 5 uCi	1

NYS Radiological Equipment Inventory (December 2010)

Instrument	Amount	Location	Notes
CDV-700 (0-50mR/Hr)	983	Albany	Survey Meter GM probe
CDV-700 (0-50mR/Hr)	42	Field	Survey Meter GM probe
CDV-700 (0-50mR/Hr)	744	Glen Falls	Survey Meter GM probe
CDV-715 (0-500 R/Hr)	531	Glen Falls	Survey Meter Ion Chamber
CDV-700M (0-50mR/Hr	11		Survey Meter with alpha detector probe
CDV-718 (.001 mR/Hr to 9,999 R/Hr)	9	Albany	Digital Radiacmeter Survey Meter
CDV-718 (.001 mR/Hr to 9,999 R/Hr)	1	Field	Digital Radiacmeter Survey Meter
CDV-705	249	Glen Falls	External Speaker for CDV-700
CDV-705	33	Albany	External Speaker for CDV-700
CDV-705	42	Field	External Speaker for CDV-700
CDV-750	650	Albany	Battery Operated Dosimeter Charger
CDV-750	325	Field	Battery Operated Dosimeter Charger
CDV-750-6	230	Albany	Piezoelectric (non battery) Operated Dosimeter Charger
CDV-750-6	18	Field	Piezoelectric (non battery) Operated Dosimeter Charger
Ludlum 14-C (0-2000 mR/Hr)	22	Albany	Survey Meter with pancake probe
Ludlum 14-C (0-2000 mR/Hr)	32	Field	Survey Meter with pancake probe
Bicron Micro REM (1uR/Hr-200 mR/Hr)	3	Albany	Survey Meter Scintillation detector Alpha/Beta detection
Eberline E-140 (0-50 mH/Rh)	1	Albany	Survey Meter with pancake probe
Eberline E-140N (0-50000 CPM	3	Albany	Survey Meter with pancake probe
Eberline RO20 (0-50 R/hr)	1	Albany	Survey Meter with Ion Chamber
Eberline RO-2A (0-50 R/Hr)	6	Albany	Survey Meter with Ion Chamber
Ludlum 2401-P (0-50mR/Hr)	6	Albany	Survey Meter “Pancake” built-in on back surface
Ludlum 19 (0-5000 uR/Hr)	3	Albany	Survey Meter probe 1" X 1" NaI(Tl) scintillator
Ludlum 3-98	4	Albany	Survey Meter probe Low Energy Gamma Scintillator

CDV-138	2,112	Albany	Dosimeter (0-200 mR) Metal **Training Use Only**
CDV-730	697	Albany	Dosimeter (0-20 R) Metal
CDV-742	14,300	Albany	Dosimeter (0-200 R) Metal
CDV-742	400	Field	Dosimeter (0-200 R) Metal
Dosimeter Corp -611	423	Albany	Dosimeter (0-5 R) Metal
Dosimeter Corp -611	50	Field	Dosimeter (0-5 R) Metal
FEMA -730	70	Albany	Dosimeter (0-20 R) Plastic
Arrow Tech- 725	275	Field	Dosimeter (0-5 R) Plastic
Arrow Tech- 725	1965	Albany	Dosimeter (0-5 R) Plastic
Badge Dosimeters	125	Albany	Optically Stimulated Luminescence (OSL) superior to TLD
Badge Dosimeters	275	Field	Optically Stimulated Luminescence (OSL) superior to TLD
Badge Dosimeters	63	Albany	Landauer (InLight) – two year radiation badge
Badge Dosimeters	1037	Field	Landauer (InLight) – two year radiation badge
DoseGard Electronic Dosimeters	63	Albany	Atomic General Dose Gard Electronic Dosimeters - 3 year calibration
DoseGard Electronic Dosimeters	1037	Field	Atomic General Dose Gard Electronic Dosimeters - 3 year calibration
DoseGard Deployment Case	8	Albany	Contains Netbook with IR port and reader/calibration software
DoseGard Deployment Case	4	Field	Contains Netbook with IR port and reader/calibration software
Air Samplers	3	Albany	In Ingestion Pathway Kits
Portal Monitor (TPM-903)	7	Albany	Portal Monitor (TPM903) Transportable
Portal Monitor (TPM-903)	7	Field	Portal Monitor (TPM903) Transportable - 2 more to be deployed to field

KI - Potassium Iodide

130 mg tablets	315,720	Albany	Note: 14 tablets per strip
130 mg tablets	678,680	Counties	
Total	1,000,000		
65 mg tablets	4,840	Albany	Note: 20 tablets per box
65 mg tablets	595,160	Counties	
Total	600,000		

65 mg Liquid Doses	18,000	Albany	Note: 30 Doses per bottle
65 mg Liquid Doses	799,050	Counties	
65 mg Liquid Doses	2242950	Glen Falls	
65 mg Liquid Doses	120000	Rochester	
Total	3,180,000		

NOTE: 850 Additional DoseGard Electronic Dosimeters to be added by the end of February 2011 (625 for Field and 225 for Albany)

LARGE TRUNK

4	Two liter bottles with boxes for water.
5	Two liter bottles with boxes for milk.
1	Package of 25 blue pads.
2	Rolls of paper towels.
1	Roll Freezer Paper 18" x 16 2/3 yards
1	Box of baby wipes.
1	Bag with blue pads and folded paper towels.
3	Five gallon pails.
1	Hedge shears.
1	Stainless steel dipper.
1	Stainless steel funnel.
1	Folding shovel.
2	Rolls duct tape.
1	Clip board.
2	Soil sampling tools.
1	Grass Shears
1	Trowel
1	Four inch putty knife.
1	Bag with filter paper and glassine envelopes.
1	Roll white electrical tape.
1	10 lbs spring scale.
1	Bag of clips (seals)

1		1.5 Quart bottle of Clorox
5		Vials with sodium bisulfate preservative

MEDIUM TRUNK

1		NY State Atlas.
1		DOT State Map.
1		Central/Capitial Region Map
1		Finger Lakes Region Map
1		Adirondack Region Map
7		Manila Envelopes 12" x 15".
2		Large clip boards.
1		Can "DEEP WOODS OFF"
1		Can Rad Con hand cleaner.
1		2 liter bottle of clean water.
1		2 liter bottle RADI- CLEAN 4% solution
1		2 liter bottle clorox 10% solution.

Brown Box with:

6		Dust Masks.
2		Pairs Cotton Gloves.
2		CDV-750 dosimeter chargers.
1		Roll adhesive tape.
1		Bag rubber bands.
1	*	Box of 12 "D" size batteries
3		Flashlights.
1		Tape measure.
1		Pair scissors
1		Knife
2		Rolls masking tape.
1		Roll of Teflon tape.
1		Roll of brown Teflon tape.
1		Bag containing 16 sun screen wipes.
1		First Aid kit.
1		Roll of paper towels.
12		Manila envelopes 9"x 12".
1		Folder of labels.
1		Check source.
1		Envelope with DOH 4356 forms
		Data acquisition forms and chain of custody forms in Field team guide book.
1		SEMO Telephone book.
1		Emergency worker reference manual.
1		Instruction manual – Ludlum Model 14-C.
1		Instruction manual – Ludlum model 19.
1		Instruction manual – Bicron urem.
1		FRMAC Monitoring and Analysis manual Vols I and II.
1	*	Calibration certificates.
1		Field team guide
1		Field team instructions: Procedure M –Ingestion sampling team procedures
2	*	Ludlum Model 14-C Survey Meters
1	*	Extra Probe for Model 14-C Meter
1	*	Extra Cable for Model 14-C Meter
1	*	Ludlum Model 19 Survey Meter
1	*	Bicron urem Survey Meter

Brown expanding document file folder containing:

2		Small ruled pads.
1		Large rule pad

1	*	GPS Unit
1	*	Box of 4 "AA" size batteries for GPS
1		Packing foam to be used between instruments
1	*	Cell phone

1		Steno Pad
1		Box paper clips
1		Yellow Sticky Notes pad
		Pens (Red and Blue ink)
		Pencils
		Sharpie markers fine point
6	*	Badge Dosimeters
15		Emergency worker cards.
6	*	DC -611 Dosimeters.
6	*	CD – 138 Dosimeters.
2		Sheet of RED Dot labels

* Note: Items with * to be added to kits from RIF shop when kits are to be used.

SMALL TRUNK

8	Pairs yellow totes overboots.
6	Pair polyethylene overboot .07 mil.
8	Pair heavy duty .50mil clear foot covers.
3	Rain ponchos.
8	Pair gloves yellow heavy duty .25 mil.
9	Pair gloves (Best Master) rubber latex.
2	Pair heave duty work gloves.
8	Pair hooded paper hooded coveralls.
1	Blue pads 25 pack.
1	Rad tape and 1 Rad bag. – Do not use on exercises.
9	Pair paper booties.
1	Box of vinyl exam gloves.
14	Paper hats.
1	Roll of masking tape.

Plastic Bags:

	Size:
0	40” x 60”
1	24” x 36”
4	10” x 16”
13	12” x 20”
5	15” x 25”
1	48”x 31”
72	8” x 15”
20	7” x 8” (Quart size)
10	12” x 22”

Tags:

	Size:
7	2.75” x 1.375”
30	3.75” x 1.875”

Wire Ties:

	Size:
54	Wire ties 7” long

AIR SAMPLER TRUNK

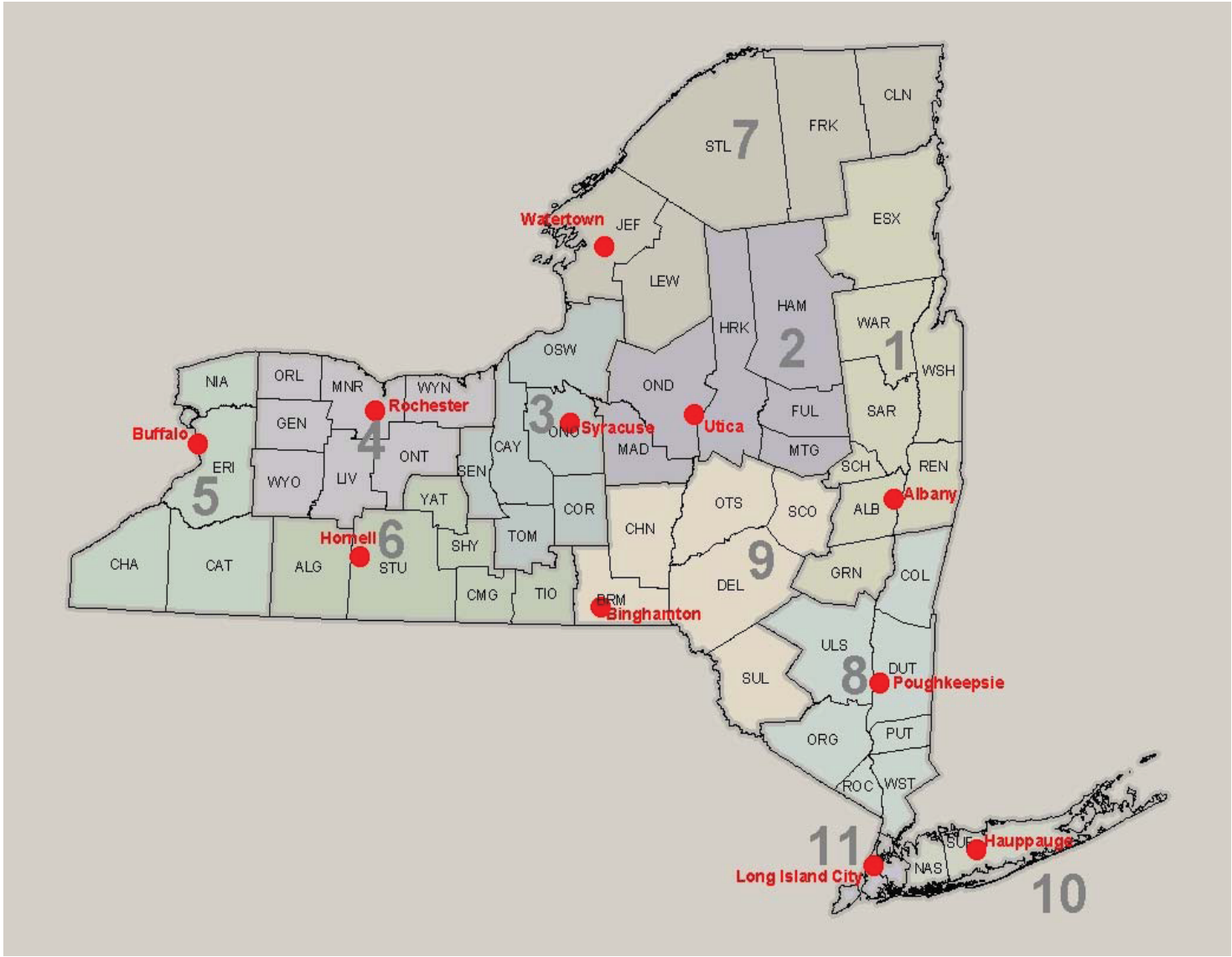
1	Air pump with sampling head.
1	Strap for air pump.
11	Charcoal filters.
1	Two liter bottle with side cut out containing:
3	6” Forceps
6	Bags clear plastic.
40	Envelope glassine.
90	Filters.
1	Stop watch/timer with instructions

New York State Police Troop Locations

Division Headquarters
Building 22, 1220
Washington Avenue
Albany, NY 12226-2252
518-457-6811

Troop A Headquarters, Batavia
716-343-2200
Troop B Headquarters, Ray Brook
518-897-2000
Troop C Headquarters, Sidney
607-561-7100
Troop D Headquarters, Oneida
315-363-4400
Troop E Headquarters, Canandaigua
716-398-3200
Troop F Headquarters, Middletown
845-344-5300
Troop G Headquarters, Loudonville
518-783-3211
Troop K Headquarters, Poughkeepsie
914-677-7300
Troop L Headquarters, Farmingdale
516-756-3300
Troop T Headquarters, Albany
518-436-2825
Troop NYC Headquarters, NYC
718-918-0600

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
APPENDIX G



NEW YORK STATE DEPARTMENT OF TRANSPORTATION

REGIONAL JURISDICTIONS

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
APPENDIX G

DOT REGIONAL INFORMATION

DOT REGION 1
328 State Street
Schenectady, NY 12305
Regional Director: 518-388-0388
Counties: Albany, Essex, Greene, Rensselaer, Saratoga, Schenectady, Warren, and Washington

DOT REGION 2
Utica State Office Building
207 Genesee Street
Utica, NY 13501
Regional Director: 315-793-2447
Counties: Fulton, Hamilton, Herkimer, Madison, Montgomery, and Oneida

DOT REGION 3
Senator John H. Hughes State Office Bldg.
333 East Washington Street
Syracuse, NY 13202
Regional Director: 315-428-4351
Counties: Allegany, Chemung, Schuyler, Oswego, Seneca, and Tompkins

DOT REGION 4
1530 Jefferson Road
Rochester, NY 14623-3161
Regional Director: 716-272-3310
Counties: Genesee, Livingston, Monroe, Ontario, Orleans, Wayne, and Wyoming

DOT REGION 5
General William J. Donovan Office Bldg.
125 Main Street
Buffalo, NY 14203
Regional Director: 716-847-3238
Counties: Cattaraugus, Chautauqua, Erie, and Niagara

DOT REGION 6
107 Broadway
Hornell, NY 14843
Regional Director: 607-324-8405
Counties: Cayuga, Cortland, Onondaga, Steuben, Tioga, and Yates

DOT REGION 7
Dulles State Office Building
317 Washington Street
Watertown, NY 13601
Regional Director: 315-785-2333
Counties: Clinton, Franklin, Jefferson, Lewis, and St. Lawrence

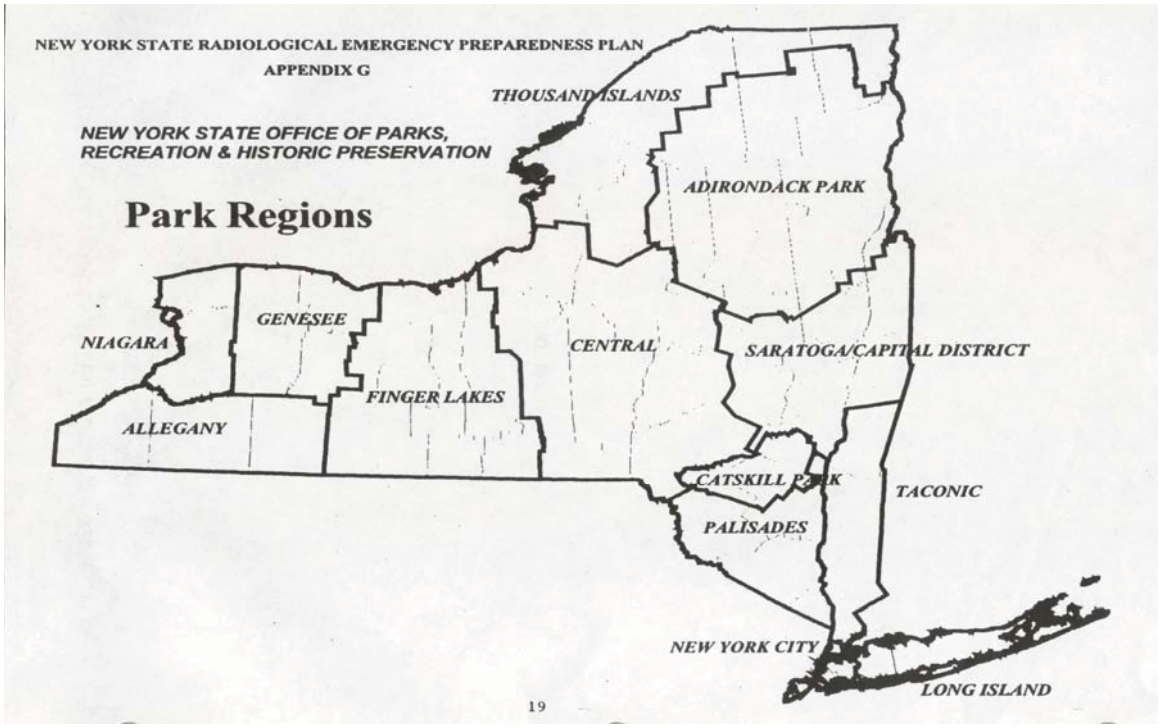
DOT REGION 8
Eleanor Roosevelt State Office Bldg.
4 Burnett Boulevard
Poughkeepsie, NY 12603-2594
Regional Director: 845-431-5750
Counties: Columbia, Dutchess, Orange, Putnam, Rockland, Ulster
Rockland, Ulster, and Westchester

DOT REGION 9
State Office Bldg.
44 Hawley Street
Binghamton, NY 13901
Regional Director: 607-721-8116
Counties: Broome, Chenango, Delaware Otsego, and Schoharie, and Sullivan

DOT REGION 10
New York State Office Bldg.
250 Veterans Memorial Highway
Hauppauge, NY 11788
Regional Director: 631-952-6632
Counties: Nassau and Suffolk

DOT REGION 11
Hunters Point Plaza
47-40 21st Street
Long Island City, NY 11101
Regional Director: 718-482-4526
Counties: Bronx, Kings, NY, Queens and Richmond

DOT Main Office
New York State Department of Transportation
50 Wolf Road
Albany, NY 12232
EM Office 518-485-1379


NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
APPENDIX G
NEW YORK STATE OFFICE OF PARKS,
RECREATION & HISTORIC PRESERVATION
Park Regions
THOUSAND ISLANDS
ADIRONDACK PARK
NIAGARA
GENESEE
CENTRAL
SARATOGA/CAPITAL DISTRICT
FINGER LAKES
ALLEGANY
CATSKILL PARK
TACONIC
PALISADES
NEW YORK CITY
LONG ISLAND
19

(Not Used)

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
APPENDIX H

CROSS REFERENCE INDEX TO THE CRITERIA FOR PREPARATION AND EVALUATION OF RADIOLOGICAL EMERGENCY RESPONSE PLANS AND PREPAREDNESS IN SUPPORT OF NUCLEAR POWER PLANTS.

Reference to lOCFR50 requirement, this index satisfies Evaluation Criteria P.8.

EVALUATION CRITERIA

	SECTION/PROCEDURE/APPENDIX
II. Planning Standards and Evaluation Criteria	
A. Assignment of Responsibility	
l.a. Identification of Response Organizations	Sect. I Sect. II Sect. III Sect. IV
b. Organization Concept Operations	Sect. I Sect. II Sect. III Sect. IV
c. Organizational Interrelationships Block Diagram	Sect. II Sect. III
d. Designation of Organization Director	Sect. I Sect. III
e. 24-Hour Response/- Communications	Sect. III Proc. B Refer to each respective County REPP
2.a. Organization Authority	Sect. I Sect. II Sect. III Refer to each respective County REPP

	SECTION/PROCEDURE/APPENDIX
b. Legal Basis for Organization Authority	Sect. I
3. Letters of Agreement (MOU's)	App. E
4. Designated Authority for for Organization Resource Continuity	Sect. III, 2.1.2
B. Onsite Emergency Organization	Refer to each NFO's Emergency Plan
C. Emergency Support and Resources	
1.a. Specify Persons Authorized to Request RAP Assistance	Sect. III
b. Arrangements for Using Resources	Sect. III Proc. H Sect. IV
c. State Resources Available to Support Federal Response	Sect. I, 4.2.4 Sect. II App. D
2.a. Representatives at EOF	Proc. H
b. Licensee Representative	Refer to each NFO's Emergency Plan
3. Identification of Radiological Laboratories	Proc. N App. G Procedure M, Att. 10
4. Nuclear and Other Facilities Organizations or Individuals for Support	Proc. H Sect. III
D. Emergency Classification System	
1. Emergency Classification	Refer to each NFO's Emergency Plan

	SECTION/PROCEDURE/APPENDIX
2. Initiating Conditions	Refer to each NFO's Emergency Plan
3. Establish Emergency Classification	Sect. III, 2.3.1
4. Provisions that Consistent Emergency Actions Will Be Taken	Proc. B Proc. D Proc. G Proc. H Proc. K
E. Notification Methods and Procedures	
1. Notification Verification of Response Organizations	Proc. B Sect. III
2. Alert, Notify & Mobilize Emergency Response Personnel	Sect. III Proc. B Proc. D
3. Initial Emergency Messages	Refer to each NFO's Emergency Plan
4. Follow-up Messages from the Facility to Offsite Authorities	Refer to each NFO's Emergency Plan
5. Dissemination of Public Information for Initial Notification	Sect. III Proc. C Proc. B
6. Means for Prompt Instructions to the Public within the Plume Exposure Pathway	Sect. III Proc. B Proc. C
7. Written Messages, in Draft Regarding Possible Protective Actions	Refer to Site Joint Information Center Workplan/ Procedure
F. Emergency Communications	
1.a. 24-Hour Notification Ability	Sect. III App. G Proc. B

	SECTION/PROCEDURE/APPENDIX
b.Communications with Contiguous State & Local Government with EPZ	Sect. III Proc. B
c. Communications with Federal Response Organizations	Proc. B Proc. H
d. Communications Between NFO, EOF, State and Local EOC's and Monitoring Teams	Proc. H Sect. III
e. Alerting or Activating Personnel Emergency Personnel in Each Response Organization	Proc. B Sect. III
f. Communication By Licensee with NRC	Refer to each NFO's Emergency Plan
2. Coordinated Communication Link for Fixed & Mobile Medical Support Facilities	Sect. III App. F
3. Testing of Emergency Communications System	Proc. B, Att. 13 Sect. III, 2.1.2
G. Public Information and Education	
1. Coordinated Annual Dissemination of Information (the how & what)	Refer to each respective County REPP Sect. II Proc. C
2. Public Information	Proc. C Proc. E Refer to each respective County REPP
3.a. Designated Points of Contact and Contact and News Media Placement	Sect. III Proc. C

	SECTION/PROCEDURE/APPENDIX
b. Joint Information Center	Proc. C Refer to Site Specific JIC Workplan/Procedures
4.a. Designate a Spokesperson	Proc. C, Sect 1.0 Sect. III, Sect. 2.1.7 Refer to respective County REPP
b. Establish Timely Exchange of Information	Proc. C Refer to Site Specific JIC Procedures
c. Public Inquiry/Rumor Control	Refer to Site Specific JIC Procedures Proc. C Sect. III
5. Annual Program to Acquaint News Media With Emergency Plans	Proc. C Sect. II
H. Emergency Facilities and Equipment	
1. Licensee Technical Support	Refer to each NFO's Emergency Center Plan
2. Licensee Emergency Operations	Refer to each NFO's Emergency Plan
3. Establish Emergency Operation Center	Proc. D Sect. III Refer to each respective County REPP
4. Activation and Staffing of Emergency Operation Center	Proc. B Proc. D Proc. H Sect.III Refer to each respective County REPP
5. Licensee Onsite Monitoring	Refer to each NFO's Emergency Plan
6. Licensee Offsite Monitoring	Refer to each NFO's Emergency Plan

	SECTION/PROCEDURE/APPENDIX
7. Offsite Radiological Monitoring Equipment	App.G Proc. M Refer to each respective County REPP
8. Licensee Meteorological	Refer to each NFO's Emergency Plan
9. Licensee Onsite Operations	Refer to each NFO's Emergency Plan
10. Inspect, Inventory and Operationally Check Emergency Equipment	Proc. G App. G Proc. M
11. Lists of Inventory	App. G Proc. B, Attachment 14
12. Central Point for Receipt and Analyzing of all Field Monitoring Data	Proc. H
I. Accident Assessment	
1. Licensee Plant System	Refer to each NFO's Emergency Plan
2. Onsite Capability and Resources Resources to Provide Initial Values and Continuing Assessment	Refer to each NFO's Emergency Plan
3. Licensee Methods for Determining Source Term and Magnitude of Releases	Refer to each NFO's Emergency Plan
4. Relationship Between Effluent Monitor Readings and Onsite and Offsite Exposures	Refer to each NFO's Emergency Plan
5. Meteorological Data Processing Interconnections	Refer to each NFO's Emergency Plan
6. Methodology for Determining Release Rates	Refer to each NFO's Emergency Plan

7. Capabilities for Monitoring . Within Plume Exposure EPZ	This criteria is assigned to the respective risk County REPP
8. Capability for Assessment of Actual/Potential Magnitude of Location of Radiological Hazards	This criteria is assigned to the respective risk County REPP
9. Capability to Detect Airborne Radioiodine Concentration as Low as IE-7 uCi/cc	This criteria is assigned to the respective risk County REPP
10. Means to Estimate Integrated Dose From Projected and Actual Dose Rates	Proc. H
11. Arrangements to Locate and Track the Airborne Radioactive Plume	Proc. H Sect. III

J. Protective Response

1. Means and Time for Warning Individuals On-site	Refer to each NFO Site Emergency Plans
2. Provisions for Evacuation Routes for Onsite Personnel	Refer to NFO and County Emergency Plan Sect. III
3. Radiological Monitoring of People Evacuated From Site	Refer to each NFO's Emergency Plan
4. Evacuation of Non-essential Personnel	Refer to each NFO's Emergency Plan
5. Ability to Account for all Individuals Onsite	Refer to each NFO's Emergency Plan
6. Protection of Individuals Remaining Onsite	Refer to each NFO's Emergency Plan
7. Mechanism for Recommending Protective Actions	Refer to each NFO's Emergency Plan

	SECTION/PROCEDURE/APPENDIX
8. Plume Exposure EPZ Evacuation Time Estimates	Refer to each NFO's Emergency Plan
9. Protective Action Guides	Sect. I Sect. III Sect. IV Proc. H Proc. K
10.a. Maps: Evacuation Routes, Evacuation Areas, Sampling and Monitoring Points, Relocation Centers, etc.	Refer to each respective County REPP
b. Map for Population Distribution by Evacuation Area	Refer to each respective County REPP
c. Means for Notifying All Segments of the Transient and Resident Population	Proc. B Proc. C Proc. E Sect. III Sect. IV Refer to each respective County REPP
d. Means for Protecting Persons Whose Mobility May Be Impaired (Institutional or Other Confinement)	Proc. E Sect. III Refer to each respective County REPP
e. Provisions for Radioactive Drugs - Quantities, Storage and Means of Distribution	Proc. G, Att.9 App. K
f. Radioprotective Drug Administration	Proc. G App. K
g. Means of Relocation	Refer to each respective County REPP Sect. III
h. Relocation Centers	Refer to each respective County REPP Sect. III
I. Projected Traffic Capacities of Evacuation Routes under Emergency Conditions	Refer to respective Site Evacuation Time Estimates (ETE)

	SECTION/PROCEDURE/APPENDIX
j. Control of Access to Evacuated Areas; Organization and Control	Sect. III Refer to each respective County REPP
k. Identification of and Means Dealing with Potential Impediments	Sect. III Refer to each respective County REPP
l. Evacuation Time Estimates	Refer to each respective County REPP and ETE manual
m. Bases for Choice of Protective Actions within the Plume EPZ	Sect. III Proc. H
11. Protective Measures Ingestion Pathway	Sect. III Sect. IV Proc. H Proc. K Proc. L
12. Means for Registering and Monitoring Evacuees	Sect. III Refer to each respective County REPP
K. Radiological Exposure Control	
1. Onsite Exposure Guidelines	Refer to each NFO's Emergency Plan
2. Onsite Radiation Protection Program	Refer to each NFO's Emergency Plan
3a. 24-Hour Capability to Determine Emergency Worker Doses	Proc. G Sect. III
3b. Maintenance of Dose Records	Proc. G, Att.8 Sect. III
4. Decision Chain for Authorizing Emergency Workers Exposure to Exceed EPA/PAG's	Proc. G Proc. H Sect. III
5.a. Specify Action Levels for Determining the Need for Decontamination	Refer to each respective County REPP Proc. G Sect. III State Emergency Worker PMC Procedures

	SECTION/PROCEDURE/APPENDIX
b. Means for Radiological Decontamination of Emergency Personnel	Proc. G Sect. III State Emergency Worker PMC Procedures Refer to each respective County REPP
6. Onsite Contamination Control	Refer to each NFO's Emergency Plan
7. Decontamination of Relocated Onsite Personnel	Refer to each NFO's Emergency Plan
L. Medical and Other Health Support	
1. Local and Backup Hospital and Medical Services	App. F Sect. III
2. Onsite First Aid Capability	Refer to each NFO's Emergency Plan
3. List of Hospitals	App. F
4. Transporting Victims of Radiological Accidents to Medical Support Facilities	Sect. III Refer to each County REPP Plan
M. Recovery and Reentry Planning and Post Accident Operations	
1. Plans for Recovery/Reentry	Sect. IV Sect. III Proc. L
2. Key Positions in the Facility Recovery Organization	Refer to each NFO's Emergency Plan
3. Informing Members of Response Organizations to Initiate Recovery	Sect. IV
4. Method for Periodically Estimating Total Population Exposure	Proc. H Sect. IV
N. Exercises and Drills	
1.a. Periodic Exercises of Response Capability	Proc. F Proc. C Sect. II

	SECTION/PROCEDURE/APPENDIX
b. Exercise Critique	Proc. F
2.a. Communication Drills	Proc. B Proc. F
b. Fire Drills	Refer to each NFO's Emergency Plan
c. Medical Emergency Drills	Refer to each NFO's Emergency Plan
d. Radiological Monitoring Drills	Proc. F
e. Health Physics Drills	Proc. F
3.a. Drill Objectives	Proc. F
b. Date/Time/Place	Proc. F
c. Simulated Events	Proc. F
d. Time Schedule of Real and Simulated Initiating Events	Proc. F
e. Summary of Exercise Conduct	Proc. F
f. Description of the Arrangements for and Advance Materials Provided to Observers	Proc. F
4. Official Observers, Critique and Formal Evaluation	Proc. F
5. Evaluation of Observer and Participants Comments	Proc. F Proc. A
O. Radiological Emergency Response Training	
1. Assure Training	Proc. F Sect. II

	SECTION/PROCEDURE/APPENDIX
1.a. Training for Offsite Emergency Organizations	Refer to each respective county REPP Proc. F
b. Offsite Response Organization Shall Participate in Training	Sect. II Proc. F
2. Training for Onsite Emergency Organizations	Refer to each NFO's Emergency Plan
3. Training for Licensee First Aid Teams	Refer to each NFO Site Emergency Plan
4.a. Specialized Training for Directors or Coordinators	Proc. F
b. Accident Assessment Personnel	Proc. F
c. Radiological Monitoring Teams	Proc. F
d. Police, Security and Firefighters	Proc. F Refer to each NFO's Emergency Plan
e. Repair and Damage Control Teams	Refer to each NFO's Emergency Plan
f. First Aid and Rescue Personnel	Proc. F
g. Local Support Services	Proc. F
h. Medical Support Personnel	Proc. F
I. Licensee's Headquarters Support Personnel	Refer to each NFO's Emergency Plan
j. Transmitters of Information	Proc. F
5. Annual Retraining	Sect. II Proc. F
P. Responsibility for the Planning Effort	
1. Training of Responsible Individuals	Proc. F, Sect 4.6

	SECTION/PROCEDURE/APPENDIX
2. Overall Authority and Responsibility for Planning	Proc. A Sect. II
3. Designation of Emergency Planning Coordinator	Proc. A
4. Annual Review and Update of Plan	Proc. A
5. Plan Distribution and Promulgation of Plan Revisions	Proc. A
6. Listing of Support Plans	Sect. I
7. Plan Implementation	Proc. A
8. Cross Reference/Table of Contents	App. H
9. Annual Review of Emergency Preparedness Program	Refer to each County REPP Plan Proc. A
10. Quarterly Update of Telephone Numbers	Proc. A

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
APPENDIX H

(NOT USED)

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
APPENDIX I

PROCEDURE CROSS-REFERENCE
(This listing reflects the Procedures required to implement this plan)

Procedure		Section Location
A.	Plan Maintenance	Sec.II – 3.1, 3.1.1, 3.1.2 Sec.II – 3.4, 3.4.1, 3.4.2 Sec.II – 3.6.1
B.	Communications/Warning	Sec.II – 3.6. Sec.III – 2.1.1 Sec.III – 2.1.2 Sec.III – 2.1.3 Sec.III – 2.2.2 Sec.III – 2.3.2 Sec.III – 2.5.1
C.	Public Information	Sec.II – 3.5 Sec.III – 2.1.7 Sec.III – 2.2.3, 2.3.5 Sec.IV – 6.0, 6.1, 6.1.1, 6.1.2. 6.1.3
D.	State and Field Emergency Operations Center	Sec.III – 1.3 Sec.III – 2.1.1, 2.1.5, 2.1.8, 2.1.9, 2.1.10 Sec.III – 2.2, 2.2.1 Sec.III – 2.3.3
E.	Public Education	Sec.I – 4.1.1, 4.1.2 Sec.II – 3.5, 3.5.1, 3.5.2 Sec.II – 3.6, 3.6.1
F.	Training, Drills & Exercises	Sec.II – 3.7, 3.7.1, 3.7.2
G.	Radiological Exposure Control	Sec.II – 3.6, 3.6.1 Sec.III – 2.4.1 Sec.III – 2.6, 2.6.1, 2.6.2, 2.6.3, 2.6.4, 2.7 Sec.IV – 3.0, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8

Procedure		Section Location
H.	Assessment/Evaluation	Sec.III – 1.3, Sec.III – 2.1.4 Sec.III – 2.1.5 Sec.III – 2.1.11 Sec.III – 2.3, 2.3.1 Sec.III – 2.4, 2.4.1, Sec.III – 2.4.2 Sec.III – 2.5, 2.5.1 Sec.IV– 3.0, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8
I.	NOT USED	
K.	Radiological Ingestion Exposure	Sec.I – 3.3, 3.3.1, Sec.III – 2.1.6 Sec.III – 2.3.2 Sec.III – 2.4.2 Sec.III – 2.6, 2.6.1, 2.6.2, 2.6.3, 2.6.4, 2.6.5 Sec.IV– 3.0, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 3.8 Sec.III – 4.0, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7
L.	Relocation/Return/Reentry/Ingestion	Sec.IV– 3.0, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 Sec.IV– 4.0, 4.1, 4.3, 4.3, 4.4, 4.5, 4.6, 4.7
M.	Ingestion Sampling Team Procedures	Sec.II – 3.3.1 Sec.II – 3.6, 3.6.1 Sec.III – 1.1 Sec.III – 2.1.4 Sec.III – 2.6.1, 2.6.2, 2.6.3, 2.6.4, 2.6.5
N.	NYS Department of Health Laboratory Procedures	Sec.II – 3.3.1 Sec.II – 3.6.1 Sec.III – 1.3 Sec.III – 2.1.4 Sec.III – 2.1.11 Sec.III – 2.4.1

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
APPENDIX K

POTASSIUM IODIDE

TABLE OF CONTENTS

ATTACHMENTS

(Not Used)

ATTACHMENT 1

New York State Policy on Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies

November 2002

Introduction

This Policy updates the 1982 New York State Policy on the use of potassium iodide (KI) for the general public to reduce the risk of thyroid cancer in radiation emergencies involving the release of radioactive iodine. The recommendations in this policy address KI dosage and the projected radiation exposure at which the drug should be used.

These recommendations are based on guidance provided by the United States Food and Drug Administration (FDA), "Guidance on Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies", in December of 2001.

Background

The FDA has provided guidance previously on the use of KI as a thyroid blocking agent. First, in 1978, the FDA announced its conclusion that KI is a safe and effective means by which to block uptake of radioiodines by the thyroid gland in a radiation emergency under certain specified conditions of use. In 1982, FDA announced final recommendation on the administration of KI to the general public in a general emergency. Those recommendations were formulated after reviewing studies relating radiation dose to thyroid disease risk that relied on estimates of external thyroid irradiation after the nuclear detonations at Hiroshima and Nagasaki and analogous studies among children who received therapeutic radiation to the head and neck. The former New York State Policy on KI was based on previous FDA recommendations for administering KI to emergency workers and selected captive populations. This former policy stated: "The FDA recommends that potassium iodide in doses of 130 mg per day per adult and children above one year, and 65 mg per day for children below one year of age, be considered for thyroid blocking in radiation emergencies in those persons who are likely to receive a projected radiation dose of 25 rem or greater to the thyroid gland from radioiodines released to the environment. The decision to administer KI will be made with the concurrence of local and State Health officials."

The policy that follows revises New York State's 1982 policy recommendation on the use of KI for thyroid cancer prophylaxis based on the FDA's recent comprehensive review of the data accumulated in the aftermath of the 1986 Chernobyl reactor accident relating radioiodine exposure to thyroid cancer risk.

Rationale for Revising the Existing KI Policy

The New York State Department of Health (NYSDOH) has reviewed the new guidance for prophylactic use of KI prepared by the FDA and is hereby recommending that the New York State Policy on KI distribution to the general public be revised. The rationale for the revision is given below.

- Studies conducted after the 1986 accident at Chernobyl have provided the most reliable information available to date on the relationship between exposure to radioiodine and thyroid cancer risk. These studies suggest that the risk of thyroid cancer is inversely related to age, and that, especially in young children, the risk may accrue at very low level of radioiodine exposure. The FDA relied on Chernobyl data to formulate its specific recommendations.

- The effectiveness of KI as a specific blocker of thyroid radioiodine uptake is well established, as are the doses necessary for blocking radioiodine uptake. As such, it is reasonable to conclude that KI will likewise be effective in reducing the risk of thyroid cancer in individuals or populations at risk for inhalation or ingestion of radioiodines.

- Short-term administration of KI at a thyroid blocking dose is safe and, in general, more so in children than adults. The risks of stable iodine administration are detailed in the FDA guidance document (FDA01).

The NYSDOH, in consultation with its Radiological Health Advisory Committee, concluded that there was no medical reason not to make KI available to the general public during a radiological emergency where a large release of radioiodines had taken place. In August 1998, the NYSDOH Commissioner (Dr. DeBuono) made that recommendation to Mr. Edward Jacoby, then Chairman of the Disaster Preparedness Commission (DPC). The subsequent NYSDOH Commissioner, Dr. Novello, reiterated that recommendation when the FDA released its final guidance on the use of KI for the general public in December 2001.

Based on information available to date, New York State has decided to revise its KI policy to reflect current FDA recommendations.

New Policy

The New York State Plan endorses the 2001 FDA recommendation regarding KI. The New York State Policy on KI is revised as follows:

ATTACHMENT 1

"The New York State Department of Health states that KI is a safe and effective means by which to prevent radioiodine uptake by the thyroid gland, under certain specified conditions of use, and thereby reduce the risk of thyroid cancer in the event of a radiation emergency. The Department will follow the FDA's lower radioactive exposure thresholds for KI prophylaxis as well as lower doses of KI for neonates, infants, and children than those previously recommended in 1982 (see Table below). The recommendation to take KI by the general public will be issued by the Local or State Commissioner of Health, or his/her designee, during a radiological emergency where the potential to exceed the new FDA dose limits may be exceeded by the general public. This recommendation will be based on a projected thyroid dose to one-year old child of 5 Rem.

The NYSDOH continues to recommend that the radiation emergency response plans include:

- Provisions (in the event of a radiation emergency) for informing the public about the magnitude of the radiation hazard;
- The manner of use of KI and its potential benefits and risks; and
- Medical contact, reporting, and assistance systems.

The NYSDOH recognizes FDA recommendations on availability as well as administration of KI in advance of exposure to radioiodine. The NYSDOH stresses that KI provides protection only for the thyroid from radioiodines. It has no impact on the impact on the uptake by the body of other radioactive materials and provides no protection against external irradiation of any kind. The NYSDOH emphasizes that the use of KI should be as an adjunct to recommended protective actions such as evacuation (itself not always feasible), sheltering, and control of foodstuffs."

Threshold Thyroid Radioactive Exposures and Recommended Doses of KI for Different Risk Groups

	KI dose (mg)	# ml liquid (65 mg/ml)	# of 65 mg tablets	# of 130 mg tablets
Adults over 40 yrs	130	2	2	1
Adults over 18 through 40 yrs				
Pregnant or lactating women				
Adolescents over 12 through 18 yrs who weigh at least 150 pounds	130	2	2	1
Adolescents over 12 through 18 yrs who weigh less than 150 pounds	65	1	1	1/2
Children over 3 through 12 yrs	65	1	1	1/2
Over 1 month through 3 years	32	1/2	1/2	1/4
Birth through 1 month	16	1/4	1/4	1/8

ATTACHMENT 2

Commercially Available Doses of KI

KI is available in FDA-approved, over-the-counter formulations as in 130-mg tablets, 65-mg tablets and liquid (65 mg per ml).

NYSDOH supports the administration of the 130-mg tablet for children in settings such as schools or childcare centers in the event of emergencies. This is in agreement with FDA statements (reference below). This dose is safe and well within the recommended therapeutic range of KI for other indications. The blocking effect of iodide on the thyroid lasts only a few days (daily dosing is needed as long as the child is exposed to radioiodine) and any suppressive effect of KI on thyroid function has been shown to be minimal, even in young children.

The FDA has noted that absolute precision in dosing is generally not critical to safety or efficacy, and has emphasized in their guidance document that across populations at risk for radioiodine exposure, the overall benefits of KI far exceed the risks of overdosing, especially in children.

Reference

FDA01 Guidance, Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies, US Department of Health and Human Services, Food and Drug Administration, Center for Drug Evaluation and Research. December 2001.

ATTACHMENT 2

New York State
Nuclear Emergency Preparedness Subcommittee
Technical Issues Task Force

Implementation of the Use of Potassium Iodide (KI) as a Protective Action for the Public

Revision 2
June 2007

ATTACHMENT 2

The following individuals and organizations participated in the development of this position paper, and agree to its purpose and contents. All participants agree to implement the guidance contained herein, to the extent possible.

Constellation Energy Group (Nine Mile Point)

Name	Signature	Date
James D. Jones	_____	_____

Entergy Nuclear Northeast (J.A. FitzPatrick and Indian Point Energy Center)

Name	Signature	Date
Michael Slobodien	_____	_____

Constellation Energy Group (R.E. Ginna Station)

Name	Signature	Date
Sherri Kennedy	_____	_____

New York State Emergency Management Office

Name	Signature	Date
Andrew Feeney	_____	_____

New York State Health Department

Name	Signature	Date
Adela Salame-Alfie, Ph.D.	_____	_____

ATTACHMENT 2

Executive Summary

Licensee and State members of the Potassium Iodide (KI) Task Force (KI Task Force) developed this position paper to detail the decision process by which several recommendations regarding KI distribution will be made. The Task Force agreed that upon declaration of a General Emergency by the licensee, a recommendation to evacuate and take KI would be made simultaneously. It was also agreed that a single trigger level would be used (projected dose of 5 rem to the child thyroid). This paper discusses several approaches to determine doses/iodine concentrations and whether one approach was selected over the others due to effectiveness, timeliness, ease of implementation, etc.

The following six specific recommendations were agreed upon by the KI Task Force:

1. ***"Upon declaration of a General Emergency, the following will be directed to ingest KI:***

   - ***members of the public that are directed to evacuate***
   - ***captive populations within the evacuated area***
   - ***members of the public that would otherwise have been evacuated but are directed to shelter-in-place because evacuation is not feasible."***

2. ***"If evacuation is recommended at an ECL other than a General Emergency, or for any other reason, a direction to ingest KI as described in recommendation No. 1 <u>will not</u> be made. Ingestion of KI will be recommended only upon declaration of a General Emergency."***

3. ***"Upon declaration of a General Emergency, members of the public that are directed to shelter-in-place in order to reduce dose shall be directed to ingest KI. Members of the public who are directed to monitor the Emergency Alert System <u>will not</u> be directed to ingest KI."***

4. ***"Upon declaration of a General Emergency, <u>all</u> emergency workers located within the 10-mile EPZ will be directed to take KI (one 130-mg tablet every 24 hours). This recommendation will be made at the same time as the recommendation to ingest KI is made to the general public."***

5. ***"Members of the public and captive populations who are directed to take KI shall be directed to ingest KI in the dosage recommended by the US FDA. If a scheme of graded dosing is not possible, one 130-mg tablet per person may be ingested with minimal risk for those over one year of age. Dose to neonates should be limited to 16 mg, if possible."***

6. ***"As part of a pre-distribution effort, each member of the public should be offered a quantity of KI tablets equivalent to the following:***

   Maximum ETE (in days-rounded up) x 1 age and/or weight dependent dose/day

Alternatively, one bottle of liquid KI may be offered per family."

The group recognizes that a strong public information campaign and clear messages during the emergency are key to a successful KI implementation program. Some implementation guidance is provided at the end of the document.

1. Purpose

The purpose of this paper is to document a technical assessment of issues associated with the distribution of Potassium Iodide (KI) to the general public, emergency workers and captive populations, and to provide implementation guidance for:

- Usage
  - General Public
  - Emergency Workers
  - Captive Populations
- Dosage and frequency
- Pre-distribution criteria

2. Regulatory Requirements and Guidance

2.1 Applicable regulations

The US Nuclear Regulatory Commission (NRC) amended emergency planning regulations to require that States consider including the prophylactic use of KI as a protective measure for the general public in the plume exposure pathway Emergency Planning Zone (EPZ) in 66 FR 5427 on 19 Jan 2001. (Ref. 1)

The Federal Emergency Management Agency (FEMA) provided notice that the Federal Radiological Preparedness Coordinating Committee (FRPCC) revised its 1985 Federal policy regarding KI use in 67 FR 1355 on 10 Jan 2002. (Ref. 2)

2.2 Current guidance

The US Food and Drug Administration (FDA) issued guidance on the use of KI in radiation emergencies in December 2001 (Ref. 3). This document concludes "Short-term administration of KI at thyroid blocking doses is safe…" (Ref. 3 IV.A.) and indicates KI dosage is dependent on age and "Predicted Thyroid Exposure" (Ref. 3 IV.B.). This document states that "The recommendation should be interpreted with flexibility as necessary to allow optimally effective and safe dosing…" Additionally, "…the overall benefits of KI far exceed the risks of overdosing…" (Ref. 3 IV.B.).

2.3 New York State Position

In 2002, New York State, in its consideration of the subject CFR, chose to incorporate KI as an adjunct to the current range of protective actions for the public. The New York State Revised KI Policy was issued in April 2002.

2.4 Upcoming Guidance

This Position Paper will be revised as necessary to accommodate any new Federal guidance and availability of KI in different dosages.

3. Assumptions

- For optimal protection against inhaled radioiodine, KI should be administered before or immediately coincident with passage of the radioactive cloud. Effectiveness drops off rather quickly as time since radioiodine exposure increases. The effectiveness drops to about 50% if KI is taken two hours after exposure, and continues to decrease as time after exposure increases. (Ref. 3. V.).

- The recommended daily dose protects the user from radioiodine uptake for approximately 24 hours.

- KI should be taken until the person is no longer exposed to radioiodine.

- Radioiodine would only be present in the environment in sufficient quantities to exceed 5 rem child thyroid dose (CDE_T), which is the minimum dose at which KI is recommended, if a General Emergency (GE) had been declared at the facility from which the source term originates. This assumption is based on the fact that radioiodine can only be present in quantities capable of producing 5 rem child CDE_T in the presence of significant core damage and loss of primary containment, which are criteria that constitute a General Emergency.

- There will only be one trigger level to recommend KI: 5 rem to the child thyroid (CDE_T). This trigger level applies to the general public, emergency workers and captive populations.

4. Implementation Analysis

This section presents six recommendations as well as the rationale, benefits and risks associated with each. Recommendations are presented for when to issue a KI recommendation, dosage, and criteria for pre-distribution. These analyses apply to members of the public, emergency workers and captive populations.

4.1 Task Force Recommendation # 1

"Upon declaration of a General Emergency, the following will be directed to ingest KI:

- ***members of the public that are directed to evacuate***
- ***captive populations within the evacuated area***
- ***members of the public that would otherwise have been evacuated but are directed to shelter-in-place because evacuation is not feasible."***

Analysis:

Three methods were investigated to arrive to this recommendation:

- Use of a dose value,
- Use of deterministic methods, and
- Use of emergency classification.

Each analysis is described separately.

4.1.1 Using Dose Value

This analysis examines a method that utilizes projected dose to the thyroid as an indication of recommendation of KI use by the public [specifically, Committed Dose Equivalent to the child thyroid (CDE_T)]. In accordance with FDA Guidance (Ref. 3), child $CDE_T \geq 5$ rem is the indication at which KI use should be recommended.

To date, none of the New York State nuclear power facilities utilize real-time iodine monitoring. Hence, releases of radioiodine to the environment during an emergency are inferred from either grab samples or back calculated from field data. Both of these methods require several steps that need, at a minimum:

- Allocation and briefing of personnel,
- Assembling equipment and procedures to enter the field to collect and analyze samples,
- Reporting the results to an emergency facility,
- Performing calculations to determine child CDE_T,
- Relaying dose assessment information to the state/county,
- Decision-making by the state/county, and

- Dissemination of recommendations to the public.

These steps are routinely performed during emergency drills, and our experience indicates that it may take anywhere from 30-90 minutes to calculate the child CDE_T once a decision has been made to obtain a sample. Additionally, the emergency facilities that implement this analysis may take up to 60 minutes to activate after declaration of an emergency.

Normally, the calculation of the child CDE_T takes place after the completion of protective action recommendations (PARs) based on "plant conditions". The PARs for a General Emergency are to evacuate people within two-miles around and five miles downwind of the site, and advise all remaining ERPAs to monitor the Emergency Alert System.

Given the above:

- Child CDE_T would likely be calculated and provided to the County and the State within 105-165 minutes after the declaration of the GE.

- If the County decides that the use of KI is appropriate, given the time the county takes to make the decision and prepare public information messages, this instruction could be provided to the public in 150-210 minutes after the declaration of the GE.

4.1.2 Use of Deterministic Methods

In this case, methods that determine child CDE_T utilizing parameters such as containment high range monitor status, gross core damage estimate, and/or reactor pressure vessel and containment integrity were considered. Unfortunately, the data needed to make even rough estimations of these parameters would typically be assessed after the GE-related recommendations. Hence, the time-delay risks of such a method still apply.

Benefits of these methods

Administration of KI would occur only in the presence of radioiodine in quantities that meet or exceed the "Predicted thyroid exposure guidance" in Reference 3.

Risks of these methods

- Administration of KI would occur (up to 3-4 hours) after the release of radioiodine, decreasing the effectiveness of the prophylaxis by more than 75%.

- Administration of KI would likely occur after other protective actions (that is evacuation) have already been recommended to the public. It is unknown if the public would comply with instructions to bring KI with them.

- Members of the public may delay evacuation in order to locate their KI.

- If two separate protective actions are issued to the public (for example, an order to evacuate not accompanied by a recommendation to take KI), compliance with the respective recommendations is unknown. It is possible that the public will not differentiate between the protective actions and, when told to evacuate, may take KI as well. The risk is that the public sees these as two separate protective actions, potentially providing confusion and non-compliance.

4.1.3 Use of Emergency Classification

This analysis examines a method that would use the emergency classification level as the indication for KI use. Specifically, the indication for KI use is a declaration of a General Emergency.

- The General Emergency classification is currently used to determine evacuation PARs.

- If KI use was always implemented concurrently with the "plant condition" protective action recommendations, the public would receive the recommendation to take KI at the same time they received the order to evacuate; that is, within an hour of the declaration of the General Emergency.

- By definition, the declaration of a General Emergency presumes that "Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area." (Ref. 7).

- The EPA Protective Action Guideline (PAG) is to evacuate populations whose actual or projected exposure level equals or exceeds 5 rem Committed Dose Equivalent to the (adult) thyroid (Ref. 8).

- New York State nuclear power plant licensees calculate CDE_T to the child thyroid, and provide this number to the counties and state for comparison against the PAG's (Ref. 9).

- Hence, when the licensee recommends evacuation due to a General Emergency declaration, a child $CDE_T \geq 5$ rem either exists or is anticipated to exist at the site boundary or beyond. Though there are exceptions to this (such as GE's declared due to security issues or electrical problems) all GE's have the potential to exceed the 5 rem child CDE_T level. Calculations performed by New York State on a variety of plant conditions postulated to exist during a GE provide confirmation of this (Ref. 6).

- Given the above, it can be reasonably assumed that the radiological conditions present within the context of a General Emergency will result in meeting or exceeding the child $CDE_T \geq 5$

rem, which is also the thyroid exposure at which the FDA recommends the use of prophylactic KI.

Benefits of this method

- The recommendation to take KI could be issued earlier than the other indication methods, concurrently with the recommendation to evacuate or shelter-in-place. This would likely occur prior to the presence of radioiodine in the environment, thus providing maximum loading dose of stable iodine to the thyroid.

- Compliance with taking KI is more likely since all protective actions are being implemented at once. Also, people would be more likely to have access to pre-distributed KI.

Risks to this method

- KI could be ingested without significant radioiodine ever being present in the environment. For example, the accident may not result in a release of radioiodine to the environment. Hence the public incurs the risk of taking KI without benefit.

Risk Analysis

- The risk of taking KI is minor (Ref. 10).
- A GE condition carries a risk of radioiodine release to the public.
- KI should be taken as soon as possible once the risk of radioiodine exposure is present.
- Using projected child CDE_T as the basis for a recommendation to take KI could significantly delay KI administration.
- Providing the public with a recommendation to take KI concurrent with an order for evacuation or sheltering-in-place provides the earliest and most effective thyroid protection with the greatest likelihood of compliance.

4.4 Task Force Recommendation # 2

"If evacuation is recommended at an ECL other than a General Emergency, or for any other reason, a direction to ingest KI as described in recommendation No. 1 will not be made. Ingestion of KI will be recommended only upon declaration of a General Emergency."

Analysis

- The recommendation to take KI should be given to any persons likely to be exposed to radioiodine in quantities that may exceed the "Predicted thyroid exposure guidance" presented in Reference 3.

- This analysis suggests that persons who are ordered to evacuate due to plant conditions or due to subsequently determined projected dose may exceed the predicted thyroid dose, and should take KI.

- For the population that has been told to evacuate for any reason other than the declaration of a General Emergency the risk of radioiodine exposure is low.

- Populations who took, or were recommended to take KI coincident with the recommendation to evacuate at an emergency classification level (ECL) other than a General Emergency, or for any other reason, are at risk of depleting their pre-distributed KI supply, making it unavailable in the event of radioiodine exposure.

4.5 Task Force Recommendation #3

"Upon declaration of a General Emergency, members of the public that are directed to shelter-in-place in order to reduce dose shall be directed to ingest KI. Members of the public who are directed to monitor the Emergency Alert System <u>will not</u> be directed to ingest KI."

<u>Analysis</u>

- Upon declaration of a General Emergency, the licensee will automatically recommend evacuation for the area two miles around and five miles downwind from the plant.

- In cases where a General Emergency is the first ECL declared ("fast-breaker"), resources and facilities would not be in place to allow for orderly evacuation. It is therefore likely that the population will not be directed to evacuate, but will be directed to shelter-in-place (in order to reduce dose).

- If it has been determined that an impediment to evacuation exits (i.e., lack of transportation resources, inclement weather, or road impediment) then the county or state may decide to shelter-in-place for the purpose of reducing dose rather than evacuate.

- Given the analysis in section 4.1.3, it can be reasonably assumed that the radiological conditions present within the context of a General Emergency will result in meeting or exceeding the child $CDE_T \geq 5$ rem, which is also the thyroid exposure at which the FDA recommends the use of prophylactic KI.

- For the population that has not been evacuated and has been told to monitor the Emergency Alert System in order to maintain a heightened state of awareness, the risk of radioiodine exposure is low. The reasons for this are:

    - Due to the distance from the reactor, this population is at significantly less risk from radiation exposure from all sources, versus persons closer to the reactor.

  - Monitoring the Emergency Alert System in order to maintain a heightened state of awareness is used for projected doses of < 1 rem TEDE or < 5 rem CDE_T. Hence this population is not at risk of significant exposures to radioiodine.

- Populations that have not been evacuated, who took, or were recommended to take KI coincident with the direction to monitor the Emergency Alert System are at risk of depleting their pre-distributed KI supply, making it unavailable in the event of radioiodine exposure.

4.6 Task Force Recommendation # 4

"Upon declaration of a General Emergency, all emergency workers located within the 10-mile EPZ will be directed to take KI (one 130 mg tablet every 24 hours). This recommendation will be made at the same time as the recommendation to ingest KI is made to the general public."

Analysis

- Though current trigger levels for emergency worker KI use vary within New York State, all methods use trigger levels greater than the 5 rem child CDE_T that is associated with the general public.

- The KI Task Force has agreed that there will be one trigger level to recommend KI, and that trigger level will be 5 rem child CDE_T.

- Most emergency workers are members of the public, and many will encounter the evacuating public, who will have been told to take their KI. Additionally, emergency workers have access to the same public information that would be instructing the public to take KI. These emergency workers:

  - May not differentiate themselves from the public in the presence of instructions regarding KI.

  - May not comply with directions that differ from those being broadcast to the public.

- Since emergency workers are likely to move about between evacuated and non-evacuated areas within the EPZ, all emergency workers within the EPZ will be directed to take KI. This includes licensee emergency workers as well as county, state, and local emergency workers.

- Using the same arguments as in section 4.1, if current methods are continued, emergency workers would receive a recommendation to take KI while in the field. This method:

- Is likely to result in a recommendation to take KI after exposure to radioiodine has already occurred.

- Has potential delays due to the communications lag present when contacting several hundred emergency workers in the field.

- Directing emergency workers to take KI in the absence of radioiodine has the same risks and benefits detailed in section 4.1.

4.7 Task Force Recommendation # 5

"Members of the public and captive populations who are directed to take KI shall be directed to ingest KI in the dosage recommended by the US FDA. If a scheme of graded dosing is not possible, one 130-mg tablet per person may be ingested with minimal risk for those over one year of age. Dose to neonates should be limited to 16 mg, if possible."

Analysis

The FDA guidance (Ref. 3) contains a number of age dependent doses. These recommendations are the lowest effective dose. Emergency planners and others should understand that absolute precision in dosing is generally not critical to safety or efficacy. Higher doses (e.g., up to 130 mg) would be equally effective and, particularly among school-age children, extremely safe (Ref. 10).

In addition to 130 mg tablets, KI is now FDA-approved and available in 65 mg tablets and liquid (65 mg/ml).

Threshold Thyroid Radioactive Exposures and Recommended Doses of KI for Different Risk Groups

	KI dose (mg)	# ml liquid (65 mg/ml)	# of 65 mg tablets	# of 130 mg tablets
Adults over 40 yrs	130	2	2	1
Adults over 18 through 40 yrs				
Pregnant or lactating women				
Adolescents over 12 through 18 yrs who weigh at least 150 pounds	130	2	2	1
Adolescents over 12 through 18 yrs who weigh less than 150 pounds	65	1	1	1/2
Children over 3 through 12 yrs	65	1	1	1/2
Over 1 month through 3 years	32	1/2	1/2	1/4
Birth through 1 month	16	1/4	1/4	1/8

ATTACHMENT 2

A scheme of graded dosing may be difficult to implement during a radiological emergency involving large numbers of people. If local emergency planners conclude that graded dosing is logistically impractical, for populations at risk for radioiodine exposure, the overall benefits of taking up to 130 mg of KI instead of the lower doses recommended for certain age groups far exceed the small risks of overdosing. However, where feasible, adherence to FDA guidance should be attempted when dosing infants. Ideally, neonates should receive the lowest dose (16 mg) of KI. Excess iodine intake can lead to transient iodine-induced hypothyroidism in neonates, which can impact intellectual development. Individuals who are intolerant of KI at protective doses, as well as neonates, pregnant, and lactating women, should be given priority with regard to other protective measures (i.e., sheltering-in-place, evacuation, and control of the food supply) (Ref. 10).

This analysis recognizes:

- Potential confusion relating these doses to the public.
- Practical issues associated with delivering doses based on fractions of a tablet. This would require sectioning KI tablets in order to achieve a desired delivered dose.
- Likely lack of compliance regarding dose given the above issues.

Benefits to this method

- Instructions to follow the FDA recommendations if possible, but allowing up to 130 mg for persons over one year of age, and limiting neonates to 16 mg are easily related in public information material.
- Simple instructions are more likely to be complied with.

Risks to this method

This recommendation may provide a dose to children significantly in excess of the FDA requirements. In light of potential developmental consequences of even transient hypothyroidism, neonates who receive KI should be medically monitored and thyroid hormone therapy given in cases where hypothyroidism develops. This action should be incorporated into the State and county plans.

Risk Analysis

- The risk associated with excessive KI is less than the risk of exposure to radioiodine (Ref. 3).
- The public is more likely to comply with simple dose instructions.

- The FDA has indicated that the use of a single 130-mg dose for all members of the public is safe, regardless of age (Ref. 10).

4.8 Task Force Recommendation # 6

"As part of a pre-distribution effort, each member of the public should be offered a quantity of KI tablets equivalent to the following:

Maximum ETE (in days-rounded up) x 1 age and/or weight dependent dose/day. Alternatively, one bottle of liquid KI may be offered per family."

Analysis

- The public should be provided with sufficient KI to assure that thyroid prophylaxis is available to accommodate an expected duration of exposure to radioiodine.

- Given that evacuation of the public is the preferred method of preventing exposure, in an incident that could result in the release of radioiodine, the public could be expected to be exposed for a period of time equal to the greatest Evacuation Time Estimate (ETE) for the facility in question.

- One dose of KI protects the thyroid for approximately 24 hours (one day).

It is possible that impediments to evacuation may prevent the egress of portions of the population that would otherwise be evacuated (examples are road impediments such as heavy snowfall or transportation resource shortfalls), however, those conditions are accommodated in each nuclear facility's ETE.

- Given the above, pre-distribution efforts should provide sufficient KI in accordance with the following:

Maximum ETE (in days-rounded up) x 1 age and/or weight dependent dose/day
= # KI tablet(s) per person that should be pre-distributed

Example: At Nine Mile Point, the maximum amount of time it would take to evacuate any member of the public is 8 hours, 20 minutes, as indicated in that facility's ETE (Ref. 4). Rounded up, that is equivalent to 1 day. Plugging this into the above formula:

1 day x 1 age and/or weight dependent dose/day
= 1 age and/or weight dependent dose

In this example, one tablet of the appropriate dosage should be offered per person in a pre-distribution method. If 65 mg tablets are not available, 130 mg tablets may be offered. Alternatively, one bottle of liquid KI per family may be offered.

5. Implementation Considerations

This section provides suggestions for implementing the recommendations contained above.

5.1 Licensee actions

The Part 1 Notification Fact Sheet item 7.B. should be modified to read, "Evacuate and implement the KI plan for the following ERPA's". This action was completed 5 May 2003.

5.2 County and State actions

- Emergency plans should be modified to include:
  - The addition of KI as a protective action for the public.
  - The above protective action may be implemented for the evacuating public and those directed to shelter-in-place upon declaration of a General Emergency.
  - The recommended dose will be in accordance with FDA guidance. If a scheme of graded dosing is not possible, one 130-mg tablet per person may be ingested with minimal risk for those over one year of age. Dose to neonates should be limited to 16 mg, if possible.
  - Dose should be repeated every 24 hours while the person is exposed to radioiodine.
  - All emergency workers located within the 10-mile EPZ will be instructed to take KI upon declaration of a General Emergency (that is, concurrent with the recommendation to the evacuating population).
  - KI distribution policies and procedures, both pre- and post-event.
- Public information plans should be modified to include:
  - KI purpose, dose, distribution methods (pre- and post-event) and precautions (consistent with NYS and FDA guidance) in public education materials.
  - Incorporation of KI protective action details into EAS follow-up messages.

ATTACHMENT 2

6. Glossary/Acronyms

CDE_T (Committed Dose Equivalent to the thyroid) -the radiation dose due to radioiodine in the thyroid over the 50-year period following exposure. In this document, *CDE_T* is used to refer to the committed dose equivalent to the child thyroid.

CFR (Code of Federal Regulations) -

Day - 24 hour period

ECL (Emergency Classification Level) - one of four classes used to describe emergencies at nuclear power plants.

EAS (Emergency Alert System) - broadcasting facilities that have been authorized by the Federal Communications Commission to operate in a controlled manner during a war, state of public peril or disaster, or other national emergency.

EPZ (Emergency Planning Zone) - the 10-mile radius around a nuclear power plant used for emergency planning purposes.

Evacuation - the urgent removal of people from an area to avoid or reduce high-level, short-term exposure, usually from the plume or from deposited radioactivity. Evacuation may be a preemptive action taken in response to a facility condition rather than an actual release.

ETE (Evacuation Time Estimate) - the time it is estimated to take to evacuate a certain area taking into consideration population size, road conditions, etc.

FEMA (Federal Emergency Management Agency) - the federal agency responsible for coordinating federal response to an emergency.

FR (Federal Register)

FRPCC (Federal Radiological Preparedness Coordinating Committee)

GE (General Emergency) - the most serious of four NRC emergency classes. Classification as a general emergency indicates that events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential loss of containment integrity. Releases can reasonably be expected to exceed EPA Protective Action Guide exposure levels offsite for more than the immediate site area.

Maintain a heightened state of awareness - go inside and monitor EAS.

Neonate - infant under 1 month of age

ATTACHMENT 2

NRC (Nuclear Regulatory Commission) - the federal agency that licenses and regulates nuclear power plants. The NRC would be the lead federal agency for responding to an emergency at a nuclear power plant.

PAG (Protective Action Guide) - the projected dose to reference man, or other defined individual, from an accidental release of radioactive material at which a specific protective action to reduce or avoid that dose is warranted.

Shelter-in-Place - a protective action where people go indoors, close all doors and windows, turn off all sources of outside air, and remain indoors until officially notified that it is safe to go out.

US FDA (United States Food and Drug Administration) - the federal agency, which among other things, is responsible for evaluating and approving drugs.

7. References

(Ref. 1) 66 FR 5427 (19 Jan 2001).

(Ref. 2) 67 FR 1355 on (10 Jan 2002).

(Ref. 3) Guidance: Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies: USFDA, Dec 2001.

(Ref. 4) Nine Mile Point / James A. FitzPatrick Nuclear Facility Development of Evacuation Time Estimates, August 2003

(Ref. 5) EPA 400-R-92-001, Manual or Protective Action Guides and Protective Actions for Nuclear Incidents, USEPA, May 1992.

(Ref. 6) (NYSDOH RASCAL calculation).

(Ref. 7) NUREG-0654 FEMA REP 1: Appendix 1.

(Ref. 8) EPA 400-R-92-001, Manual or Protective Action Guides and Protective Actions for Nuclear Incidents, USEPA, May 1992, Table 2-2 footnote b.

(Ref. 9) Implementation of the new EPA Protective Action Guides in Existing Emergency Programs for Nuclear Power Plants in New York State, March 1994.

(Ref. 10) Guidance for Industry: KI in Radiation Emergencies – Questions and Answers, Revision 1, USFDA, December 2002.

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
PROCEDURE A – PLAN MAINTENANCE

TABLE OF CONTENTS

(Not Used)

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
PROCEDURE A – PLAN MAINTENANCE

1.0 PURPOSE

This procedure provides for the control, distribution, amendment and updating of this Plan to ensure its accuracy and uniformity with local plans, NFO site-plans, the State's overall Comprehensive Emergency Management Plan and contiguous states' and provinces' plans.

2.0 RESPONSIBILITIES

2.1 The appropriate Commissioner, Director, or other designated head of each State agency with a designated responsibility under this Plan, and the Chief Elected Official of each affected county will insure the development and maintenance of plans to carry out such agency's or county's radiological emergency response responsibilities.

2.2 The Director of the NYSOEM under the auspices of the DPC is responsible for the administration of this New York State REPP.

These responsibilities include:

2.2.1 providing for and controlling the distribution, amendment, and updating of this Plan;

2.2.2 coordinating the development by State emergency response agencies of their procedures for implementing this Plan;

2.2.3 providing for an annual review of this Plan, updating with current information based on the results of periodic drills and annual exercises.

2.2.4 ensuring that rosters of key personnel's telephone numbers are updated at least quarterly.

3.0 IMPLEMENTATION

3.1 The Director of the NYSOEM will control the distribution of the Plan and its procedure to all officials as required.

3.1.1 An up-to-date plan distribution list will be maintained.

3.1.2 All amendments or updates of this Plan will reflect the date of such change in the lower right hand corner of each page.

3.2 Oversight of emergency response agencies as recorded in this Plan will be the responsibility of the Director of the NYSOEM.

3.2.1 Each agency will forward their new or revised procedures to the NYSOEM, State Campus, Building 22, Ste 101, 1220 Washington Ave., Albany, NY, 12226-5000.

3.2.2 State agencies and their disaster-related responsibilities will be coordinated by the Director of the NYSOEM in accordance with the Comprehensive Emergency Management Plan.

3.2.3 The Director of the NYSOEM will review and update quarterly, lists of telephone numbers of key personnel.

3.3 This Plan will be reviewed annually, or sooner, if necessary, to ensure its applicability to current policy and its compatibility with each local plan.

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
PROCEDURE A – PLAN MAINTENANCE

TABLE OF CONTENTS

(Not Used)

1.0 INTRODUCTION

The NY State Warning Point Section (NYSWP) will disseminate the appropriate information in conjunction with the county REPP, NYS REPP, and each nuclear power operator's Site Emergency Plan and procedures - Indian Point Unit 2 (IP 2), Indian Point Unit 3 (IP 3), Nine Mile Point Nuclear Station (NMPNS), Unit 1 and Unit 2, James A. FitzPatrick Nuclear Power Plant (JAFNPP), and Robert E. Ginna Nuclear Station (Ginna). Communication systems, equipment and personnel are available to respond to a radiological emergency (Attachment 12).

2.0 INITIAL COMMUNICATION

The initial notification that a potential or actual radiological emergency has occurred at a nuclear power plant will be made by the NFO over the Radiological Emergency Communications System (RECS). Attachment 1 lists procedures for using RECS and Attachment 2 lists procedures for testing RECS. IP-2, IP-3, NMPNS-l, NMPNS-2, JAFNPP, and Ginna will use dedicated 24-hour telephone lines to notify the NYSWP, and the appropriate NYSOEM Field Office, and the DOH during duty hours. During non-duty hours, DOH radiological staff, State staff and appropriate NYSOEM field staff will be notified by the NYSWP by commercial telephone. (See Attachment 3A, 3B and 3C for diagrams of RECS. Notification lists are contained in Attachments 4, 5 and 6.) Note - If initial notification is a General Emergency condition the NFO control room operator of any New York State nuclear power plant will immediately refer to (Attachment l) procedures for the New York State RECS as appropriate.

NFO will transmit initial information as shown in Part I of Attachment 7A and 7B to the officials indicated above.

The RECS notification systems described have backup provided by: 1) commercial telephones, 2) radios and 3) satellite telephones.

2.1 Incidents with No Potential Off-Site Consequences

For incidents classified as an Unusual Event, the NFO will notify the NYSWP and county warning points/EOCs through prescribed communication channels (outlined in Section 3.0) that an unusual event is in progress or has occurred which indicates a potential degradation of the level of safety of the plant or indicates a security threat to facility protection. No release of radioactive material requiring off-site response or monitoring is expected unless further degradation of safety systems occurs.

2.2 Incidents with Potential Off-Site Consequences

2.2.1 Alert

For incidents classified as an Alert, the NFO will notify the NYSWP and county warning points/EOCs through prescribed communication channels (outlined in Section 4.0) that events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of intentional malicious dedicated efforts of a hostile act. Any releases are expected to be limited to small fractions of the EPA protective

action guideline exposure levels.

2.2.2 Site Area Emergency

For incidents classified as Site Area Emergency the NFO will notify the NYSWP and warning points/EOCs through prescribed communication channels (outlined in Section 5.0) that events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or (2) prevents effective access to equipment needed for the protection of the public. Any releases not expected to exceed EPA protective action guideline exposure levels except near site boundary.

2.2.3 General Emergency

For incidents classified as General Emergency the NFO will notify the NYSWP and county warning points/EOCs through prescribed communication channels (outlined in Section 6.0) that events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or security events that result in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA protective action guideline exposure levels offsite for more than the immediate site area.

3.0 RESPONSE ACTION - UNUSUAL EVENT

3.1 Upon initial notification from the NFO- (IP 2, IP 3, NMPNS-l, NMPNS-2, JAFNPP, or Ginna) of an Unusual Event, the NYSWP Operator located at Building #22, State Campus, Albany, will answer the RECS phone and record the information utilizing the Radiological Emergency Data Form (Attachment 7A and 7B). The NYSWP Operator will then contact the appropriate NYSOEM Duty Officer, Director, Deputy Director, DOH and DSP personnel, as well as Engineering Technical Specialists (Attachment 10) and transmit the information received from the NFO as recorded on the Radiological Emergency Data Form.

The NYSWP Operator will telephone the appropriate NYSOEM Regional office personnel as shown in Attachment 6 and transmit the information received from the NFO.

3.2 The NYSOEM Duty Officer/ Deputy Director will continue to monitor the situation. The NYSWP will take any necessary actions, including activating other NYSOEM communication systems (Attachment 8) and staff, until termination or escalation to a higher emergency classification level by the NFO.

4.0 RESPONSE ACTION - ALERT

4.1 Upon initial notification from the NFO (IP 2, IP 3, NMPNS-l, NMPNS-2, JAFNPP, or Ginna) of an Alert, the NYSWP Operator will answer the RECS phone and record the information using the Radiological Emergency Data Form (Attachment 7A and 7B). The NYSWP Operator will then telephone the appropriate NYSOEM Duty Officer. All other calls are

made by the NYSOEM Notification System to the Director, Deputy Director, DOH and DSP personnel, as well as Engineering Technical Specialists (Attachment 10). The caller receives a message read into the system by the NYSWP Operator; the message offers the level of event. The DOH/Engineering Technical Specialist representative will then telephone the NFO to verify the information received.

4.2 The New York State Office of Emergency Management will ensure that the Chairman of the DPC is advised of the situation.

4.3 Using the notification system The NYSWP Operator will notify appropriate staff to respond to the SEOC (Attachment 10) and will also notify appropriate NYSOEM regional office personnel (Attachment 6) and transmit the information received from the NFO via email.

4.4 Using the notification system The NYSWP Operator will notify as appropriate Federal agencies, contiguous states, ingestion EPZ counties, the Province of Ontario (Ginna and Nine Mile Site only) and others and inform them of the situation (Attachment 10 and 12).

4.5 The NYSOEM Duty Officer/ Deputy Director will continue to monitor the situation. The NYSWP will take the necessary action, including activating other NYSOEM communications systems and staff, until termination or escalation to a higher emergency classification level by the NFO (Attachment 8).

5.0 RESPONSE ACTION - SITE AREA EMERGENCY

5.1 Upon initial notification from the NFO (IP 2, IP 3, NMPNS-l, NMPNS-2, JAFNPP, or Ginna) of a Site Area Emergency, the NYSWP Operator will answer the RECS phone and record the information using the Radiological Emergency Data Form Sheet (Attachment 7A and 7B). The NYSWP Operator will then telephone the appropriate NYSOEM Duty Officer, Director, Deputy Director, DOH and DSP personnel, as well as Engineering Technical Specialists (Attachment 10) personnel and read the information received from the NFO. The DOH/Engineering Technical Special representative will telephone the NFO to verify the information received.

5.2 The New York State Office of Emergency Management will insure that the Chairman of the DPC is advised of the situation.

5.3 The NYSWP Operator will notify appropriate staff and activate the EOC (Attachment 10) and will also notify appropriate NYSOEM regional office personnel (Attachment 6) and transmit the information received from the NFO.

5.4 The NYSWP Operator will notify as appropriate Federal agencies, contiguous states, ingestion EPZ counties, the Province of Ontario (Ginna and Nine Mile Site only) and inform them of the situation (Attachment 10 and 12).

5.5 The NYSOEM will continue monitoring the situation. NYSOEM will coordinate necessary actions until termination or escalation to the General Emergency classification level by the NFO.

6.0 RESPONSE ACTION - GENERAL EMERGENCY

6.1 Upon initial notification from the NFO (IP 2, IP 3, NMPNS-l, NMPNS-2, JAFNPP, or Ginna) of a General Emergency, the NYSWP Operator will answer the RECS phone and record the information using the Radiological Emergency Data Form (Attachment 7A and 7B). The NYSWP Operator will then telephone the appropriate NYSOEM Duty Officer, Director, Deputy Director, DOH and DSP personnel, as well as Engineering Technical Specialists (Attachment 10) personnel and read the information received from the NFO. The DOH/Engineering Technical Specialist representative will then telephone the NFO to verify the information received.

6.2 The New York State Office of Emergency Management will ensure that the Chairman of the DPC is advised of the situation.

6.3 The NYSWP Operator will notify appropriate staff and activate the EOC (Attachment 10) and will also notify appropriate NYSOEM regional office personnel (Attachment 6) and transmit the information received from the NFO.

6.4 The NYSWP Operator will notify as appropriate Federal agencies, contiguous states, ingestion EPZ counties, the Province of Ontario (Ginna and Nine Mile Site only) and inform them of the situation (Attachment 10 and 12).

6.5 NYSOEM will continue monitoring the situation. NYSOEM will coordinate necessary actions until the emergency classification level declared by the NFO is terminated.

NOTE:
For nuclear facilities other than those listed above, the NYSWP Operator will record the information received via telephone using the Radiological Emergency Data Form (Attachment 7A and 7B). Procedures listed above will be followed for each appropriate emergency classification starting with the procedure to call NYSOEM, DOH, DSP and Engineering Technical Specialists representatives.

ATTACHMENT 1

GENERAL PROCEDURES FOR THE NEW YORK STATE RADIOLOGICAL EMERGENCY COMMUNICATIONS SYSTEM (RECS)

In the event of a classified radiological incident, initial and follow-up notification will be made by the NFO to State and counties. State and county agencies will comply with the following procedures for Unusual Event, Alert, Site Area Emergency and General Emergency.

I. INDIAN POINT UNIT 2 and INDIAN POINT UNIT 3

A. LICENSEES

1. Control room operator will initiate the call. "THIS IS TO REPORT AN INCIDENT AT (SITE). STAND BY FOR ROLL CALL." (Conduct roll call to include the following stations :)

   Westchester County Warning Point
   Peekskill City Warning Point
   Rockland County Warning Point
   Orange County Warning Point
   Putnam County Warning Point
   NYSWP

During duty hours, the following stations may be manned to receive information:

*NYS DOH (Radiological Health)
*Westchester County EOC
*Orange County EOC
*Putnam County EOC
*Rockland County EOC
*Peekskill City EOC
*West Point EOC
*Indian Point AEOF
*Indian Point Technical Support Center (TSC)
*Indian Point EOF
*These stations do not have to be present on telephone before licensee operator begins the message information.

NOTE #1 - In the event a County Warning Point/EOC station does not answer roll call, licensee operator will proceed with the information. The NYSWP will make best attempts to notify the non-answering station and give the required information.

ATTACHMENT 1

NOTE: Specific procedural steps are provided in licensee and NYSWP standard operating guidelines.

B. COUNTY or CITY WARNING POINT (EOC)

1. When phone rings (light ON), operator will pick up handset immediately and after hearing its station name being called, depress the hand set push-to-talk button and identify by saying, "THIS IS (NAME) COUNTY or CITY, and release button.

2. Operator will take information as given by licensee operator and copy on Radiological Emergency Data Form (Attachment 7A and 7B).

3. Operator will notify county or city officials in accordance with local notification procedures.

C. NEW YORK STATE WARNING POINT (NYSWP)

1. Operator will take information as given by licensee operator and copy on Radiological Emergency Data Form (Attachment 7A and 7B).

NOTE: Specific operational guidance is provided in NYSWP procedures.

2. The NYSWP Operator will call via telephone the NYSOEM Duty Officer and Deputy Director, State DOH, DSP and Engineering Technical Specialist personnel (Attachment 10), and transmit information received.

AT ALL TIMES: NYSWP - If a county warning point/EOC does not answer roll call, NYSWP Operator will notify non-answering station and give required information (see Note #1).

3. The NYSWP Operator will notify State officials in accordance with State notification procedures (Attachment 10 & 12).

D. STATE HEALTH DEPARTMENT

1. When phone rings (light ON), operator will pick up handset after hearing its station name being called, depress the handset push-to-talk button identify by saying, "THIS IS STATE HEALTH DEPARTMENT," and release the button.

Operator will take information as given by licensee operator and copy on Radiological Emergency Data Form (Attachment 7A and 7B).

ATTACHMENT 1

2. After hearing its name, operator will depress the handset push-to-talk button and answer,

3. "STATE HEALTH DEPARTMENT copied."

4. Operator will sign off by hanging up handset.

5. Operator will record receipt of information on log.

6. Operator will notify DOH officials in accordance with the department's notification procedures (Attachment 10 & 12).

II. NINE MILE POINT NUCLEAR STATIONS and JAMES A. FITZPATRICK NUCLEAR POWER PLANT

A. LICENSEES

1. Control Room operator will initiate the call. "THIS IS TO REPORT AN INCIDENT AT (SITE). STAND BY FOR ROLL CALL." (Conduct roll call to include the following stations :) Oswego County Warning Point, NYSWP.

During duty hours, the following stations may be manned to receive information:

*NYS DOH (Radiological Health)
*Oswego County EOC
*These stations do not have to be present on the telephone before licensee operator begins message information. If these stations want a repeat of information, SWP will comply.

NOTE #2 - In the event the Oswego County Warning Point does not answer roll call, the licensee operator will proceed with the information. The NYSWP will be responsible to notify the Oswego County Warning Point and give the required information.

2. Upon completion of roll call, operator will give information outlined on Radiological Emergency Data Form (Attachment 7A and 7B).

NOTE: Specific operational guidance is provided in licensee and NYSWP procedures.

ATTACHMENT 1

B. COUNTY WARNING POINT (EOC)

1. When phone rings (light ON), operator will pick up handset after hearing its station name being called, depress handset push-to-talk button and identify by saying, "THIS IS OSWEGO COUNTY."

2. Operator will take information as given by licensee operator and copy on Radiological Emergency Data Form (Attachment 7A and 7B).

C. NEW YORK STATE WARNING POINT (NYSWP)

1. Operator will take information as given by licensee operator and copy on Radiological Emergency Data Form (Attachment 7A and &B).

NOTE: Specific operational guidance is provided in NYSWP procedures.

2. The NYSWP Operator will call via telephone the NYSOEM Duty Officer and Deputy Director, State DOH, DSP and Engineering Technical Specialist personnel (Attachment 10), and transmit information received.

NEW YORK STATE WARNING POINT - If Oswego County Warning Point does not answer roll call, the NYSWP Operator will notify Oswego County Warning Point and give required information. (See Note #2.)

3. Operator will notify State officials in accordance with State notification procedures (Attachment 10 & 12).

D. STATE HEALTH DEPARTMENT

1. When phone rings (light ON), operator will pick up handset immediately and after hearing its station name being called, depress the handset push-to-talk key and identify by saying, "THIS IS STATE HEALTH DEPARTMENT and release key.

2. Operator will take information as given by licensee operator and copy on Radiological Emergency Data Form (Attachment 7A and 7B).

AFTER BUSINESS HOURS, WEEKENDS AND HOLIDAYS: NEW YORK STATE WARNING POINT - DOH personnel will be notified by NYSWP personnel and copy the information received. (See Note #1.)

6. Operator will notify DOH officials in accordance with the Department's procedures.

ATTACHMENT 1

III. ROBERT E. GINNA (GINNA) NUCLEAR POWER PLANT

A. LICENSEE

1. Control Room operator will initiate the call, "THIS IS TO REPORT AN INCIDENT AT the Ginna Nuclear Station. STAND BY FOR ROLL CALL." (Conduct roll call to include the following stations :)

- ♦ Wayne County Warning Point
- ♦ Monroe County Warning Point
- ♦ NYSWP

During duty hours, the following stations may be manned to receive information:

*NYS DOH (Radiological Health)
*Wayne County EOC
*Monroe County EOC

*These stations do not have to be present on telephone before licensee operator begins message information. If these stations want repeat of information, NYSWP will comply.

NOTE #3 - In the event a county warning point station does not answer roll call, the licensee operator will proceed with the information, or the NYSWP (during non-duty hours) will be responsible to notify the non-answering station and give the required information.

NOTE: Specific operational guidance is provided in licensee and NYSWP procedures.

2. Upon completion of roll call, operator will give information outlined on Radiological Emergency Data Form (Attachment 7A and 7B).

B. COUNTY WARNING POINT (EOC)

1. When phone rings (light ON), operator will pick up handset and after hearing its station name being called, depress the handset push-to-talk button and identify by saying, “THIS IS (NAME) County”, and release button.

2. Operator will take information as given by licensee operator and copy on Radiological Emergency Data Form (Attachment 7A and 7B).

ATTACHMENT 1

5. Operator will record receipt of information on log.

6. Operator will notify County officials in accordance with local notification procedures.

C. NEW YORK STATE WARNING POINT (NYSWP)

1. When phone rings (beehive light ON), operator will pick up handset after hearing its station name being called, identify by saying, "THIS IS STATE WARNING POINT (NYSWP),"

2. Operator will take information as given by licensee operator and copy on Radiological Emergency Data Form (Attachment 7A and 7B).

NOTE: Specific operational guidance is provided in NYSWP procedures.

If a County Warning Point does not answer roll call, NYSWP operator will notify non-answering station and give required information (see NOTE #3).

6. The NYSWP operator will call via telephone the NYSOEM Duty Officer and 1st Deputy Director, State DOH, DSP and Engineering Technical Specialist personnel (Attachment 10), and transmit information received.

7. Operator will notify State Officials in accordance with State Implementing Procedures (Attachment 10 & 11)

D. STATE HEALTH DEPARTMENT

1. When phone rings (light ON), operator will pick up handset and after hearing its station name being called, identify by saying, "THIS IS STATE HEALTH DEPARTMENT, " and release the button.

2. Operator will take information as given by licensee operator and copy on Radiological Emergency Data Form (Attachment 7A and 7B).

ATTACHMENT 2

TEST PROCEDURES FOR THE NEW YORK STATE RADIOLOGICAL EMERGENCY COMMUNICATIONS SYSTEM (RECS)

*****The NYSWP initiates the RECS Line test for the Nine Mile Point (NMP) Site and the Ginna Nuclear Station. Initiation at the IPEC is performed by EOF. In this attachment, the initiator is identified as the "test originator".*****

1. Test originator will initiate call and announce for the NMP and Ginna Nuclear Station: "THIS IS A TEST. REPEAT. THIS IS A TEST. This is test originator calling all stations. Stand by for roll call".

NYSWP WILL CALL ROLL ACCORDING TO SEQUENCE OF CALLS IN 9 BELOW)

2. After hearing ring (light ON) all stations will lift up handset and after hearing its station name depress the hand set push-to-button and answer roll call. "(NAME OF STATION) TEST" and release.

3. After completing roll call, test originator will recall all stations not answering saying, "Test originator recalling (NAME OF STATION NOT ANSWERING)". (NAME OF STATION RECALLED will answer using terminology in 2 above.

4. Test originator will sign off by saying, "END OF TEST, test originator out at (TIME) and (DATE)".

5. All stations will log results.

6. All stations not answering initial test will be called on commercial telephone by NYSWP for reasons. Problems will be reported immediately to the appropriate licensee.

7. TEST SCHEDULE - Tests will be conducted weekly on Tuesdays or Wednesdays according to the following:

Test will be initiated by NYSWP will be a and b:

a. Ginna at 9:15 a.m.
b. Nine Mile Point at 9:30 a.m.

Tests will be initiated by EOF will be c:

c. IPEC every Wednesday at 9:30 a.m.

8. If required by system maintenance and repair activities, additional RECS tests may be conducted using appropriate protocols.

9. SEQUENCE OF ROLL CALL **ATTACHMENT 2**

a. INDIAN POINT - called in the following order:

NYSWP
Putnam Warning
Orange Warning
Rockland Warning
Westchester Warning
Peekskill Warning
Unit #2 CCR
Unit #3 CCR
Westchester Command Room
West Point
AEOF
EOF
NYS Health Dept.
NYSOEM Region II
Putnam EOC
Orange EOC
Rockland EOC
Westchester EOC
Peekskill EOC

b. NMP/JAF - called in the following order:

Nine Mile Point Unit #1 Control Room
Nine Mile Point Unit #2 Control Room
FitzPatrick Control Room
Oswego County Warning Point
Oswego County EOC
NYS Department of Health (Radiological Health)

c. GINNA - called in the following order:

Ginna Control Room
Wayne County Warning Point
Wayne County EOC
Monroe County Warning Point
Monroe County EOC

(Other licensee operational areas having RECS phones will be tested by licensee.)

(Information on file at NYSOEM:)

ATTACHMENT 3A

Radiological Emergency Communication System (RECS)
Indian Point Unit 2 and Unit 3

ATTACHMENT 3B

Radiological Emergency Communications System (RECS
Nine Mile Point Nuclear Station (NMPS) & James A. FitzPatrick Nuclear Power Plant (JAFNPP)

ATTACHMENT 3C

Radiological Emergency Communications System (RECS)
Ginna Nuclear Power Station

ATTACHMENT 4

RADIOLOGICAL EMERGENCIES
PROCEDURE FOR INITIAL RESPONSE FOR DEPARTMENT OF HEALTH-BERP PERSONNEL

(Contact Listings Available at NYSOEM)

ATTACHMENT 5

EMERGENCY NOTIFICATION ROSTER
NUCLEAR POWER PLANT EMERGENCY
NEW YORK STATE EMERGENCY MANAGEMENT OFFICE

(Contact Listings Available at NYSOEM)

ATTACHMENT 6

NYSOEM REGIONAL OFFICES

(Contact Listings Available at NYSOEM)

ATTACHMENT 7A

NEW YORK STATE
UPSTATE RADIOLOGICAL EMERGENCY DATA FORM
PART 1 Notification # _____

This is to report an incident at _____, Standby for roll call.

1. This message is being transmitted on: _____ at _____ Via: A. EDCS
(date) (time-24 hr clock) B. Other _____

2. This is :
A. An Actual Emergency B. An Exercise

3. The Emergency Classification is:
A. UNUSUAL EVENT C. SITE AREA EMERGENCY E. EMERGENCY TERMINATED
B. ALERT D. GENERAL EMERGENCY F. Other _____

4. This Emergency Classification declared on: _____ at _____
(date) (time-24 hr clock)

5. Release of Radioactive Materials due to the classified event:
A. No Release
B. Release **BELOW** federal limits
□ To Atmosphere □ To Water
C. Release **ABOVE** federal limits
□ To Atmosphere □ To Water
D. Unmonitored release requiring evaluation

6. The following Protective Actions are recommended to be implemented as soon as practicable

A. **NO NEED** for **PROTECTIVE ACTIONS** outside the site boundary

B. **EVACUATE** and **IMPLEMENT the KI PLAN** for the following ERPAs and
All remaining ERPAs **MONITOR the EMERGENCY ALERT SYSTEM**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

W1 W2 W3 W4 W5 W6 W7 M1 M2 M3 M4 M5 M6 M7 M8 M9

NOTE: OFFSITE AUTHORITIES SHOULD CONSIDER SHELTER-IN-PLACE + TAKE KI IF EVACUATION IS NOT FEASIBLE

C. **SHELTER–IN-PLACE** and **IMPLEMENT the KI PLAN** for the following ERPAs and
All remaining ERPAs **MONITOR the EMERGENCY ALERT SYSTEM**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

W1 W2 W3 W4 W5 W6 W7 M1 M2 M3 M4 M5 M6 M7 M8 M9

7. EAL # _____

Brief Event Description & Other Significant Information _____

8. Reactor Status: A. Operational B. Shutdown _____ at _____
(date) (time 24 hr clock)

9. Wind Speed: A. _____ Miles/Hour at elevation _____ Feet
B. _____ Miles/Hour at elevation _____ Feet

10. Wind Direction: A. (From) _____ Degrees at elevation _____ Feet
B. (From) _____ Degrees at elevation _____ Feet

11. Stability Class: Unstable - A B C Neutral - D Stable - E F G

12. Reported By - Communicator's name: _____ Telephone # _____

✓ in o indicates change in this item from previous Notification #

REV. 6/06

ATTACHMENT 7B

NEW YORK STATE
Indian Point Energy Center
RADIOLOGICAL EMERGENCY DATA
PART 1 Notification # _____

This is the Indian Point Energy Center with a Part 1 notification on: _____ (Date) at _____ (Time-24 hr clock)

1. This is:
A. An Actual Emergency B. An Exercise at **Unit 2** **Unit 3** **Both**

Reactor Status:

Unit 2 A. Operational B. Shutdown _____ (Date) at _____ (Time-24 hr clock)

Unit 3 A. Operational B. Shutdown _____ (Date) at _____ (Time-24 hr clock)

2. The Emergency Classification is:

A. UNUSUAL EVENT C. SITE AREA EMERGENCY E. EMERGENCY TERMINATED

B. ALERT D. GENERAL EMERGENCY

This Emergency Classification declared on: _____ (Date) at _____ (Time-24 hr clock)

3. EAL # _____
Event Description:

4. Release of Radioactive Materials due to the Classified Event:
A. No Release

B. Release **BELOW** federal limits
□ To Atmosphere □ To Water
C. Release **ABOVE** federal limits
□ To Atmosphere □ To Water
D. Unmonitored release requiring evaluation

5. Wind Speed: _____ Meters/Sec. at elevation 10 Meters

6. Wind Direction: (From) _____ Degrees at elevation 10 Meters

7. Stability Class: A B C D E F G

8. The following Protective Actions are recommended to be implemented as soon as practicable:
A. **NO NEED for PROTECTIVE ACTIONS** outside the site boundary
B. **EVACUATE** and **IMPLEMENT the KI PLAN** for the following Areas
All remaining Areas **MONITOR** the **EMERGENCY ALERT SYSTEM**

2 miles around 5-miles downwind 5 miles around 10-miles downwind Entire EPZ
In the following Sectors 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
NOTE: OFFSITE AUTHORITIES SHOULD CONSIDER SHELTER-IN-PLACE + TAKE KI IF EVACUATION IS NOT FEASIBLE
C. **SHELTER-IN-PLACE** and **IMPLEMENT the KI PLAN** for the following Areas and
All remaining Areas **MONITOR** the **EMERGENCY ALERT SYSTEM**
2 miles around 5-miles downwind 5-miles around 10-miles downwind Entire EPZ
In the following Sectors 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

9. Reported By - Communicator: _____ Telephone # _____

ATTACHMENT 8

SUPPLEMENTAL COMMUNICATIONS SYSTEMS

(Information on file at NYSOEM)

ATTACHMENT 9

HARRIMAN/BEAR MOUNTAIN STATE PARK RECEPTION CENTER NOTIFICATION PROCEDURE

1.0 INITIATING EVENTS

The Harriman and Bear Mountain State Parks are located in Rockland and Orange Counties north and west of the Indian Point Nuclear Power Station. It is the policy of the State and local government to close these parks at the Alert Classification of any emergency at Indian Point. In the event of an immediate General Emergency involving the release of radioactive materials, the counties may require supplemental monitoring assistance as a result of park transients arriving at general population reception centers.

To supplement local monitoring efforts, DPC agency personnel may be activated to supplement monitoring and decontamination personnel at the county general population reception centers.

ATTACHMENT 10

STATE NOTIFICATION AND ACTIVATION LIST

Upon receipt of information of an emergency at a nuclear facility, the NYSWP operator will notify agency representatives for stand-by or activation of the State EOC according to the emergency class declared.

I. UNUSUAL EVENT

STAND-BY	ACTIVATE TO EOC
A. STATE EMERGENCY MANAGEMENT OFFICE	
B. HEALTH DEPARTMENT (Radiological)	
C. DEPARTMENT OF HEALTH	
D. STATE POLICE	
E. ENGINEERING TECHNICAL SPECIALIST	

This list is maintained by NYSEMO. Distribution of names and phone numbers is controlled and is provided on a need-to-know basis.

Changes will be made to master copies of notification lists as changes are received at NYSWP. Lists will be updated and published on a quarterly basis.

II. ALERT

STAND-BY	ACTIVATE TO EOC
A. NYSERDA	A. NEW YORK STATE OFFICE OF EMERGENCY MANAGEMENT (NYSOEM)
	B. HEALTH DEPARTMENT (RADIOLOGICAL)
B. LABOR DEPARTMENT	C. ENGINEERING TECHNICAL SPECIALISTS
C. OFFICE OF GENERAL SERVICES	D. DIVISION OF STATE POLICE
D. OFFICE OF TEMPORARY & DISABILITY ASSISTANCE	E. DEPARTMENT OF TRANSPORTATION
E. OFFICE OF MENTAL HEALTH	F. DIVISION OF MILITARY AND NAVAL AFFAIRS

ATTACHMENT 10

STAND-BY	ACTIVATE TO EOC
F. OFFICE MENTAL RETARDATION & DEVELOPMENTAL DISABILITY	G. PARKS, RECREATION & HISTORIC PRESERVATION
G. DEPARTMENT OF CORRECTIONAL SERVICES	H. NYS EDUCATION DEPARTMENT
H. OFFICE OF CHILDREN AND FAMILY SERVICES	I. DEPARTMENT OF HEALTH
I. OFFICE OF AGING	J. DEPARTMENT OF ENVIRONMENTAL CONSERVATION
J. AMERICAN RED CROSS	K. OFFICE OF FIRE PREVENTION AND CONTROL
K. DIVISION OF CRIMINAL JUSTICE SERVICES	L. FEMA REGION II
L. SALVATION ARMY	M. THRUWAY AUTHORITY
M. SUNY	N. AGRICULTURAL & MARKETS
	O. PUBLIC SERVICE COMMISSION
	P. Office of Counter Terrorism
	Q. CYBER SECURITY

ATTACHMENT 10

III. SITE AREA EMERGENCY

STAND-BY	ACTIVATE TO EOC
	A. NEW YORK STATE OFFICE OF EMERGENCY MANAGEMENT (NYSOEM)
	B. NYSERDA
	C. LABOR DEPARTMENT
	D. OFFICE OF GENERAL SERVICES
	E. OFFICE OF TEMPORARY & DISABILITY SERVICES
	F. MENTAL HEALTH
	G. MENTAL RETARDATION & DEVELOPMENTAL DISABILITY
	H. CORRECTIONAL SERVICES
	I. OFFICE OF CHILDREN FAMILY SERVICES
	J. OFFICE OF AGING
	K. AMERICAN RED CROSS
	L. DIVISION OF CRIMINAL JUSTICE SERVICE
	M. SALVATION ARMY
	N. AG&MKTS
	O. PUBLIC SERVICE COMMISSION

ATTACHMENT 10

STAND-BY	ACTIVATE TO EOC
	P. THRUWAY AUTHORITY
	Q. STATE UNIVERSITY
	R. DEPARTMENT OF HEALTH BERP
	S. DEPARTMENT OF HEALTH
	T. ENGINEERING TECHNICAL SPECIALISTS
	U. DIVISION OF STATE POLICE
	V. DEPARTMENT OF TRANSPORATATION
	W. DIVISION OF MILITARY AND NAVAL AFFAIRS
	X. PARKS, RECREATION & HISTORIC PRESERVATION
	Y. NEW YORK STATE EDUCATION DEPARTMENT
	Z. NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
	AA. OFFICE OF FIRE PREVENTION AND CONTROL
	BB. FEMA, REGION II
	CC. OFFICE OF HOMELAND SECURITY
	DD. CYBER SECURITY

ATTACHMENT 10

The Following agencies are notified for informational purposes of all Alerts, Site Area Emergencies and General Emergencies.

Agency Name:

BANKING
BRIDGE AUTHORITY
DEPARTMENT OF STATE
DEPARTMENT HOUSING COMMUNITY RENEWAL
EMPIRE STATE DEVELOPMENT CORP
INSURANCE DEPT
METRO TRANSIT AUTHORITY
OFFICE FOR HOMELAND SECURITY
OFFICE FOR TECHNOLOGY
PANY&NJ
VERMONT WARNING POINT
NEW JERSEY WARNING POINT
PENNSYLVANIA WARNING POINT
CANADA WARNING POINT ONTARIO
COAST GUARD
FAA
VOAD
RAILWAYS
TELEPHONE COMPANIES
CONNECTICUT WP
MASSACHUSETTS WP

IV. GENERAL EMERGENCY

In the event that the emergency escalates to a General Emergency without declaration of a Site Area Emergency, the NYSWP operator will notify all agencies as shown in the previous section.

This list is maintained by NYSOEM. Distribution of names and phone numbers is controlled and is provided on a need-to-know basis.

Changes will be made to master copies of notification lists as changes are received at NYSWP
Lists will be updated and published on a quarterly basis.

ATTACHMENT 11

SPECIALIZED CONTACT LIST
FOR RADIOLOGICAL EMERGENCY INFORMATION OR SUPPORT

When requested by the State DOH appropriate agencies from the following list are to be contacted and provided messages from DOH. Staff from SEMO and/or the DOH will proceed to the EOC and assist NYSWP personnel with completing required notification:

(Contact Listings Available at NYSOEM)

ATTACHMENT 12

INGESTION EPZ COUNTIES/CONTIGUOUS STATES AND CANADIAN PROVINCE WARNING POINTS AND EOC PHONE NUMBERS

(Contact Listings Available at NYSOEM)

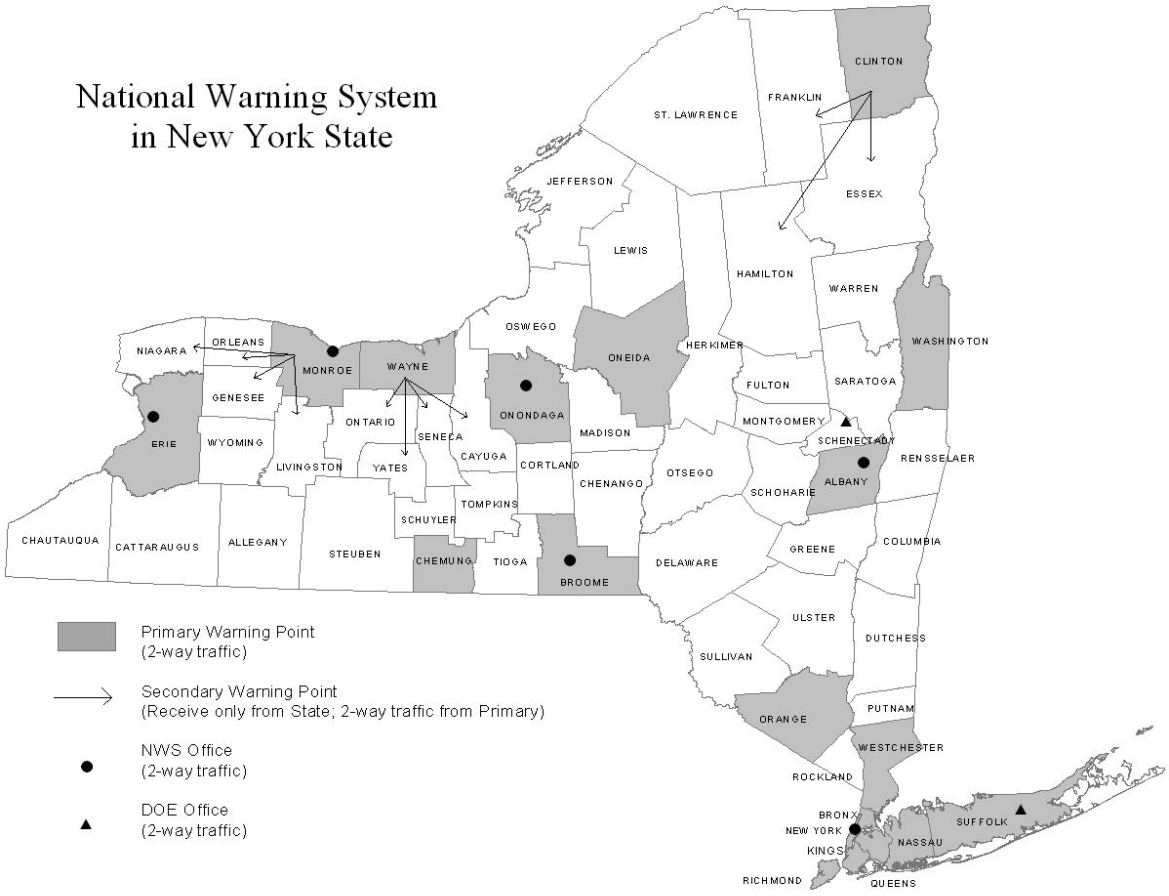
Office	Warning Point	EOC/Local EMO
A. Indian Point		
Westchester		
Orange		
Putnam		
Rockland		
Dutchess		
Nassau		
New York City		
Suffolk		
Sullivan		
Ulster		
Connecticut		
New Jersey		
B. Nine Mile Point		
Oswego		
Cayuga		
Jefferson		
Lewis		
Madison		
Oneida		
Onondaga		
Ontario		
Seneca		
Wayne		
Canada-Ontario		

C. Ginna

Monroe
Wayne
Cayuga
Genesee
Livingston
Onondaga
Ontario
Orleans
Oswego
Seneca
Wyoming
Yates
Canada-Ontario

All notification lists are maintained by the NYSWP. Lists will be updated and published on a quarterly basis.

ATTACHMENT 13



Note: Orange County no longer participates in NAWAS.

ATTACHMENT 14

NEW YORK STATE
COMMUNICATIONS SYSTEMS IN SUPPORT OF EMERGENCIES

General Discussion:

The communications system operated and maintained by the State Emergency Management Office supports response to all hazards statewide and are not dedicated to radiological response. The core of the NYSOEM system uses a dedicated satellite spectrum to connect NYSOEM'S Regional Operations Centers to the New York State Warning Point (NYSWP) in Albany. Digital microwave links extend this system to remote controlled radio repeater stations that provide coverage to most of the state. These remote radio repeaters can communicate with Local Governments and regional staff.

In addition, NYSOEM operates mobile and portable resources. Three broadband satellite terminals are available in vehicular and ground mount configurations. Bandwidth capacity can be as large as 3 mbps or more for commercial grade video transmission. These satellite terminals support situational awareness and video damage assessment as well as providing an electronic umbilical cord between the NYSWP and on-scene Command Posts. NYSOEM has one Mobile Command Post (Command 1) and is building five new communications vehicles. These units will have radios in all bands and will have cross-band capability in support of interoperability.

The radio spectrum supported includes HF radio to communicate with DHS and NYSOEM Regional Operations Centers. A secure voice and HF e-mail upgrade has been deployed in our regional offices. All public safety radio FM bands, aviation, marine, and some conventional military bands are supported. Radios that are subscribers of several local trunked radio networks are included.

NYSOEM headquarters maintains a stock of several dozen satellite phones, several hundred handheld VHF, 800 Mhz, and low band radios for hand receipt to state and local agencies. The Communications Section can deploy 800 Mhz repeaters to support NPSAC channels. The handheld units are packaged in lots of twelve with chargers and accessories ready for shipment by overnight shipper.

Information pertaining to specific frequencies, quantities and storage locations is sensitive and available by contacting the Communications Section.

(Not Used)

NEW YORK STATE
RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN

PROCEDURE C - PUBLIC INFORMATION

TABLE OF CONTENTS

NEW YORK STATE
RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN

PROCEDURE C - PUBLIC INFORMATION

(Not Used)

NEW YORK STATE
RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN

PROCEDURE C - PUBLIC INFORMATION

1.0 STATEMENT OF PURPOSE

The lead spokesperson for the release of information to the public and the press during a radiological emergency in New York State shall appointed by the Chair for the New York State Disaster Preparedness Commission (DPC). The NYS Department of Health, as lead agency, has typically filled this spokesperson role. If the emergency involves a security event, the DOH spokesperson will be assisted by a PIO from the Division of State Police (DSP).

The NYSOEM PIO is responsible for ensuring the accurate and timely release of State information to the public and the media concerning public protective action recommendations and state emergency response activities during radiological emergencies.

2.0 PUBLIC INFORMATION OFFICER DUTIES

The NYSOEM PIO shall be responsible for the following activities:

2.1 Identification, Recruitment and Training of Public Information Staff

The NYSOEM PIO will identify interested and capable individuals from other State agencies to serve as assistant PIOs for radiological emergency preparedness. The NYSOEM PIO will provide training and orientation sessions for the assistant PIOs at least once each year, and will provide them with complete copies of necessary State and local public information and education procedures, related maps, and educational materials on radiological emergency planning.

2.2 Exercises and Drills

The NYSOEM PIO and assistant PIOs shall participate in all preparedness exercises and shall be responsible for ensuring that State public information policies and procedures are carried out appropriately and accurately.

2.3 Liaison with County and Licensee Public Information Officers

The NYSOEM PIO shall be the State contact point for all county and licensee PIOs on matters relating to emergency preparedness information. The NYSOEM PIO will ensure county and licensee PIOs are kept informed of NYSOEM PIO activities, will participate in determination of site and equipment for all near-site information centers, and will seek to ensure consistency and cooperation among the related public information programs.

2.4 Training

The NYSOEM PIO shall provide to county PIOs, as necessary, training in radiological emergency public information. Training sessions shall include overview of plans, PIO responsibilities during exercises and emergencies, coordination of news releases, Emergency Alert System (EAS) messages, equipment and staffing needs, and ongoing public education responsibilities and projects.

2.5 Public Education

Working with county and licensee PIOs, the NYSOEM PIO shall develop and implement programs to raise public consciousness of radiological emergency preparedness. These activities include, but are not limited to briefings for news editors and reporters; development and dissemination of germane booklets, brochures, and news releases; participation in "town meetings;" development of radio and TV public service announcements.

Information shall be disseminated to the public at least once annually. Such information shall include educational information on radiation, contact number or place for additional information, evacuation routes and corresponding reception and/or congregate care centers, sheltering, respiratory protection, the special needs of the handicapped, and a transient emergency information program.

2.6 Annual Media Outreach

The NYSOEM PIO, in coordination with county and licensee PIOs, will ensure that a Radiological Emergency Preparedness Plan (REPP) briefing is conducted for the media at least annually. This may be a briefing session at the Joint Information Center (JIC) or through visits to the major media and providing them with updated materials.

2.7 Plan Development

The NYSOEM PIO shall review the public information portions of the State REP Plan at least annually and make any necessary revisions and/or additions.

PROCEDURE C - PUBLIC INFORMATION

3.0 SHARING OF PUBLIC INFORMATION

To ensure the prompt dissemination of pertinent, credible and reliable information to the media and the public during a radiological emergency, State, county and licensee spokespersons shall share information and releases.

3.1 Designation of Near-Site Information Centers

To facilitate coordination of information release, each site shall have a designated near-site JIC. The JIC shall be the sole site from which emergency information shall be issued to the media and public by designated spokespersons for the State, the affected county (ies) and the affected licensee.

Each JIC must be capable of performing the following functions:

1. Issue EAS messages
2. Conduct media briefings
3. Conduct Public Inquiry operations

Each near-site JIC shall be equipped with adequate communications equipment and production equipment to allow timely collection of the writing and distribution of informational materials, and regular media briefings.

3.2 Information Release

The NYSOEM PIO shall release, on behalf of and with the approval of the State Disaster Preparedness Commission (DPC) Chair, the following general types of information during an emergency:

- Announcement of State receipt of emergency notification by the affected licensee;
- Announcement of activities of State Emergency Operations Center (EOC);
- Regular and timely updates of State activities, determinations and policies related to the emergency;
- State assessment of projected doses and/or dose rates related to any release of radiation;
- State determination of any protective action, including the recommendation to ingest KI (Potassium Iodide) and the basis for these determinations; and
- Regular and timely updates of State recovery and re-entry activities.

3.3 Sharing of Information Release

The State PIO shall share information release with county and licensee PIOs. The State PIO shall keep records of information released to the media and public during an exercise or emergency, and shall maintain a record of telephone inquiries related to any exercise or emergency.

3.4 Public Inquiry

The NYSOEM PIO, in conjunction with county and licensee PIOS, shall maintain a Public Inquiry system capable of responding to factual inquiries, and providing input to those subsequent news releases and/or press statements that can be addressed, in order to ensure that misinformation and rumors in a radiological emergency are kept to a minimum. Information that is broadcast over electronic media or printed in the print media shall be monitored to intercept any inaccurate information and provide corrective material.

3.5 State Declaration of Emergency

There is no change in the NYSOEM PIO's role following a declaration of a State Disaster Emergency by the Governor.

ATTACHMENT 1: EMERGENCY ALERT SYSTEM

1.0 Objectives

The Emergency Alert System (EAS) is the vehicle through which public officials from the counties and the State of New York can advise the public directly of:

- The status of emergencies involving any of New York's nuclear power plants
- Any protective actions that the public should take to ensure minimum risk of danger or radiation exposure

2.0 Concept of Operations

Transmission of messages to the public via EAS must be coordinated to ensure the following:

2.1 The EAS message is ready for broadcast when the prompt notification system is first activated

2.2 The EAS message content has been cleared with county officials and the State decision makers prior to release

2.3 EAS messages are concise, cohesive and comprehensible to the public

2.4 The State and counties do not clutter the airwaves with individual messages, but compile them into single messages that meet the requirements stated in 2.3 above

2.5 EAS messages are verifiable and verified before release

3.0 Existing Procedures

The lead county will access EAS in accordance with locally developed plans.

3.1 Immediate Declaration of a General Emergency

In the event that that a General Emergency has been declared (i.e., a fast-breaking incident), the county (ies) will activate their siren system and release a prearranged EAS message to the public prior to coordination with the State. In the case of multiple county involvement, a lead county has been selected to activate the EAS system, as well as authorization and procedures to activate the siren system immediately. Procedures are contained in each county's plan.

3.2 Routine EAS Message Preparation

Should EAS activation be required due to an emergency at a nuclear power plant site, the affected county (ies) and the State will participate in and coordinate EAS message development in accordance with JIC procedures for the specific site.

4.0 EAS MESSAGE CONTENT

4.1 Required EAS Message Content

- Location
- Governing authority (State or county)
- Plant
- Protective actions
- Affected areas

5.0 State Declaration of Emergency

There is no change in the above listed procedures following a Declaration of Emergency by the Governor.

ATTACHMENT 2: JOINT INFORMATION CENTER

1.0 Purpose

The purpose of a Joint Information Center (JIC) is to provide a single location for the dissemination of information to the public and media concerning an emergency at a nuclear power plant, and to enhance coordination and prompt release of accurate information by officials from the State, affected county (ies) and licensee.

2.0 Operation

A JIC will be established near each nuclear power plant site in New York State. This information center will be the single location for the dissemination of information to the media and public concerning all State, local, and licensee emergency response activities and recommended public protective actions.

To ensure coordinated and accurate information release, all information proposed for release, either in the form of EAS messages, press releases or through media briefings, will be shared by all lead PIOs from the State, county(ies) and licensee.

Sufficient equipment and space will be provided for use by the State, county, and licensee public information staff and media representatives to ensure effective operation of the information center.

Specific operational procedures are outlined in each site's specific JIC plans.

3.0 JIC Locations

- Indian Point
  200 Broadhurst Avenue, Hawthorne, New York 10532

- Ginna
  1255 Research Forest, Macedon, NY 14502

- Nine Mile Point / Fitzpatrick
  10 Airport Road, Fulton, New York 13069

ATTACHMENT 3: PUBLIC INQUIRY

1.0 Public Inquiry Procedures

During a radiological emergency at a nuclear power plant, a JIC will be activated to serve as the single, central facility for the coordinated release of information regarding the emergency from the State, county (ies) and licensee. Public Inquiry functions carried out at the JIC consist of the following three elements: Public Inquiry, Media Monitoring and Media Response. Details regarding each of these elements can be located at each site's specific JIC procedures.

Each part of the Public Inquiry System will function as a complement to the rest of the program. Inaccurate information from media coverage may be addressed by the Public Inquiry team members or by the appropriate PIO. Media briefings and/or press releases can be used to address specific rumors that have become apparent through calls to the Public Inquiry team or from off-air monitoring reports.

The minimum staffing requirements for drills and exercises are as follows

- Ginna: 7 (seven)
- Nine Mile Point: 7 (seven)
- Indian Point: The New York State Tax & Finance Call Center will provide as many as telephones as required based on demand.

NEW YORK STATE
RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN

PROCEDURE C - PUBLIC INFORMATION

NEW YORK STATE
RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN

PROCEDURE C - PUBLIC INFORMATION

TABLE OF CONTENTS

NEW YORK STATE
RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN

PROCEDURE C - PUBLIC INFORMATION

(Not Used)

NEW YORK STATE
RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN

PROCEDURE C - PUBLIC INFORMATION

1.0 STATEMENT OF PURPOSE

The lead spokesperson for the release of information to the public and the press during a radiological emergency in New York State shall appointed by the Chair for the New York State Disaster Preparedness Commission (DPC). The NYS Department of Health, as lead agency, has typically filled this spokesperson role. If the emergency involves a security event, the DOH spokesperson will be assisted by a PIO from the Division of State Police (DSP).

The NYSOEM PIO is responsible for ensuring the accurate and timely release of State information to the public and the media concerning public protective action recommendations and state emergency response activities during radiological emergencies.

2.0 PUBLIC INFORMATION OFFICER DUTIES

The NYSOEM PIO shall be responsible for the following activities:

2.1 Identification, Recruitment and Training of Public Information Staff

The NYSOEM PIO will identify interested and capable individuals from other State agencies to serve as assistant PIOs for radiological emergency preparedness. The NYSOEM PIO will provide training and orientation sessions for the assistant PIOs at least once each year, and will provide them with complete copies of necessary State and local public information and education procedures, related maps, and educational materials on radiological emergency planning.

2.2 Exercises and Drills

The NYSOEM PIO and assistant PIOs shall participate in all preparedness exercises and shall be responsible for ensuring that State public information policies and procedures are carried out appropriately and accurately.

2.3 Liaison with County and Licensee Public Information Officers

The NYSOEM PIO shall be the State contact point for all county and licensee PIOs on matters relating to emergency preparedness information. The NYSOEM PIO will ensure county and licensee PIOs are kept informed of NYSOEM PIO activities, will participate in determination of site and equipment for all near-site information centers, and will seek to ensure consistency and cooperation among the related public information programs.

2.4 Training

The NYSOEM PIO shall provide to county PIOs, as necessary, training in radiological emergency public information. Training sessions shall include overview of plans, PIO responsibilities during exercises and emergencies, coordination of news releases, Emergency Alert System (EAS) messages, equipment and staffing needs, and ongoing public education responsibilities and projects.

2.5 Public Education

Working with county and licensee PIOs, the NYSOEM PIO shall develop and implement programs to raise public consciousness of radiological emergency preparedness. These activities include, but are not limited to briefings for news editors and reporters; development and dissemination of germane booklets, brochures, and news releases; participation in "town meetings;" development of radio and TV public service announcements.

Information shall be disseminated to the public at least once annually. Such information shall include educational information on radiation, contact number or place for additional information, evacuation routes and corresponding reception and/or congregate care centers, sheltering, respiratory protection, the special needs of the handicapped, and a transient emergency information program.

2.6 Annual Media Outreach

The NYSOEM PIO, in coordination with county and licensee PIOs, will ensure that a Radiological Emergency Preparedness Plan (REPP) briefing is conducted for the media at least annually. This may be a briefing session at the Joint Information Center (JIC) or through visits to the major media and providing them with updated materials.

2.7 Plan Development

The NYSOEM PIO shall review the public information portions of the State REP Plan at least annually and make any necessary revisions and/or additions.

PROCEDURE C - PUBLIC INFORMATION

3.0 SHARING OF PUBLIC INFORMATION

To ensure the prompt dissemination of pertinent, credible and reliable information to the media and the public during a radiological emergency, State, county and licensee spokespersons shall share information and releases.

3.1 Designation of Near-Site Information Centers

To facilitate coordination of information release, each site shall have a designated near-site JIC. The JIC shall be the sole site from which emergency information shall be issued to the media and public by designated spokespersons for the State, the affected county (ies) and the affected licensee.

Each JIC must be capable of performing the following functions:

1. Issue EAS messages
2. Conduct media briefings
3. Conduct Public Inquiry operations

Each near-site JIC shall be equipped with adequate communications equipment and production equipment to allow timely collection of the writing and distribution of informational materials, and regular media briefings.

3.2 Information Release

The NYSOEM PIO shall release, on behalf of and with the approval of the State Disaster Preparedness Commission (DPC) Chair, the following general types of information during an emergency:

- Announcement of State receipt of emergency notification by the affected licensee;
- Announcement of activities of State Emergency Operations Center (EOC);
- Regular and timely updates of State activities, determinations and policies related to the emergency;
- State assessment of projected doses and/or dose rates related to any release of radiation;
- State determination of any protective action, including the recommendation to ingest KI (Potassium Iodide) and the basis for these determinations; and
- Regular and timely updates of State recovery and re-entry activities.

3.3 Sharing of Information Release

The State PIO shall share information release with county and licensee PIOs. The State PIO shall keep records of information released to the media and public during an exercise or emergency, and shall maintain a record of telephone inquiries related to any exercise or emergency.

3.4 Public Inquiry

The NYSOEM PIO, in conjunction with county and licensee PIOS, shall maintain a Public Inquiry system capable of responding to factual inquiries, and providing input to those subsequent news releases and/or press statements that can be addressed, in order to ensure that misinformation and rumors in a radiological emergency are kept to a minimum. Information that is broadcast over electronic media or printed in the print media shall be monitored to intercept any inaccurate information and provide corrective material.

3.5 State Declaration of Emergency

There is no change in the NYSOEM PIO's role following a declaration of a State Disaster Emergency by the Governor.

ATTACHMENT 1: EMERGENCY ALERT SYSTEM

1.0 Objectives

The Emergency Alert System (EAS) is the vehicle through which public officials from the counties and the State of New York can advise the public directly of:

- The status of emergencies involving any of New York's nuclear power plants
- Any protective actions that the public should take to ensure minimum risk of danger or radiation exposure

2.0 Concept of Operations

Transmission of messages to the public via EAS must be coordinated to ensure the following:

2.1 The EAS message is ready for broadcast when the prompt notification system is first activated

2.2 The EAS message content has been cleared with county officials and the State decision makers prior to release

2.3 EAS messages are concise, cohesive and comprehensible to the public

2.4 The State and counties do not clutter the airwaves with individual messages, but compile them into single messages that meet the requirements stated in 2.3 above

2.5 EAS messages are verifiable and verified before release

3.0 Existing Procedures

The lead county will access EAS in accordance with locally developed plans.

3.1 Immediate Declaration of a General Emergency

In the event that that a General Emergency has been declared (i.e., a fast-breaking incident), the county (ies) will activate their siren system and release a prearranged EAS message to the public prior to coordination with the State. In the case of multiple county involvement, a lead county has been selected to activate the EAS system, as well as authorization and procedures to activate the siren system immediately. Procedures are contained in each county's plan.

3.2 Routine EAS Message Preparation

Should EAS activation be required due to an emergency at a nuclear power plant site, the affected county (ies) and the State will participate in and coordinate EAS message development in accordance with JIC procedures for the specific site.

4.0 EAS MESSAGE CONTENT

4.1 Required EAS Message Content

- Location
- Governing authority (State or county)
- Plant
- Protective actions
- Affected areas

5.0 State Declaration of Emergency

There is no change in the above listed procedures following a Declaration of Emergency by the Governor.

ATTACHMENT 2: JOINT INFORMATION CENTER

1.0 Purpose

The purpose of a Joint Information Center (JIC) is to provide a single location for the dissemination of information to the public and media concerning an emergency at a nuclear power plant, and to enhance coordination and prompt release of accurate information by officials from the State, affected county (ies) and licensee.

2.0 Operation

A JIC will be established near each nuclear power plant site in New York State. This information center will be the single location for the dissemination of information to the media and public concerning all State, local, and licensee emergency response activities and recommended public protective actions.

To ensure coordinated and accurate information release, all information proposed for release, either in the form of EAS messages, press releases or through media briefings, will be shared by all lead PIOs from the State, county(ies) and licensee.

Sufficient equipment and space will be provided for use by the State, county, and licensee public information staff and media representatives to ensure effective operation of the information center.

Specific operational procedures are outlined in each site's specific JIC plans.

3.0 JIC Locations

- Indian Point
  200 Broadhurst Avenue, Hawthorne, New York 10532

- Ginna
  1255 Research Forest, Macedon, NY 14502

- Nine Mile Point / Fitzpatrick
  10 Airport Road, Fulton, New York 13069

ATTACHMENT 3: PUBLIC INQUIRY

1.0 Public Inquiry Procedures

During a radiological emergency at a nuclear power plant, a JIC will be activated to serve as the single, central facility for the coordinated release of information regarding the emergency from the State, county (ies) and licensee. Public Inquiry functions carried out at the JIC consist of the following three elements: Public Inquiry, Media Monitoring and Media Response. Details regarding each of these elements can be located at each site's specific JIC procedures.

Each part of the Public Inquiry System will function as a complement to the rest of the program. Inaccurate information from media coverage may be addressed by the Public Inquiry team members or by the appropriate PIO. Media briefings and/or press releases can be used to address specific rumors that have become apparent through calls to the Public Inquiry team or from off-air monitoring reports.

The minimum staffing requirements for drills and exercises are as follows

- Ginna: 7 (seven)
- Nine Mile Point: 7 (seven)
- Indian Point: The New York State Tax & Finance Call Center will provide as many as telephones as required based on demand.

NEW YORK STATE
RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN

PROCEDURE C - PUBLIC INFORMATION

TABLE OF CONTENTS

(Not Used)

1.0 PURPOSE

State operations in response to a radiological emergency will be directed from the New York State Emergency Operations Center (SEOC). This procedure is to provide instruction to the preassigned emergency staff concerning their movement to the EOC and the initial actions to be taken upon arrival.

2.0 LOCATION

The State EOC is located in the substructure of the Public Security Building, 1220 Washington Avenue, Bldg 22, Suite 101, Albany, New York 12226-2251.

3.0 NOTIFICATION

Notification will be conducted in accordance with SOPs established for the SEOC (see Communication/Warning Procedure - B and will be based upon the four emergency classes adopted for use by nuclear power plants by the NRC. Should initial notification occur at an Alert ECL or higher, activities of all lower levels will also be accomplished as required. These levels, and the basic activity taken for each, are:

3.1 Notification of Unusual Event

Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs. Notification procedures are identified in Procedure B.

3.2 Alert

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of intentional malicious dedicated efforts of a hostile act. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels. (See Procedure B)

3.3 Site Area Emergency

Events are in process or have occurred that involve actual or likely major failures in the plant functions needed for protecting the public or security events that result in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or (2) prevents effective access to equipment needed for the protection of the public. Releases are not expected to exceed EPA PAG exposure levels, except near the site boundary. (See Procedure B)

3.4 General Emergency

Events are in process or have occurred that involve actual or imminent substantial core degradation or melting, with potential for loss of containment integrity or security events that result in an actual loss of physical control of the facility. Releases can reasonably be expected to exceed EPA PAG exposure levels offsite, beyond the immediate site area. (See Procedure B)

4.0 EMERGENCY STAFF

Depending upon the emergency classification level, the staff on duty at the EOC may include:

4.1 The Governor and/or designated members of his staff.

4.2 The Chairman of the DPC

4.3 The Commissioner of Health and key staff including the Director of the BERP.

4.4 The Director and members of the staff of the NYSOEM.

4.5 Key personnel and support staff of the State Departments of Agriculture and Markets, NYS Energy Research & Development Authority, Environmental Conservation, Health, Public Service, Transportation, the Division of State Police, Division of Military & Naval Affairs, and other members of the DPC and other State agencies as determined by the Commission Chairman.

4.6 Liaison personnel from the NFO and other public utilities, the American National Red Cross and other volunteer organizations, and designated Federal agencies including FEMA.

5.0 VEHICLE AND TRAFFIC CONTROL

Traffic control and vehicle parking will be supervised by the State Police. Vehicles will be parked in an orderly manner in the adjacent parking lots. License numbers of parked vehicles not bearing the correct parking sticker should be reported to the Security personnel at the entrance.

6.0 ENTRANCE AND IDENTIFICATION

6.1 Entrance

Unless otherwise directed during a period of emergency operations the only entrance to the EOC will be through the main lobby of the Public Security Building. All other entrances will be secured.

6.2 Identification

The State Police will provide full-time security at the entrance to the EOC. Identification satisfactory to the Security personnel will be required to gain admittance. Every effort will be made to expedite the admittance of required staff personnel, however, personal identification by a senior staff member may be required if the Security personnel is not otherwise satisfied.

7.0 ACTIVATION

7.1 A DPC agency representative will check in at the State EOC and staff its agency's desk in the Operations Room.

7.2 The Director of NYSOEM/ Chairman of the DPC will verify the activation of the appropriate field locations and local government EOCs.

7.3 The Department of Environmental Conservation and/or the Division of State Police may be requested to maintain a helicopter on standby in the vicinity of the Public Security Building.

7.4 Each agency will prepare a list giving the name, title, and work shift of available personnel and provide a copy to the Planning Section Chief for the State EOC.

8.0 RESOURCES AVAILABLE AT THE EOC

8.1 Communications

8.1.1 Radiological Emergency Communications System

8.1.2 Radio to NYSOEM Regional Offices.

8.1.3 State Fire Radio

8.1.4 NAWAS

8.1.5 New York Statewide Police Information Network (NYSPIN)

8.1.6 FEMA National Radio System (FEMA NARS)

8.1.7 FEMA National Teletype System (FEMA NATS)

8.1.8 Commercial Telephone including cell phone.

8.1.9 Internal Mobile Radios

8.1.10 Direct Access to Selected Commercial Broadcast Stations

8.1.11 Direct Access to the EAS

8.1.12 NYSOEM SAT (direct satellite uplink/downlink communication to NYSOEM field sites and/or other mobile sites)

8.1.13 NY-Alert

8.2 Operations

8.2.1 DisasterLan

8.2.2 Plotting boards

8.2.3 Situation boards

8.2.4 Detail maps of power plant areas, including Geographic Information System (GIS)

8.2.5 Message forms and other clerical supplies

8.2.6 Library of State agency plans and procedures, Federal and State regulations, directories, etc.

8.3 Full-load emergency power generating capability with 2 week fuel supply

8.3.1 NYS Division of State Police Academy Dorms adjacent to the Public Security Building may be available to house emergency staff

8.3.2 Miscellaneous

9.0 PROHIBITED POSSESSIONS

Articles of the following types are forbidden and will be confiscated when found:

Firearms and other weapons (except those of State Police and uniformed security forces).

Narcotic drugs (except those prescribed by a doctor for medical treatment).

Alcoholic beverages.

10.0 SECURITY

10.1 Access to the EOC will be strictly limited to personnel required for emergency operations and their support (clerical, housekeeping, etc.).

10.2 Public information staff will be restricted to personnel of the DPC. All other public information and media personnel will be accommodated in space provided.

10.3 When the Governor is present in the EOC, the ranking State Police official will ensure that a proper security guard is furnished at all times.

10.4 Additional security personnel, as required, will be provided by the State Police to provide security and maintain order.

11.0 OPERATIONS

11.1 The Chairman of the DPC will direct State agency personnel present to carry out such functions as are necessary to accomplish the Commissioner of Health's directions or recommendations.

11.2 The Director of NYSOEM to ensure coordination of activities among these agencies will:

11.2.1 Provide staff and support services.

11.2.2 Ensure the dissemination of direction, advice and information to the involved agencies, appropriate Regional office, and to the affected local jurisdictions.

11.2.3 Receive periodic situation reports from these agencies and local jurisdictions on a schedule established by the Chairman.

(NOT USED)

NEW YORK STATE
RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN

PROCEDURE E – PUBLIC EDUCATION

TABLE OF CONTENTS

NEW YORK STATE
RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN

PROCEDURE E – PUBLIC EDUCATION

(Not Used)

NEW YORK STATE
RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN

PROCEDURE E – PUBLIC EDUCATION

1.0 PURPOSE

To ensure that a coordinated educational program is developed and implemented to familiarize the public – particularly those living within an l0-mile radius of commercial nuclear power plants – with relevant information pertaining to radiation, preparedness plans, how the public will be notified in an emergency, and what their actions should be in an emergency.

2.0 RESPONSIBILITIES

2.1 The NYSOEM PIO, in coordination with county and licensee PIOs, has primary responsibility to develop and oversee the public education program to include, but not be limited to the following:

- Potential hazards associated with improper handling or transportation of radiological materials;
- Governmental and private sector mitigation measures to minimize public risk;
- Prompt public notification system and other methods to keep the public informed during an emergency;
- Public protective measures that might be recommended;
- Specific public emergency response information, i.e., evacuation routes, reception centers, EAS stations, etc.; and
- Importance of prompt and consistent public response.

2.2 The NYSOEM PIO has overall responsibility for development and dissemination of all state educational materials and for coordination of state educational activities with those of the federal and local governments and the nuclear facility operators.

3.0 IMPLEMENTATION

3.1 The NYSOEM PIO will direct a statewide public education task force to assist in the development of radiological emergency preparedness public education materials, to coordinate public education efforts of all interested groups, to identify needs and the means to meet them, and to limit unnecessary duplication of efforts by the various involved governmental jurisdictions and nuclear facility operators.

3.2 The specific, expert capabilities and resources of all appropriate State agencies will be utilized in the development and implementation of the State's public education plan.

3.3 Educational activities within the statewide program will include, but not be limited to, the following:

- Public service announcements;
- Brochures, pamphlets, posters and other printed materials as necessary;
- Public appearances by subject matter experts in various areas of radiological emergency planning;
- Exhibits at public events;
- Participation, as requested, on radio talk shows and other radio, television and print media informational presentations;
- Informational video presentations on radiological emergency preparedness; and
- Press conferences and media briefings.

3.4 Brochures and calendars have been developed cooperatively by the State, involved counties and nuclear facility operators for dissemination to the public residing in the 10-mile Emergency Planning Zones (EPZs) surrounding nuclear power plant sites. These brochures include information on radiation, public protective measures, evacuation routes, reception and congregate care centers, special provisions for mobility-impaired persons, and points of contact for additional information.

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
PROCEDURE F - TRAINING, DRILLS, EXERCISES

TABLE OF CONTENTS

ATTACHMENTS

(Not Used)

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
PROCEDURE F - TRAINING, DRILLS, EXERCISES

1.0 PURPOSE

The purpose of this procedure is to provide the vehicle by which personnel with emergency responsibilities will be trained initially, periodically retrained, and tested by means of drills and exercises in the performance of the functions that may be required of them in the implementation of this Plan.

2.0 SCOPE

Radiological emergency preparedness plans require trained personnel to implement them. The State Emergency Management Office will coordinate this training for emergency personnel and public officials. Training and retraining of State and local officials is provided through a variety of programs, such as formal courses, seminars, conferences, and experience gained in response to drills and exercises as well as actual emergencies.

State and local agencies with emergency response functions will designate individuals within these organizations who are to be trained in functions that are unique to a radiological emergency. Functions that are normal for the agency's usual role, i.e., teaching a police officer to direct traffic, are not considered here. The personnel selected for radiological preparedness training will include those from the following categories:

- Command and Control Personnel
- Key agency personnel assigned to State, or County Emergency Operations Center (EOC) staffs
- Radiological monitoring teams and radiological assessment personnel
- Personnel monitoring and decontamination personnel
- Police, security and fire-fighting personnel
- Medical and rescue personnel
- Personnel assigned to the evacuation of the general public, special populations and mobility-impaired individuals
- Communications personnel
- Reception and Congregate Care Center personnel
- Public information personnel
- Planning personnel

2.2 Exercises will be scheduled to provide that all major elements of the respective State and county organizations are tested in accordance with lOCFR50 and 44CFR350 (see 4.2). These exercises will be conducted, at different times and under various weather conditions.

2.3 In addition to the scheduled exercise, drills shall be conducted as follows:

- Communication between State EOC, and local government EOCs within the Plume Exposure pathway EPZ will be tested at least monthly.

- Communications between State EOC and Connecticut, New Jersey, Pennsylvania and Canada radiological emergency response organization, all within the ingestion pathway for Nuclear facilities located in New York, will be tested at least quarterly.

- Communications between NFOs, State EOC, local EOCs and field assessment teams will be exercised annually.

- Radiological Health staff and local organizations will conduct annual radiological monitoring drills. The drills may include the collection and analysis of water, vegetation, soil and air samples; the communications used for reporting sample results, and the means for keeping records of these sample results. These drills will be included as part of annual exercises.

- The State Radiological Health staff may conduct semi-annual Health Physics drill involving one of the nuclear generating facilities. These drills will involve both the State's and local organizations' analysis of, and response to, conditions arising from simulated elevated airborne and liquid samples and direct radiation measurements in the environment. To the extent possible these drills will be included as part of the required scheduled NFO exercises. New York State, as an NRC agreement State, maintains an offsite environmental sampling program which includes the above activities.

- All or any portion of the State and/or county plans may be drilled as necessary.

3.0 RESPONSIBILITIES

3.1 The New York State Office of Emergency Management (NYSOEM) coordinates the planning and conduct of emergency response training for personnel who will implement radiological emergency preparedness plans. NYSOEM will:

- Receive technical guidance from the State Health Department and FEMA on the appropriate application of radiological resources to peacetime radiological emergency response.

- Factor the above guidance into the development of appropriate training activities.

- Conduct formal courses for Emergency Operations Center staff and Personnel Monitor Center staff at the State and local level.

- Manage the Independent Study course, "Radiological Emergency Management" (IS-3) as the basic introduction to radiation and radiation detection. Distribution of course material is through a single contact point with each appropriate State agency, local jurisdiction or other large emergency response organization.

- Provide to State agencies and localities technical assistance in the development of their own training capability including training their instructors.

- Provide technical assistance on the planning, conducting, and evaluation of exercises and drills.

- Receive and provide for staff and other agencies as appropriate, training on the use of new instrumentation and equipment procured for radiological emergency responses.

- Assist in identifying and recruiting appropriate State and local Emergency Preparedness applicants for federally-conducted or other appropriate emergency response training activities and courses. These training activities include planning, operations, and response courses sponsored by the Federal Emergency Management Agency which are geared specifically for State and local emergency response personnel. These courses include topics such as radiological accident assessment, analysis, monitoring and response operations.

3.2 The NYSOEM coordinates with the representatives of the Nuclear Facilities, appropriate counties, Federal and State agencies in exercising of the New York State emergency response organizations. These responsibilities include:

- The designation of elements of the Plan that are to be exercised, to ensure that all elements are exercised in accordance with the federal regulations (see 4.2) under various conditions and times.

- The establishment of the exercise's basic objectives and any appropriate evaluation criteria.

- The date and time of the exercise.

- The agencies, officials and organizations that are expected to participate.

- The scenario to be used to include a schedule of real and simulated events.

- The designation and training of exercise observers.

- Arrangements for materials to be provided to the FEMA Regional Assistance Committee

(RAC) and other observers.

- Arrangements for a critique of each exercise.

3.3 Each agency or organization having a designated emergency responsibility will insure that appropriate training is made available to their emergency response personnel, including annual refresher training. Training of appropriate personnel for accident assessment and evaluation will be the responsibility of the Department of Health, BERP. State agencies are responsible for the continuance and implementation of training programs relating to their respective agency's operating procedures and coordinate their training efforts related to radiological emergencies with NYSOEM.

In addition, these agencies and organizations will conduct drills to develop, test and maintain their capabilities. These responsibilities include:

- Communications drills to insure the ability to understand and transmit the unique terminology associated with a radiological emergency.

- Radiological monitoring drills.

- As appropriate, medical emergency drills at the local level and health physics drills at the State level.

- Other drills as may be required to improve the capabilities of emergency response personnel.

3.4 Local Emergency Management/Preparedness Offices are responsible for, and coordinate with, NYSOEM for the following:

- Identification of local training needs and requirements.

- Request of appropriate training courses, which includes designation of times and locations.

- Recruitment of trainees to include Directors and Coordinators of response organizations, radiological monitors, emergency service personnel (fire, police, first-aid, medical support, and rescue), and other appropriate personnel.

- Development of local training capability as required.

- Assist, as applicable, in the conduct of training. This includes the use of local instructor capabilities such as for the training of radiological monitors, etc.

- Conduct and participate in drills and exercises to improve the capabilities of their emergency response personnel.

4.0 IMPLEMENTATION

4.1 In addition to agencies' existing training programs, specialized emergency response training courses are offered to key personnel of those agencies with emergency response responsibilities. The types of training courses to be offered, and the titles and assignments of those who should participate are:

Type of Course	Ref.Attachment	Participants
Public Officials Conferences (POC)	1	Agency heads, and local government chief executives.
Emergency Operations Center Course	2	Agency heads, EOC staff and emergency planning
State Radiological Training Courses	3	Radiological EOC staffs/monitors, and Instructors, Emergency Management, and as appropriate, personnel assigned to REP-related duties. (see Attachment 3).
Federally Sponsored Training Courses	4	Radiological EOC staffs, Medical and Public Safety Personnel (as appropriate)
Nuclear Facility Operator sponsored training courses	5	Emergency Management Personnel Public Safety, Rad monitors and EOC Staff
Professional Development Series PDS Courses	6	Emergency Management Staff, agency representatives, public safety personnel.

4.2 Exercises will be conducted to test the integrated capability of a major portion of the State's and appropriate County's radiological emergency preparedness plan and organization. An exercise will include mobilization of State and local personnel and resources adequate to verify the capability to respond to an accident scenario requiring response. The State and appropriate local governments will conduct an exercise jointly with a nuclear power facility in accordance with the federal regulation set forth in lOCFR50, "Domestic Licensing of Production and Utilization Facilities", Appendix E, and 44CFR350, "Review and Approval of State and Local Radiological Emergency Plans and Preparedness". The State will choose, on a rotational basis, the site(s) at which the required exercise(s) is to be conducted. The

scenario should be varied from exercise to exercise such that all major elements of the plans and preparedness organizations are tested. Each full-scale exercise will include as many actual (hands on) activities as possible within the resources available for the exercise.

Exercising will include the decision-making process (assessment and evaluation), deployment of monitoring personnel and making recommendations of protective action response options to responsible officials. Law enforcement and fire personnel will be exercised on access and traffic control and security. Exercises will include public information activities to demonstrate coordinated efforts by the State, local officials and the licensee in keeping the public informed.

Qualified observers from Federal, State or local governments will critique the exercises. State and local observers will be provided appropriate pre-exercise briefings and, if required, additional training.

A critique will be scheduled as soon as practicable after each exercise to evaluate the ability of organizations to respond to the plan.

Each organization establishes the means for evaluating observer and participant comments on areas needing improvement, including emergency plan procedural changes, and for assigning responsibility for implementing corrective actions. Each organization establishes management control to ensure that corrective actions are implemented.

4.3 Drills involving varying number of personnel and organizations are used to provide practical training. When conducting such a drill, emphasis is on the effectiveness of procedures and use of actual emergency equipment. Observers will be assigned to evaluate the performance of the participants. Drills to test smaller segments of the plan will be held more frequently than exercises. Although a drill is often a component of an exercise, drills will be conducted, in addition to the scheduled exercise, all the frequencies specified in Paragraph 2.3 above. Drills will be supervised and evaluated by qualified instructors. Communication drills are conducted for both radio and hard line modes (RECS) and include the testing of operators' understanding and ability to understand the content of messages transmitted/received. Radiological monitoring drills teach and test procedures for the collection, analysis, recording and reporting of radiation readings. Drills of other emergency functions will be conducted to enhance the capabilities of those persons performing such functions.

4.4 Upon completion of an exercise or drill, the evaluator and observer comments will be collected and evaluated. Plan revisions, arising from the lessons learned, will be incorporated in plans and procedures as appropriate.

4.5 State and local training will be given as described in (Attachment 3). Training documentation will be retained by the entity providing the training.

4.6 Training for individuals responsible for the planning effort includes the following:

- Annual Licensee EAL Training

- National REP conference
- NRC Scheduling Conference
- Continual update on NIMS and ICS training and planning
- State EOC Operations training including updates on new disaster management software.
- Lessons learned from emergency activations of the State EOC
- Review of new federal guidance on radiological monitoring and assessment
- Review new planning guidance as it becomes available
- Semi-annual nuclear safety meetings

ATTACHMENT 1

PUBLIC OFFICIALS CONFERENCES (POCs)

The New York State Office of Emergency Management routinely conducts POCs for State, County and City level government officials and is designated to acquaint them with their emergency responsibilities, need for planning, training, and coordinated effort.

This course includes:

1. Review of FEMA's emergency role.

2. Discussion of the New York State Executive and Disaster laws outlining local emergency responsibilities, including a description of the State, District and local command and control structure and responsibilities.

3. Stressing the need for Local Executive Orders assigning specific emergency response functions to local officials.

4. The concept of an emergency operations center.

5. Advising of training that is available and the sequence in which it is given.

6. Emphasis on the benefits of a well-organized and coordinated government that is able to act in time of emergency.

7. The importance of a local resource inventory.

8. The methods for recognizing and identifying hazardous materials.

ATTACHMENT 2

EMERGENCY OPERATIONS CENTER COURSE

This course includes:

1. Introduction to the NYS Emergency Operations Center
2. Orientation to Emergency Management in NYS.
3. Incident Command System (ICS) Structure
4. Agency Resources
5. DisasterLan
6. Situation reports and the Incident Action Plan

ATTACHMENT 3

New York State Radiological Training Courses

I. RADIOLOGICAL EMERGENCY PREPAREDNESS PROGRAM

The following is a listing of the various types of courses specifically given for the REP training of emergency workers:

1. REP Monitoring Course - This course is designed for radiological officers, radiological monitors (RM's) and emergency workers and addresses all aspects of peacetime radiological incidents.

2. REP Exposure Control Course - This course has been developed for emergency workers specifically for nuclear power plants and has become the core of instruction, following the subject matter dealing with radiological exposure control from the Emergency Worker Response Manual. (4 Hr.)

3. REP Personnel Monitoring Center (PMC) Course - This course deals with the specific aspects of PMC operations for radiological monitors. Variations of this course also allows for personnel from numerous State, county, and volunteer agencies to receive this training for their responsibility with respect to PMC operations. Please note that this course should be taken after the 4 Hour Exposure Control course by Radiological Monitors who will the stationed at PMC. (4 Hr.)

4. REP Management Course- This course is intended for REP emergency managers, coordinators and supervisors, i.e., County EMO Directors, State Agency personnel, and local elected officials who have decision making responsibilities. (3 Hr.)

5. REP Instructor Course - This course is designed to afford potential REP Trainers, preferably with adult education experience with the necessary information to conduct the training utilizing the NYS REP Instruction/Training Modules.

II. INSTRUCTOR GUIDES

The following training modules are available from NYSOEM to assist in course instruction at the agency level.

Module 1 – REP Planning Overview

Module 2 – Intermediate and Late Phase (Ingestion) Issues

ATTACHMENT 3

Module 3 – Radiation Basics

Module 4 – Radiation Detection Instruments

Module 5 - Radiological Exposure Control

Module 6 – Evacuation Travel Time Estimates

Module 7 – Basic Nuclear Power Plant Operations

Module 8 – Emergency Operations Center

Module 9 – Command and Control

Module 10 – Dose Assessment

Module 11 – Field Monitoring Operations

Module 12 – PIO/JIC Operations

- Basic Public Information Officer
- EOC Public Information Roles
- JIC Operations
- Joint Information Center Spokesperson
- EAS Message Preparation and Release
- News Release Writing
- Public Inquiry and Media Monitoring

Module 13 – Personnel Monitoring Center (PMC) Operations

Module 14 – Reception Center Operations

Module 15 – Emergency Operations Facility (EOF) Operations

Module 17 – Fire Service Operations

Module18 – MS-1 Treatment and Transportation of the Radiologically Contaminated/ Injured/ Exposed Patient

Module 19 – Bus Company and Bus Driver Operations

Module 21 – School Officials Operations

Module 20 – Public Works Operations

II. RADIOLOGICAL MONITORING COURSES

The following courses are administered and conducted by local instructors using materials provided by the State. State agencies will also use these courses to train their own personnel. These courses are for radiological monitors from emergency services or other organizations or industries which have a response role for peacetime radiological incidents. The primary purpose of this training as related to nuclear accidents is to provide a capability for exposure control of emergency workers and the public through detection and removal of surface contamination. Emphasis will also be placed on personnel external dosimetry and exposure records:

a. Emergency Management, Independent Study (IS-3)

   An 8-hour programmed independent study course, which serves as an introduction to the nature of radiation and radiation detection instruments.

b. Fundamentals Course for Radiological Response (G320)

   An 8-hour follow-up course to the Independent Home Study IS-3 course, which uses a number of exercises in the use of radiation detection instrumentation and sampling instrumentation.

ATTACHMENT 4

Federally-Sponsored Training Courses

Courses dealing with the evaluation of and response to radiation emergencies are sponsored by the Federal Government. DOH coordinates the student selection with NYSOEM. Courses listed in the latest edition of the NFA/EMI Training Catalog".

Radiological Emergency Preparedness Planning Course
Radiological Accident Assessment Concepts Course
Radiological Emergency Response Operations Course
Advanced Radiological Incident Operations Course
Radiological Emergency Preparedness Exercise Evaluation
Radiological Series Train the Trainer

The Emergency Management Institute (EMI) offers a variety of additional emergency management courses designed to improve overall management and response capabilities for the emergency management community.

ATTACHMENT 5

Nuclear Facility Operator Courses

The nuclear facilities provide periodic training and retraining for local emergency services located in the vicinity of the facility. Training and/or drills are typically provided on an annual basis for fire, hospital and ambulance personnel. The nuclear facilities provide instructors at numerous state, county training sessions and provide staff to assist in preparation of scenarios used in the simulated emergencies.

In addition, the Nuclear Facility Operators are providing resources to accomplish the required initial training of county staff. State and local officials provide input into the development of these training programs as well as the individual lesson plans. State and local personnel will provide training for new individuals and periodic retraining on an ongoing basis.

NEW YORK STATE READIOLOGICAL EMERGENCY PREPAREDNESS PLAN
PROCEDURE G – RADIOLOGICAL EXPOSURE CONTROL PROCEDURES

TABLE OF CONTENTS

ATTACHMENTS

(NOT USED)

1.0 PURPOSE

The objectives of these radiological exposure control procedures are:

- To provide State/County agencies with guidance to protect their emergency response personnel from excessive or unnecessary exposure to radiation
- To describe the requirements for and availability of instruments and equipment
- To describe certain technical aspects including: proper use of instruments and equipment, requirements for record keeping, use of exposure protective action guides, personnel monitoring and decontamination.

2.0 SCOPE

This procedure describes the necessary actions by State/County agencies and their personnel when involved in emergency response activities performed in connection with an accident or incident at a fixed nuclear facility large enough to require activation of the State/County Radiological Emergency Preparedness Plan. It also describes some of the support activities available from those State agencies with specific radiological resources.

3.0 PERSONNEL EXPOSURE GUIDANCE

3.1 It will be the responsibility of the DPC agency representative to insure that appropriate agency personnel are trained in exposure control guidelines, procedures, and techniques. Training assistance is available for State Agencies and counties through the New York State Office of Emergency Management (NYSOEM).

3.2 Supervisors who will have workers in the plume EPZ must also be familiar enough with exposure limits to provide guidance to their subordinates regarding actual or planned unusual exposures. They should also know enough about radiation to answer basic questions from their workers and to seek additional guidance on exposures in excess of the EPA PAGs.

3.3 Supervisors will make every attempt to insure that exposure to emergency workers is kept As Low As Reasonably Achievable (ALARA). Staff rotation or reassignment should be used as methods for reducing individual dose to the workers.

3.4 The following guidelines apply:

3.4.1 Only required emergency workers (State/County/Federal or Licensee) will be permitted access into the l0-mile plume exposure pathway or any State/County/Federal or Licensee Emergency Operations Center or other facility which is being utilized to conduct

emergency operations. Appropriate identification will be required and will be shown on request of law enforcement officers or appropriate State/County representatives.

3.4.1.1 In the post plume phase, exposure limits for those individuals who are permitted to reenter restricted zones will be established by the Department of Health, Bureau of Environmental Radiation Protection.

3.4.2 Supervisors of State emergency teams or personnel will coordinate with the State and the County EOC's prior to entry into the 10-mile EPZ.

3.4.3 Rescue personnel for lifesaving activities will be selected using the following criteria:

- Should be volunteers or professional rescue personnel who are familiar with the consequences of exposure.
- Whenever possible, volunteers over 45 years of age should be selected.
- Pregnant women or women capable of bearing children should not be selected for lifesaving activities where they could be exposed to radiation exceeding 0.5 rem maximum permissible dose equivalent to the fetus. (Reference U.S. NRC Regulatory Guide 8.13, Instruction Concerning Prenatal Radiation Exposure, Attachment 10).

3.4.4 Emergency Workers' planned dose exposure will not be permitted to exceed the following limits except by express authorization of the Commissioner, NY State Health Department:

- For emergency operations not involving lifesaving activities: 5 rem TEDE.
- For protecting valuable property: 10 rem TEDE if lower dose is not practicable.
- For life saving or protection of large populations: 25 rem TEDE if lower dose is not practicable. This limit may be exceeded upon approval by the Commissioner of DOH, only on a voluntary basis by persons fully aware of the risks involved.
- Exposures in excess of the above guidelines will be approved by the Commissioner of DOH upon:
  - notification by the appropriate supervisor of the need to perform actions which will result in excess exposure;
  - estimation of total exposure to be received;
  - exhaustion of alternatives.

3.5 Exposure control procedures should be prescribed by supervisors that will ensure rapid notification and relief and/or rotation of personnel whose exposure rate indicates that the worker is approaching the maximum limits of 10 rem TEDE (protection of property) or

25 rem TEDE lifesaving or protection of large populations or > 25 rem TEDE lifesaving (voluntary basis).

3.6 Each supervisor will maintain exposure records for personnel on the Group Radiation Exposure Record (see Attachment 2) on the basis of reports to be provided by the emergency workers who are under his/her supervision. A copy of the completed record will be furnished to the State EOC Exposure Control Coordinator, within the Planning Section, A &E Branch, by State personnel and to the County Exposure Control Coordinator by County personnel (see 5.5 below).

3.7 Each emergency worker will maintain an individual Emergency Worker Radiation Exposure Record Card (Attachment l) for each period of duty (or each shift). Basic identification information and the serial numbers of all issued dosimeters (direct-reading and permanent) as well as the individual's total previous exposure (if known) will be recorded at the beginning of each shift. (See 5.5 below and Attachments 1 and 3.)

3.8 Dose Correction Factor: A conversion factor may be applied to the dosimeter reading to correct for TEDE measurements. This factor will be calculated by DOH staff at the SEOC when information on plume composition becomes available. In the absence of this information, a correction factor of 1 should be used. In all cases, the actual dosimeter reading should be recorded on the Emergency Worker Radiation Exposure Record Card. The State/County Exposure Control Coordinator will apply correction factors when completing the employee dose record.

4.0 RADIATION DETECTION INSTRUMENTS/ASSOCIATED EQUIPMENT AND SUPPLIES

4.1 Each emergency worker who is to perform duty within the l0-mile plume exposure pathway EPZ or at any other location where exposure to radiation is possible, including the 50-mile Ingestion Pathway EPZ will be furnished an emergency worker kit or packet which will include:

- Emergency Worker Radiation Exposure Record Card
- One electronic direct-reading dosimeter (DOSE-GARD)
- One radiation badge/permanent record dosimeter (InLight)
- One packet of potassium iodide (KI) tablets (14 tablets)
- One exposure control information card
- Form letter for declaring Pregnancy
- Lanyard

4.1.1 Other equipment and supplies to provide protection:

Monitoring equipment (as required) for workers who will perform monitoring duties (field, personnel, vehicle, equipment, area or taking samples) may include:

- ♦ Ludlum Model 14C survey meter 0-2R/hr or 0-4,000,000 cpm or equivalent
- ♦ Air sampler (field monitoring)
- ♦ Sample bags/bottle (field monitoring and taking samples)
- ♦ Anti-contamination clothing/hoods/gloves/boots
- ♦ Dust masks
- ♦ Other items for specific function or task

4.2 Radiation Badge/Permanent Record Dosimeters

4.2.1 Radiation Badge/Permanent Record Dosimeters may be film, TLD, OSLD, etc. Direct-reading dosimeters are not permanent record dosimeters.

4.2.2 Each State Agency or county is responsible for obtaining sufficient quantities of permanent record dosimeters to provide one for each worker anticipated to be entering the plume EPZ.

4.2.3 Purchase, inventory, distribution, periodic replacement or processing, reading and proper record keeping and reporting shall also be the responsibility of the State or County Agency's representative. All such distributions shall be under the control of the SOEM to State Agencies and the County Emergency Management Offices and the County Radiological Officer to County Agencies.

4.2.4 Radiation Badge/Permanent Record Dosimeters must be located by the agency so they will be immediately available to those workers who will need them in case of emergency.

4.2.5 Radiation Badge/Permanent Record Dosimeters must be stored to prevent exposure to radiation (other than normal background). At least one badge/dosimeter should be designated and recorded as a "control" to allow for subtraction of accumulated background radiation. All radiation badge/permanent record dosimeters will be exchanged in accordance with vendor's recommendations. The State Health Department will advise State Agencies on the frequency of exchange during an emergency.

4.3 Source of Instruments

4.3.1 Radiation detection instruments that are currently stored at NYSOEM include:

- ■ Electronic direct-reading dosimeters - DOSE-GARD (0.01 rem – 999 rem)
- ■ Survey Meters - CDV-700 (0-50mR/Hr)
  Ludlum 14C (0-2R/hr or 0-4,000,000 cpm)
- ■ Other - See Appendix G

4.3.2 Other required instruments and supplies are available for purchase from commercial sources.

4.4 Instrument Inventory and Maintenance

4.4.1 Each state agency anticipated to have emergency workers in the 10-mile plume EPZ will obtain a sufficient number of electronic direct-reading dosimeters to issue to each emergency worker while in the Plume EPZ.

4.4.2 State DPC agencies may request and receive dosimeters from SOEM according to available supplies.

4.4.3 One individual in each such DPC agency will be accountable for these instruments and responsible for subsequent distribution within the agency and periodic inventory to insure availability and readiness of the instrument at all times.

4.4.4 Dosimeters will be rechecked by the agency in this fashion annually.

4.4.5 Defective dosimeters will be returned to NYSOEM for replacement as necessary and according to available supplies.

5.0 PERSONNEL CONTAMINATION CONTROL

5.1 State Emergency Worker Personnel Monitoring Center (PMC) Locations

- Two locations for each upstate nuclear facility site will be used as state emergency worker PMCs. There are four designated locations identified for the Indian Point Energy Center, one in each of the 4 EPZ counties. (See Appendix C for State PMC locations.)

- PMCs will be established outside the l0-mile plume EPZ.

- PMCs will be readily accessible from areas within the plume EPZ and will be available for 24-hour use.

5.2 PMC Requirements

- PMCs will have sufficient parking available for vehicles transporting state emergency workers to the PMC after completion of their assignments within the plume EPZ.

- PMCs will preferably have a separate entrance and exit from the building.

- PMCs will have an area, for which access can be controlled, of at least 10 x 20 feet of open floor space where personnel monitoring will be performed.

- Adjacent to the monitoring area, there will be a decontamination area for which access can be controlled. This area will contain a sink and a shower or other suitable facility, which can be used for decontamination.

- An area will be designated for waste storage near the decontamination areas. Such stored wastes will be disposed of in a manner specified by the State Health Department. The licensee involved in the accident will collect and properly dispose of contaminated waste from both State and county operations.

- Contaminated water from the decontamination of personnel and vehicles should be allowed to flow directly into the normal sewage system. Any contamination present will be greatly diluted by the volume of water in the system and would pose no health hazard to the public.

5.3 Personnel and Equipment Monitoring

5.3.1 Unless otherwise directed, all state emergency workers who have been in the plume EPZ during the accident response will report to the Personnel Monitoring Center (PMC) for monitoring.

5.3.2 DPC agency personnel who have been trained in the techniques and procedures to be used will perform all monitoring. This operation will be supervised by a Radiation Technical Specialist. Personnel from the State Health Department will be available by telephone to provide technical assistance.

5.3.3 Personnel, vehicles, and other equipment will be monitored upon arrival at the PMC for external radioactive contamination using a portal monitor and/or a Beta/Gamma sensitive GM survey instrument with beta shield open and probe covered with plastic to prevent instrument contamination. All outer clothing worn and equipment or supplies used in the plume EPZ will also be monitored. (See Attachments 4, 5, & 6).

5.3.4 If the survey instrument indicates any areas on the person or object with a reading in excess of 300 cpm above background, that individual or object is considered contaminated.

5.3.5 Decontamination will be provided if any area on the individual's skin, hair, etc. is found to be contaminated. Contaminated clothing will be removed and retained per 5.4.2 below.

5.3.6 After decontamination actions are taken the individual will be monitored again and released if the meter reading is below 300 cpm above background.

5.3.7 If several attempts at decontamination do not result in levels below 300 cpm above background, the contamination will be classified as non-removable and the individual released. If a reading above 3000 cpm above background persists the case will be referred to the State/County Exposure Control Coordinator for evaluation and determination if referral to a special facility for further decontamination is required.

5.3.8 The personnel monitoring area will be periodically monitored, especially the floor where

workers stand during monitoring, and steps taken to minimize contamination spread.

5.4 Personnel and Equipment Decontamination

5.4.1 Contaminated vehicles or other objects which may be easily decontaminated will be decontaminated as soon as possible to insure their continued availability.

5.4.2 Contaminated clothing will be removed, tagged with the owner's identification, and retained at the PMC in plastic bags. Replacement clothing will be available at the PMC.

5.4.3 Contamination on the skin or hair will be removed by rinsing and washing using water, soap or other available cleansing agents, taking care not to abrade the skin. A sink and shower will be available for this purpose.

5.4.4 Individuals whose decontamination is complicated by the presence of wounds will be referred to a medical facility for further treatment and decontamination. These persons will be transported via an appropriately trained and equipped ambulance service. A list of ambulance services is maintained in each county radiological emergency response plan.

5.4.5 The decontamination area will be periodically monitored especially sink, shower floor and waste storage area and necessary steps taken to minimize contamination spread. Appropriate precautions will be taken to minimize exposure to contaminated run-off water.

5.5 Record keeping

5.5.1 There are two types of basic records on exposure of workers, the individual's Emergency Worker Radiation Exposure Record Card and the Group Radiation Exposure Record. Additional exposure records will be available after processing of permanent record dosimeters.

5.5.2 Each worker will be responsible for keeping the individual Emergency Worker Radiation Exposure Record Card (see Attachment 1).

5.5.3 Each supervisor will maintain the exposure records of his personnel in the plume EPZ on the Group Radiation Exposure Record (see Attachment 2) on the basis of reports provided by workers returning from the area. A completed copy of these records will be provided to the Personnel Monitoring Center or the State EOC.

5.5.4 Each worker reporting to the PMC will bring the individual Emergency Worker Radiation Exposure Record Card.

5.5.5 If the PMC is not activated, these cards will be examined and collected by the worker's supervisor who will forward them to the State EOC.

5.5.6 Before an individual Emergency Worker Radiation Exposure Record Card is collected, a new card will be provided so the worker can record the cumulative exposure to date on the new card. If he returns to the plume EPZ he will use the new card.

5.5.7 If an individual is found not to be contaminated after monitoring at the PMC, the word "CLEAN" will be stamped/written on the individual's Emergency Worker Radiation Exposure Record Card.

5.5.8 If an individual is found to be contaminated, the word "DECON" will be written on his Emergency Worker Radiation Exposure Record Card, as well as the general location(s) of contamination. After successful decontamination the word "CLEAN" will be stamped/written on the card.

5.5.9 If an individual remains contaminated enough to require referral to a special facility for further decontamination, the location to which the individual was referred and the time of referral will be recorded on his Emergency Worker Radiation Exposure Record Card as well as the body locations and instrument readings.

5.5.10 For referral cases, a separate description of the specific contamination problems will be completed using the Personnel Contamination Referral Sheet (see Attachment 4). One copy of the sheet is retained at the PMC and one taken with the individual to the special facility.

5.5.11 Copies of the Contamination Referral Sheet will be given to the supervisor of the PMC operation for follow-up action.

5.5.12 Each person monitored at the PMC, will turn in his individual Emergency Worker Radiation Exposure Record Card upon release. The card will be marked with the results of the monitoring as indicated above.

5.5.13 Each individual exposure record card will be collected either:

- ♦ Immediately after the word "CLEAN" is entered on it in accordance with the above procedure, or
- ♦ Upon completion of the Contamination Referral Sheet.

5.5.14 Individual exposure record cards will be examined at the PMC.

- ♦ Those cards with a total exposure less than 1 R and with the word "CLEAN" entered will be set aside for later reference.

- ♦ Those cards with an exposure exceeding 1 R for the day, or for individuals referred to a special facility for further decontamination will be given to the supervisor of the PMC operation for follow-up action.

5.5.15 Appropriate information from the exposure cards and contamination referral sheets will be provided to the radiation technical specialist assigned to the PMC for review and follow-up as appropriate. Such notification will be made when fixed contamination exceeds 3,000 cpm or whenever the whole body cumulative dose reaches 3 rem.

5.5.16 A record must be kept on each individual processed at the PMC.

5.5.17 A copy of exposure records, including permanent record dosimeter readings, will be forwarded to the Bureau of Environmental Radiation Protection for permanent filing.

6.0 THYROID EXPOSURE CONTROL

6.1 Thyroid exposure estimates

The thyroid dose to an emergency worker in the plume EPZ can be estimated from knowledge of the airborne iodine concentration and the time spent in the plume.

6.2 Thyroid exposure limitation

Thyroid exposure can be reduced by utilizing one of several methods. Staff and/or material availability will dictate which of the following methods is to be used in a specific situation:

6.2.1 Removal from the plume pathway

Emergency workers in the plume pathway can be rotated so as to limit exposure to any one individual. If their presence is not essential they may be removed from the area until the iodine exposure is reduced.

6.2.2 Authorized use of KI by Emergency Workers

When authorized by the Commissioner NYS Department of Health, Emergency Workers will take one 130 mg KI tablet per day while working in the plume EPZ , in order to reduce the effects of radioactive iodine exposure (see Appendix K).

ATTACHMENT 1

Emergency Worker Radiation Exposure Record Card

Name: _____
Agency: _____
Business Address:_____
_____
Telephone # (B)_____(H)_____
Social Security - Last Four Digits_____
Date of Birth: _____
Emergency Worker Assignment: _____
Electronic Dosimeter (ED)
Serial #: (provided to you at PMC) _____
Radiation Badge
Serial #:_____
Date:_____ Work Hours: _____

DISASTER PREPAREDNESS COMMISSION

Rev. 7/10

TOTAL INCIDENT EXPOSURE TO DATE _____

Electronic Dosimeter (ED) Reading	Time	Location/Remarks

KI used: YES / NO Directed by _____Date_____Time_____

Report Readings to Supervisor of 1 R, 3 R, 5 R	ED Total (at end of shift) _____

ATTACHMENT 2

GROUP RADIATION EXPOSURE RECORD

Location or Class **Date**_____

Address _____

Remarks _____

Name	Dosimeter Serial No.	Initial Reading	Final Reading	Exposure (R or mR)

Exposure = Final Reading minus Initial Reading.

ATTACHMENT 3

EMERGENCY WORKER EXPOSURE CONTROL PROCEDURES

A. Before entering the plume exposure EPZ each field supervisor will:

1. Obtain enough Emergency Worker Kits containing direct-reading and radiation badge/permanent record dosimeters for use in the field as needed.

2. Make sure that all dosimeters are functional.

4. Make sure that all emergency workers know what their responsibilities are as indicated below.

B. Before entering the plume Emergency Planning Zone (EPZ) each worker will:

1. Obtain an Emergency Worker Kit containing both direct-reading and radiation badge/permanent record dosimeters.

2. Prepare an individual Emergency Worker Radiation Exposure Record Card by completing side one and entering total dose to date and initial dosimeter reading (usually zero) on side two.

3. Make sure that a timepiece and writing implement will be constantly available to insure the keeping of proper exposure records.

C. While in the plume EPZ each worker will:

1. Record the time and dosimeter reading (usually zero) upon entering the area.

2. Following a release, record the time and dosimeter reading on the Emergency Worker Radiation Exposure Record Card every 15 to 30 minutes.

3. If the direct-reading dosimeter audible alarm activates at 1R, record the time and reading on the individual Emergency Worker Radiation Exposure Record Card and notify your immediate supervisor.

ATTACHMENT 3

EMERGENCY WORKER EXPOSURE CONTROL PROCEDURES

4. Notify your supervisor immediately if any of the following occurs:

   a. You notice your dosimeter is reading other than zero (0.00 rem)

   b. Your dosimeter audible alarm activates at 1 rem exposure

   c. You have received a total exposure of 3 rem

   d. You have received a total exposure of 5 rem

5. Report your dose to your supervisor at least every 12 hours if you remain in the plume EPZ.

D. After leaving the plume EPZ each worker will:

1. Immediately record the time and dosimeter reading on the Emergency Worker Radiation Exposure Record Card.

2. Notify the supervisor of the total exposure received while in the plume EPZ.

3. Follow any instructions you receive from your supervisor regarding the dosimeters.

4. Unless specifically told not to do so, report to the Emergency Worker Personnel Monitoring Center (PMC) to be checked for contamination. Take all of the contents of your Emergency Worker Packet with you.

5. At the PMC follow the instructions of the monitors, receive a new individual exposure card, and turn in the old card.

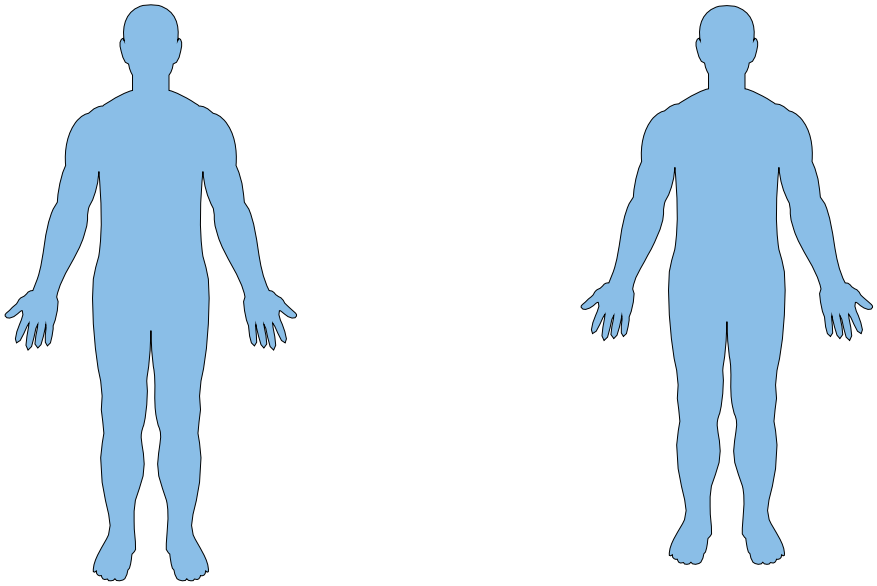
6. If personnel monitoring is not necessary, your supervisor will collect your individual exposure record card and give you a new card. Complete new card as instructed in B.2 above.

7. Prior to re-entry into the plume EPZ , refer to Part A of this procedure.

ATTACHMENT 4

NEW YORK STATE EMERGENCY WORKER
Personnel Contamination Referral Sheet

1. DATE:_____ TIME: _____ STATE AGENCY:_____
2. PMC LOCATION:_____
3. NAME: _____
   WORK ADDRESS:_____
   HOME TELEPHONE:_____WORK TELEPHONE:_____
4. BRIEFLY DESCRIBE PERSON'S LOCATION PRIOR TO ARRIVAL:_____
   _____
5. CONTAMINATION DIAGRAM: MARK ALL BODY AREAS CONTAMINATED AND INDICATE RADIATION READINGS



FRONT BACK

6. METHOD(S) USED AND RESULT OF INITIAL DECONTAMINATION EFFORTS:
   _____
   _____
7. ACTION TAKEN: (CHECK ONE)
   _____DECONTAMINATED TO 300 CPM ABOVE BACKGROUND OR LESS AND RELEASED
   _____PERSON REMAINS CONTAMINATED. CONTACT TEAM LEADER AND/OR EOC FOR FURTHER INSTRUCTIONS.
   _____REFERRED FOR DECONTAMINATION LOCATION_____ TIME_____

   _____ _____
   SIGNATURE OF INITIAL MONITOR SIGNATURE OF DECON MONITOR

ATTACHMENT 5

NYS EMERGENCY VEHICLE CONTAMINATION REFERRAL SHEET

1. DATE:_____ _____TIME:_____
2. PMC LOCATION_____ _____
3. OPERATOR'S NAME_____ STATE AGENCY_____ ____
4. YEAR:_____MAKE/TYPE_____COLOR_____ _____
   LICENSE PLATE_____AGENCY/OTHER ID_____ _____
5. DESCRIBE THE EXTENT OF CONTAMINATION AND INDICATE CONTAMINATION LOCATION ON DRAWING BELOW_____ _____
   _____ _____
   _____ _____
   _____ _____

6. METHOD(S) USED AND RESULT OF DECONTAMINATION EFFORTS:_____ _
   _____ _____
   _____ _____
7. ACTION TAKEN: (CHECK ONE)
   _____DECONTAMINATED TO 300 CPM ABOVE BACKGROUND OR LESS AND RELEASED.
   _____VEHICLE REMAINS CONTAMINATED and SENT TO DESIGNATED CONTAMINATED PARKING AREA. CONTACT PMC TEAM LEADER and/or PMC RADIATION TECHNICAL SPECIALIST

_____ _____ _____
SIGNATURE OF INITIAL MONITORING AREA RECORDER

SIGNATURE OF DECON MONITORING AREA RECORDER

ATTACHMENT 6

EQUIPMENT CONTAMINATION REFERRAL SHEET

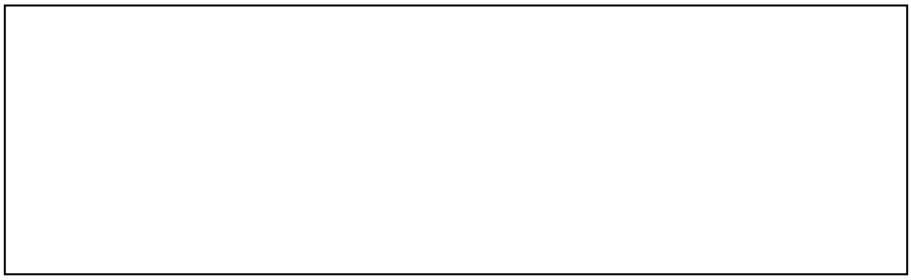
1. DATE:_____ TIME:_____

2. PMC LOCATION: _____

3. DESCRIBE EQUIPMENT:_____

4. OWNER'S NAME:_____
   WORK ADDRESS:_____
   HOME TELEPHONE: _____WORK TELEPHONE: _____
   STATE AGENCY_____

5. DESCRIBE THE EXTENT OF CONTAMINATION AND INDICATE LOCATION OF DRAWING: _____
   _____



6. METHOD(S) USED AND RESULT OF DECONTAMINATION EFFORTS
   _____

7. ACTION TAKEN: (CHECK ONE)
   _____ DECONTAMINATED TO 300 CPM ABOVE BACKGROUND OR LESS AND RELEASED
   _____ ITEM REMAINS CONTAMINATED. RETAIN ITEM. CONTACT PMC TEAM LEADER AND/OR RADIATION TECHNICAL SPECIALIST.

_____ _____
SIGNATURE OF INITIAL MONITOR SIGNATURE OF DECON MONITOR

ATTACHMENT 7

STANDARD OPERATING PROCEDURE

FOR THE INITIAL ISSUE, ACCOUNTABILITY AND MAINTENANCE OF STATE EMERGENCY WORKER KITS FOR THE RADIOLOGICAL EMERGENCY PREPAREDNESS PROGRAM

1. Emergency Worker Kits are issued to State emergency workers in the event of an accident at a nuclear power plant.

2. Distribution of these dosimeters is each Agency's responsibility.

a. Issue Emergency Worker Kits in accordance with the State distribution plan. Be sure to prepare receipt forms, verify counts and record the serial numbers of the radiation badge/ permanent record dosimeters.

3. Each recipient of these Kits will inventory them by serial number of the radiation badge/ permanent record dosimeters on an annual basis.

The enclosed format (Attachment 7A) will be used to report the inventory of Emergency Worker Kits.

4. It is the responsibility of the recipient to annually evaluate the Emergency Worker Kits.

ATTACHMENT 7A

_____

Agency

Page _____ Date _____

EMERGENCY WORKER KIT STOCKPILE AND DISTRIBUTION PLAN

A. Total Allocation To This Organization

1. Emergency Worker Kits : _____

B. Summary of Present Distribution :

1. Quantity in central storage at : _____
2. Quantity distributed to decentralized Storage : _____
3. Quantity distributed to individuals: _____

TOTAL: _____

C. Inspection

1. Date of last inventory : _____

D. Location of Equipment Distributed

1. Name of Individual or Facility	2. Quantity	3. Street Address	4. City

(NOT USED)

ATTACHMENT 8

STANDARD OPERATING PROCEDURE

FOR THE ISSUE, ACCOUNTABILITY AND MAINTENANCE
OF RADIATION BADGE/PERMANENT RECORD DOSIMETRY

1. In accordance with the State Radiological Emergency Preparedness (REP) Plans, radiation badge/permanent record dosimeters (Film, TLD, OSLD, Etc.) will be provided to all emergency workers within the 10 mile Emergency Planning Zone in the event of a nuclear power plant incident. These dosimeters will be utilized in conjunction with direct reading dosimeters and will be the permanent legal record of radiation exposure for all emergency workers.

2. Distribution of permanent record dosimeters will be in accordance with the State distribution plan developed by the Bureau of Environmental Radiation Protection and NYSOEM.

3. Upon receipt of the permanent record dosimeters from the supplier, the NYSOEM Radiological Instrument Facility will perform the following actions:

a. Verify the count of permanent record dosimeters received from the vendor.

b. Issue permanent record dosimeters in accordance with the State distribution plan to include: preparing receipt forms, verifying counts and recording serial numbers.

c. Maintain, by serial number, a record of issue of these permanent record dosimeters to State agencies. Also provide copies of serial numbers to recipients.

4. At the present time (2011), the State of New York provides Optically Stimulated Luminescent Dosimeters (OSLDs) to be utilized as the permanent (legal) record dosimeters for State emergency workers. Procedure G, Section 4.2, of the New York State Radiological Emergency Preparedness Plan outlines further the requirements and procedures for permanent record dosimeters.

5. Upon receipt of permanent record dosimeters, State agencies shall:

a. Verify count and serial numbers.

b. Develop appropriate plans for the distribution and storage of permanent record dosimeters as part of the Emergency Worker Kit to emergency response personnel or agencies. A listing, by serial number, shall be maintained of permanent record dosimeters stored at each location.

ATTACHMENT 8

STANDARD OPERATING PROCEDURE

6. Radiation badge/permanent record dosimeters will be exchanged biennially through the following procedure:

a. SOEM Radiological Instrument Facility will distribute replacement radiation badge/permanent record dosimeters to each agency that initially received them. Upon receipt of these radiation badge/permanent record dosimeters, the recipient will distribute the permanent record dosimeters per item 5 above. Previously issued radiation badge/permanent record dosimeters will be collected for return to the following address:

NY State Office of Emergency Management
Radiological Instrument Facility
Building 22, Ste. 101
1220 Washington Ave.
Albany, New York 12226

***Note**:* It is the responsibility of the recipient to insure that each radiation badge/permanent record dosimeter is returned as required. If the number of badges/dosimeters returned for replacement is less than the number of badges/dosimeters initially issued, the recipient will be responsible for the appropriate replacement cost.

7. In the event of a nuclear power plant incident, all emergency workers will record their radiation badge/permanent record dosimeter serial number on their individual Emergency Worker Radiation Exposure Record Card. At the termination of the incident or upon request of the State Department of Health, Emergency Worker Radiation Exposure Record Cards will be collected in accordance with REP Plan procedures. It is the responsibility of the recipient to record emergency worker personnel information (name, dob, social security number, etc.) on the Emergency Worker Radiation Exposure Record Card.

8. Upon request from the State Department of Health, a copy of the radiation badge/permanent record dosimeter serial number listing and all emergency worker permanent record dosimeters used shall be sent to the SOEM Radiological Instrument Facility for shipment to the supplier for recording of radiation exposure. Replacement radiation badge/permanent record dosimeters will be provided to the recipient per item 6 above.

9. It is the responsibility of the recipient to annually evaluate emergency worker kit/radiation badge/permanent record dosimeter requirements.

10. The NYS Department of Health, Bureau of Environmental Protection, is responsible for maintaining dose records for each individual. These records will include the person's name, social security number, dosimeter serial number, dosimeter reading, estimate of internal dose (whole body and organ, if applicable), and total effective dose equivalent.

11. Internal doses will be estimated based on air sample analysis and length of time each person was exposed to airborne contamination.

12. Following an accident at a nuclear power facility, NYS has an agreement with Landauer, the supplier of the OSLD badges, who will provide a prompt reading of the emergency worker's permanent record dosimeter.

13. Emergency workers who have been identified as being exposed to the plume will also receive a whole body scan.

ATTACHMENT 9

STATEWIDE POTASSUIM IODIDE (KI) INVENTORY

	130mg Tablets	65 mg Tablets	65 mg Liquid
NEW YORK STATE			
- **Field Distribution**	27,300	0	0
- **Storage Supply - SOEM**	297,520	22,660	18,240
- Storage Supply – Glen Falls			2,242,950
- Storage Supply - Rochester			120,000
COUNTY GOVERNMENT	681,331	573,790	783,570
NON-GOVERNMENT ORGANIZATIONS (Daycare & Nursery Schools)	2,949	3,550	15,480
Totals	**1,009,100**	**600,000**	**3,180,240**

1. The New York State field distribution is to State Agencies, emergency workers and eight personnel monitoring centers throughout the State. The storage supply is located at the State Office of Emergency Management Headquarters in Albany.

2. The County government KI inventory is used for the general population, schools, emergency workers and bulk storage.

3. Non-government organizations consist of business and non-governmental entities.

ATTACHMENT 10

U.S. NRC REGULATORY GUIDE 8.13

Office of Nuclear Regulatory Research

REGULATORY GUIDE 8.13 (Draft was issued as DG-8014)

INSTRUCTION CONCERNING PRENATAL RADIATION EXPOSURE

A. INTRODUCTION

The Code of Federal Regulations in 10 CFR Part 19, "Notices, Instructions and Reports to Workers: Inspection and Investigations," in Section 19.12, "Instructions to Workers," requires instruction in "the health protection problems associated with exposure to radiation and/or radioactive material, in precautions or procedures to minimize exposure, and in the purposes and functions of protective devices employed. " The instructions must be "commensurate with potential radiological health protection problems present in the work place."

The Nuclear Regulatory Commission's (NRC's) regulations on radiation protection are specified in 10 CFR Part :20, "Standards for Protection Against Radiation"; and 10 CFR 20.1208, "Dose to an Embryo/Fetus," requires licensees to "ensure that the dose to an embryo/fetus during the entire pregnancy, due to occupational exposure of a declared pregnant woman, does not exceed 0.5 rem (5 mSv)." Section 20.1208 also requires licensees to "make efforts to avoid substantial variation above a union monthly exposure rate to a declared pregnant woman." A declared pregnant woman is defined in 10 CFR 20.1003 as a woman who has voluntarily informed her employer; in writing, of her pregnancy and the estimated date of conception.

This regulatory guide is intended to provide information to pregnant women, and other personnel, to help them make decisions regarding radiation exposure during pregnancy. This Regulatory Guide 8.13 supplements Regulatory Guide 8.29, "Instruction Concerning Risks from Occupational

Radiation Exposure" (Ref 1), which contains a broad discussion of the risks from exposure to ionizing radiation.

Other sections of the NRC's regulations also specify requirements for monitoring external and internal occupational dose to a declared pregnant woman. In 10 CFR 20.1502, "Conditions Requiring Individual Monitoring of External and Internal Occupational Dose," licensees are required to monitor the occupational dose to a declared pregnant woman, using an individual monitoring device, if it is 1ikely that the declared pregnant woman will receive, from external sources, a deep dose equivalent in excess of 0.1 rem (1 mSv). According to Paragraph (e) of 10 CFR 20.2106, "Records of Individual Monitoring Results," the licensee must maintain records of dose to an embryo/fetus if monitoring was required, and the records of dose to the embryo/fetus must be kept with the records of dose to the declared pregnant woman. The declaration of pregnancy must be kept on file, but may be maintained separately from the dose records. The licensee must retain the required form or record until the Commission terminates each pertinent license requiring the record.

The information collections in this regulatory guide are covered by the requirements of 10 CFR Parts 19 or 20, which were approved by the Office of Management and Budget, approval numbers 3150-0044 and 3150-0014, respectively. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

B. DISCUSSION

As discussed in Regulatory Guide 8.29 (Ref. 1), exposure to any level of radiation is assumed to carry with it a certain amount of risk. In the absence of scientific certainty regarding the relationship between low dose exposure and health effects, and as a conservative assumption for radiation protection purposes, the scientific community generally assumes that any exposure to ionizing radiation may cause undesirable biological effects and that the likelihood of these effects increases as the dose increases. At the occupational dose limit for the whole body of 5 rem (50 mSv) per year, the risk is believed to be very low.

The magnitude of risk of childhood cancer following in utero exposure is 1.U1certain in that both negative and positive studies have been reported. The data from these studies "are consistent with a lifetime cancer risk resulting from exposure during gestation which is two to three times that for the

adult" (NCRP Report No.116, Ref. 2). The NRC has reviewed the available scientific literature and has concluded that the 0.5 rem (5 mSv) limit specified in 10 CFR 20.1208 provides an adequate margin of protection for the embryo/fetus. This dose limit reflects the desire to limit the total lifetime risk of leukemia and other cancers associated with radiation exposure during pregnancy. In order for a pregnant worker to take advantage of the lower exposure limit and dose monitoring provisions specified in 10 CFR Part 20, the woman must declare her pregnancy in writing to the licensee. A form letter for declaring pregnancy is provided in this guide or the licensee may use its own form letter for declaring pregnancy. A separate written declaration should be submitted for each pregnancy.

C. REGULATORY POSITION

1. Who Should Receive Instruction

Female workers who require training under 10 CFR 19.12 should be provided with the information contained in this guide. In addition to the information contained in Regulatory Guide 8.29 (Ref: 1), this information may be included as part of the training required under 10 CFR 19.12.

2. Providing Instruction

The occupational worker may be given a copy of this guide with its Appendix, an explanation of the contents of the guide, and an opportunity to ask questions and request additional information. The information in this guide and Appendix should also be provided to any worker or supervisor who may be affected by a declaration of pregnancy or who may have to take some action in response to such a declaration.

Classroom instruction may supplement the written information If the licensee provides classroom instruction, the instructor should have some knowledge of the biological effects of radiation to be able to answer questions that may go beyond the information provided in this guide. Videotaped presentations may be used for classroom instruction. Regardless of whether the licensee provides classroom training, the licensee should give workers the opportunity to ask questions about information contained in this Regulatory Guide 8.13. The licensee may take credit for instruction that the worker has received within the past year at other licensed facilities or in other courses or training.

3. Licensee's Policy on Declared Pregnant Women

The instruction provided should describe the licensee's specific policy on declared pregnant women, including how those policies may affect a woman's work situation. In particular, the instruction should include a description of the licensee's policies, if any, that may affect the

declared pregnant woman's work situation after she has filed a written declaration of pregnancy consistent with 10 CFR 20.1208.

The instruction should also identify who to contact for additional infom1ation as well as identify who should receive the written declaration of pregnancy. The recipient of the woman's declaration may be identified by name (e.g., John Smith), position (e.g., immediate supervisor, the radiation safety officer), or department (e.g., the personnel department).

4. Duration of Lower Dose Limits for the Embryo/Fetus

The lower dose limit for the embryo/fetus should remain in effect until the woman withdraws the declaration in writing or the woman is no longer pregnant. If a declaration of pregnancy is withdrawn, the dose limit for the embryo/fetus would apply only to the time from the estimated date of conception until the time the declaration is withdrawn. If the declaration is not withdrawn, the written declaration may be considered expired one year after submission.

5. Substantial Variations Above a **Uniform Monthly Dose Rate**

According to 10 CFR 20. 1208(b), "The licensee shall make efforts to avoid substantial variation above a uniform monthly exposure rate to a declared pregnant woman so as to satisfy the limit in paragraph (a) of this section,"that is, 0.5 rem (5 mSv) to the embryo/fetus. The National Council on Radiation Protection and Measurements (NCRP) recommends a monthly equivalent dose limit of 0.05 rem (0.5 mSv} to the embryo/fetus once the pregnancy is known (Ref: 2). In view of the NCRP recommendation, any monthly dose of less than 0.1 rem (1 mSv) may be considered as not a substantial variation above a uniform monthly dose rate and as such will not require licensee justification. However, a monthly dose greater than 0.1 rem (1 mSv) should be justified by the licensee.

D. IMPLEMENTATION

The purpose of this section is to provide information to licensees and applicants regarding the NRC staffs plans for using this regulatory guide.

Unless a licensee or an applicant proposes an acceptable alternative method for complying with the specified portions of the NRC's regulations, the methods described in this guide will be used by the NRC staff in the evaluation of instructions to workers on the radiation exposure of pregnant women.

REFERENCES

1. USNRC, "Instruction Concerning Risks from Occupational Radiation Exposure," Regulatory Guide 8.29, Revision 1, February 1996.

2. National Council on Radiation Protection and Measurements, *Limitation of Exposure to Ionizing Radiation,* NCRP Report No.116, Bethesda, MD, 1993.

APPENDIX

QUESTIONS AND ANSWERS CONCERNING PRENATAL RADIATION EXPOSURE

1. Why am I receiving this information?

The NRC's regulations (in 10 CFR 19.12, "Instructions to Workers") require that licensees instruct individuals working with licensed radioactive materials in radiation protection as appropriate for the situation. The instruction below describes information that occupational workers and their supervisors should know about the radiation exposure of the embryo/fetus of pregnant women.

The regulations allow a pregnant woman to decide whether she wants to formally declare her pregnancy to take advantage of lower dose limits for the embryo/fetus. This instruction provides inforn1ation to help women make an information decision whether to declare a pregnancy.

2. If I become pregnant, am I required to declare my pregnancy?

No. The choice whether to declare your pregnancy is completely voluntary. If you choose to declare your pregnancy, you must do so in writing and a lower radiation dose limit will apply to your embryo/fetus. If you choose not to declare your pregnancy, you and your embryo/fetus will continue to be subject to the same radiation dose limits that apply to other occupational workers.

3. If declare my pregnancy in writing, what happens?

If you choose to declare your pregnancy in writing, the licensee must take measures to limit the dose to your embryo/fetus to 0.5 rem (5 millisievert) during the entire pregnancy. This is one-tenth of the dose that an occupational worker may receive in a year. If you have already received a dose exceeding 0.5 rem (5 mSv) in the period between conception and the declaration of your pregnancy, an additional dose of 0.05 rem (0.5 mSv) is allowed during the remainder of the pregnancy. In addition, 10 CFR 20.1208, "Dose to an Embryo/Fetus," requires licensees to make efforts to avoid substantial variation above a uniform monthly dose rate so that all the 0.5 rem (5 mSv) allowed dose does not occur in a short period during the pregnancy.

This may mean that, if you declare your pregnancy, the licensee may not permit you to do some of your normal job functions if those functions would have allowed you to receive more than 0.5 rem, and you may not be able to have some emergency response responsibilities.

4. Why do the regulations have a **lower dose limit for the embryo/fetus of** a **declared pregnant woman than for** a **pregnant worker who has not declared?**

A lower dose limit for the embryo/fetus of a declared pregnant woman is based on a consideration of greater sensitivity to radiation of the embryo/fetus and the involuntary nature of the exposure. Several scientific advisory groups have recommended (References 1 and 2) that the dose to the embryo/fetus be limited to a fraction of the occupational dose limit.

5. What are the potentially harmful effects of radiation exposure to my embryo/fetus?

The occurrence and severity of health effects caused by ionizing radiation are dependent upon the type and total dose of radiation received, as well as the time period over which the exposure was received. See Regulatory Guide 8.29, "Instruction Concerning Risks from Occupational Exposure" (Ref. 3), for more information. The main concern is embryo/fetal susceptibility to the harmful effects of radiation such as cancer.

6. Are there any risks of genetic defects?

Although radiation injury has been induced experimentally in rodents and insects, and in the experiments was transmitted and became manifest as hereditary disorders in their offspring, radiation has not been identified as a cause of such effect in humans. Therefore, the risk of genetic effects attributable to radiation exposure is speculative. For example, no genetic effects have been documented in any of the Japanese atomic bomb survivors, their children, or their grandchildren.

7. What if I decide that I do not want any radiation exposure at all during my pregnancy?

You may ask your employer for a job that does not involve any exposure at all to occupational radiation dose, but your employer is not obligated to provide you with a job involving no radiation exposure. Even if you receive no occupational exposure at all, your embryo/fetus will receive some radiation dose (on average 75 mrem (0.75 mSv)) during your pregnancy from natural background radiation.

The NRC has reviewed the available scientific literature and concluded that the 0.5 rem (5 mSv) limit provides an adequate margin of protection for the embryo/fetus. This dose limit reflects the desire to limit the total lifetime risk of leukemia and other cancers. If this dose limit is exceeded, the total lifetime risk of cancer to the embryo/fetus may increase incrementally. However, the decision on what level of risk to accept is yours. More detailed information on potential risk to the embryo/fetus from radiation exposure can be found in References 2-10.

8. What effect will **formally declaring my pregnancy have on my job status?**

Only the licensee can tell you what effect a written declaration of pregnancy will have on your job status. As part of your radiation safety training, the licensee should tell you the company's policies with respect to the job status of declared pregnant women. In addition, before you declare your pregnancy, you may want to talk to your supervisor or your radiation safety officer and ask what a declaration of pregnancy would mean specifically for you and your job status.

In many cases you can continue in your present job with no change and still meet the dose limit for the embryo/fetus. For example, most commercial power reactor workers (approximately 93%) receive, in 12 months, occupational radiation doses that are less than 0.5 rem (5 mSv) (Ref. 11). The licensee may also consider the likelihood of increased radiation exposures from accidents and abnormal events before making a decision to allow you to continue in your present job.

If your current work might cause the dose to your embryo/fetus to exceed 0.5 rem (5 mSv), the licensee has various options. It is possible that the licensee can and will make a reasonable accommodation that will allow you to continue performing your current job, for example, by having another qualified employee do a small part of the job that accounts for some of your radiation exposure.

9. What information must I provide in my written declaration of pregnancy?

You should provide, in writing, your name, a declaration that you are pregnant, the estimated date of conception (only the month and year need be given), and the date that you give the letter to the licensee. A form letter that you can use is included at the end of these questions and answers. You may use that letter, use a form letter the licensee has provided to you, or write your own letter.

10. To declare my pregnancy, do I have to have documented medical proof that I am pregnant?

NRC regulations do not require that you provide medical proof of your pregnancy. However, NRC regulations do not preclude the licensee from requesting medical documentation of your pregnancy, especially if a change in your duties is necessary in order to comply with the 0.5 rem (5 mSv) dose limit.

11. Can I tell the licensee orally rather than in writing that I am pregnant?

No. The regulations require that the declaration must be in writing.

12. If l have not declared my pregnancy in writing, but the licensee suspects that I am pregnant, do the lower dose limits apply?

No. The lower dose limits for pregnant women apply only if you have declared your pregnancy in writing. The United States Supreme Court has ruled (in *United Automobile Workers International Union* v. *Johnson Controls, Inc.,* 1991) that "Decisions about the welfare of future children must be left to the parents who conceive, bear, support, and raise them rather than to the employers who hire those parents" (Reference 7). The Supreme Court also ruled that your employer may not restrict you from a Specific job "because of concerns about the next generation." Thus, the lower limits apply only if you choose to declare your pregnancy in writing.

13. If I am planning to become pregnant but am not yet pregnant and I inform the licensee of that in writing, do the lower dose limits apply?

No. The requirement for lower limits applies only if you state in writing that you are already pregnant.

14. What if I have a miscarriage or find out that I am not pregnant?

If you have declared your pregnancy in writing, you should promptly inform the licensee in writing that you are no longer pregnant. However, if you have not formally declared your pregnancy in writing, you need not inform the licensee of your non-pregnant status.

15. How long is the lower dose limit in effect?

The dose to the embryo/fetus must be limited until you withdraw your declaration in writing or you inform the licensee in writing that you are no longer pregnant. If the declaration is not withdrawn, the written declaration may be considered expired one year after submission. I

16. If I have declared my pregnancy in writing, can I revoke my declaration of pregnancy even if I am still pregnant?

Yes, you may. The choice is entirely yours. If you revoke your declaration of pregnancy, the lower dose limit for the embryo/fetus no longer applies.

17. What if I work under contract at a licensed facility?

The regulations state that you should formally declare your pregnancy to the licensee in writing. The licensee has the responsibility to limit the dose to the embryo/fetus.

18. Where can I get additional information?

The references to this Appendix contain helpful information, especially Reference 3, NRC's Regulatory Guide 8.29, "Instruction Concerning Risks from Occupational Radiation Exposure," for general information on radiation risks. The licensee should be able to give this document to you.

For information on legal aspects, see Reference 7, "The Rock and the Hard Place: Employer Liability to Fertile or Pregnant Employees and Their Unborn Children-What Can the Employer Do?" which is an article in the journal *Radiation Protection Management* .

You may telephone the NRC Headquarters at (301) 415-7000. Legal questions should be directed to the Office of the General Counsel, and technical questions should be directed to the Division of Industrial and Medical Nuclear Safety.

You may also telephone the NRC Regional Offices at the following numbers: Region I, (610) 337-5000; Region II, (404) 562-4400; Region ill, (630) 829-9500; and Region IV, (817) 860-8100. Legal questions should be directed to the Regional Counsel, and technical questions should be directed to the Division of Nuclear Materials Safety.

REFERENCES FOR APPENDIX

1. National Council on Radiation Protection and Measurements, *Limitation of Exposure to Ionizing Radiation,* NCRP Report No.116, Bethesda, MD, 1993.

2. International Commission on Radiological Protection, 1990 *Recommendations of the International Commission on Radiological Protection,* ICRP Publication 60, Ann. ICRP 21: No.1-3, Pergamon Press, Oxford, UK, 1991.

3. USNRC, "Instruction Concerning Risks from Occupational Radiation Exposure," Regulatory Guide 8.29, Revision 1, February 1996.11 (Electronically available at www.nrc.gov/NRC/RG/index.htrn1)

4. Committee on the Biological Effects of Ionizing Radiations, National Research *Co\Ulcil,Health Effects of Exposure to Low Levels of Ionizing Radiation* (BEIR V), National Academy Press, Washington, DC, 1990.

5. United Nations Scientific Committee on the Effects of Atomic Radiation, *Sources and Effects of Ionizing Radiation,* United Nations, New York, 1993.

6. R Doll and R. Wakeford, "Risk of Childhood Cancer from Fetal Irradiation," ***The British Journal*** *of Radiology,70,* 130-139,1997.

7. David Wiedis, Donald E. Jose, and Timm 0. Phoebe, "The Rock and the Hard Place: Employer Liability to Fertile or Pregnant Employees and Their Unborn Children-What Can the Employer *Do?' Radiation Protection Management,* 11, 41-49, January/February 1994.

8. National Council on Radiation Protection and Measurements, *Considerations Regarding the Unintended Radiation Exposure of the Embryo, Fetus, or Nursing Child,* NCRP Commentary No.9, Bethesda, MD, 1994.

9. National Council on Radiation Protection and Measurements, *Risk Estimates for Radiation Protection,* NCRP Report No.115, Bethesda, MD, 1993.

1 Single copies of regulatory guides, both active and draft, and draft NUREG documents may be obtained free of charge by writing the Reproduction and Distribution Services Section, OCIO, USNRC, Washington, DC 20555-0001, or by fax to (301)415-2289, or by emai1 to <DISTRIBUTION@NRC.GOV>. Active guides may also be purchased from the National Technical Information Service on a standing order basis. Details on this service may be obtained by writing NTIS, 5285 Port Royal Road, Springfield, VA 22161. Copies of active and draft guides are available for inspection or copying for a fee from the NRC Public Document Room at 2120 L

Street NW., Washington, DC; the PDR's mailing address is Mail Stop LL-6, Washington, DC 20555; telephone (202)634-3273; fax (202)634-3343.

10. National Radiological Protection Board, *Advice on Exposure to Ionising Radiation During Pregnancy,* National Radiological Protection Board, Chilton, Didcot, UK. 1998.

11. M.L. Thomas and D. Hagerneyer, "Occupational Radiation Exposure at Commercial Nuclear Power Reactors and Other Facilities, 1996," Twenty-Ninth Annual Report, NUREG-O713, Vol. 18, USNRC, 1998.22

12. Copies are available at current rates from the U.S. Government Printing Office, P .0. Box 37082, Washington, DC 20402-9328 (telephone (202)512-1800); or from the National Technical Information Service by writing NTIS at 5285 Port Royal Road, Springfield, V A 22161. Copies are available for inspection or copying for a fee from the NRC Public Document Room at 2120 L Street NW ., Washington, DC; the PDR's mailing address is Mail Stop LL-6, Washington, DC 20555; telephone (202)634-3273; fax (202)634-3343.

FORM LETTER FOR DECLARING PREGNANCY

This form letter is provided for your convenience. To make your written declaration of pregnancy, you may fill in the blanks in this form letter, you may use a form letter the licensee has provided to you, or you may write your own letter.

DECLARATION OF PREGNANCY

To: _____

In accordance with the NRC's regulations at 10 CFR 20.1208, "Dose to an Embryo/Fetus," I am declaring that I am pregnant. I believe I became pregnant in _____(only the month and year need be provided).

I understand the radiation dose to my embryo/fetus during my entire pregnancy will not be allowed to exceed 0.5 rem (5 millisievert) (unless that dose has already been exceeded between the time of conception and submitting this letter). I also understand that meeting the lower dose limit may require a change in job or job responsibilities during my pregnancy.

_____
(Your signature)

_____
(Your name printed)

_____
(DATE)

REGULATORY ANALYSIS

A separate regulatory analysis was not prepared for this regulatory guide. A regulatory analysis prepared for 10 CFR Part 20, "Standards for Protection Against Radiation" (56 FR 23360), provides the regulatory basis for this guide and examines the costs and benefits of the rule as implemented by the guide. A copy of the "Regulatory Analysis for the Revision of 10 CFR Part 20" (PNL-6712, November 1988) is available for inspection and copying for a fee at the NRC Public Document Room, 2120 L Street NW , Washington, DC, as an enclosure to Part 20 (56 FR 23360).

ATTACHMENT 11

Federal Emergency Management Agency
Washington, D.C. 20472

December 1988

POLICY STATEMENT ON DISPOSAL OF WASTE WATER AND CONTAMINATED PRODUCTS FROM DECONTAMINATION ACTIVITIES

The Federal Emergency Management Agency (FEMA) was requested to provide guidance on:". . monitoring and disposal of contaminated waste water resulting from decontaminating, when necessary, members of the general public, emergency workers, automobiles and equipment in the event of an accident. . ." at a commercial nuclear power plant. This guidance was requested by the Pennsylvania Emergency Management Agency (PEMA) for the annual update of their State and local emergency response plans. The following information is provided in response to that request and has been developed in consultation with members of the Federal Radiological Preparedness Coordinating Committee, Subcommittee on Offsite Emergency Instrumentation, and the E-6 Subcommittee of the Conference of Radiation Control Program Directors.

Guidance

The applicable guidance for this issue is contained in NUREG-0654/FEMA-REP-1, Rev. 1; and Supp. 1, evaluation criterion K.5.b: "The offsite response organization, as appropriate, shall establish the means for radiological decontamination of emergency personnel wounds, supplies, instruments and equipment, and for waste disposal."

Background

Additional Federal guidance on this issue is general. However, the three following documents can be used to clarify and interpret evaluation criterion K.5.b.

1. Environmental Protection Agency (EPA) Manual of Protective Action Guides and Protective Actions For Nuclear Incidents, Chapter 7, Implementing the Protective Action Guides for the Intermediate Phase, draft dated August 12, 1988.

2. FEMA Prefiled Testimony dated April 10, 1987, before the Atomic Safety and Licensing Board (ASLB) in the Matter of Long Island Lighting Company, Shoreham Nuclear Power Station, Unit 1, Docket No. 50-322-0L-3, Remand Issue D.

3. Chapter 16, Decontamination, TID-21919, Radiological Emergency Operations, Student Manual, USAEC Division of Technical Information.

ATTACHMENT 11

Attached to this policy statement is a copy of item numbers 1 and 3 and selected portions of item number 2.

Discussion

The Nuclear Regulatory Commission issues licenses for the operation of commercial nuclear power plants and for the use of other byproduct materials. Any constraints that are imposed on the licensee through 10 CFR regulations apply to radioactive material under the licensee's control during normal operations.

The situation involves radioactive material that is not controlled by NRC rules and regulations. The concern is with an accident, I e., an uncontrolled event. There are no Federal limits for contamination that apply in such emergency situations. Obviously, sound health physics principles and practices should be followed to protect the health and safety of the public under anticipated emergency conditions.

The fact that decontamination is necessary is the result of a radioactive release which contaminates personnel, equipment, and/or vehicles. There are two principal ways in which contamination can occur. First, evacuees and emergency workers and/or their vehicles could initially intercept a portion of the airborne plume which would have otherwise deposited on the fixed surfaces in the plume path. Second, contamination deposited on the ground could subsequently be picked up by evacuees and emergency workers and/or their vehicles from an area previously contaminated by plume passage. The act of bringing evacuees and emergency workers together at a single location for monitoring and, if necessary, decontamination, does not create contamination, i.e., radioactive material; it merely facilitates the movement and relocation of a portion of the radioactive material which was initially released into the environment.

The decontamination of personnel, equipment, and vehicles and the discharge of the waste liquids directly into a water supply source, such as an underground aquifer, pond, lake, stream, or river, may significantly increase the level of radioactive contamination in the water supply source; but this will not significantly increase the potential threat of that body of water to the general public. This assumes that the decontamination is accomplished at a location not too distant from the area that was initially contaminated by deposition from the plume and that all run-off from the decontamination will be deposited in the same watershed contaminated by the plume. If a threat exists, precipitation (i.e., rain or snow, falling on the surface of the land mass) which would also have been contaminated by the plume passage, would have a much greater potential for contaminating the water supply. The problem, if any, created by the disposal of decontamination waste liquids is trivial when compared to potential problems resulting from the leaching or runoff of radioactive material deposited on the ground surfaces in the plume path.

ATTACHMENT 11

In the August 12, 1988, draft of EPA 400 Chapter 7, "Implementing the Protective Action Guides for the Intermediate Phase," this statement is made on page 7-29: "Do not waste effort trying to contain contaminated wash water" when discussing the control of surface contamination on persons and equipment. Also, on the same page, "Establish monitoring and personnel decontamination (bathing) facilities at evacuation centers. Encourage evacuated persons who did not go to an evacuation center but who were in specified areas at specified times (based on the location of the airborne plume) to bathe, change clothes, wash clothes, and wash other exposed surfaces such as cars, and trucks and their contents and then report to these evacuation centers for monitoring."

Personnel contamination will most likely involve spot contamination on an individual's soles of the feet; fingers and palms of the hands; any place that the individual would touch with his hands (even unsuspectingly), especially the face in the area of the head; the hair (especially if outside and not wearing any head covering); the seat of the pants, etc. The most likely personnel decontamination would require spot cleaning of an individual's body that was not covered with clothing. This can usually be accomplished with a good cleansing soap and water at a wash basin, sink, etc. If the hair is contaminated, then a good shampoo would be helpful. In extreme cases of significant personnel contamination, a thorough shower using a liberal amount of a good shampoo and cleansing soap, or if necessary, a stronger detergent would be recommended. If an individual's clothing is contaminated it would be preferable to remove it and replace it with clean clothing until it can be decontaminated. If an individual's shoes are contaminated, it will likely be only the soles. A stiff brushing with detergent and water should remove enough of the contamination so that the individual can retain the shoes. All waste water can be run down the drain as is normally done. Thus, holding tanks for collecting the contaminated waste water are not needed. Also, waste liquid from decontamination of the general public does not need to be monitored for radioactive contaminants.

If individuals are contaminated to levels that require decontamination of the person, then the individual's clothing will undoubtedly require storage for decay or decontamination/cleaning. Contaminated clothing should be collected in plastic bags and stored until it can be cleaned. Replacement clothing of some type must be provided. The utility may be able to provide a laundry facility on-site. After the clothing is washed and dried, it should be checked for contamination by utility personnel prior to being returned to the person. If contamination over a large area is involved, then it may be necessary for the utility to secure an off-site laundry facility near each decontamination station or reception and care center. A commercial dry cleaning facility may also be needed. The water used for washing clothes can be run down the drain as is normally done. The used dry cleaning fluid should be disposed of by the utility as they consider appropriate.

ATTACHMENT 11

Small pieces of equipment that are contaminated offsite should likewise be wiped down with a concentrated detergent solution, or if it can be immersed in water, it can be soaked in the detergent solution. The used solution can also be disposed of down any drain that can be used for waste water. If water could be harmful to the equipment, then any non-aqueous solvent could be used (e.g., alcohol or mineral spirits). Likewise, these solvents should be disposed of by the utility as they consider appropriate.

Decontamination of vehicles and other large pieces of equipment would normally be by washing down with a water spray, either (1) manually through the use of a garden hose or preferably a fire hose that delivers a larger quantity of water, or (2) through the use of fixed spray nozzles mounted on vertical and horizontal pipes. The area selected for the vehicle decontamination must have a surface that will avoid becoming a large mud puddle. A concrete or blacktopped area which drains well could be used. The waste water could be drained directly into a storm sewer or other sewerage system, preferably one that results in the waste water going through a treatment process before returning to a body of water which is used for a drinking water supply. Certainly, any drinking water supply intake should not be immediately below the discharge point for a storm sewer if the water is not treated prior to discharge. If a concrete or blacktopped area of sufficient size is not generally available, an area covered with several inches of crushed rock over a layer of sand or other porous material could be easily constructed in advance. This approach could also allow for the waste water to be naturally filtered so that the majority of the contaminants could be retained in the porous material. A regular commercial car wash could be used for vehicle decontamination if located in the general vicinity where a vehicle decontamination station is required. If the wash water is recycled, then the filter medium should be checked for contamination and properly disposed of, if necessary.

Clothing, tools, equipment, and other usable materials, which are contaminated, should be considered as contaminated waste when the time and effort spent in decontamination efforts would exceed the value of these materials. Contaminated equipment damaged beyond repair and other solid contaminated debris, such as automobile air filter elements, should be considered waste material and should be bagged in plastic and provided to the utility for appropriate disposal. For selected items contaminated by short-lived radio nuclides, storage which would allow decay to effect the decontamination might be feasible, in lieu of disposal.

Attachments
As Stated

APPROVED

Richard W. Krimm
Assistant Associate Director
Office of Natural and
Technological Hazards Program

(NOT USED)

NEW YORKSTATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
PROCEDURE H – ASSESSMENT AND EVALUATION

TABLE OF CONTENTS

Attachments

(Not Used)

NEW YORKSTATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
PROCEDURE H – ASSESSMENT AND EVALUATION

1.0 RADIOLOGICAL ASSESSMENT PURPOSE

The objective of radiological assessment is to determine potential or actual off-site consequences of a radiological emergency. The purpose of this procedure is to identify how such an assessment is to be achieved and how it will influence the selection and initiation of appropriate protective measures.

2.0 SCOPE

This procedure will define the State staff involved in the assessment and evaluation process, their roles, and their interaction with the Nuclear Facility Operator (NFO) and local and Federal agencies.

3.0 RADIOLOGICAL ASSESSMENT STAFF

3.1 Assessment & Evaluation

Assessment at the initial stages of an accident will be performed by the Nuclear Facility Operator (NFO). The NFO will use available information on plant status and releases and on-site and off-site monitoring data to project off-site doses and determine the accident classification. Once an emergency classification has been determined, the NFO will promptly notify the State and local authorities. In cases where radioactive materials are released as a result of the emergency, the NFO will promptly provide information on the release, and will provide on-site and off-site monitoring data as it becomes available. State Assessment & Evaluation (A&E) Staff will perform an independent assessment of the public health effects of the emergency. If the accident is classified as an Alert, Site Area Emergency or General Emergency, accident assessment activities will be conducted at the State Emergency Operation Center (EOC) in Albany. State representatives will be also dispatched to the NFO's Emergency Operations Facility (EOF) to participate in accident assessment activities. Typically, State representatives will be dispatched to the EOF at an Alert or higher emergency classification.

3.2 Lead Role

The State Health Department has the lead role in assessing the off-site health impacts resulting from radioactive releases. The Bureau of Environmental Radiation Protection (BERP) within the Health Department is responsible for carrying out this role. The State Emergency Management Office supports the Bureau of Environmental Radiation Protection in performing this assessment. Specific responsibilities of BERP staff are provided in Section 4.0.

Additional technical support is provided as follows:

The NYS Department of Health Laboratory of Inorganic and Nuclear Chemistry (Wadsworth Center) will perform laboratory analysis of samples collected.

The NYS Department of Environmental Conservation (DEC) will provide staff to support in meteorology, dose assessment, and environmental monitoring and sampling.

The NYS Department of Agriculture and Markets (A&M) will provide staff to support sampling of milk and evaluation of the need for protective actions relating to the milk and food supply.

The NYS Emergency Management Office (NYSOEM), Department of Public Service (DPS), NYS Energy Research and Development Authority (NYSERDA) and DOH will provide staff to assist in assessment and evaluation of the status of the reactor systems.

4.0 BUREAU OF ENVIRONMENTAL RADIATION PROTECTION ACTIVITIES

The Bureau of Environmental Radiation Protection is responsible for overall accident assessment and for providing radiological health expertise to other state and local agencies as required.

The Bureau staff conduct their activities during a radiological emergency from a variety of locations. These are:

4.1 Bureau Office in the Health Department:

Initial notification (during working hours) will be received at the Bureau of Environmental Radiation Protection (BERP) office. Initial contacts with the NFO and key State and local staff will be conducted from these offices.

In case of an Unusual Event, the State EOC will not be activated and all activities relating to the situation will be conducted from the Bureau offices. BERP staff will:

- maintain periodic contact with the NFO
- maintain periodic contact with the NRC
- maintain periodic contact with the state EOC
- keep key Health Department staff, the NRC, other State agencies and local officials informed of all significant developments relating to the situation.

During non-business hours, the above activities will be completed from the homes of appropriate BERP staff.

4.2 State EOC

If the emergency classification is Alert or more severe, the State EOC will be either partially or fully activated. In both cases the A & E Branch as defined in Item 3.1 will proceed to the State EOC. Following initial contact with the NFO and notification of key Health Department staff, two radiological health specialists and a specialist in reactor systems and operations will proceed to the State EOC. The EOC Planning Section, A & E Branch staff controls and directs the State radiological emergency response effort and has the following responsibilities:

- establishing initial contact with the NFO using the call back number on RECS Part 1 Form (Procedure B, attachment 7A or 7B);
- maintaining contact with the NFO and NRC and obtaining updated information periodically;
- evaluating information on plant status, assessing potential for releases to the environment and estimating magnitude of likely release;
- projecting off-site doses and comparing them to the Protective Action Guides (PAGs);
- recommending protective actions to prevent or reduce potential exposures to the off-site population;
- determining the need for and issuing the recommendation to ingest potassium iodide (KI);
- preparing a sampling program as needed, and initiating sampling activities as appropriate;
- determining the need for off-site monitoring, and taking action to initiate the monitoring program as appropriate;
- determining the need for, and/or requesting through NYSOEM, Federal radiological assistance through the USDOE's Brookhaven Area Office and the Federal Radiological Monitoring and Assessment Center;
- maintaining flow of current information and data between the EOC and EOF;
- calculating the ratio of the Total Effective Dose Equivalent (TEDE) to the radiation dosimeter reading when sufficient information on radionuclide mixture in the release has been obtained, and providing dosimeter correction factor to State and local staff as appropriate;
- advising the Commissioner of Health in situations when personnel exposure may exceed PAGs for emergency workers and should be authorized;
- recommending relaxation of protective actions as the emergency conditions ease; and
- conducting briefings for the Chairman of the Disaster Preparedness Commission, the EOC Command staff, the Commissioner of Health, and other officials as appropriate.

4.3 EOF

When activated, the EOF becomes the center where data from the NFO and affected counties is shared. Accident assessment is performed at the affected county's EOC, State EOC, and the

EOF. The State will typically send two representatives to the EOF. These will include a radiological health specialist and a specialist in reactor systems and operations.

The State EOF liaison staff will have the following responsibilities:

- ♦ participate in the accident assessment process at the EOF;
- ♦ interface with county liaisons;
- ♦ maintain flow of current information and data between the EOF and the State EOC; and
- ♦ represent the State at briefings conducted in the EOF.

4.4 Local EOC

In general, local radiological health specialists or radiological officers are responsible for the radiological aspects of the emergency response at the county level.

If requested by the affected county, a State radiological health specialist will proceed to the countyEOC and will act as a radiological consultant to the county.

4.5 Monitoring Teams

During the plume exposure pathway phase of an emergency, the NFO and county field monitoring teams have the primary responsibility for evaluating the magnitude of the off-site exposure levels and concentrations of radioactive releases.

The State may also request assistance for aerial and ground monitoring from federal resources through the Brookhaven Area Office, USDOE. This assistance may be internal USDOE departmental Radiological Assistance Program (RAP teams) or federal interagency support through the National Response Framework (NRF)

4.5.1 Collection and Dissemination of Field Data

Prior to activation of the NFO EOF:

- Data collected by county or NFO field monitoring teams will be transmitted to their EOC or TSC, respectively, according to existing procedures.
- NFO staff receiving field data from NFO's field monitoring teams reviews, tabulates and promptly transmits data to the A&E Branch of the State EOC.
- Radiological assessment and evaluation staff in the State EOC promptly transmits field data received from state field teams to TSC and counties as appropriate.

After activation of the NFO EOF:

- Field monitoring data collected by NFO's monitoring teams will be transmitted to the EOF according to NFO's existing procedures.
- NFO radiological assessment staff tabulate and review field data.
- Data collected by county teams will be transmitted to their respective county EOCs.
- County radiological assessment staff tabulate and review field data.
- County EOC promptly transmits all field data to the EOF and Planning Section, A&E Branch at the SEOC.
- EOF staff makes copies of field data (both generated by NFO or received from counties) and distributes to State, County and Federal liaison persons in the EOF. Each liaison person is responsible for assuring that copies of all appropriate data are transmitted from the EOF to their respective EOCs.
- If a county liaison officer has not arrived at the EOF, the State representative will assure that appropriate field monitoring data are transmitted to that county's EOC from the EOF.
- Should a county who does not have a representative at the EOF have any questions concerning the data, they should address them to the State liaison at the EOF or to the SEOC.

5.0 OTHER AGENCIES' ACTIVITIES

Assessment and Evaluation (A&E) in New YorkState is an interagency team effort which brings together, in the StateEmergencyOperations Center, technical experts from various state agencies.

The following is a list of functional areas with information on the resources employed and tasks assigned.

5.1 Assessment and Evaluation (A&E) Area Facilities and Readiness

The State Emergency Management Office (NYSOEM) Planning Section designs and develops the appropriate workspace and systems needed, in consultation with the A&E participants. NYSOEM staff make sure that the A&E area is maintained and that the reference documents, plans, maps, forms, computers, software and other items needed for A&E are appropriately maintained, stored and retrieved when needed.

In the early stages of an event, NYSOEM staff will make final preparations for activation of A&E, and will carry out those initial tasks necessary to insure continuity of the operation. These efforts will gradually evolve into an integrated A&E operation as the various A&E staff members arrive.

To support the activities of the A&E Branch, NYSOEM provides a variety of administrative and support personnel. These include the following:

- Planning Section personnel assist the DOH group leader in managing and coordinating A&E activities.

- State EOC staff manage the information flow in the A&E Area.

- The Information/Administrative Assistant distributes and records information, delivers messages, and provides essential support services.

- Meteorological technical specialist provides support to the A&E team leader.

5.2 Weather Information

Meteorological assessment, as part of the State A & E area, obtains, processes, displays and disseminates meteorological information.

In an emergency, meteorologists from the NYS Department of Environmental Conservation (DEC) are activated to the State EOC to assume its operation. In a nuclear emergency, the Weather Center obtains and analyzes all meteorological data relevant to plume transport, dispersion and deposition, dose assessment, and the operational needs of the response. Data are obtained, as needed, from the NFO, the National Weather Service, NYS DEC, Weather Services International (WSI) and other sources.

Meteorological information is provided to the A&E room, the command room and the operations room, and is posted in the areas provided. Weather forecasts are prepared and distributed for future dose projections for any potential releases of radioactive material and to inform responders of the conditions under which they will have to operate.

5.3 Nuclear Engineering

Specialists in reactor systems and operations (nuclear specialists) are part of the A&E Branch and act under the direction of the DOH A&E Team Leader at the State EOC. Nuclear specialists gather, assess and relay plant systems information to DOH and other State decision-makers. A minimum of two nuclear specialists are normally needed during emergency operations. The State Department of Health, NYS Department of Public Service, NYSOEM, and the State Energy Research and Development Authority provide nuclear specialists.

The nuclear specialists obtain information from the NFO on the plant status, sequence of events, operating and safety systems and problems, critical parameters and time frames, corrective actions taken or planned, and the prognosis for improvement or worsening of the situation. They determine the effect of engineering matters on plant operations and public safety; keep the A&E Branch advised of plant status as it relates to potential releases of radioactive material; and provide briefings to the command room staff, operations personnel and, when required, the public information officer.

Their analysis includes use of the NFO's Emergency Plans and Procedures and the Final Safety Analysis Reports, the NRC's Emergency Response Data System (ERDS) and other information relating to the plant, and its operating and safety systems. When possible, they work side-by-side with nuclear engineers from the Nuclear Regulatory Commission and the NFO who are dispatched to the state EOC.

5.4 Dose Assessment

As circumstances warrant, other agencies may assist the DOH personnel in performing dose assessment. Trained individuals who may provide such assistance come from NYSOEM, the NYS DEC, the USDOE, and the affected NFO. The use of such assistance depends on the requirements of the operation and availability of trained personnel.

5.5 Ingestion Pathway

Decisions regarding the sampling requirements and procedures for ingestion pathway analysis involve a number of agencies. These include Health, Environmental Conservation, Agriculture and Markets, Transportation and State Police. When appropriate, representatives from these agencies will be called upon to discuss sampling issues and related food and water protective actions. A list of the involved agencies and types of samples they are responsible for is found in Attachment 7. Additional information is found in the special procedures for ingestion pathway response located in Procedures K, L, M, and N of this plan.

6.0 ASSESSMENT INPUT INFORMATION REQUIRED

The assessment process utilizes four sources of information. These are the following:

- Previously developed data
- Relayed real-time radiological and meteorological data
- NFO supplied information
- Federal monitoring and assessment information

6.1 Previously Developed Data

Previously developed data includes information that is independent of the nature of the accident which is needed for a determination of the impact on public health resulting from the accident. These data include the following:

1. Site map showing facility layout
2. Site map showing plume EPZ
3. Site map showing ingestion EPZ
4. Maps, or overlays for the appropriate maps showing

    a. population distribution
    b. special facilities
    c. milk and food processing plants
    d. open reservoirs
    e. ERPAs/Protective Action Areas and evacuation routes
    f. relocation centers
    g. local and State EOCs and EOF
    h. locations of fixed monitoring stations and assigned mobile monitoring points (if predesignated)
    i. watersheds
    j. farms

5. Precalculated off-site projected doses for design basis accidents
6. Site specific emergency procedures

6.2 Relayed real-time Radiological and Meteorological Data

The protective action recommendations in a fast developing emergency are made by the NFO, who is the only entity in a position to identify the emergency and evaluate its on-site and off-site consequences within a short period of time. Any supplementary radiological release information from State or Federal agencies will be delayed by a number of hours, and thus is not usable for preliminary assessment of the accident. Available information is to be provided promptly to the Bureau of Environmental Radiation Protection staff at Health Department offices or at home prior to activation of the EOC. Updates should be supplied periodically to the EOC, once activated.

Primary responsibility for offsite monitoring for exposure rates and radioiodine concentration in the plume EPZ will be conducted by the NFO staff and field monitoring teams of the at-risk county. Pre-selected monitoring and sampling locations for the various teams have been identified. These are shown in the county components of the NYS REP Plan.

Monitoring capability support for extended periods of time will be supplied by the other NFOs. Agreements are established by which mutual radiological assistance will be made available to any facility suffering an accident. Monitoring staff from one facility will be available to support

the other. For example, support to Ginna may be supplied by staff from Nine Mile Point and Fitzpatrick, as these two sites are only 50 miles apart. Ginna staff can also support Nine Mile Point and Fitzpatrick.

6.2.1 NFO Supplied Information

Source term information:

a. shutdown time
b. physical form of release (liquid or gas)
c. radionuclides released and inventory available for potential release
d. iodine/noble gas ratio
e. release rate and possible change in rate
f. time offsite release started, or projected time of start of offsite release
g. projected duration of release
h. effective height of release point

Meteorological Information (current and forecast)

a. on and off-site low level wind speed and direction
b. upper-air wind speed and direction for on and off-site
c. atmospheric stability class
d. precipitation data
e. temperature, pressure, humidity

Off-site radiological information - measured

a. exposure rates at monitoring points and time of measurement
b. cumulative dose at fixed monitoring points (where available)
c. airborne concentrations and radionuclides measured and time and location of measurement
d. location of ground deposition and radionuclide composition

Reactor status information

a. the reactor operational status
b. status of engineered safeguards
c. projected effect on release rate and/or duration
d. length of operating cycle
e. time delay of release after shutdown

Off-site Dose Information

The NFO will provide the following information and will identify whether it is measured or projected:

a. sectors affected
b. dose rate at various distances downwind and time of measurement (or projection) for whole body and thyroid
c. projected dose at site boundary and at various distances downwind (2, 5 and 10 miles)
d. projected dose for special facilities downwind

Protective Actions Information

a. on-site NFO's protective measures involving off-site emergency response teams
b. NFO's recommendation for off-site protective actions

6.2.2 Federal Monitoring and Assessment Information

The Federal Emergency Management Agency has the responsibility for coordinating Federal response to nuclear incidents. NYSOEM will request all federal radiological assistance through FEMA. The coordination of the logistical support necessary for this operation will be the responsibility of NYSOEM and FEMA.

The NRF sets forth the federal government's operational concept of radiological emergency response. It primarily addresses the off-site federal response in support of the state and local authorities having jurisdiction over the emergency site. When the NRF is implemented, the agency responsible for the overall federal response is referred to as the Coordinating Agency. However, because of the complexity of collecting, analyzing, evaluating, assessing, and interpreting off-site radiological data, the NRF specifies that a technical operations center must be established where these activities will be conducted. This center is the Federal Radiological Monitoring and Assessment Center (FRMAC).

The FRMAC is implemented as soon as possible after the radiological emergency commences and continues operations until the Coordinating Agency and the state agree that the FRMAC is no longer needed. The FRMAC becomes a coalition of all federal offsite monitoring and assessment efforts to assist the Coordinating Agency, state and local authorities in a timely manner. The Department of Energy (DOE) is assigned initial management of the FRMAC.

The FRMAC field organization will accomplish the following specific tasks:

- Provide, in cooperation with other federal components, the personnel and equipment to coordinate and perform environmental monitoring and assessment activities.

- Request supplemental assistance and technical support from other federal agencies when needed and when considered necessary to maintain the credibility of the off-site assessment.

- Manage the responding FRMAC resources in the most time-effective and efficient manner possible to support the needs of the Coordinating Agency and New York State.

- Manage and direct the federal, off-site, environmental, radiological monitoring, assessment, and evaluation activities and maintain a FRMAC liaison with state and local authorities that have similar responsibilities.

- Maintain a common set of off-site, environmental, radiological monitoring data in an accountable and retrievable form and ensure the technical integrity of the data.

- Provide data and interpretations as well as exposure-rate contours, dose projections (including future radiation levels and potential dose commitments), and other requested radiological assessments to the Coordinating Agency, state, or other designated agencies or jurisdictions as quickly as possible.

- Support the Coordinating Agency in providing off-site monitoring, analysis, and assessment. Provide data to the Coordinating Agency for developing Protective Action Recommendations (PARs) and promote the involvement of other federal agencies in this process.

- Provide technical and medical advice for handling radiological contamination.

- Assist in planning the recovery of the off-site area and promote the involvement of agencies having radiological expertise in participating with the federal, state, and local agencies. This recovery may involve planning for decontamination, reentry, relocation, and return.

The Coordinating Agency is the federal agency that owns, authorizes, and regulates the facility or is otherwise deemed responsible for the facility or radiological activity causing the emergency and has authority to take onsite action. When it is necessary for the Coordinating Agency to deploy to the site, the it will manage federal actions on-site; assist in developing, evaluating, or recommending off-site protective actions to be taken by the state based on federal Protective Action Guides (PAGs); provide advice on issues such as reentry; and help implement those actions if requested by the state.

Major DOE Resources

Radiological Assistance Program (RAP)

The function of the Radiological Assistance Program (RAP) is to respond with appropriate scientific and medical advice and technical assistance to incidents involving loss of control over radioactive materials. The RAP mission includes making initial radiological monitoring assessments; identifying radioactively contaminated personnel, equipment, vehicles, or property;

determining the need for additional technical resources; providing advice on personnel monitoring, decontamination, and recovery; and recommending sources of medical advice for treating injuries due to radiation exposure or complications from radioactive contamination.

RAP teams stationed at Brookhaven National Laboratory can respond to any site in the State within 4 to 6 hours if air transport is used. (If air transport cannot be used due to weather conditions, motor vehicles will be used. The use of motor vehicles may add about 3 hours to response time for an incident at Indian Point; add about 9 hours for an incident at NMP/JAF; and add about 11 hours for an incident at Ginna Station).

RAP advance teams at Knolls Atomic Power Laboratory (KAPL), Environmental Measurements Laboratories (EML) and the West Valley Demonstration Project, may be able to respond in a shorter time frame depending upon the site of the emergency. KAPL teams can respond to any nuclear power site in the State within 5 hours. The EML team can respond to Indian Point within 2 to 3 hours. West Valley teams can respond to Ginna within 2 to 3 hours and NMP/JAF within 3 to 5 hours.

U.S. DOE Radiological Assistance Program (RAP) teams will be requested for emergencies classified as Site Area or General Emergencies. Data from the DOE teams will be coordinated with other data in the EOF and transmitted from there to the State EOC and the FRMAC. The DOE teams will be the primary source of information on aerial monitoring of the plume. Aircraft of the Aerial Measuring System (AMS) are maintained ready to supply state-of -the-art remote sensing equipment to map large areas that may have been affected by an accidental release. Aerial monitoring capabilities are expected to arrive from Andrews AFB, Maryland. This capability is expected to be functional 4 hours after take-off.
A computer based system, the National Atmospheric Release Advisory Capability (NARAC) uses actual weather and terrain data to predict on a regional scale the transport, diffusion, and deposition of any radioactivity released to the environment.

The information supplied by this monitoring mode includes:

- exposure rates and radionuclide concentrations in the plume
- isotopic identification of radionuclide releases
- delineation of plume extent
- extent of ground deposition

Environmental Protection Agency (EPA) Monitoring Network (RadNet)

The EPA RadNet program is a national network of more than 200 monitoring stations distributed across all 50 states and the American Territories. The EPA RadNet program was initially responsible for monitoring radiation associated with nuclear weapons testing, but the program was later expanded to include monitoring radiation emergencies, following trends in environmental radioactivity levels, and providing data for dose calculations. During its operation beginning in 1973, RadNet's predecessor, ERAMS, collected over half million high environmental samples. The current database primarily provides data that was collected between 1978 and present. These data can be accessed and studied to provide information about releases of radioactivity to the environment at http://www.epa.gov/enviro/html/erams/

RadNet normally operates in a "routine" mode, sampling radiation in all media on a regularly defined schedule.

Media	Sampling Frequency
Air Particulates	Twice Weekly
Precipitation	Monthly
Drinking Water	Quarterly
Milk	Quarterly

Sampling stations and media sampled in New York State are:

Location	Media Sampled
Albany	Air Particulates, Precipitation, Drinking Water
Buffalo	Milk
Lockport	Air Particulates, Near Real-Time Gamma
Hauppauge	Air Particulates
New York City	Air Particulates, Drinking Water, Near Real-Time Gamma
Niagara Falls	Drinking Water
Syracuse	Air Particulates, Drinking Water, Milk
Yaphank	Air Particulates, Precipitation, Near Real-Time Gamma

If there is a major nuclear accident or threat of an event which would result in significant radiation release, RadNet operates in an "emergency" (or alert) mode, accelerating the frequency of sampling and generating many more data records for a given period of time compared to its routine mode. Data from RadNet can be used for dose assessment; to determine the immediate and long-term environmental and public health impacts. The system would help determine whether additional sampling or other actions are needed in response to particular releases of radioactivity to the environment. When atmospheric dispersion of significant levels of radionuclides occurs, the air and precipitation component provides immediate information on airborne particulates and precipitation, while the pasteurized milk component provides information on the uptake and transfer of these radionuclides in milk.

Other EPA Programs

- Assist in developing recommendations regarding measures to protect the public health and safety.
- Assess the nature and extent of the environmental radiation hazard.
- Assist DOE in monitoring radioactivity in the environment during the emergency and intermediate phases;
- Take control of the FRMAC and assume primary responsibility for monitoring in the recovery phase.

Food and Drug Administration (FDA) Analytical Capabilities

FDA manages a program whereby representative samples of foods in a typical diet are taken from various locations throughout the country. These foods, including dairy products are then examined for their radionuclide content, commonly tritium, Sr-90 Cs-137 and K-40. Under emergency conditions, FDA facilities can be used to analyze milk samples taken by FDA regional field staff.

Food Emergency Response Network (FERN)

The Food Emergency Response Network (FERN) integrates the nation's food-testing laboratories at the local, state, and federal levels into a network that is able to respond to emergencies involving biological, chemical, or radiological contamination of food. The FERN structure is organized to ensure federal and state inter-agency participation and cooperation in the formation, development, and operation of the network.

The FERN plays a number of critical roles related to food security and food defense. These include:

1. Prevention: FERN provides a national surveillance program that will offer early means of detecting threat agents in the American food supply;
2. Preparedness: FERN prepares the nation's laboratories to be able to respond to food-related emergencies;
3. Response: FERN offers significant surge capacity that will strengthen the nation's response towards widespread complex emergencies, intentional or inadvertent related to agents in food; and
4. Recovery: The FERN network of laboratories enhances the ability of the country to restore confidence in the food supply following a threat or an actual emergency targeting the nation's food supply.

Department of Health and Human Services

- Guidance to State and local officials on the use of radio-protective substances, including dosage, and on projected doses that warrant such measures.

- Guidance to State on protective action guides for food and animal feeds.

Department of Agriculture

- Provide the State with advice on the minimization of losses to agricultural resources from radiation effects.

- Procurement of food

- Inform and assist farmers and others in returning to pre-emergency conditions.

- Assist in the implementation of protective measures to minimize contamination through food ingestion.

- Assist in the collection of samples within the 50 mile EPZ.

6.3 Sampling Data

Data from laboratory analysis of air, soil, water, milk and vegetation samples collected in the area surrounding the plant are important for defining the magnitude and extent of contamination resulting from the release. These data are not available during the initial phases of the accident and may be delayed up to several days depending upon the radionuclides present, contamination levels and sampling media involved. This data is not used in the decision process in the preliminary stages of the accident where the dose from inhalation and whole body exposure determines the protective action options recommended.

However, laboratory data will be used for:

- modification of protective actions taken already

- prescribing protective actions for the ingestion pathway

- determining the need for decontamination

Sampling will be conducted by the NFO and State agencies. Additional sampling by the Federal agencies (EPA, FDA, NRC, DOE) may be requested through USDOE if needed.

Samples collected by or for the State are analyzed by the radiological laboratory in the State Department of Health. The laboratory's equipment and staff capabilities are listed in Appendix G. The director of the radiological laboratory will coordinate the laboratory analysis activities of the various agencies. Additional sample analysis capability is provided through Federal support coordinated by USDOE.

The State sampling program involves collecting and analyzing samples of the following:

6.3.1 Air Samples

The Bureau of Environmental Radiation Protection maintains sampling points around the nuclear power plant sites that include sampling for particulate and radioiodine releases from the plant. The frequency of sampling and the number of the samples will be increased in an emergency. The state also has portable air samplers and 5 Mobile Vehicle-based Emergency Radiation System (MOVERS) vans that can be deployed as necessary.

6.3.2 Water Samples

Water samples will be collected initially from open reservoirs downwind within the plume EPZ and the tap water from water supplies using these reservoirs. Sampling locations can be extended beyond the plume EPZ as necessary. The Bureau of Water Supply in the Division of Environmental Health Protection, State Department of Health, will be responsible for the collection of water samples and delivering them to the radiological laboratory for analysis.

In the event of a significant release to a river or lake, water samples from the river or the lake will be collected from locations near the point of release as well as down-stream from the release point by the NFO and the state health department. Water samples near public water supply intake points that may be affected by the release will also be collected.

6.3.3 Milk Samples

The milk sampling locations will be coordinated with the State Department of Agriculture and Markets, who will be responsible for sample collection.

Milk samples will be collected from a representative sample of farms in the ingestion EPZ concentrating on farms located in the down-wind direction. Samples will also be collected from milk processing plants that draw milk from farmers in the ingestion EPZ. NYS Department of Agriculture and Markets has identified potential monitoring locations in each EPZ. Radiological assessment information will be used by State DOH BERP and Agriculture and Markets to determine the most efficient means of collecting the necessary dairy samples, e.g., at transfer/processing plants or at each dairy farm. Equipment and resources for this response action are listed in Procedure M.

6.3.4 Vegetation Samples

Vegetation samples are collected in order to determine the contamination level of edible vegetables (in season) and to determine the need for reducing the potential of radionuclide intake through that route.

Samples are also collected from vegetation that constitutes farm animal feed in order to determine potential intake of radionuclides by milk producing animals or those that are used for human consumption. State Departments of Agriculture and Markets and Health will be responsible for the collection of these samples.

6.3.5 Soil Samples

While aerial monitoring may outline the extent of land contamination resulting from deposition of airborne activity, analysis of soil samples collected within the area of contamination determines the radionuclides present and their concentrations. BERP and DPC agencies will be responsible for obtaining these samples.

6.3.6 Fish and Biota Samples

These will be collected when appropriate, to assess potential doses to fishermen and hunters and their family members. DEC will be responsible for obtaining the samples.

7.0 UTILIZATION OF INFORMATION

The assessment and evaluation Branch (A&E) at the EOC will use available information to perform the following:

7.1 Dose Projection

The staff performing the accident assessment at the State EOC will take all the available information described in Item 6 above into consideration when calculating actual or projected doses to the public.

7.1.1 Exposure to the Plume

The purpose of the assessment calculation in the plume EPZ is to estimate the projected dose resulting from airborne radionuclides, as a function of time and distance from the facility, to an individual if no protective measures are taken, and the projected dose for different combinations of protective actions. These are:

- unprotected exposure followed by sheltering in place
- unprotected exposure followed by evacuation

- unprotected exposure followed by sheltering in place, then evacuation

Total Effective Dose Equivalent (TEDE) resulting from exposure from the plume as well as estimates of projected Committed Dose Equivalent (CDE) to the child thyroid due to inhalation of radioiodines in the plume will be calculated.

Preliminary dose estimates for the plume EPZ will be based on the output from RASCAL, licensee specific dose assessment programs, and/or on methods used in the EPA Protective Action Guide Manual and Response Technical Manual. Attachment 1 describes the procedures that will be used to make preliminary dose estimates using various types of available information.

7.1.2 Deposition

There are three different pathways that lead to radiation exposure resulting from deposited radionuclides. These are ingestion of contaminated food or water, external exposure due to surface contamination, and exposure to and inhalation of resuspended radionuclides. The dose resulting from these pathways depends upon a number of factors including the physical properties and chemical form of the radionuclide, their concentrations and the nature of the contaminated surfaces.

In general, the dose due to ingestion of contaminated food(particularly milk), will be the most significant in the early stages after deposition. Concentrations of ^{131}I, ^{134}Cs, ^{137}Cs, ^{90}Sr and ^{89}Sr (the most significant radionuclides for this pathway) will be obtained through laboratory analysis of collected milk and food samples. The measured concentrations of these radionuclides in food or water can be related to dose commitments from uncontrolled ingestion using the methods used in FDA's *Accidental Radioactive Concentration of Human Food and Animal Feeds: Recommendations for State and Local Agencies*, Issued August 13, 1998 (FDA's PAGs). The dose commitment resulting from ingestion of food or water contaminated with other radionuclides will be estimated using the method used by FDA or tables given in EPA's *Manual of Protective Action Guides and Protective Actions for Nuclear Accidents*, EPA 400-R-92-001, May 1992 (EPA PAG Manual), or the FRMAC Assessment Manual . The dose commitment due to external exposure to contaminated grounds can be estimated from an analysis of the contaminants using the procedures and tables in the EPA PAG Manual, Chapter 7, or the FRMACAssessment Manual.

The dose commitment due to resuspension can be calculated for a standard man from knowledge of the air concentrations of airborne radionuclides, using procedures and tables in the EPA PAG Manual, Chapter 7, or the FRMAC Assessment Manual. Attachment 1 outlines the procedure that will be used to obtain projected dose commitments for the various pathways for certain key nuclides.

7.2 Recommendation of Protective Action Options

Based upon the projected doses, and the applicable PAGs, A&E Branch will make protective action recommendations to the State Commissioner of Health. These, if implemented, will institute, alter or rescind previously ordered protective action measures. The criteria used in arriving at these recommendations are described below in Sec. 8, Evaluation and Protective Action Options.

7.3 Deployment of Monitoring and Sampling Resources

The incoming information on the nature of the release and the prevailing conditions will be used by the A&E Branch when determining the need for additional monitoring and sampling. The nature and duration of the release, wind direction and speed and the demographic and topographic characteristics of the areas downwind from the point of release will be taken into consideration when determining the monitoring and sampling needs. Due to the limited monitoring and sampling resources available at the early stages of a developing emergency, sampling priorities will be established. These priorities will be incident-specific and determined by the Field Team Coordinator in consultation with the A&E Team Leader.

7.4 Preparation of Briefing Material

The data received in the EOC and the results of the analyses performed will be reduced by the A&E Branch into concise and understandable information that will give a clear view of the situation. Briefing material will be presented to the EOC staff and the Public Information Officer. The A&E Branch will also assist the PIO in preparing public information messages.

The information prepared should utilize graphic displays and should include the following:

- Identification of the facility experiencing the emergency and the time the incident began;
- Identification of the communities or geographic areas affected by the emergency;
- Brief description of the type of emergency;
- The hazard, particularly in terms of potential risk or absence thereof, to the affected populace;
- Instructions with regard to specific protective measures to be taken by residents of the affected areas and their effectiveness relative to no action and other options;
- Type and extent of participation of involved emergency response organizations;

8.0 EVALUATION AND PROTECTIVE ACTION OPTIONS

Projected doses will be used to determine whether protective actions should be taken to reduce the population exposure. This decision is based upon whether the projected dose exceeds predetermined trigger levels recommended by the EPA Protective Action Guides (PAGs) for plume exposure, FDA PAGs for ingestion of contaminated milk and other foodstuffs, and EPA Protective Action Guides (PAGs) for exposure to deposited radioactivity during the intermediate phase of an accident. FDA and EPA PAGs are listed in Attachments 2, 3, and 5, respectively.

8.1 Plume Protective Actions

The protective action(s) that will result in the maximum dose reduction will depend upon the nature and duration of the release, the time delay prior to initiation of the protective action, the time needed to complete the protective action and the time delay until the plume arrival to the area under consideration. These times are dependent upon the release characteristics, the meteorological and climatic conditions and logistic and demographic distribution constraints. Protective action decisions may also be based on the Emergency Classification Level (ECL) or plant conditions. In general there are three options that can reduce the exposure of an individual to the plume. These are evacuation, shelter-in-place, ingestion of KI, or a combination of the above.

The selection of the optimum protective action involves an evaluation of the dose to the individual that will be averted by taking that protective action. The doses already received will not be considered when comparing the various options in order to evaluate their relative effectiveness.

Protective actions are recommended prior to detailed analysis in the case of a declaration of a General Emergency. In this situation, evacuation for the 2-mile radius around the plant and 5-mile downwind area will be considered, along with implementation of the NYS KI Plan (See Appendix K). As more information becomes available, these initial protective actions will be modified as needed.

8.2 Ingestion Protective Actions

Population exposure can result from intake of radioactive material due to consumption of food and water which have been contaminated by the radionuclides released in the accident. The primary exposure pathways to be considered are the milk, food & water pathways. (See Appendix G for Department of Agriculture Markets radiological control resources listings.)

In 1998, the FDA set the ingestion pathway PAG at 0.5 rem (5 mSv) committed effective dose equivalent (CEDE) or 5 rem (50 mSv) committed dose equivalent (CDE) to an individual tissue or organ, whichever is more limiting. FDA further defined Derived Intervention Levels (DIL) which correspond to the concentrations in food which, if eaten, could lead to an individual

receiving a radiation dose equal to the PAG. Food products with concentration equal to or greater than these DILs will not be allowed to be distributed for public consumption.

The relationship between PAG and DIL is given in Attachment 2. DIL values derived by FDA for a number of radionuclides are also given in Attachment 2.

Implementation of protective measures for food and milk will be carried out by the Department of Agriculture and Markets in coordination with the Department of Health according to their specific operating procedures.

8.2.1 Milk

In the early stages of an emergency, the milk pathway is the most significant route of exposure. Thus, early protective actions for preventing contamination of milk in the affected area are recommended prior to obtaining confirmatory data.

If a Site Area Emergency classification is declared, an immediate recommendation will be made to place milk animals located within a 10-mile radius of the plant on stored feed and water. As more information becomes available, this recommendation may be modified as required. In the case of an immediate General Emergency declaration, a secondary consideration will be to place milk animals within 10 miles on stored feed and water. Primary consideration will be to reduce exposure to the population from the radioactive plume by evacuation or sheltering in place.

8.2.2 Food

Consumable agricultural products such as fruits, vegetables, meat and meat products will be embargoed if the contamination level exceeds the PAGs.

Farmers will be advised not to use contaminated animal feed for livestock used for meat production if the projected dose to the meat consumer exceeds the PAG.

8.2.3 Water

Maps showing water supplies in the ingestion EPZ are available at the State Department of Health and the State EOC. Due to dilution, water treatment, and time lag between contamination of surface water and drinking water at the tap, immediate protective actions prior to confirmatory measurements may not be warranted. However, if measurements show contamination of the drinking water supply in excess of the applicable drinking water standards, (10 NYCRR SubPart 5-1.51, Table 7), one or more of the following options will be recommended:

- use alternative uncontaminated source for drinking, limiting the use of the contaminated water source for sanitary and fire-fighting purposes

- initiate special treatment procedures for water to remove contaminants

- limit water supply sources to uncontaminated water

8.3 Deposition

While the primary source of population dose resulting from ground deposition of radionuclides in the ingestion EPZ is expected to be that resulting from ingestion of contaminated milk and other food products, external exposure due to contaminated surfaces might also be significant.

The Effective Dose Equivalent (EDE) due to the surface contamination and CEDE from inhalation of resuspended materials can be calculated from knowledge of the various radionuclides that make up the surface contamination and the projected time of exposure. Should the TEDE exceed the EPA's intermediate phase PAGs, protective actions will be recommended.

The nature of the protective action recommended will depend upon the half-life of the contaminant, the nature of the contaminated surface, weather conditions, magnitude and extent of the contamination. The protective actions could range from simple decontamination to relocation, depending upon the severity of the problem.

9.0 ASSESSMENT AND EVALUATION PROCEDURE

9.1 Notification of Unusual Event (NUE)

The Bureau of Environmental Radiation Protection, State Health Department:

1. Receives notice of an NUE from NFO or SEOC.
2. Contacts NFO and obtains more detailed information.
3. Notifies DOH PIO, DOH Public Health Preparedness staff, and Director of the Center for Environmental Health (CEH) by telephone or e-mail.
4. Notifies DOH Regional/Area office (during working hours), the DOH Duty Officer and Regional Administrator on Duty (after hours) and DEC.
5. Completes and distributes Problem Alert form to DOH staff (Attachment 6).
6. Continues contact with NFO until emergency is terminated or is escalated to a more severe class.
7. If emergency is terminated, prepares and distributes an update to the Problem Alert form.
8. If emergency is escalated, takes appropriate action as indicated in the following sections.

9.2 Alert

The Bureau of Environmental Radiation Protection, State Health Department:

1. Receives notice of an Alert from NFO or SEOC.
2. Takes steps 2-5 under Unusual Event.

3. Notify Staff responsible for radiological assessment that EOC is partially activated and recommends deployment as necessary.
4. Proceeds to EOC.
5. Once at the EOC establishes contact with the NFO, to advise that the EOC has been activated.
6. Keeps State Commissioner of Health, CEH Director, Regional Environmental Health Director and PIO advised of all significant changes.
7. Prepares briefing material.
8. Maintains Alert status until emergency is terminated, or escalates to a more severe class emergency.

9.3 Site Area Emergency

The Bureau of Environmental Radiation Protection, State Health Department:

1. Receives notice of a Site Area Emergency from NFO or SEOC.
2. Contacts NFO for confirmation and obtains a brief information update.
3. Notifies CEH Director, Director of Radiological Sciences Laboratory and PIO and advises that the following will be recommended:
   - placing all emergency workers on standby;
   - placing milk animals within 10 miles on stored feed.
4. Proceeds to the EOC.

(The following actions will be taken by the assessment staff at the EOC).

5. Establishes contact with the NFO and the State liaison Staff in the EOC, and Local Government EOCs.
6. Requests notification of the USDOE at Brookhaven Area Office and requests radiological monitoring and sampling support.
7. Obtains more detailed information of the plant status and possibility of a release.
8. Performs preliminary (“what-if”) dose projections at various distances downwind (2, 5, and 10 miles), based on plant conditions and possible release pathways.
9. Recommends protective actions based on preliminary dose estimates, taking into consideration the NFO's projected plant status and recommendations.
10. Continues to update preliminary dose projections according to data received.
11. Revises recommended protective actions as indicated by updated data.
12. Advises EOC staff of all significant changes and revisions in projected doses and recommended protective actions.
13. Prepares briefing material, including graphical representation of data and projections for use by PIO and others.
14. Manages emergency worker's exposure.
15. Maintains Site Area Emergency status until closeout or escalation to General Emergency class.

9.4 General Emergency

The Bureau of Environmental Radiation Protection, State Health Department:

1. Receives notice of a General Emergency from NFO or SEOC.
2. Contacts NFO for confirmation and obtains a brief information update.
3. Notifies CEH Director, Director of Radiological Sciences Laboratory and PIO and advises that the following will be recommended:
   - Evacuation for 2 mile radius and 5 miles downwind;
   - Dispatching of emergency workers to duty stations within 5 miles radius and alerting all others to standby;
   - Placing milk animals within 10 miles on stored feed.
   - Implementation of the NYS KI Plan (See Appendix K).
4. Proceeds to the EOC.

(The following actions will be taken by the assessment staff at the EOC).

5. Establishes contact with the NFO and the State liaison Staff in the EOC, and Local Government EOCs.
6. Notifies USDOE at Brookhaven Area Office and requests radiological monitoring and sampling support.
7. Obtains more detailed information on the plant status and on the release if it has occurred.
8. Performs dose projections at various distances downwind (2, 5 and 10 miles).
9. Recommends protective action based on preliminary dose estimates taking into consideration the NFO's projected plant status and recommendations.
10. Calculates TEDE to dosimeter reading ratio, and provides correction factor to appropriate state and local organizations (see Attachment 9).
11. Determines the need for additional monitoring and sampling and initiates programs by contacting appropriate contact persons listed in Attachment 7.
12. Continues to update dose projections according to data received.
13. Revises recommended protective actions as indicated by updated data.
14. Advises EOC staff of all significant changes and revisions in projected doses and recommended protective actions.
15. Provides State monitoring and sampling data to the EOF and county EOCs as these become available.
16. Prepares briefing material, including graphical representation of data and projections for use by PIO and others.
17. Manages emergency worker’s exposure.
18. Maintains General Emergency status until closeout.

ATTACHMENT 1

DOSE ESTIMATION PROCEDURES

Dose estimates will be made for a number of downwind locations including the site perimeter, 2, 5, and 10 miles from the site. They will be based upon data developed by the NFO and others. State dose assessment staff will use RASCAL as the primary dose assessment tool. The applicable licensee dose assessment methodology (computerized and/or manual, see Attachment 8) will be run in parallel with RASCAL, and will provide verification of dose projections. Additional verification of dose projections may be derived using methodologies from the RTM-96 manual, FRMAC Assessment Manual, or EPA PAG manual.

In the absence of computer-based methodologies, hand calculations may be used (Attachment 10). The dose estimating procedures that are available to project Total Effective Dose Equivalent (TEDE), Committed Dose Equivalent (CDE) to the thyroid, Committed Effective Dose Equivalent (CEDE) from inhalation, external and internal doses resulting from deposition and skin beta dose from inhalation are outlined below. Methods to be used to extrapolate doses and concentrations from the point of measurement to other locations are also included.

The assessment procedure will consist of calculating the TEDE, and the CDE to the thyroid using any of the methods discussed. Once the TEDE and CDE are calculated, they will be compared to the PAGs to determine the need for Protective Action Recommendations (PARs). Terms and definitions used throughout this attachment are as follows:

Terms and Definitions

H_T: Dose, (rem)
E: Gamma exposure rate, (mR/hr)
POI: Point of interest
POM: Point of measurement
Q: Release rate, (Ci/sec)
t_a: Cloud travel time, (hrs) = (x/u)/3600
t_e: Estimated exposure time, (hrs)
t_r: Time between shutdown and release, (hrs)
t_s: Time since shutdown, (hrs)
u: Average wind speed, (m/sec)
O: Concentration, (Ci/m^3)
x: Downwind distance to POI or POM, (m)

Definitions

Deep Dose Equivalent, **(Hd)** which applies to external whole body exposure, means the dose equivalent at a tissue depth of 1 cm (1000 mg/cm^2).

ATTACHMENT 1

Committed Dose Equivalent($H_{T,50}$) means the dose equivalent to organs or tissues of reference (T) that will be received from an intake of radioactive material by an individual during the 50-year following intake.

Weighting Factor (W_T) for an organ or tissue (T) means the proportion of the risk of stochastic effects resulting from irradiation of that organ or tissue to the total risk of stochastic effects when the whole body is irradiated uniformly. For calculating the effective dose equivalent, the values of W_T are:

Organ Dose Weighting Factors

Organ or Tissue	W_T
Gonads	0.25
Breast	0.15
Red Bone Marrow	0.12
Lung	0.12
Thyroid	0.03
Bone Surfaces	0.03
Remainder	0.30
Whole Body	1.00

Effective Dose Equivalent(H_E)means the sum of the products of the dose equivalent to each organ or tissue **(H_T)** and the weighting factor **(W_T)** applicable to each of the body organs or tissues that are irradiated.

$$H_E = \sum W_T H_T$$

Committed Effective Dose Equivalent, **($H_{E,50}$)** is the sum of the products of the weighting factors applicable to each of the body organs or tissues that are irradiated and the committed dose equivalent to each of these organs or tissues.

$$H_{E,50} = \sum W_T H_{T,50}$$

Total Effective Dose Equivalent means the sum of the deep dose equivalent for external exposures and the committed effective dose equivalent for internal exposures.

$$TEDE = H_d + H_{E,50}$$

ATTACHMENT 1

1.0 EARLY PHASE DOSES

There are several approaches that can be used to estimate offsite doses during the early phase. The selected approach will depend primarily on the type of information available at the time. This attachment describes the various approaches that may be used.

1.1 Using RASCAL

Radiological Assessment System for Consequence Analysis (RASCAL) will be the primary tool used for estimating offsite doses. The RASCAL program contains tools to estimate source term, atmospheric transport, and dose from a radiological accident; to estimate dose from field measurements of radionuclide concentrations; and to compute decay of radionuclides. It provides dose estimates out to 50 miles in affected directional sectors. This model is designed to provide a rough comparison with EPA PAGs and thresholds for acute health effects. RASCAL was developed by the NRC as a tool to conduct independent assessments of dose projections during nuclear power plant accidents. The RASCAL Version 3 and Version 4 Workbooks are available in the State EOC, and RASCAL is loaded on all computers in the A&E room.

RASCAL can be used in any of the three following modes depending on the data available at the time:

- ST-DOSE Model (source term to dose) – Used to calculate TEDE and CDE to the thyroid based on release rates, radiation monitor readings, and/or plant conditions.
- FM-DOSE Model (field measurement to dose) – Used to calculate dose at the point of measurement and compare it to the appropriate PAG
- Decay model – Used to calculate radiological decay and daughter ingrowth
- Meteorological Data Processor – used to input additional weather information from surrounding locations

1.2 Final Safety Analysis Report (FSAR) Evaluated Incident

Early in the event, prior to a release of radioactive material or availability of data from effluent monitors and the offsite monitoring program, it is possible to estimate offsite doses using information such as the type of reactor, type of accident, plant conditions and the status of engineered safeguards as provided by the Control Room or TSC.

1.2.1 Data Required

a. Type of accident, status of safeguards.
b. FSAR Accidents Analysis and Estimated Dose Projections.

c. Meteorological data - atmospheric stability class, wind direction, and speed.
d. Diffusion overlays and base map (Indian Point only).

1.2.2 Procedure

External dose estimates at a specific distance from the reactor are determined from the FSAR Accidents Analysis and Estimated Dose Projections when the type of accident and status of the safeguards is known. Although this method is crude and does not take into account decay as the cloud travels, it may be the only method available during the early stages of an accident. Results are to be refined as source term information or monitoring data comes in.

1.3 Source Term Known

The first "hard data" likely to be available to the A&E staff that can be used to estimate the external dose component is the release rate obtained from effluent monitors or other direct measurements.

1.3.1 Data Required

a. Release rate, Q, Ci/sec
b. Meteorological data - atmospheric stability class, wind speed and direction.
c. Diffusion overlays and base map (Indian Point only).
d. Atmospheric dilution factors (Xu)/(Q) from RTM-96, Table F-10 (or from plant specific dose assessment procedures)
e. Duration of exposure, t_e, hrs.
f. Time after reactor shutdown, t_s, hrs.
g. Dose Conversion Factors from EPA PAG Manual, Tables 5-1 and 5-2, or from tables H-1 and H-2 below for gross noble gas or gross iodine releases, or from plant-specific dose assessment procedures.

1.3.2 Procedure

Meteorological data is used to select and align the appropriate diffusion overlay on the base map (Indian Point only). Atmospheric dilution factors (Xu)/(Q) are obtained from the overlay at the points of interest (Indian Point only) or from RTM-96, Table F-10 (or plant-specific dose assessment procedures), and concentration at the point of interest is obtained by multiplying (Xu)/(Q) by the source term Q and dividing by the average wind speed u.

$$\chi_{POI} = \left(\frac{\chi u}{Q}\right)_{POI} \left(\frac{Q}{u}\right)$$

This gives the concentration in units of Ci/m^3. The dose at the point of interest can then be calculated by multiplying the concentration in units of $\mu Ci/cm^3$ by a dose conversion factor. ($\mu Ci/cm^3$ is equal to Ci/m^3).

$$TEDE = X\ (\mu Ci/cm^3)\ x\ DCF$$

$$CDE_{thyroid} = X\ (\mu Ci/cm^3)\ x\ DCF$$

This will give you the dose for a 1 hour exposure at the point of interest. For longer exposure times, multiply by the number of hours exposed.

1.3.2.1 Isotope Mix Unknown

If theisotope mix is not known, use the Dose Conversion Factors for mixes of Noble Gases and Iodines from Tables H-1 and H-2 below.

Table H-1 DCFs for Mixtures of Noble Gases (rem per µCi-cm^{-3}-hour) as a function of time after shutdown and expected exposure time

Time between shutdown and start of release (hours)	Estimated Exposure Time (hours)				
	1.0	2.0	3.0	5.0	10.0
1	2.6 E+2	2.4 E+2	2.2 E+2	1.9 E+2	1.5 E+2
2	2.2 E+2	2.0 E+2	1.9 E+2	1.6 E+2	1.2 E+2
3	1.8 E+2	1.7 E+2	1.6 E+2	1.4 E+2	1.1 E+2
5	1.3 E+2	1.2 E+2	1.1 E+2	1.0 E+2	7.7 E+1
10	6.3 E+1	5.9 E+1	5.6 E+1	5.1 E+1	4.2 E+1
DCF for Kr-87 is 5.1 E+2. Use of Kr-87 DCF is conservative.					

Table H-2 Thyroid DCFs for Mixtures of Iodines (rem per µCi-cm^{-3}-hour) as a function of time after shutdown and expected exposure time

Time between shutdown and start of release (hours)	Estimated Exposure Time (hours)				
	1.0	2.0	3.0	5.0	10.0
1	3.2 E+5	3.3 E+5	3.5 E+5	3.8 E+5	4.3 E+5
2	3.5 E+5	3.7 E+5	3.8 E+5	4.1 E+5	4.5 E+5
3	3.9 E+5	4.0 E+5	4.1 E+5	4.3 E+5	4.7 E+5
5	4.4 E+5	4.5 E+5	4.6 E+5	4.8 E+5	5.1 E+5
10	5.3 E+5	5.4 E+5	5.5 E+5	5.6 E+5	6.0 E+5
DCF for I-131 is 1.3 E+6. Use of I-131 DCF is conservative.					
As time after shutdown increases, DCF approaches I-131 DCF.					
Only I-133 ($T_{1/2}$ = 21 hours) has much influence on dose calculations as compared to I-131.					

1.3.2.2 Isotopic Mix Known

If the nuclide mix is known, use the Dose Conversion Factors from the EPA PAG Manual, Tables 5-1 for TEDE and 5-2 for $CDE_{thyroid}$. Sum doses over all nuclides present.

1.3.2.3 Iodine-131 Source Term Known

The procedure here is the same as in the previous section except that the I-131 concentration must be converted to total iodine concentration. Based upon the equilibrium core inventory of radioiodines and noble gases present in a typical light water reactor (NUREG/BR-150, Vol. 1, Rev. 5) and analysis of the decay of each iodine species present, the ratio of total radioiodine to I-131 can be determined. I-131 concentrations are multiplied by the factors listed in Table H-3 to get total radioiodine concentration. $CDE_{thyroid}$ is then determined by multiplying the concentration by the appropriate dose conversion factor from Table H-2, above.

Table H-3 Multiplication Factors to calculate total radioiodines when I-131 concentration is known

Time After Shutdown	Multiplication Factor
0	9
1 Hour	6
2 Hours	5
3 - 5 Hours	4
6 -12 Hours	3
13 - 24 Hours	2
After 2 Days	1

1.3.2.4 Doses from Immersion, Inhalation, and Deposition

For doses specifically from either immersion in the radioactive plume, inhalation of the radioactive plume, or exposure to deposited radioactive materials, use the Dose Conversion Factors from the EPA PAG Manual, Tables 5-3, 5-4, and 5-5. Sum doses for all radionuclides present.

2.0 Offsite Monitoring

2.1 External Dose

The external dose component of TEDE may also be obtained from offsite monitoring data. Since the external dose rate is measured directly in the field, this method should yield the most accurate results. It is likely however, that the required data will not be available until some time

after other dose estimating procedures have been used. This method will therefore be used to refine dose estimates and protective action recommendations. This method does not take into account decay as the cloud travels downwind.

2.1.1 Data Required

a. Gamma exposure rate, dE/dt, mR/hr.
b. Meteorological data - atmospheric stability class, wind direction.
c. Diffusion overlays and base map (Indian Point only).
d. Exposure time, t_e, hrs.

2.1.2 Procedure

The external dose equivalent at the point of measurement is calculated by multiplying the gamma exposure rate by the time of exposure.

$$\mathbf{H_{TPOM} = (dE/dt)\ (t_e)}$$

The methods of Attachment 1, Section 3 are used to obtain the dose at other POI.

If the exposure rate is known, the noble gas concentration can be approximated by dividing the exposure rate by the appropriate 1 hour exposure DCF from Table H-1, above.

2.2 Internal Dose

2.2.1 Data Required

a. Total Iodine or I-131 concentration from air sample
b. Dose Conversion Factors from the EPA PAG Manual, Table 5-2, or Table H-2 above.

Note: Ci/m^3 is equal to $\mu Ci/cm^3$

2.2.2 Procedure

$CDE_{thyroid}$ at a specific location can be calculated from air sampling data. Multiply the radionuclide concentration by the appropriate dose conversion factor from the EPA PAG Manual, Table 5-2, or Table H-2 above.

ATTACHMENT 1

3.0 EXTRAPOLATION OF DOSES AND CONCENTRATION TO SELECTED LOCATIONS

Two methods may be used to project exposure rates, doses or concentration from the point of measurement to other locations that might be of interest. The first uses diffusion overlays and the second uses an analytical expression from the EPA Manual of Protective Action Guides.

3.1 Diffusion Overlays (Indian Point only)

Atmospheric stability class is used to select the appropriate diffusion overlay and it is aligned over the base map according to the prevailing wind direction. The atmospheric dilution factor for any point of interest and for the point of measurement are obtained from the overlay and their ratio is multiplied by either the exposure rate, dose or concentration, as appropriate to obtain the value at the point of interest.

$$\left(H_T, E, \chi\right)_{POI} = \frac{\left(\frac{\chi u}{Q}\right)_{POI}}{\left(\frac{\chi u}{Q}\right)_{POM}} \left(H_T, E, \chi\right)_{POM}$$

3.2 Direct Computation Method

Use the relationship:

$$\frac{E_1}{E_2} \text{ or } \frac{H_{T1}}{H_{T2}} \text{ or } \frac{\chi_1}{\chi_2} = \left(\frac{x_2}{x_1}\right)^n$$

n = exponent as a function of stability class as listed in Table H-4:

ATTACHMENT 1

Table H-4 Exponent as a Function of Stability Class	
Stability Class	**n**
A	2.5 (good only for 0.25-1.5 miles)
B	2.0
C	1.8
D	1.5
E	1.4
F	1.3

4.0 INTERMEDIATE PHASE

4.1 External Pathway (EDE)

4.1.1 Data Required

a. Surface concentration of each radionuclide contributing significantly to exposure (pCi/m^2)
b. Tables of gamma exposure rate and effective dose equivalent due to an initial uniform concentration from the EPA PAG Manual Tables 7.1 and 7.2

4.1.2 Procedure

Determine surface concentration of each radionuclide contributing significantly to exposure. Determine the relative contribution to the gamma exposure rate at 1 meter by multiplying each activity by the corresponding value in Column 3 of Table 7.1 or 7.2. Sum for all radionuclides present. To determine relative integrated dose for 1 year, 2 years, or 50 years, multiply each activity by columns 4, 5, or 6 of Table 7.1 or 7.2. Sum for all radionuclides present.

$$EDE = \sum \{\text{Activity} \times \text{Dose Coefficient}_{(1,\ 2,\ \text{or}\ 50\ \text{years})}\}$$

4.2 Inhalation (CEDE)

4.2.1 Data Required

a. Air concentration of each radionuclide contributing significantly to exposure (pCi/m^3)
b. Tables of dose conversion factors for inhalation of resuspended material due to an initial uniform concentration from the EPA PAG Manual Table 7.4

4.2.2 Procedure

Determine concentration of each radionuclide contributing significantly to exposure. Determine the relative contribution to committed effective dose equivalent by multiplying each activity by the corresponding value in Table 7.4. Sum for all radionuclides present. To determine relative integrated dose for 1 year or 2 years multiply each activity by the appropriate column of Table 7.4. Sum for all radionuclides present.

$$\text{CEDE} = \sum \{\text{Activity} \times \text{Dose Coefficient}_{(1 \text{ or } 2 \text{ years})}\}$$

4.3 TEDE

TEDE is the sum of the effective dose equivalent for external exposures and the committed effective dose equivalent for internal exposures.

$$\text{TEDE} = \text{EDE} + \text{CEDE}$$

4.4 Skin Beta Dose

4.4.1 Data Required

b. a. Surface concentration of each radionuclide contributing significantly to exposure (pCi/m^2)
c. b. Tables of skin beta dose conversion factors for deposited radionuclides from the EPA PAG Manual Table 7.5

4.4.2 Procedure

Determine surface concentration of each radionuclide contributing significantly to exposure. Determine the skin beta dose by multiplying each activity by the corresponding value in Table 7.5. Sum for all radionuclides present.

$$\text{Beta Dose} = \sum \{\text{Activity} \times \text{Dose Conversion Factor}\}$$

ATTACHMENT 1

5.0 INGESTION PATHWAY

Section 3 of Procedure H describes the pathways of concern during the early phase or plume phase. Once the plume has passed, there are other pathways of concern, resulting from the deposition of radioactive materials from the passing cloud. This section describes the approach used to calculate potential doses resulting from ingestion of contaminated foodstuffs. Dose assessment techniques are presented here for CEDE and $CDE_{thyroid}$ exposures resulting from ingestion of contaminated food. In addition, calculations of accident-specific derived intervention levels (DILs) are presented to aid in decisions regarding food embargo.

5.1. CDE Thyroid Exposure (Ingestion Pathway)

5.1.1 Data Required

a. Concentration of radionuclide of interest in food of interest, (pCi/kg for solids, pCi/l for liquids)
b. Dose conversion factor (mrem/pCi) (from the thyroid column of Table 2.2 in Federal Guidance Report No. 11 for standard man)
c. Annual ingestion rate (kg/yr or l/yr)

NOTE: To convert Sv/Bq to mrem/μCi, multiply by 3.7×10^9

5.1.2 Procedure

$$CDE_{thyroid} = \sum \{\text{Concentration} \times \text{Dose Conversion Factor} \times \text{Annual Ingestion Rate}\}$$

The annual amount of a radionuclide ingested is calculated by multiplying the concentration of the radionuclide by the annual ingestion rate for the appropriate food. $CDE_{thyroid}$ dose is calculated by multiplying the dose conversion factor for the radionuclide of interest by annual amount of that radionuclide ingested. For multiple radionuclides, sum contributions for all radionuclides. This dose can be related to other ingestion periods through consideration of the actual ingestion period and correction for decay that occurs prior to ingestion.

5.2. CEDE (Ingestion Pathway)

5.2.1 Data Required

a. Concentration of radionuclide of interest in food of interest (pCi/kg or pCi/l).
b. Dose Coefficient (mrem/pCi) (from the effective column of Table 2.2 in Federal Guidance Report No. 11 for standard man)
c. Annual ingestion rate (kg/yr or l/yr)

5.2.2 Procedure

The annual amount of a radionuclide ingested is calculated by multiplying the concentration of the radionuclide by the annual ingestion rate for the appropriate food. CEDE is calculated by multiplying the dose conversion factor for the radionuclide of interest by annual amount of that radionuclide ingested. For multiple radionuclides, sum contributions for all radionuclides. This dose can be related to other ingestion periods through consideration of the actual ingestion period and correction for decay prior to ingestion.

$$CEDE = \sum \{\text{Concentration x Dose Coefficient x Annual Ingestion Rate}\}$$

5.3 Calculations of Accident-Specific DILS

The Derived Intervention Levels (DILs) are limits on the concentrations of various radionuclides permitted in human food distributed in commerce for human consumption. DILs are expressed in units of μCi/kg or Bq/kg.

See Attachment 2 for derivation of DILs.

5.3.1 Data Required

a. Isotopic analysis of contaminated food, Bq/kg
b. Isotope specific DILs for most sensitive age group, Bq/kg (FDA PAGs Table D-6 and E-7)

5.3.2 Procedure

Divide the sample results by the appropriate DILS. If any ratio is greater than 1, the food exceeds the PAGs and embargo should be considered DO NOT sum contributions for all radionuclides.

6.0 OTHER METHODS

6.1 Each NFO has procedures for calculatingthe values listed above using plant-specific values. These procedures are listed in Attachment 8 and avaialbe at the SEOC, A&E Room.

6.2 The FRMAC Assessment Manuals contain procedures for calculating the values listed above. FRMAC Assessment Manuals are available in hard copy at the SEOC, A&E Room, or can be downloaded from http://www.nv.doe.gov/nationalsecurity/homelandsecurity/frmac/manuals.aspx

6.3 TURBO-FRMAC is the computer code that is used along with the FRMAC assessment Methods. TURBO-FRMAC is installed on all computers in the A&E room.

7.0 TOTAL POPULATION EXPOSURE

Total population dose will be estimations will be performed consistent with the procedures contained in US NRC Regulatory Guide 1.109, Appendix D, using data derived using the above-listed procedures.

7.1 Population total effective dose equivalent (TEDE) and thyroid committed effective dose equivalents ($CDE_{thyroid}$) will be calculated annually for the population living within the 50-mile EPZ.

7.2 The 50-mile region may be divided into a number of subregions, consistent with the nature of the exposure from the radioactive release, i.e., population dose in areas downwind from the plant will be calculated separately from population dose in areas upwind from the plant or otherwise unaffected by the radioactive plume. Each subregion will be described based on dispersion factors, population data, and other information.

7.3 All significant exposure pathways will be evaluated. For purposes of this evaluation, a significant pathway is one that contributes 10% or more to the total dose. Pathways include:

- Ingestion of potable water
- Inhalation of airborne effluents
- External exposure to airborne and/or deposited radionuclides
- Ingestion of aquatic and terrestrial food products

7.4 Calculation of total population dose will be the responsibility of the NYS Department of Health, Bureau of Environmental Radiation Protection. Technical assistance with this effort is available through the US DOE, Brookhaven National Laboratories.

ATTACHMENT 2

INGESTION PATHWAY PROTECTIVE ACTION GUIDES

1. Protective Action Guides (PAG)

   The PAG recommended by FDA is the more limiting of:

   - 0.5 rem (5 mSv) committed effective dose equivalent (CEDE)
   - 5 rem (50 mSv) committed dose equivalent (CDE) to an individual tissue or organ.

2. Derived Intervention Levels (DIL)

   The DILs are limits on the concentrations of various radionuclides permitted in human food distributed in commerce for human consumption. DILs are expressed in units of μCi/kg or Bq/kg. DILS are calculated using the expression:

   $$DIL = PAG / (f \times I \times DC)$$

   Where

   f is the fraction of food intake assumed to be contaminated
   I is the quantity of food intake in the appropriate period of time, kg
   DC is the dose coefficient for the specific radionuclide, rem/μCi or mSv/Bq.

The fraction f, of food intake that is assumed to be contaminated is equal to 0.3, except for ^{131}I in infant diets where f is equal to 1.0.

For a radionuclide whose decay half-life is 55 days or longer, the food intake, I, is taken to be equal to the annual dietary intake of food and beverage. For radionuclides with a half-life less than 55 days, I corresponds to the dietary intake over a period of time during which the radionuclide concentration decays to 0.01 of its initial value. For example, for ^{131}I, FDA uses a value which corresponds to food intake over a period of 60 days in calculating the DIL.

Because of the variation of I and DC with age, FDA calculated DIL values which correspond to 6 age groups. These are 3 months, 1, 5, 10, 15 years and adults. The most limiting DIL value for all age group diets is used as the limit for determining whether a food product can be allowed to be distributed for human consumption.

ATTACHMENT 2

The values used by FDA for the annual food and beverage intake for the different age groups are:

Age Groups	3 months	1 year	5 years	10 years	15 years	Adults
Annual Intake (kg)	418	506	660	779	869	943

The most limiting DIL and the corresponding age group have been given by FDA for a number of radionuclides (Tables D-6 and E-7 of the FDA's PAG document). The following are extracted from these tables:

Derived Intervention Levels			
Radionuclides	DIL Bq/kg	DIL μCi/kg	Limiting Age Group
^{89}Sr	1400	0.038	3 months
^{90}Sr	160	0.004	15 years
^{131}I	170	0.005	1 year
^{132}Te	4400	0.12	3 months
^{134}Cs	930	0.025	Adult
^{137}Cs	1360	0.037	Adult
Cs Group	1200	0.032	Adult
^{103}R	6800	0.18	3 months
^{106}Ru	450	0.012	3 months

3. Other Methods

Both TURBO-FRMAC and the FRMAC Assessment Manuals contain procedures for calculating DILS for these and other isotopes. In addition, there are procedures forcalculating incident specific Derived Intervention Levels (DRLs) to be used as a surrogates for DILs.

ATTACHMENT 3

Protective Action Guides for the Early Phase of a Nuclear Incident		
Protective Action	**PAG (projected dose)**	**Comments**
Evacuation (or Sheltering in place[a])	1 - 5 Rem[b]	Evacuation (or for some situations, sheltering in place[a]) should normally be initiated at 1 Rem.
Administration of stable iodine[d]	5 Rem[c]	Requires approval of State/County medical officials.

[a] Sheltering in place may be the preferred protective action when it will provide protection equal to or greater than evacuation, based on consideration of factors such as source term characteristics, release duration, and temporal or other site-specific conditions.

[b] The sum of the effective dose equivalent resulting from exposure to external sources and the committed effective dose equivalent incurred from all significant inhalation pathways during the early phase. Committed dose equivalents to the thyroid and to the skin may be 5 and 50 times larger, respectively.

[c] Committed dose equivalent to the child thyroid from radioiodine.

[d] This recommendation will be made at the General Emergency ECL.

ATTACHMENT 4

Guidance on Dose Limits for Emergency Workers

Dose limit[a] (rem)	Activity	Condition
5	All	
10	Protecting valuable property	Lower dose not practicable
25	Life saving or protection of large populations	Lower dose not practicable
>25	Life saving or protection of large populations	Only on a voluntary basis to persons fully aware of the risks involved

[a] Sum of external effective dose equivalent and committed effective dose equivalent to nonpregnant adults from exposure and intake during an emergency situation. Workers performing services during emergencies should limit dose to the lens of the eye to three times the listed value and doses to any other organ (including skin and body extremities) to ten times the listed value. These limits apply to all doses from an incident, except those received in unrestricted areas as members of the public during the intermediate phase of the incident.

ATTACHMENT 5

Protective Action Guides for Exposure to Deposited Radioactivity During the Intermediate Phase of a Nuclear Incident

Protective Action	PAG (projected dose) [a] in the first year	Comments
Relocate the general population [b]	TEDE≥ 2 rem	Beta dose to the skin may be up to 50 times higher (100 rem)
Apply simple dose reduction techniques [c]	TEDE <2 rem	These protective actions should be taken to reduce doses to as low as practicable levels

[a] The projected sum of effective dose equivalent (EDE) form external gamma radiation and committed effective dose equivalent (CEDE) from inhalation of resuspended materials, from exposure or intake during the first year. Projected doses refer to doses that would be received in the absence of shielding from structures or the application of dose reduction techniques. These PAGs may not provide adequate protection from some long-lived radionuclides.

[b] Persons previously evacuated from areas outside the relocation zone defined by this PAG may return to occupy their residences. Cases involving relocation of persons at high risk from such action should be evaluated individually.

[c] Simple dose reduction techniques include scrubbing and/or flushing hard surfaces, soaking or plowing soil, minor removal of soil from spots where radioactive materials may have concentrated, and spending more time than usual indoors or in other low exposure rate areas.

Longer Term Objectives of the Protective Action Guides

It is the objective of these PAGs to assure that:

- Doses in any single year after the first year do not exceed 0.5 rem
- The cumulative dose over 50 years (including the dose from the first and second years) will not exceed 5 rem

For source terms from reactor incidents, a PAG of 2 rem projected dose for the first year is expected to meet both the second year and 50-year objectives through decay, weathering, and normal part-time occupancy in contaminated areas.

ATTACHMENT 6

Problem Alert

Message #: cac04-4

Date: 10/17/2008 - 02:06:31 PM **Status:** New **Classification:**

Subject:

Information

Original Information:

From: **Prepared By:** Cynthia A. Costello

Notification is **automatically** sent to NYSDOH executive staff, CEH, and CEH Regional/ District Office staff.
Please note these groups in the NYSDOH Address Book: CEH, CEHALERT, CEHREGIONAL, CEHDISTRICT, DODIR.

Additional NYSDOH Notification:

Latest Notification sent:
Notification sent by:

Additional External Notification:

Latest Notification Sent:
Notification sent by:

Incident Information

Date/Time of Incident:
Incident Location:
County of Incident:
Site Contact:

ATTACHMENT 6

Name: **Affiliation:** **Phone:** **Fax:** **email:**

Incident Category:
Weather Disturbance **Hazardous Substance Incident** **Radiological Incident** **Water Supply Related** **Disease Outbreak** **Other**

County/Area of Concern: maps
Statewide **Western** **Central** **Metropolitan**

Evacuation:

Number of Individuals: **ill:** **Injured:** **Deceased:**

Samples Taken:

Attachments:

ATTACHMENT 7

Contact List for Initiating Sampling Procedures			
Type	**Agency**	**Title**	**Telephone#**
Milk	A&M	Director, Division of Food Safety and Inspection	518-457-4492
Drinking Water Supplies	Health	Director, Bureau of Water Supply Protection	518-402-7650
Air	Health	Director, Bureau of Environmental Radiation Protection	518-402-7550
	Environmental Conservation	Director, Bureau of Radiation	518-402-8579
Soil	Health	Director, Bureau of Environmental Radiation Protection	518-402-7550
	Environmental Conservation	Director, Bureau of Radiation	518-402-8579
Farm products	A&M	Director, Division of Food Safety and Inspection	518-457-4492
Water (lakes & rivers)	Environmental Conservation	Director, Bureau of Radiation	518-402-8579
Fish and biota	Health	Director, Bureau of Toxic Substance Assessment	518-402-7800
	Environmental Conservation	Director, Bureau of Radiation	518-402-8579

This list is maintained by NYSDOH. Distribution of telephone numbers is controlled and numbers will be given on a need-to-know basis. Lists are updated on a quarterly basis.

During an emergency, staff from these agencies will be in the operation center at the State EOC. Requests for sampling will be coordinated through agency staff at the State EOC.

ATTACHMENT 8

NFO Dose Assessment Methodologies Available for Use at State EOC

Dose Assessment Procedures	Citation from NFO Emergency Plan
Nine Mile Point	Procedure EPIP-EPP-8, (current revision)
Ginna	Proc. EPIP - 2-4 (current revision) Proc. EPIP - 2-5 (current revision)
Fitzpatrick	EAP-4.1 (current revision)
Indian Point 2 and 3	EP-310 (current revision)

NOTE:
Licensee dose assessment procedures are maintained in the state EOC and are available for use by the Assessment and Evaluation staff. These documents are controlled by the respective licensee's document control procedures.

CAUTION: When evaluating licensee program outputs for CDE thyroid dose calculations, verify whether a time dependency is used to correct for isotopic decay. If the time factor is not utilized, the calculations may not be consistent with EPA and NRC RASCAL results. Also verify whether the program calculates child $CDE_{thyroid}$ or adult $CDE_{thyroid}$. RASCAL calculates adult $CDE_{thyroid}$.

ATTACHMENT 9

PROCEDURE FOR CALCULATING WORKER DOSE CORRECTION FACTOR

A&E staff will use this procedure to calculate a dosimeter correction factor to account for internal exposures. Since a dosimeter only measures external radiation exposure, a correction factor must be calculated to take internal radiation doses into account. This correction factor is multiplied by the dosimeter reading to calculate TEDE. This correction factor will be relayed to the counties in the affected EPZs as soon as information on the isotopic mix is available.

NOTE: IT IS IMPORTANT THAT THE COUNTIES AND EOF* ARE NOTIFIED IMMEDIATELY, SINCE THEY HAVE BEEN INSTRUCTED TO USE C_f=1 UNLESS TOLD DIFFERENTLY.

*EOF is for information purposes only.

These correction factors are estimates. Data used to calculate these correction factors are based on assumptions that may have large uncertainties.

PROCEDURE FOR USING RASCAL TO CALCULATE WORKER DOSE CORRECTION FACTOR (WITHOUT KI)

The following formula is used to calculate a dosimeter correction factor for emergency workers who have not ingested KI.

1. Once a release has occurred, run RASCAL using either the release rate or plant conditions option. Actual field measurements used to calculate I/NG ratio are the best data to input into RASCAL.

2. Extract the following data from the output summary:

   - Cloud shine dose (CS) = _____ Rem
   - Period ground shine dose (PGS) = _____ Rem
   - CEDE (inhalation) dose (CEDE) = _____ Rem

3. Use the following formula:

$$C_f = \frac{(CS + PGS + CEDE)}{(CS + PGS)}$$

C_f =_____

4. Transmit Correction Factor to appropriate counties.

PROCEDURE FOR USING RASCAL TO CALCULATE WORKER DOSE CORRECTION FACTOR (WITH KI)

The following formula is used to calculate a dosimeter correction factor for emergency workers who have ingested KI. This correction factor is an estimate. Data used to calculate these correction factors are based on assumptions that may have large uncertainties.

1. Once a release has occurred, run RASCAL using either the release rate or plant conditions option. Actual field measurements used to calculate I/NG ratio are the best data to input into RASCAL.

2. Extract the following data from the output summary:

   - Cloud shine dose (CS) = _____ Rem
   - Period ground shine dose (PGS) = _____ Rem
   - CEDE (inhalation) dose (CEDE) = _____ Rem
   - Thyroid dose (THY) = _____ Rem

3. Calculate the contribution from the thyroid dose to the total dose (ThyC):

$$ThyC = (THY * 0.03)$$

ThyC = _____ Rem

4. Use the following formula:

$$C_f = \frac{((CEDE-ThyC) + CS + PGS)}{(CS + PGS)}$$

C_f =_____

5. Transmit Correction Factor to appropriate counties.

.

PROCEDURE FOR USING EPA DCFs to CALCULATE WORKER DOSE CORRECTION FACTOR (WITHOUT KI)

The following formula is used to calculate a dosimeter correction factor for emergency workers who have not ingested KI using the methods in the EPA PAG Manual. In order to use this method, you must know which isotopes are in the plume.

$$Cf = \frac{0.7\ Rem/R \times TEDE}{EDE_{immersion} + 1/96\ EDE_{deposition}}$$

(Not Used)

TABLE OF CONTENTS

(Not Used)

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
PROCEDURE K - RADIOLOGICAL INGESTION EXPOSURE

1.0 INTRODUCTION

The purpose of this procedure is to establish a framework for the responsibilities of the New York State Disaster Preparedness Commission (DPC) with respect to the radiological ingestion exposure pathway. This procedure also identifies State agency emergency management readiness, response and recovery activities.

The contents of this document reflect the current policies and criteria associated with the radiological ingestion exposure pathway from the operating nuclear power plants located within New York State, as well as those that border the State, and therefore require an ingestion exposure pathway component for response. Attachment 1 depicts the operating nuclear power plants for which this procedure has been developed.

The information identified in this procedure relies upon the ability of the DPC, through appropriate State agencies, to accomplish the following:

- activate appropriate State agency field staff;
- collect, transport and analyze ingestion pathway samples;
- assess and evaluate the potential impact of ingestion pathway contamination; and
- alert local governments of the emergency and the potential for adverse public health impact.

The DPC is responsible to the Governor for the implementation of the radiological emergency preparedness program. This procedure calls for State agency coordination among federal and local governments, the nuclear facility operators, and the private sector for information, technical assistance or resources as necessary.

In response to an ingestion pathway incident, State, County and Federal governments will all be responsible for specific roles and activities in a coordinated response. The State's role, which is built around existing regulatory authority and ongoing programs, includes:

- assessment of impact;
- evaluation of response options; and
- implementation of necessary response actions

The role of the Federal government, which would be assisting the State through the Department of Energy, the Federal Radiological Monitoring and Assistance Center, and the National Response Framework, would include:

- technical resource supplement;
- personnel;
- monitoring and assessment; and
- laboratories

The impacted county(ies) would be called upon to provide the following support:

- maintenance of ongoing monitoring programs (i.e., public water supply);
- providing information on local agricultural activities;
- guiding State/Federal responders; and
- supporting State response for ingestion concerns

The licensee that owns the affected plant would continue to work to stabilize and return the plant to pre-accident conditions. Offsite monitoring would also be supplied by the licensee to supplement the county/state resources.

When considering ingestion pathway responses and actions, short term and long-term aspects of this response must be kept in mind. Short-term consideration would be given to establishing intensive monitoring, sampling and evaluation programs aimed at preventing contamination of ingestion pathways or minimizing consumption of contaminated foodstuffs or water. Long term considerations will include: identification of restricted zones requiring relocation of the impacted population; return to this area once radiation levels have been reduced and dealing with the economic impact of an ingestion pathway incident.

Technical Federal support is an integral part of New York State's ingestion pathway response. In the early hours of a radiological emergency, support will be provided through the U.S. Department of Energy's Radiological Assistance Program (RAP). Technical expertise with sophisticated monitoring, sampling and laboratory analysis capability will be provided from the Brookhaven Area Office with USDOE and Brookhaven National Laboratory staff. Advance RAP teams are also available from the Knolls Atomic Power Laboratory, West Valley Demonstration Project, and the Environmental Measurements Laboratory. If the emergency conditions warrant, the Federal Radiological Monitoring and Assessment Center (FRMAC) will be activated to obtain Federal interagency technical support. FRMAC is administered by USDOE. USDOE will provide sophisticated aerial monitoring capability and plume modeling using NARAC. USDOE resources from Region I will be supplemented as required from other DOE facilities including the National Laboratories. (See Procedure H, Section 6.2.2 for a complete summary of available Federal assistance.)

Sampling teams, which will be fielded by NYS in response to ingestion concerns, can be comprised of representatives from the DPC agencies and local Cooperative Extension/USDA, depending upon the situation. The DPC agencies will provide vehicles for the transport of the sampling teams and for the transport of samples to the DOH lab in Albany.

Each State agency which has a role in responding to an ingestion exposure pathway incident will use existing agency procedures based upon its responsibilities as defined in the NYS REP Plan.

2.0 CONCEPT OF OPERATIONS

The concept of operations for this procedure stems from those existing governmental and licensee responsibilities currently identified within this plan. The procedures contained in this plan form the basis for State response to an ingestion exposure pathway incident. However, unlike the plume exposure pathway, the radiological exposure concerns from the ingestion pathway are not as direct and may not require immediate protective actions. The information contained within this procedure centers around these ingestion exposure pathways (see Attachment 2):

- Milk
- Foodstuffs
- Animal feeds
- Water

From an emergency management and public health perspective, the milk pathway is of primary concern. The radioactive materials enter the human food chain through deposition of radioactive material to pasture land, ingestion and concentration of this radioactive material by lactating animals, and consumption of contaminated milk and further concentration of radioactive materials by the human population. The two-step concentration of radioactive materials plus the short time period between initial deposition of the radioactive materials and its ingestion by the public, amplified by the potential detrimental impact upon children and infants who are most sensitive to the biological effects of radiation, are what make the milk pathway a critical concern.

For potential ingestion exposure pathways, State agencies have prepared procedures which would be implemented under the direction of the Chairman of the DPC. The DPC Chairman is designated as the lead agent on behalf of the Governor. Appropriate State agency procedures contain information for sampling, detecting the presence of contamination, analyzing and evaluating the problem, and recommending and implementing protective actions.

Response levels for Protective Actions Guides are based on U.S. Food and Drug Administration guidance, shown in Attachment 2 to Procedure H (USFDA PAG's).

Notification Information and Coordination of Agency Response and Recovery Procedures

Coordination and communication are necessary to effectively implement ingestion exposure pathway protective actions. New York State, through the NYSOEM system, will coordinate all operational and informational requirements with local governments and bordering states and the Province of Ontario. NYSOEM will insure that this information is coordinated among appropriate officials as necessary in accordance with the State Comprehensive Emergency Management Plan and the REPP. In addition, State agencies, as appropriate, will maintain periodic contact with counterparts in contiguous states and provinces to provide specific details pursuant to respective responsibilities.

3.0 ALERT AND NOTIFICATION

Procedures for the alert and notification of State agencies for a nuclear power plant accident are contained in Procedure B of this plan, and will be used as appropriate for mobilization of State agencies for the ingestion exposure pathway response. Procedures for notification of other affected governments are also contained in Procedure B. This ingestion procedure deals with the responsibilities of State Government for alert and notification to local government and other appropriate officials in the event of an ingestion exposure pathway concern.

When the State Planning Section, A & E Branch confirms that radiological ingestion is of concern, NYSOEM will implement procedures for alert and notification of all potentially affected local governments. State assessment personnel will provide NYSOEM with a listing of those counties within the actual or potentially affected areas, and will also provide continual status updates. NYSOEM will notify appropriate State agencies that send representatives to the State EOC, and potentially affected local governments. In addition, notification will be made to other states and the Province of Ontario (as appropriate) and the Federal Emergency Management Agency who will in turn notify appropriate Federal agencies and Canadian officials.

Appropriate attachments contained in Procedure B comprise NYSOEM's procedures for alert and notification, by operating nuclear power plant site, for the ingestion exposure pathway.

In the event that expeditious notification to county emergency management offices is required, NYSOEM will use NY-Alert, the National Warning System (NAWAS) and New York State Police Information Network (NYSPIN). NAWAS and NYSPIN provide the capability for simultaneous notification of local governments on the circuit.

The alert and notification procedures, as defined for the three operating nuclear power plant sites in New York, can be expanded to cover all NYS, or different areas of NYS, as the situation warrants.

As a means of augmenting alert and notification for an incident, DPC agencies will employ their respective communications systems.

4.0 DIRECTION AND CONTROL RESPONSIBILITIES

In the event of a nuclear power plant incident, Emergency Operations are managed from the Command Room at the State EOC in Albany. From this location, the Chairman of the DPC (as the Governor's designee) and other State officials direct the emergency management response and recovery operations. The Command Room is supported by the Operations Section, the Planning Section (including radiological assessment and evaluation), communications and public information. These components provide the necessary information to Command Room personnel to facilitate the State's decision-making.

From the Command Room, decisions concerning State response and recovery are provided. The objectives of the Command Room operation are:

- to assess the magnitude of the situation;
- define radiological impact;
- implement procedures to respond to the situation;
- implement protective actions;
- initiate public information procedures;
- coordinate all actions with appropriate government officials.

With respect to a plume exposure pathway response, Command Room personnel use the existing "Executive Hotlines", which are dedicated landlines, or other bridge lines to coordinate emergency management actions with County Executive personnel. Attachment 3 depicts Command Room informational flow and coordination responsibilities for the ingestion exposure pathway.

The following is a checklist of Command Room activities which will be completed in the event of an ingestion exposure pathway incident:

- assess the magnitude of the ingestion pathway concern;

- determine appropriate protective actions to be employed to protect public health, property and the environment;

- implement protective actions or measures as required in coordination with local officials;

- coordinate the dissemination of public information through the Joint Information Center (when one exists);

- keep local officials informed of protective action recommendations (PARs), the implementation of PARs and public information;

- determine the requirement for Federal resources that may be necessary to augment the State efforts pursuant to the National Response Framework, or the U.S. Department of Energy's Radiological Assistance Program;

- provide periodic briefings to the Governor from the Chairman of the DPC on the current and projected status of the incident and provide recommendation on the requirement for a State Disaster Emergency Declaration pursuant to Article 2-B of State Executive Law;

- as the incident progresses, evaluate protective actions and adjust as necessary in the interest of public safety;

- provide periodic updates on the status of the management of the incident to all components in the State EOC ;

- manage the implementation of short- and long-term State recovery actions; and

- insure that all information is coordinated with other bordering states and the Province of Ontario, Federal authorities and the nuclear facility operator.

5.0 ORGANIZATIONAL RESPONSIBILITIES

In the event of a radiological ingestion exposure pathway accident, State agencies will provide the necessary resources to protect public health, property and the environment. State agencies involved in the ingestion exposure pathway response will use their own specific agency procedures. Activities will be coordinated by NYSOEM at the State EOC. The following is a listing of the State Agency responsibilities associated with the radiological ingestion pathway:

A. Department of Health

As the State's lead agency for the protection of public health for radiological incidents, DOH will:

- collect samples of potable water, soil, produce and vegetation;
- take environmental radiation measurements;
- provide laboratory analysis for samples taken in the field;
- recommend protective actions;
- assist in the coordination and delivery of public information relating to protective actions implemented;
- serve as the focal point in the State EOC for the analysis and assessment of radiological information;
- provide technical training as required;
- provide technical support for PMC's.

B. Department of Agriculture and Markets

- maintain an inventory of crop farms, dairy farms, food processing plants and stock farms;
- collect samples of milk;
- may collect produce, meats, animal feeds, etc., from processing plants and the marketplace;
- recommend protective actions;
- implement protective actions as appropriate for milk, produce and animal feeds;
- embargo produce and milk in contaminated areas;
- restrict use of animal feeds;
- provide information and direction to all farmers within the affected areas;
- assist in the development and release of public information;

- coordinate with appropriate local and federal agencies (Cooperative Extension, USDA) for necessary resources;
- provide technical training as required;
- identify milk shed including location of dairy farms and amount of milk produced in each EPZ;
- maintain an inventory of milk processing plants and subsequent sale locations; and
- identify time of year for cows and goats on pasture.

C. Department of Environmental Conservation

- collect samples of environmental flora and fauna;
- using agency resources, transport samples to laboratory facilities;
- implement protective actions with respect to environmental flora and fauna;
- assist in public information for protective actions;
- support communications using agency resources;
- provide regulatory oversight for waste management and disposal;
- assist DOH in field monitoring and other activities;
- provide technical support for PMC's.

D. Division of State Police

- provide division resources to support communications;
- expedite the delivery of samples for laboratory analysis;
- maintain access control points; and
- provide personnel to staff State Emergency Worker Personnel Monitoring Centers (PMC).

E. Department of Transportation

- provide department resources for delivery of samples to appropriate laboratory for analysis;
- assist in the maintenance of access control points;
- support communications with agency resources;
- provide resources for transporting ingestion field teams;
- provide resources and personnel to staff State Emergency Worker PMCs; and
- maintain accessibility of routes during severe weather conditions.

F. State Office of Emergency Management

- act as transportation coordinator for collection and transportation of samples to appropriate laboratories;
- provide coordination for response and recovery activities for the State EOC and the NYSOEM Regional Offices, if activated;
- provide notification to Federal, State and local governments;
- assist the State DOH in radiological assessment at the State EOC;

- provide training and awareness to State and local officials;
- coordinate the delivery and implementation of resources to sustain operational requirements;
- support communications with agency resources;
- coordinate the State's Public Information Program;
- assist in the implementation of protective actions;
- coordinate the overall ingestion pathway planning components of the State's procedure;
- provide liaison to appropriate Federal agencies;
- provide dosimetry and survey and sampling instruments.

6.0 PUBLIC INFORMATION RESPONSIBILITIES

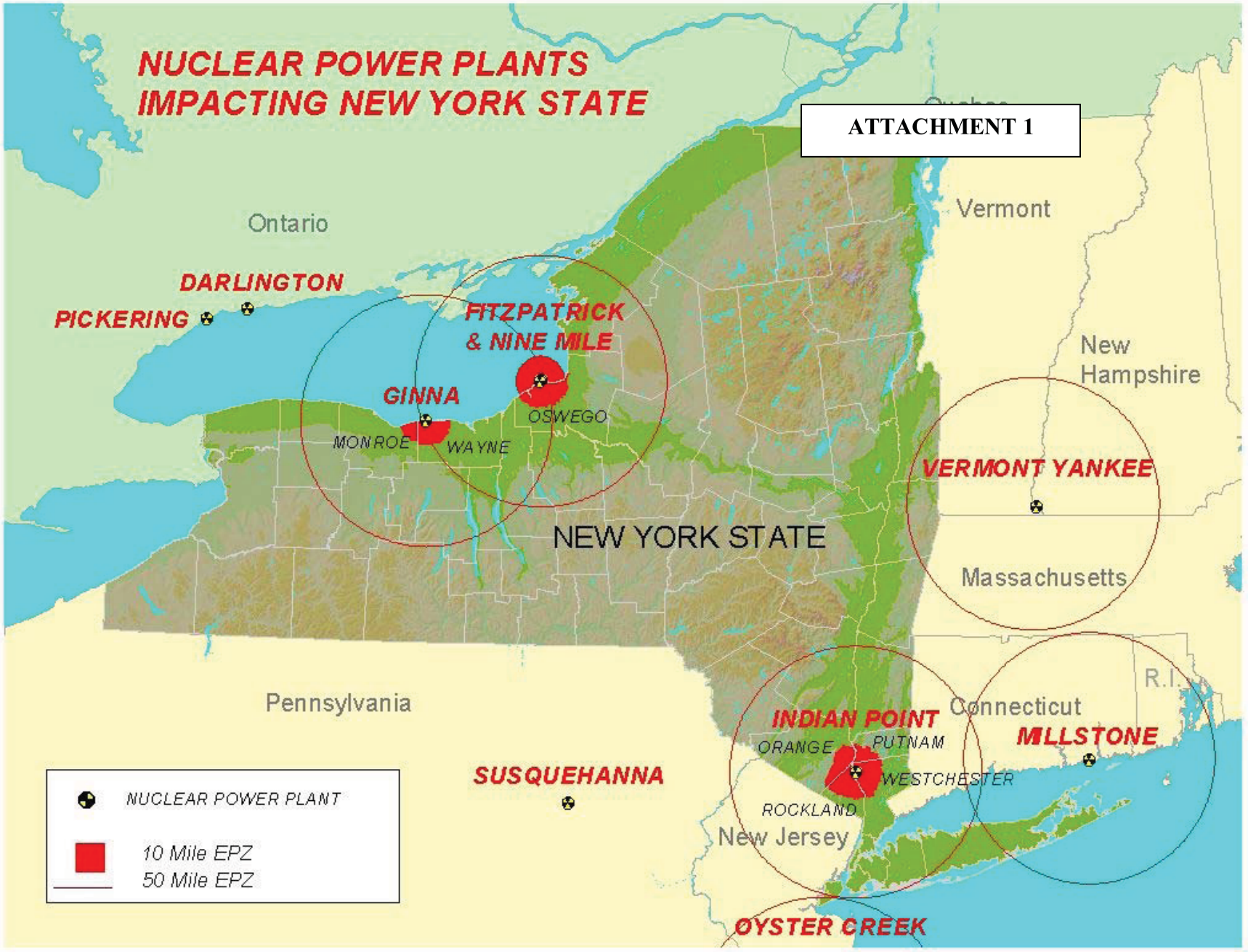
The potential magnitude and impact of an ingestion exposure pathway incident requires an extensive public alert and notification capability on the part of state and local government. There is a requirement for notification to the general public, agricultural industry, retail and wholesale food and commodity distributors, industrial representatives and other appropriate entities.

Procedures exist in this plan for public information during a nuclear power plant incident. Through the use of a Joint Information Center (JIC) located near to the potentially affected area, local, State, Federal and licensee public information officers coordinate and disseminate all information to the general public on the status of the incident and protective measures to be employed for public safety. The JIC (when one exists) is the designated location for the release of information to the public during an ingestion exposure pathway response.

The JIC may, at the discretion of the NYS DPC, continue to operate for the initial portions of an ingestion pathway response. For long-term ingestion pathway activities, the public information function may return to Albany. In the event that no JIC exists in the areas with ingestion pathway impact, the information will be provided to the public from Albany or another designated location.

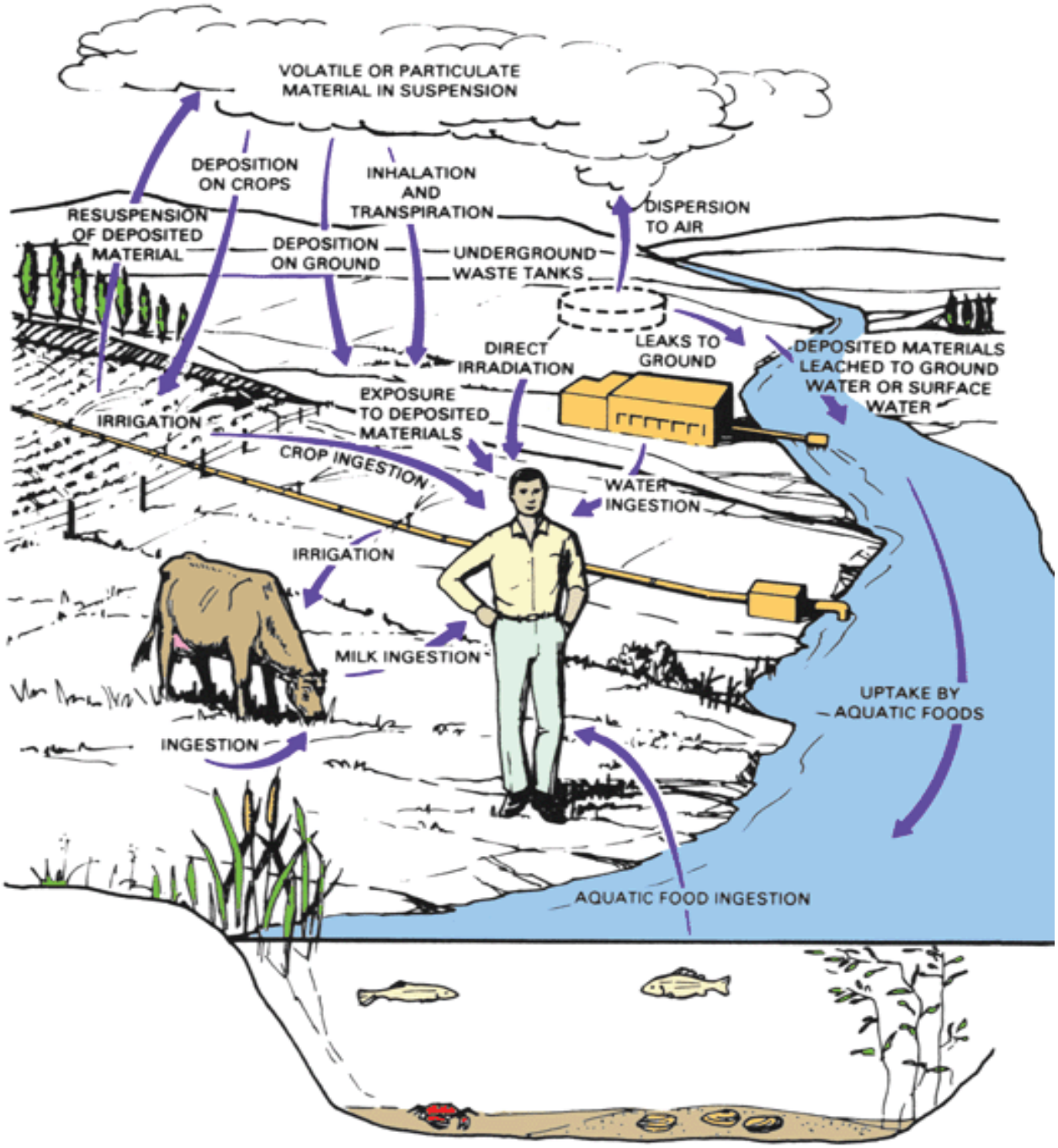
To provide effective public information releases to the general public, the New York State Emergency Alert System (EAS) can be activated if determined to be necessary. Additionally, NY-Alert may be used to disseminate EAS and other emergency notifications. The primary means for accessing EAS for dissemination of protective action decisions will be with the assistance of local access (county) personnel. If the EAS cannot be accessed locally, or if a large region must be notified simultaneously, NYSOEM will coordinate the issuance of the message via EAS as appropriate. (Reference EAS procedures on file at the EOC.) Public information may also be disseminated to specific areas through NY-ALERT and/or reverse dialers such as CODE RED.

While the JIC is operational, all public information news releases and EAS and other messages will be compiled and written at the JIC. This information will be provided to the representative for the public information function at the State EOC upon completion.


NUCLEAR POWER PLANTS
IMPACTING NEW YORK STATE
ATTACHMENT 1
Ontario
Vermont
DARLINGTON
PICKERING
FITZPATRICK
& NINE MILE
GINNA
OSWEGO
MONROE
WAYNE
New
Hampshire
VERMONT YANKEE
NEW YORK STATE
Massachusetts
Pennsylvania
R.I.
Connecticut
INDIAN POINT
ORANGE
PUTNAM
MILLSTONE
WESTCHESTER
ROCKLAND
New Jersey
SUSQUEHANNA
OYSTER CREEK
NUCLEAR POWER PLANT
10 Mile EPZ
50 Mile EPZ

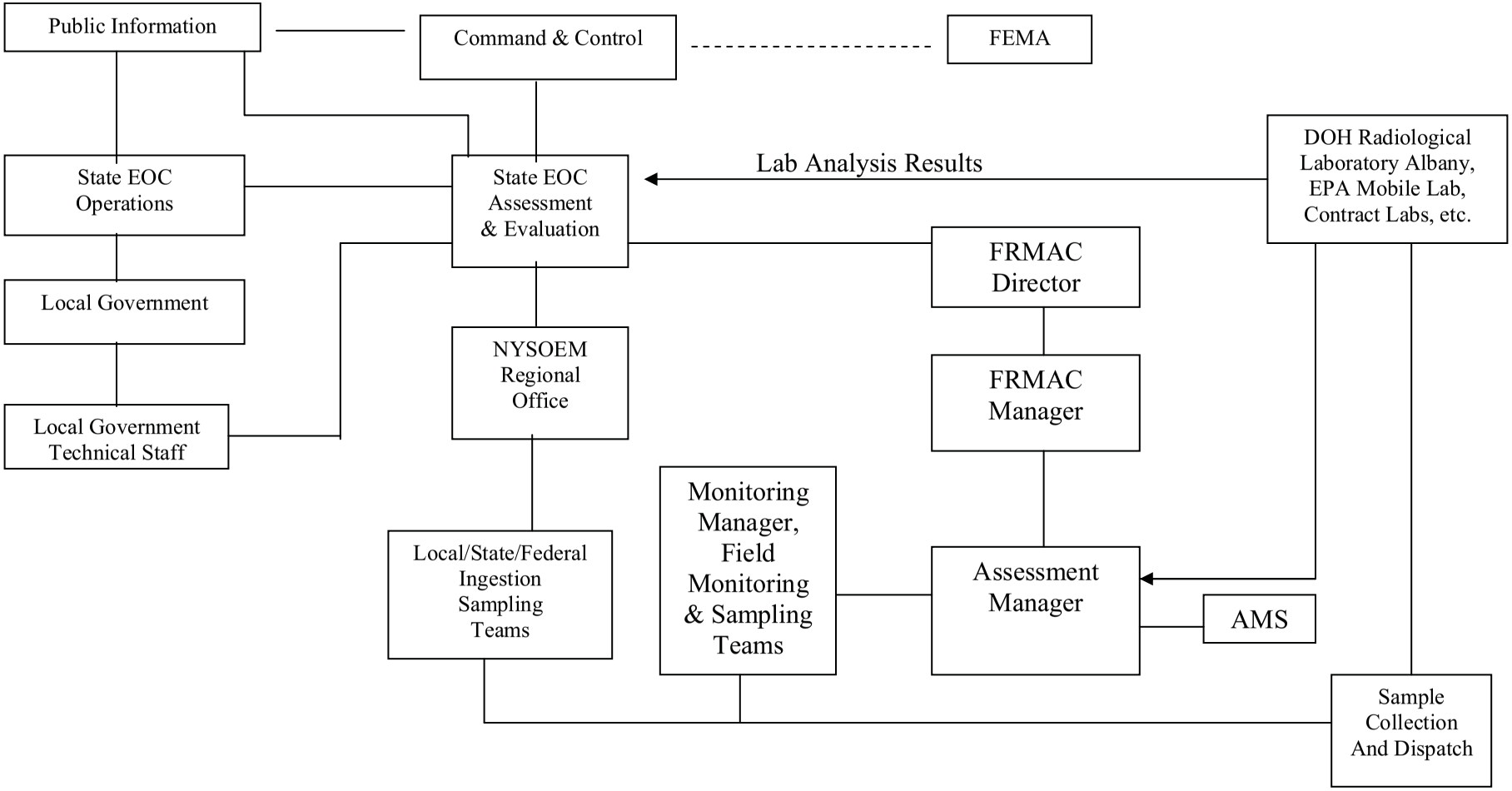
ATTACHMENT 2

PATHWAYS FOR EXTERNAL AND INTERNAL EXPOSURE OF MAN FROM AIRBORNE AND LIQUID RELEASES OF RADIOACTIVE EFFLUENTS



ATTACHMENT 3

COMMAND ROOM INFORMATIONAL FLOW AND COORDINATION RESPONSIBILITIES



(NOT USED)

TABLE OF CONTENTS

(Not Used)

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
PROCEDURE L - RELOCATION/RETURN/REENTRY/INGESTION

This procedure identifies actions to be taken following the termination of radioactive releases from a nuclear power plant accident. This procedure is to be implemented by the Disaster Preparedness Commission (DPC) member agencies in coordination with impacted counties, contiguous states/Canada and Federal agencies.

1.0 PREREQUISITE

Determine from the licensee that the plant is in a stable condition and radioactive releases have been terminated (State Assessment and Evaluation). Coordinate this determination with the NRC.

2.0 INITIAL ACTIONS

2.1 Develop a monitoring plan (1-meter dose rates and soil samples) to determine the plume footprint.

2.1.1 Review all available plume radiological monitoring team data (DOH).

2.1.2 Review DOE flyover data (DOH).

2.1.3 Determine projected plume footprint (DOH).

2.1.4 Consider number of available teams from all sources (DOH).

2.1.5 Coordinate sample transport to available laboratories (DPC).

2.2 Determine dose limits (Procedure G), brief and dispatch teams (Procedure M) (DOH).

2.3 Establish initial restricted zone.

2.3.1 Identify plume footprint from soil sample analysis and dose rate data (DOH).

2.3.2 Determine exposure rate that corresponds to a 2 Rem dose for the first year provided that the soil samples indicate consistent isotopic mix (Procedure H, Attachment 1). This exposure rate is called a derived response limit (DRL). If there is not a consistent isotopic mix, multiple DRLs may need to be calculated (DOH).

2.3.3 Using calculated DRLs, determine areas exceeding 2 Rem PAG for first year (DOH).

2.3.4 At a minimum, set the initial restricted zone to include areas exceeding 2 Rem in the first year. In order to provide an adequate buffer zone, include all areas in the plume footprint which were previously evacuated (DOH).

2.3.5 In coordination with the impacted counties, expand the restricted zone to a point where access control is practical (DPC).

2.3.6 Establish Access Control Points (DPC/local law enforcement agencies).

2.3.7 Coordinate with contiguous states and the Province of Ontario (NYSOEM/DOH/DSP).

2.3.8 Approve protective action decisions (DPC).

2.3.9 Inform counties of decisions (NYSOEM).

2.4 Reentry (controlled temporary access) into the initial restricted zone.

2.4.1 Establish allowable reasons for reentry (e.g. recovery operations, retrieval of property, security patrol, operation of vital services, care/feeding of farm/other animals) with input from State/local officials (DPC).

2.4.2 Establish location(s) for issuing reentry passes and dosimetry in coordination with local officials (DOH/NYSOEM).

2.4.3 Establish dose limits for reentry (DOH).

2.4.4 Identify any areas to avoid during reentry (DOH).

2.4.5 Consider the use of vehicles that remain in the restricted zone to limit the spread of contamination (DOH/NYSOEM).

2.4.6 Establish monitoring/decontamination facility(ies) close to restricted zone boundary at selected access points in coordination with local officials (DOH/NYSOEM).

2.5 Issue news advisories as decisions are made (DPC).

2.6 Consider requesting Federal Disaster declaration (DPC).

3.0 ONGOING ACTIONS

3.1 Coordinate activities (sampling, protective actions, implementation) with other states, Province of Ontario and Federal Response (DPC).

3.2 Review staffing and adjust as conditions warrant (DPC).

3.3 Develop environmental sampling plan (see Attachment 1) (DOH).

3.3.1 Determine commercial dairy producers, public water supplies, and crops in season in and out of the plume footprint (Ag&Mkts/DOH).

3.3.2 Consider soil samples to verify restricted zone boundary (DOH).

3.3.3 Have teams monitor for locations exceeding exposure rate (DRL) corresponding to 2 rem first-year dose to identify hot spots (DOH).

3.3.4 Collect environmental TLDs (DOH).

3.3.5 Consider private garden sampling if resources permit (DOH).

3.3.6 Prioritize sampling and sample analysis (see Attachment 2) (DOH).

3.3.7 Coordinate sample transport and distribution (DOH/NYSOEM).

3.4 Determine dose limits (see Procedure G), brief, and dispatch teams (see Procedure M) (DOH).

3.5 Develop/implement protective actions for the ingestion pathway (milk, food, water).

3.5.1 Determine areas where sample results exceed derived intervention levels (DILS) for food (see Procedure H, Attachment 1) (DOH).

3.5.2 Determine protective actions for those areas (DOH).

3.5.3 Expand areas for practical implementation (DOH/Ag&Mkts/DEC).

3.5.4 Consider embargo and quarantine measures (DOH/Ag&Mkts).

3.5.5 Coordinate protective actions with contiguous states and the Province of Ontario (NYSOEM/DOH/Ag&Mkts/DSP).

3.5.6 Approve protective action decisions (DPC Chairman).

3.5.7 Inform counties of decisions (NYSOEM).

3.5.8 Issue news advisories (DPC).

3.6 Redefine restricted zone.

3.6.1 As more detailed information becomes available, redefine restricted zone boundaries to include only areas where the projected dose is greater than 2 Rem in the first year

(plus a small buffer zone) in coordination with impacted counties (DPC). It may be practical to use the 5 rem in 50 years projected dose line to define the buffer zone.

3.6.2 Move Access Control Points and monitoring/decontamination facility(ies) to correspond to redefined restricted zone in coordination with impacted counties (DOH/NYSOEM/DPC/local law enforcement agencies).

3.6.3 Allow return of the population into areas outside the boundary of the redefined restricted zone. Coordinate return with local officials (DPC).

3.6.4 Relocate people not included in the initial restricted zone in coordination with local officials (DPC).

3.6.5 Coordinate with contiguous states and the Province of Ontario (NYSOEM/DOH/DSP).

3.6.6 Approve protective action decisions (DPC Chairman).

3.6.7 Inform counties of decisions (NYSOEM).

3.6.8 Issue news advisories (DPC).

3.7 Decontamination of land/property.

3.7.1 Determine areas where the second and 0-50 year dose commitments will be exceeded (see Procedure H, Attachment 1) (DOH).

3.7.2 Consider decontamination of land/property in selected areas of deposition inside/outside of restricted zone (DOH).

3.8 Assist with long term needs of relocated population (DPC).

3.9 Interface with American Nuclear Insurers (DPC).

3.10 Repeat above steps as necessary (All).

3.11 Establish long term sampling and recovery plans (DPC).

ATTACHMENT 1

MONITORING AND SAMPLING PLAN

The monitoring and sampling plan is a generic plan that will provide a path for completing the priorities set down by DOH. If FRMAC is activated, these priorities will be discussed with the Consequence Management Home Team prior to the arrival of FRMAC. The plan will list the equipment and generically describe the techniques that will be used to accomplish the priorities listed. The monitoring and sampling plan will outline the types of survey (e.g., contamination vs. exposure rate) and radiation types such as alpha, beta, gamma, and neutron. The plan will list the types of samples to be collected and the frequency for collecting those samples.

PRIORITIES

- Assess the footprint to determine the area of radiological concern.
- Assess the contamination run –off/deposition (movement of radioactive materials).
- Identify location of and characterize access control points.
- Survey main transportation corridors to determine if they can be reopened.
- Identify areas that have not been evacuated but where early health effects are possible (e.g., 100 rem in four days).
- Identify areas that have not been evacuated, but where the Protective Action Guide (PAG) for evacuation may be exceeded (greater than one rem in four days).
- Determine the isotopic ratios following a deposition.
- Establish air sampling stations to measure resuspension and future plume releases.
- Monitor institutions, facilities, and/or residences located in the evacuated zone which were not evacuated or where people must reenter.
- Sample drinking water from surface supplies and open-air water treatment facilities in the affected area.
- Monitor farms, dairies and food processing plants

DEPOSITION

Identify the isotope mix and verify the deposition models by taking appropriate radiation measurements using roadways and monitoring aircraft to traverse the predicted foot print. The chosen roadways and flight paths should intersect a representative number of predicted radiation contours. I*n situ* gamma spectrometry systems are the preferred field-team instrument to be used with an exposure rate meter.

Routes for the monitoring teams will be developed using the best available information on the release. This includes NARAC plots, AMS flyover data, on-site monitoring, and off-site results gathered by county and licensee field teams. The routes developed will depend on the priorities of the situation. Generally, the first routes established will verify the NARAC models, define the

edges of deposition, and determine if additional areas must be relocated. Additional routes will be developed to collect air, soil, water, and vegetation samples throughout the affected area.

As a rule of thumb, soil and vegetation samples should be collected at every order of magnitude change in measured radiation levels.

Initiate monitoring in the downwind direction from the plume footprint. If practical, monitoring activities should be initiated at a distance well beyond the deposition footprint and moved toward the incident center. A serpentine pattern should be followed as closely as roadways allow. Representative measurements should be made at all state, local and licensee monitoring locations. Monitor where people are residing in non-evacuated areas. Attempt to monitor along the edge of the inhabited zones closest to the evacuated areas.

In coordination with local officials, monitor institutions, facilities and residences located in the evacuated areas where people were not evacuated or where people must reenter in the near future. Monitor the exterior as well as the interior. Interior monitoring may include wipes of representative surfaces.

MILK

Radioiodine will begin to appear in the milk of exposed cows and goats within 3-4 hours. Radioiodine concentrations will peak in approximately three days. Therefore, milk sampling should begin the day after the plume passes. Dairies within the deposition footprint will receive lowest priority as milk is assumed contaminated in these areas and products will not be immediately marketable. Milk processing facilities outside the evacuated area will be monitored and sampled in order of their importance. In order to characterize a specific dairy, sampling should begin with the first milking after the plume passes and continue daily. When milk is collected, samples of the animal's feed and water should also be collected.

NOTE: Goat's milk will have radioiodine concentrations four times greater than cow's milk.

MEAT

Meat sampling will be coordinated with the NYS Department of Agriculture and Markets and the USDA. The primary isotopes of concern are cesium-134 and cesium-137. The biological half-life of cesium is approximately 4 months; therefore contamination levels are expected to be below the applicable limits unless the animal is butchered soon after exposure. Meat from processing plants within the contamination footprint will be sampled before it is allowed to go to market.

ATTACHMENT 1

WATER

Community surface drinking water supplies and open air treatment facilities located within the deposition footprint should be sampled following the passage of the plume and resampled daily until radioactivity levels are below the FDA and EPA Protective Action Guidelines. Daily sampling should continue until usability of the water is ascertained (i.e., does it meet drinking water standards or is it a non-flowing body of water that is sufficiently contaminated that it can not be used as a drinking water supply for some time). Generally, public water supplies will be sampled by regional DOH staff or water supply operators. In addition, sediment samples should be collected from surface drinking water supplies located within the deposition footprint. Repeat sediment sampling as necessary. Community surface drinking water supplies located outside of the deposition footprint, but in its proximity, should be sampled daily for a minimum of three days or until acceptable radioactivity levels are below the FDA and EPA Protective Action Guidelines.

PRODUCE

Sampling at farms within the deposition footprint will receive lowest priority as contamination is insured, and products will not be immediately marketable. Farms outside of the deposition footprint should be monitored in order of the perishability of the crops. Include samples from roadside stands and u-pick operations. Food and animal feed processing facilities outside the evacuated area will be monitored and sampled in order of their importance. Sampling should continue until food is cleared.

NUMBER OF SAMPLES

Care should be exercised in collecting environmental samples, as the analytical laboratory may become inundated. A sufficient number of samples should be collected to adequately characterize the environment and satisfy monitoring requirements, but the collection of samples should be performed prudently.

ATTACHMENT 2

EXAMPLE PRIORITIES LIST

The following considerations should be used when a decision to prioritize sampling is necessary:

1. Assess the footprint to determine the area of radiological concern

    - Determine resuspension factors
    - Determine isotopic ratios
    - Identify hotspots
    - Establish air sampling stations to measure resuspension and/or future plume releases
    - Validate the dispersion model in use
    - Identify location of and characterize access control points

2. Perform surveys of special facilities (Hospitals, Nursing Homes, Prisons, Schools, Food, Drug, Agricultural, etc.)

    - Identify contaminated areas where people have not relocated and non-contaminated areas where the people can return.
    - Identify areas that have not been evacuated, but where early health effects are possible (100 rem in four days, i.e., 1 rem/hour exposure rate).
    - Identify areas that have not been evacuated, but where the federal Protective Action Guide (PAG) for evacuation may be exceeded (greater than 1 rem in four days, i.e., 10 mrem/hour).
    - Monitor close to evacuated areas where people are located.
    - Provide monitoring data to allow decision-makers to identify evacuated areas where the public can return.

3. Perform surveys to determine if the main transportation corridors can be reopened (including highways, surface roads, railroads, air and water transport)

4. Sample surface drinking water supplies and open air water treatment facilities

    - Assess contamination run-off/deposition (movement of radioactive material).

5. Support reentry, clean-up, and mitigation activities
    - Support monitoring and decontamination of emergency workers and equipment
    - Support monitoring and decontamination efforts for the population
    - Support reentry efforts.

(NOT USED)

NEW YORK STATE RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN
PROCEDURE M - INGESTION SAMPLING TEAM PROCEDURES

TABLE OF CONTENTS

ATTACHMENTS

FIELD TEAM INSTRUCTIONS

Sampling teams will ideally be composed of three members or more depending on the availability of personnel and the time into the event. Initial and late sample teams may have limited personnel availability, but never less than two persons will be deployed as a team. Teams will be composed of, if available, (1) DOH Radiological Health Specialist/ Radiophysicist, (1) DEC Environmental Radiation Specialist, (1) Agriculture and Markets Staff or a local non-technical person (who can drive, take notes, read procedures out loud, perform other tasks as directed, etc.). Federal assets may also be assigned to field teams. One member should be designated Field Team Leader.

Each team will:

1. Receive initial briefing and initial assignments from the Field Team Coordinator. Items to be discussed during the briefing are included in Attachment 1.

2. Obtain appropriate equipment and information. Refer to attachments for sample forms.

   - Obtain the telephone number of the Field Team Coordinator in case radio contact is lost.
   - Obtain telephone number for the A&E staff at the State EOC.

3. Obtain an OSLD and pocket dosimeter and/or self-reading dosimeter and /or electronic dosimeter, if required.

   - Record initial dosimeter reading on your *Emergency Worker Radiation Exposure Record Card* before departing for the field.
   - Check dosimeter reading every 15-30 minutes during exposure or as requested by the Field Team Coordinator and record data on a *Emergency Worker Radiation Exposure Record Card.*

4. Perform quality control (QC) checks on survey instruments, including battery check at the beginning and end of each shift.

5. Complete a *Team, Instrument, & Equipment Information* form and submit the form to the Field Team Coordinator before departing for field.

6. Preload any air sampling heads with the filter/cartridge and seal in a plastic bag. Note arrow on cartridge indicating proper direction of airflow.

7. Bag instruments if instructed by the Field Team Coordinator or as required for surveys in contaminated areas.

- Take background reading with each survey instrument and initial readings with global positioning system (GPS) device and record on a *Field Monitoring Log*.

8. Put on protective clothing and respiratory equipment, if necessary, as instructed by the Field Team Coordinator.

9. Proceed to designated monitoring area, as directed by the Field Team Coordinator. The Field Team Coordinator receives meteorological and dose assessment information and provides updated information, as necessary.

10. Use the most sensitive instrument (e.g. Ludlum MicroR) to provide the first indication of encountering radiation from plume deposition or contaminated area.

11. Once ground level plume deposition boundary is reached, notify the Field Team Coordinator of location and readings.

12. Upon arrival at the monitoring location, conduct requested surveys and sampling and then report these results to the Field Team Coordinator.

OBTAINING EQUIPMENT

The following equipment is used for Ingestion Pathway sampling and should be picked up prior to departing for the sampling location:

Vehicles
Sampling kits
Air Samplers (F&J and/or RADeCO)
Cell phones
Radiation dosimeters
Survey meters
Global Positioning System (GPS) Units
Batteries

Vehicles will be borrowed from the State Office of Emergency Management (NYSOEM) or rented.

Sampling kits will be picked up from NYSOEM . There are three kits. The teams are called Red, White and Blue. Each team has four supply containers which resemble trunks with handles.

Each team should obtain cell phones from the NYSOEM . Personal cell phones may be used as a back up.

Each individual should pick up 0-5R and 0-20R Direct Reading Dosimeters and a permanent record radiation badge (OSLD) at the NYSOEM Radiological Shop.

Each team should pick up a portable Micro-R-Meter and a Ludlum 14C Survey Meter with GM Pancake Probe from the NYSOEM Radiological Shop.

Batteries are available at NYSOEM for survey meters, flashlights, dosimeter chargers and other uses.

F&J Air Samplers and GPS units may be picked up at DOH BERP at 547 River Street, Troy NY, 12180, Room 530. If time permits, detailed maps of the sampling locations can be loaded into the GPS units. If DOH GPS units are not available, GPS units may be obtained from NYSOEM.

DUPLICATE SAMPLES

A duplicate sample is a second sample which is approximately equal in mass or volume to the first sample and which is collected in the same manner, location, and time, and analyzed for the same parameters. Duplicate samples are typically collected to document the overall precision of the sampling and analysis process. Collecting these samples is of secondary importance to limiting exposure of field teams to ionizing radiation and other safety considerations.

Field teams collect duplicate samples at the direction of the Field Team Coordinator. Any duplicate sample is collected, handled, packaged, and documented in the same manner as the original sample. Remarks on the *Sample Control Form* identify the sample as a duplicate and reference the original sample control number.

CHAIN-OF-CUSTODY

Chain-of-Custody is the sample tracking and control procedure used for ensuring that samples and data maintain their original identity and integrity throughout the collection, shipment, and analysis processes. The record of Chain-of-Custody is kept on the *Sample Control Form*.

The Chain-of-Custody procedure requires that samples are identified and their location and handling be known from initial acquisition through eventual consumption, storage, or disposal. This includes sealing the sample when it is collected and logging all activities affecting the sample through signature documentation of receipt, possession, and release by all persons handling the sample.

Each person handling samples is responsible for the security and documentation required for the Chain-of-Custody procedure. Samples are transferred only to authorized personnel.

The sample, with documentation, is under custody when:

- It is in your possession, or
- It is in your view, after being in your possession, or
- It was in your possession and you locked it up, or
- It is in a designated, secure area.

Each time the sample changes hands, the persons relinquishing and receiving the sample will sign the Chain-of-Custody section of the *Sample Control Form*.

SAMPLE TRANSFER TO WADSWORTH CENTER

After performing the sample collection and preparation procedures given in the specific procedure for the type of sample collected, transport the sample(s) to the Field Team Coordinator or "base". The Field Team Coordinator will coordinate transfer of field team samples to the courier and may temporarily retain the samples until arrival of the courier.

The Field Team Coordinator will notify the laboratory as soon as possible that samples are coming in to be analyzed. The Field Team Coordinator shall call the Wadsworth Laboratory Director at (518) 474-7161 or the Nuclear Emergency Officer at (518) 474-3025 to notify them of the estimated time of arrival of the samples. To improve processing, include an estimate of number and type of samples and estimated range of radiation readings. Vehicle identification (i.e. license plate number, name and organization of driver) of the courier vehicle should be provided as well.

1. Place PRIORITY or HIGH PRIORITY label on bag, if necessary. Separate samples labeled HIGH PRIORITY and PRIORITY. Presorting samples will further aid processing and counting.

2. Check sample container for contamination. This may be accomplished by taking a wipe sample of the container and counting the wipe with a GM meter in a low background area.

3. Complete Section 3 of *Sample Control Form* (ATTACHMENT 5).

4. Place several of the samples into a larger bag or other container for handling convenience by the courier.

5. Load samples into courier vehicle for transport to the Wadsworth Center.

6. Transfer custody of the sample by completing and signing the Chain-of-Custody section of the *Sample Control Form*.

7. The Field Team Coordinator should retain the original and one copy of each *Sample Control Form*. The third copy will be provided to the courier to accompany the samples to the laboratory. Minimize contamination by placing copies in a clean manila envelope or plastic bag.

8. The courier shall provide safe, secure transport of samples to Wadsworth Center and arrive on or about the prearranged time or contact the Wadsworth Laboratory and notify of the delay.

9. Give the courier the driving directions and Lab contact phone numbers to the Wadsworth Center (Attachment 9).

10. The Field Team Supervisor will fax one copy of each *Sample Control Form* to Assessment and Evaluation (A&E) at (518) 292-2481.

NOTE: Samples are never to be left unattended and/or unsecured.

AIR SAMPLES

Purpose: To obtain grab air samples following a nuclear emergency, in order to estimate the impact of re-suspended, respirable particulates on the total effective dose equivalent received by the target population.

Equipment:

1. Disposable Gloves/Booties
2. GPS*
3. Dosimetry (OSLD and DRD or electronic dosimeter)*
4. Radioactive waste bag/container
5. Decon supplies (towelettes, water, decontamination soap solution, paper towels, etc.)
6. *Sample Control Form* and *Field Monitoring Log*
7. Writing instruments (Pen and Sharpie or equivalent)
8. Mobile phone*
9. Survey meter – GM or ion chamber*
10. Tags or self-affixing labels
11. 1" or 2" tap
12. - Radeco H-809C air sampling pump or F&J Specialty Products Air Flowmeter, Model DF-AB-40L*Filter and charcoal cartridge sampling head assembly
13. Glass Fiber Filters
14. Forceps
15. Glassine envelope and 3 small plastic bags
16. Timing Device (Stop watch)
17. Charcoal cartridges

*Not in kit. Refer to page M-2 for location.

The Radeco H-809C is a portable air sampling device designed to be used in conjunction with the 12-volt power supply common to all motor vehicles; namely the vehicle's battery. The unit, when properly configured, will draw approximately 1-2 cubic feet per minute through a glass fiber filter and a charcoal cartridge in the sampling head.

A sample of at least 50 cubic feet (1400 liters) would be required to obtain the necessary data on the effect of re-suspended particulates.

These air samples may be taken at the same sites that are being used to obtain other representative environmental samples. Field teams should locate the vehicle to reduce the effects of passing traffic and/or team activities. The vehicle should be well off the road and the sampling should not start immediately after parking the vehicle. It may be necessary to run the air sampler after performing other duties.

NOTE: Prior to starting on an assigned route, sampling heads should be "loaded" with the filter/canister and sealed in a plastic bag. Note arrow on cartridge indicating proper direction of airflow.

Procedure:

1. Upon arrival at the sampling site, make any required or predetermined notifications

2. Take and record GPS reading on the *Field Monitoring Log*.

3. Put on gloves and booties.

4. Prior to sampling, measure and record one meter and one cm (ground) dose rates on the *Field Monitoring Log*.

5. Remove plastic covering and screw the sampling head into the air pump.

****

If using F&J air sampling device, use the following steps:

6A. Open the cover on the air flowmeter and push the "On/Off" button. The LED display should read "0.00" and the "flow" LED should be lit.

7A. Push the "RESET" button to begin air sampling. The flow rate should gradually increase to about 0.96 to 1.00 cfm. Close and latch the cover.

8A. The air flowmeter has been programmed to collect a 10 (ten) cubic foot air sample. Running at a flow rate of about 1.0 cfm, it will require about 10 minutes to collect the sample. After collecting 10 cubic feet, the air flowmeter will shut off.

Continue with Step 11.

****

If using the Radeco air sampling device, use the following steps:

6B. Open hood of vehicle and place air pump on fender so that the filter head is perpendicular to the front and attach the terminal clamps of the sampling unit to the battery. The **RED** clamp should always be attached first to the **POSITIVE (+)** terminal of the battery. The **NEGATIVE (-)** or **BLACK** clamp may be attached to the vehicle chassis, engine block or negative terminal on the battery. Be sure that the sampling unit if **OFF** while attaching clamps.

CAUTION: **Batteries produce Hydrogen gas, which can be ignited by sparks and/or open flames. Before attaching cables, be sure the unit is OFF and the polarity is correct.**

7B. Start engine of vehicle and then start the air pump, simultaneously starting timing.

8B. Note airflow rate (middle of ball) and record. Determine length of run time based on the observed flow rate and the required sample volume of 50 cu. ft. (50 cu.ft. / flow rate (cfm) = time required for sample (min)).

9B. After the elapsed time determined in step 8, note the sample flow rate and turn off the air pump.

10B. Turn engine off and disconnect air pump clamps from battery. Remove **RED** clamp first.

Continue with Step 11.

****

11. Record the following information on the *Sample Control Form*:
    - (Start Time and Flow Rate)
    - (Stop Time and Flow Rate)

12. Remove outer ring of sampling head and using forceps, carefully remove filter disk and insert into glassine envelope.

13. Remove next ring to get access to the charcoal cartridge. Remove and place in plastic bag.

14. Fill out sample tag with enough information to be able to match it to the *Sample Control Form* and affix to the plastic bag. At a minimum, include:

    - Sample location description, map grid coordinates and/or GPS coordinates
    - Sample date and time
    - Sampling team designation
    - Sample type/size
    - Sample Number (from *Sample Control Form*)

15. Place bagged canister and glassine envelope into a second plastic bag.

16. Fill out security seal. When no security seals are available, one can be made from masking or adhesive tape.

    - Write the sample date/time and initials of the person collecting the sample on the security seal.
    - Wrap the security seal around the plastic bag with the ends making a flag, or seal over the top of the sealable bag or sample container.
    - Ensure information on security seal can be read.

17. Fill out the *Sample Control Form*.

    - Section 1 - Sampling Information
    - Section 2 - Air
    - Section 4 - Chain of Custody

18. Decontaminate (wipe off sampling head with towelettes) all sampling tools. Monitor with GM and place in plastic bag. Discard decontamination materials, disposable gloves, shoe covers, and any other potentially contaminated materials in the radioactive waste bag/container.

19. Make any required or predetermined notifications.

SOIL SAMPLES

Purpose: To collect a representative surface soil sample, which reflects recent deposition of radionuclides from plume passage prior to any effect of weathering.

Equipment:

1. Disposable Gloves/Booties
2. GPS*
3. Dosimetry (OSLD and DRD or electronic dosimeter)*
4. Radioactive waste bag
5. Decon supplies (towelettes, water, decontamination soap solution, paper towels, etc.)
6. *Sample Control Form* and *Field Monitoring Log*
7. Writing instruments (Pen and Sharpie or equivalent)
8. Mobile phone*
9. Survey meter – GM or ion chamber*
10. Tags or self-affixing labels
11. 1" or 2" tape
12. Disposable bench pads (for kneeling on potentially contaminated ground)
13. Tape measure or a 1-ft. ruler
14. ½-gallon plastic bags or 500-mL wide-mouth plastic jar
15. Custom-made FRMAC type sampling tool (if available), garden trowel, or 4" putty knife.
16. Disposable scoops or disposable spatulas

* - Not in kit. Refer to page M-2 for location.

Procedure:

1. Upon arrival at the sampling site, make any required or predetermined notifications

2. Take and record GPS reading on the *Field Monitoring Log*.

3. Put on gloves and booties.

4. Prior to sampling, measure and record one meter and one cm (ground) dose rates on the *Field Monitoring Log*.

5. Within the designated grid area or sector, locate an area of undisturbed soil with little or no vegetative cover, and few stones or twigs. Avoid locations next to roads, trees, drainage areas, areas prone to erosion or flooding, and wet, low-lying areas. If an area without vegetation can not be located, remove the vegetation (as described in the procedure for sampling vegetation) and package as a sample, then sample the soil

underneath. On the *Sample Control Form*, indicate that both a soil and vegetation sample were taken.

6. To avoid contamination, place plastic bags or some other barrier on the ground and then lay the clipboard, instruments and tools on them.

7. If kneeling is necessary, place a disposable bench pad (or a plastic bag) on the ground next to the selected area to prevent contamination of clothing.

8. Sample Collection

   A. If using the custom made FRMAC type sampling tool:

   - Using a trowel, dig a trench 45 cm long X 15 cm wide X 15 cm deep (18 X 6 X 6 in). Fashion a vertical surface that is as straight as possible.

   - Place the open end of the sampling frame against the edge of the trench to form a 10 X 10 cm (4 X 4 in) square sample area. Press or tap the cutter edge into the soil until it hits the depth stop wings (2 cm).

   - Slide the flat custom trowel under the sampling frame. Pick up the sample. Slowly dump it into a sealable bag, a 500-ml (16 oz) jar or similar sample container.

-OR-

   B. If using a conventional putty knife, trowel and disposable scoop:

   - Mark off a 4" x 4" (10cm x 10cm) area using the tape measure and the 4" putty knife or the trowel.

   - Using a disposable scoop or the putty knife, carefully collect the top 7/8" (2 cm) layer of soil from this area, and transfer it into a sealable bag, a 500-ml (16 oz) jar or similar sample container.

9. Fill out sample tag with enough information to be able to match it to the *Sample Control Form* and affix to the sample container. At a minimum, include:

   - Sample location description, map grid coordinates and/or GPS coordinates
   - Sample date and time
   - Sampling team designation
   - Sample type/size
   - Sample Number (from *Sample Control Form*)

10. Place sample container into a second plastic bag.

11. Fill out security seal. When no security seals are available, one can be made from masking or adhesive tape.
    - Write the sample date/time and initials of the person collecting the sample on the security seal.
    - Wrap the security seal around the plastic bag with the ends making a flag, or seal over the top of the sealable bag or sample container.
    - Ensure information on security seal can be read.

12. Fill out the *Sample Control Form*.

    - Section 1 - Sampling Information
    - Section 2 - Ground
    - Section 4 - Chain of Custody

13. Decontaminate all sampling tools and place in plastic bag. Monitor tools with a GM in low background area prior to reuse.

14. Discard decontamination materials, disposable gloves, shoe covers, and any other potentially contaminated materials in the radioactive waste container.

15. Make any required or predetermined notifications.

SURFACE WATER SAMPLES

Purpose: To obtain representative samples of surface water from lakes, streams, creeks, ponds, open wells, drainage ditches or standing water locations which may be affected by a release of radioactive materials.

These samples are not considered to be representative of public water supplies, although they may be used for irrigation, farm ponds, fish farming or private drinking water supplies. Public water supply samples will be obtained by system operators or local/district health departments and will be submitted for analysis through other channels.

Equipment:

1. Disposable Gloves/Booties
2. GPS*
3. Dosimetry (OSLD and DRD or electronic dosimeter)*
4. Radioactive waste bag
5. Decon supplies (towelettes, water, decontamination soap solution, paper towels, etc.)
6. *Sample Control Form* and *Field Monitoring Log*
7. Writing instruments (Pen and Sharpie or equivalent)
8. Mobile phone*
9. Survey meter – GM or ion chamber*
10. Tags or self-affixing labels
11. 1" or 2" tape
12. Disposable bench pads (for kneeling on potentially contaminated ground)
13. 2-liter plastic bottle and shipping box
14. 2 x ½-gallon plastic bags
15. ¾" or 1" Teflon, electrical, or other conformable vinyl tape
16. Dipper and funnel

*Not in kit. Refer to page M-2 for location.

Procedure:

1. Upon arrival at the sampling site, make any required or predetermined notifications

2. Take and record GPS reading on the *Field Monitoring Log*.

3. Put on gloves and booties.

4. Prior to sampling, measure and record one meter and one cm (ground) dose rates on the *Field Monitoring Log*.

5. If kneeling is necessary, place a disposable bench pad (or a plastic bag) on the ground next to the selected area to prevent contamination of clothing.

6. To avoid contamination, place plastic bags or some other barrier on the ground and then lay the clipboard, instruments and tools on them.

The characteristics of the body of water being sampled shall determine the method chosen to obtain the sample. If the water is moving and is deep enough, the sample container can be used to allow the water to flow into and fill the bottle. Where the water is not deep enough or access is difficult, the dipper and funnel may be used. Bridges, boat docks and boats may be used to obtain the water sample and avoid stirring up sediment. Collect as much surface film or pond scum as possible. Oil slicks and debris should be avoided. If using the direct fill method, follow procedure A. If using the dipper method, follow procedure B.

7. Sample Collection

   A. Direct Fill Method

      - Without disturbing bottom sediment, partially fill and rinse the 2-liter bottle three times, discarding the rinse water downstream or away from the sampling point.

      - Partially submerge the 2-liter bottle in the water at the selected sampling point. Collect approximately 2-liters of water. Do not over fill the bottle; leave at least a 2" headspace.

-OR-

   B. Dipper Method

      - Using the dipper and funnel, partially fill the bottle and rinse three times. Be careful to discard the water in such a manner that either bottom sediment or mixing of the rinse and sample does not occur.

      - Slowly skim the surface water with the dipper and collect approximately 2-liters of water.

8. Cap the bottle and seal with conformable vinyl tape.

9. Wipe and dry the surfaces of the bottle with absorbent towels. Discard towels into rad waste container.

10. Place bottle into a plastic bag and seal with 1" or 2" tape.

11. Remove and discard disposable gloves and shoe covers. Place the gloves, shoe covers and bench pad in the rad waste container.

12. Place the bagged bottle in a cardboard shipping box. Fill out sample tag with enough information to be able to match it to the *Sample Control Form* and affix to the box. At a minimum, include:

    - Sample location description, map grid coordinates and/or GPS coordinates
    - Sample date and time
    - Sampling team designation
    - Sample type/size
    - Sample Number (from *Sample Control Form*)

13. Place box into a second plastic bag.

14. Fill out security seal. When no security seals are available, one can be made from masking or adhesive tape.

    - Write the sample date/time and initials of the person collecting the sample on the security seal.
    - Wrap the security seal around the plastic bag with the ends making a flag, or seal over the top of the sealable bag or sample container.
    - Ensure information on security seal can be read.

15. Fill out the *Sample Control Form*.

    - Section 1 - Sampling Information
    - Section 2 - Water
    - Section 4 - Chain of Custody

16. Decontaminate all sampling tools and place in plastic bag. If a dipper and funnel were used, wipe and dry all surfaces of both. Before using this equipment for milk samples, be sure to wash with decon soap solution and dry.

17. Discard decontamination materials, disposable gloves, shoe covers, and any other potentially contaminated materials in the radioactive waste container.

18. Make any required or predetermined notifications.

SNOW

Purpose: To obtain representative samples of snow which may have radioactive materials deposited on its surface as a result of plume passage during a nuclear emergency.

Equipment:

1. Disposable Gloves/Booties
2. GPS*
3. Dosimetry (OSLD and DRD or electronic dosimeter)*
4. Radioactive waste bag
5. Decon supplies (towelettes, water, decontamination soap solution, paper towels, etc.)
6. *Sample Control Form* and *Field Monitoring Log*
7. Writing instruments (Pen and Sharpie or equivalent)
8. Mobile phone*
9. Survey meter – GM or ion chamber*
10. Tags or self-affixing labels
11. 1" or 2" tape
12. Disposable bench pads (for kneeling on potentially contaminated ground)
13. Tape measure or ruler
14. (2) 10 gal. plastic bags and 5 gal. bucket with lid
15. Shovel or Trowel
16. Scale

*Not in kit. Refer to page M-2 for location.

Procedure:

1. Upon arrival at the sampling site, make any required or predetermined notifications

2. Take and record GPS reading on the *Field Monitoring Log*.

3. Put on gloves and booties.

4. Prior to sampling, measure and record one meter and one cm (ground) dose rates on the *Field Monitoring Log*.

5. If kneeling is necessary, place a disposable bench pad (or a plastic bag) on the ground to prevent contamination of clothing.

6. To avoid contamination, place plastic bags or some other barrier on the ground and then lay the clipboard, instruments and tools on them.

7. Locate a relatively flat surface away from trees, buildings, foot traffic, and if possible, unaffected by drifting. The type of snow; dry powder, wet icy, may dictate the surface area required for sampling. Dry powdery snow may require a two square meter ($2m^2$) area, while wet snow will require one square meter to obtain the necessary water content of 2-liters, for analysis. Snow can be weighed on the scale to determine if an adequate volume has been obtained (2 kg or 4.5 lbs = 2 liters).

   The sampling team may also be required to remove layers of snow from the sampling area if snow has fallen during or after plume passage. In this case, multiple samples may be obtained from the same site.

8. Depending on the type of snow, mark off an area of 1 sq. m. using the tape measure and shovel. Measure the depth of snow cover adjacent to the sampling area.

9. Remove the top 2.5 cm. (1 in.) from the designated area and place into a 5-gallon bucket with lid.

10. Place bucket into a 10-gallon plastic bag. Remove air from bag and seal with tape.

11. Fill out sample tag with enough information to be able to match it to the *Sample Control Form* and affix to the bag. At a minimum, include:

    - Sample location description, map grid coordinates and/or GPS coordinates
    - Sample date and time
    - Sampling team designation
    - Sample type/size
    - Sample Number (from *Sample Control Form*)

12. Place sample into a second plastic bag.

13. Fill out security seal. When no security seals are available, one can be made from masking or adhesive tape.

    - Write the sample date/time and initials of the person collecting the sample on the security seal.
    - Wrap the security seal around the plastic bag with the ends making a flag, or seal over the top of the sealable bag or sample container.
    - Ensure information on security seal can be read.

14. Fill out the *Sample Control Form*.

    - Section 1 - Sampling Information
    - Section 2 - Water/Other
    - Section 4 - Chain of Custody

15. Decontaminate all sampling tools and place in plastic bag. Monitor tools with a GM in low background area prior to reuse.

16. Discard decontamination materials, disposable gloves, shoe covers, and any other potentially contaminated materials in the radioactive waste container.

17. Make any required or predetermined notifications.

MILK

Purpose: To obtain representative samples of milk from producers, transporters, processors and distributors to assess the impact of potentially deposited radioactive materials following plume passage during a nuclear emergency.

Note that in most cases staff from the NYS Department of Agriculture and Markets (Ag & Mkts) will do the collection of milk samples since special certification is necessary in order to collect a milk sample. In the absence of Ag & Mkts staff, the farmer may collect the sample.

Equipment:

1. Disposable Gloves/Booties
2. GPS*
3. Dosimetry (OSLD and DRD or electronic dosimeter)*
4. Radioactive waste bag
5. Decon supplies (towelettes, water, decontamination soap solution, paper towels, etc.)
6. *Sample Control Form* and *Field Monitoring Log*
7. Writing instruments (Pen and Sharpie or equivalent)
8. Mobile phone*
9. Survey meter – GM or ion chamber*
10. Tags or self-affixing labels
11. 1" or 2" tape
12. 2 Liter plastic bottle and shipping box
13. 2 Plastic bags
14. 20 g vial of Sodium Bisulfite Preservative
15. Funnel
16. Dipper
17. Sanitizer (bleach)
18. ¾" or 1" Teflon, electrical, or other conformable vinyl tape

*Not in kit. Refer to page M-2 for location.

Procedure: Attempt to contact commercial dairies or farms prior to arrival. This notification should be accomplished through Ag & Mkts staff at the state EOC.

1. Upon arrival at the sampling site, make any required or predetermined notifications

2. Take and record GPS reading on the *Field Monitoring Log*.

3. Put on gloves and booties.

4. Prior to sampling, measure and record one meter and one cm (ground) dose rates on the *Field Monitoring Log*.

   Milk samples will be collected by the Ag & Mkts representative on the sampling team following the routine procedures established by their department. DOH staff will only take milk samples if Ag & Mkts representative is unavailable and the farmer can not provide the sample.

5. Activate the mechanical agitator for at least five minutes prior to sampling. (Be sure switch is returned to automatic position if manual activation is used.)

6. Sanitize sampling tools using the Chlorine based sanitizer and shake off excess (Do Not Rinse)

7. Using a funnel and the stainless steel dipper, obtain at least a 2-liter sample.

<u>WARNING</u>: Do not attempt to collect a milk sample from an outlet valve on either a milk truck or storage tank. Use manholes or sample petcocks where applicable.

8. Preserve the sample with Sodium Bisulfite (20 g/2 liter sample, 40 g/gallon sample)

9. Seal the 2-liter bottle cap with vinyl/conformable tape, place bottle in plastic bag; remove air and seal with tape.

10. Fill out sample tag with enough information to be able to match it to the *Sample Control Form* and affix to the bag. At a minimum, include:

    - Sample location description, map grid coordinates and/or GPS coordinates
    - Sample date and time
    - Sampling team designation
    - Sample type/size
    - Sample Number (from *Sample Control Form*)

11. Place tagged sample in second plastic bag.

12. Fill out security seal. When no security seals are available, one can be made from masking or adhesive tape.

    - Write the sample date/time and initials of the person collecting the sample on the security seal.
    - Wrap the security seal around the plastic bag with the ends making a flag, or seal over the top of the sealable bag or sample container.
    - Ensure information on security seal can be read.

13. Insert in cardboard shipping box and seal. Alternatively, the sample may be placed in a cooler.

14. Fill out the *Sample Control Form.*

    - Section 1 - Sampling Information
    - Section 2 - Milk
    - Section 4 - Chain of Custody
    - Additional information to be included in remarks: name and address of dairy farm, transfer station, or milk plant, sample size, bulk tank capacity, date and time of last pickup (this refers to the length of time and number of milkings between exposure and sample collection), origin of milk sampled (area from which milk is received, if sample is obtained at a transfer station, processing facility or tanker truck.)

15. Decontaminate all sampling tools and place in plastic bag. Monitor tools with a GM in low background area prior to reuse.

16. Discard decontamination materials, disposable gloves, shoe covers, and any other potentially contaminated materials in the radioactive waste container.

17. Make any required or predetermined notifications.

PRODUCE

Purpose: To obtain representative samples of edible produce, potentially contaminated by the deposition of radioactive materials resulting from an airborne release of radioactive materials

These samples would represent the types of produce scheduled to be harvested within 30 days following plume passage and would be non-root, non-tuber, edible portions, excluding roots and stems.

Sampling priority will be established by A&E and Ag & Mkts staff at the state EOC and would probably be as follows (see Procedure L, Attachments 1 and 2):

1. Large commercial production farms
2. Roadside stands - commercial/family
3. Family gardens
4. Retail stores

Chose locations not protected from wind by trees, structures, etc. Collect all moisture or ice that is on the produce.

Equipment:

1. Disposable Gloves/Booties
2. GPS*
3. Dosimetry (OSLD and DRD or electronic dosimeter)*
4. Radioactive waste bag
5. Decon supplies (towelettes, water, decontamination soap solution, paper towels, etc.)
6. *Sample Control Form* and *Field Monitoring Log*
7. Writing instruments (Pen and Sharpie or equivalent)
8. Mobile phone*
9. Survey meter – GM or ion chamber*
10. Tags or self-affixing labels
11. 1” or 2” tape
12. Tape Measure
13. (2) One-gallon plastic bags
14. Shears, pruners, knife or other suitable cutting tool.
15. Sample form
16. Scale

*Not in kit. Refer to page M-2 for location.

Procedure: The type of produce collected will be dictated by the harvest time of the crops grown in the affected area. While all food crops will eventually need to be sampled; under emergency conditions, the crops nearest to harvest and market should be sampled first. Sampling is to measure deposition, not plant uptake.

Generally, only the edible portions of the plant are needed for a sample. For most produce the edible is quite obvious, but there may be some plants for which this is not clear. The following guide may be used to determine both the appropriate portion and size of the sample.

Berries - Berry only - 4 qts.

Fruits - Edible whole fruit only - about 5lbs.

Head vegetables - For head vegetables like cabbage or lettuce collect the entire head, cutting at ground level. For heads like broccoli or cauliflower cut the flowering head, unless it's known that the leaves are used for other purposes.

Grains and Cereals- If crop is growing in the field collect only the top seed portion of the plant. A one square meter area should be sampled. If the crop has already been harvested and is being stored, obtain 2-kg (5lb).

Greens- In some instances the tops of root vegetables are harvested as part of a thinning process and used as leaf vegetables. If this is the case, obtain a one square meter area of sample, if possible. If you cannot cut out a measured area, obtain a 2kg. (5lb) sample.

Onions-Scallions-Chives-
If the top or green portions of the crop are to be harvested, you must determine if a square meter or 2kg. (5lb) sample is appropriate.

Sweet Corn- Ears only, no stalks.

Roots/Tubers- Unless the root/tuber crop is out of the ground for harvesting, or if the tops are used for food, no sample is required at this time.

This list is by no means all inclusive. There will be instances where produce is available for sale or consumption that does not fall under any of the above categories. It is therefore important that the sampling teams use their best judgement as to what constitutes edible portions and sample accordingly.

1. Upon arrival at the sampling site, make any required or predetermined notifications

2. Take and record GPS reading on the *Field Monitoring Log*.

3. Put on gloves and booties.

4. Prior to sampling, measure and record one meter and one cm (ground) dose rates on the *Field Monitoring Log*.

5. If kneeling is necessary, place a disposable bench pad (or a plastic bag) on the ground to prevent contamination of clothing.

6. To avoid contamination, place plastic bags or some other barrier on the ground and then lay the clipboard, instruments and tools on them.

7. Determine whether a one square meter area or weight sampling criteria is appropriate.

8. Obtain sample and place in plastic bag.

9. Remove air from bag and seal with tape.

10. Fill out sample tag with enough information to be able to match it to the *Sample Control Form* and affix to the bag. At a minimum, include:

    - Sample location description, map grid coordinates and/or GPS coordinates
    - Sample date and time
    - Sampling team designation
    - Sample type/size
    - Sample Number (from *Sample Control Form*)

11. Place tagged sample in second plastic bag.

12. Fill out security seal. When no security seals are available, one can be made from masking or adhesive tape.

    - Write the sample date/time and initials of the person collecting the sample on the security seal.
    - Wrap the security seal around the plastic bag with the ends making a flag, or seal over the top of the sealable bag or sample container.
    - Ensure information on security seal can be read.

13. Fill out the *Sample Control Form*.

    - Section 1 - Sampling Information
    - Section 2 - Other/Produce
    - Section 4 - Chain of Custody
    - Additional information to be included in remarks: Sample size - AREA or WEIGHT, type of produce.

14. Decontaminate all sampling tools and place in plastic bag. Monitor tools with a GM in low background area prior to reuse.

15. Discard decontamination materials, disposable gloves, shoe covers, and any other potentially contaminated materials in the radioactive waste container.

16. Make any required or predetermined notifications.

VEGETATION

Purpose: To collect vegetation samples potentially contaminated by an airborne release of radioactive material, consumption of which could lead to an indirect human exposure from the vegetation/animal/human pathway.

In most instances, these samples are not classified as vegetables but are types of vegetation which may be incorporated in farm feeding programs. This includes: pasture grasses, feed corn, green chop or leafy vegetation, and shrubs and bushes that can be consumed by grazing or browsing animals.

Equipment:

1. Disposable Gloves/Booties
2. GPS*
3. Dosimetry (OSLD and DRD or electronic dosimeter)*
4. Radioactive waste bag
5. Decon supplies (towelettes, water, decontamination soap solution, paper towels, etc.)
6. *Sample Control Form* and *Field Monitoring Log*
7. Writing instruments (Pen and Sharpie or equivalent)
8. Mobile phone*
9. Survey meter – GM or ion chamber*
10. Tags or self-affixing labels
11. 1" or 2" tape
12. Tape Measure
13. (2) One-gallon plastic bags
14. Tape measure
15. Grass shears, pruners, knife or other suitable cutting tool
16. Work gloves, if desired
17. Scale

*Not in kit. Refer to page M-2 for location.

Procedure: Because of the variety of vegetation which may be sampled, some general guidelines include the following:

A. Grasses should be cut as close to the ground as possible without getting roots and soil in the sample. Depending on the height of grasses, one square meter area should be adequate.

B. Leafy vegetation samples should include only the leaf portion, not the stems and roots. Sample one square meter.

C. Crops such as corn, used as chopped forage, should be cut into small 3-4 inch segments, rather that individual stalks.

D. For most purposes, a one kilogram (2 lb) sample should be sufficient for analysis. This usually corresponds to a one square meter area. Corn would be an exception and sample size should be based on weight of chopped material, rather than an area sampled.

1. Upon arrival at the sampling site, make any required or predetermined notifications.

2. Take and record GPS reading on the *Field Monitoring Log*.

3. Put on gloves and booties.

4. Prior to sampling, measure and record one meter and one cm (ground) dose rates on the *Field Monitoring Log*.

5. Locate an undisturbed area, away from trees, buildings, road spray or foot traffic. Chose locations not protected from wind by trees, structures, etc.

6. If kneeling is necessary, place a disposable bench pad (or a plastic bag) on the ground to prevent contamination of clothing.

7. To avoid contamination, place plastic bags or some other barrier on the ground and then lay the clipboard, instruments and tools on them.

8. Depending on the type and height of the vegetation; mark off one (1) sq. meter area with the tape measure.

9. Starting along the periphery of the measured area, cut the vegetation as close to the ground as possible, transferring the cuttings to the plastic bag. If grasses are tall, start at the top and work down to the soil. Collect all moisture or ice that is on the produce.

10. Determine if at least 1 kilogram (2 lb) of sample has been obtained from the measured area chosen. If not, sample another equivalent measured area and make note of the total area sampled on both the tag and form.

11. Remove air from the bag and seal with tape.

12. Fill out sample tag with enough information to be able to match it to the *Sample Control Form* and affix to the bag. At a minimum, include:

    - Sample location description, map grid coordinates and/or GPS coordinates
    - Sample date and time
    - Sampling team designation
    - Sample type/size
    - Sample Number (from *Sample Control Form*)

13. Place tagged sample in second plastic bag.

14. Fill out security seal. When no security seals are available, one can be made from masking or adhesive tape.

    - Write the sample date/time and initials of the person collecting the sample on the security seal.
    - Wrap the security seal around the plastic bag with the ends making a flag, or seal over the top of the sealable bag or sample container.
    - Ensure information on security seal can be read.

15. Fill out the *Sample Control Form.*

    - Section 1 - Sampling Information
    - Section 2 - Other/Vegetation
    - Section 4 - Chain of Custody
    - Additional information to be included in remarks: Sample size - AREA or WEIGHT, type of vegetation.

16. Decontaminate all sampling tools and place in plastic bag. Monitor tools with a GM in low background area prior to reuse.

17. Discard decontamination materials, disposable gloves, shoe covers, and any other potentially contaminated materials in the radioactive waste container.

18. Make any required or predetermined notifications.

ATTACHMENT 1

FIELD TEAM BRIEFING

Provide the following information to field sampling teams prior to deployment:

- Status of the emergency and classification
- Protective actions ordered
- Areas evacuated, sheltered, or potentially under consideration for relocation
- Radioactive plume deposition and footprint, including areas to avoid
- Communications protocols, including phone numbers, sample location call in, and frequency of calls
- Use of dosimetry and turn back values
- Location to report for monitoring/decontamination
- Sample assignments and priorities
- Protective clothing requirements
- Sample drop-off location
- Vehicle assignments
- Location/maps of sampling areas
- Team designation and assigned route
- Return of samples and completed paperwork to field team coordinator

ATTACHMENT 2

DAILY INSTRUMENT QC CHECKS

The Daily Instrument QC Checks form is used to record quality control information for each instrument at the beginning and end of every shift.

Event	Write name of event.
Team #	Write team number / name.
Instrument Number	Write instrument model number and serial number.
Instrument Type	Write instrument type.
Depart Date/Time	Record departure date following example below. Record departure time using military notation, as below. Example: 02/09/1997 1745
QC Check Source Type/ID#	Write the type of check source used. Include number of check source, if available.
Check Source Activity	Record activity of source and units. If instrument has different scales, record scale used.
Acceptable Operating Range	Write acceptable range of operation.
Depart Actual Reading	Record actual meter reading (Reading x Scale) at time of departure.
Initials	Record initials of person performing QC check.
Return Date/Time	Record return date and time following example above.
Return Actual Reading	Record actual meter reading (Reading x Scale) on return.
Initials	Record initials of person returning instrument.

ATTACHMENT 2 (cont.)

DAILY INSTRUMENT QC CHECKS

EVENT_____ **TEAM**_____ **REVIEWED BY**_____

Instrument Number	Instrument Type	Depart Date/Time	QC Check Source Type/ID #	Check Source Activity	Acceptable Operating Range	Depart Actual Reading	Initials	Return Date/Time	Return Actual Reading	Initials

ATTACHMENT 3

DATA ACQUISITION LOG

The *Data Acquisition Log* is used by the Field Team Coordinator to record field monitoring data reported by Field Monitoring Teams.

> **NOTE**
> Columns on *Data Acquisition Log* correspond to those on *Field Monitoring Log*. Therefore, report data in order recorded on *Field Monitoring Log*.

Date	Write Date of event (mm/dd/yyyy)
Event	Write name of event.
Team #	Write team number / name.
Instrument ID	Write instrument type, model number and serial number.
Time of Day	In military time.
Location	Description of survey site; i.e., street address, town, intersection, highway, sector, distance, if applicable.
Latitude	In degrees, and decimal degrees.
Longitude	In degrees, and decimal degrees.
Measurement	Reported reading.
Units	Units in which instrument reads (cpm or mR/hr)
Radiation Type/Energy	Used primarily by the Accident Response Group program. For FRMAC purposes, use descriptive comments such as alpha, beta, gamma, neutron, Pu (plutonium), Am (americium), etc.
Measurement Surface	Examples: grass, soil, filter, etc.
Remarks	Any factors pertinent to instrument measurements, and any other environmental conditions.

ATTACHMENT 3 (cont.)

DATA ACQUISITION LOG

DATE _____ **EVENT** _____ **TEAM** _____ **PAGE** ____ **of** ____
(mm/dd/yyyy)
INSTRUMENT ID _____ **REVIEWED BY** _____ **DATA ENTRY BY** _____

Time (military)	Location Description	Latitude	Longitude	Measure-ment	Units	Radiation Type/Energy	Measurement Surface	Remarks (If samples are collected at this site, note sample ID and type here)

ATTACHMENT 4

FIELD MONITORING LOG

The *Field Monitoring Log* is used by Field Monitoring Teams to record field monitoring data and sample collection by sample number.

Date	Write Date of event (mm/dd/yyyy)
Event	Write name of event.
Team #	Write team number / name.
Survey Instrument ID	Write instrument type, model number and serial number.
GPS Unit ID	Write instrument type, model number and serial number.
Reviewed by/Transmitted by	Write initials
Time of Day	In military time.
Location	Description of survey site; i.e., street address, town, intersection, highway, sector, distance, if applicable.
Latitude	In degrees, and decimal degrees.
Longitude	In degrees, and decimal degrees.
Measurement	Reported reading.
Units	Units in which instrument reads (cpm or mR/hr).
Radiation Type/Energy	Used primarily by the Accident Response Group program. For FRMAC purposes, use descriptive comments such as alpha, beta, gamma, neutron, Pu (plutonium), Am (americium), etc.
Measurement Surface	Examples: grass, soil, pavement, filter, etc.
Remarks	Any factors pertinent to instrument measurements, and any other environmental conditions.

NOTE: A *Field Monitoring Log* entry is completed for each measurement taken.

ATTACHMENT 4 (cont.)

FIELD MONITORING LOG

DATE _____ **EVENT** _____ **TEAM** _____ **PAGE** ____ **of** ____
(mm/dd/yyyy)

SURVEY INSTRUMENT ID _____ **GPS UNIT ID** _____ **REVIEWED BY** _____ **TRANSMITTED BY** _____

Time (military)	Location Description	Latitude	Longitude	Measure-ment	Units	Radiation Type/Energy	Measurement Surface	Remarks (Include all pertinent measurement factors, ground conditions, mist, rain, etc. If samples are collected at this site, note sample ID and type here)

ATTACHMENT 5

SAMPLE CONTROL FORM

Field	Data
Collection Team ID	Enter Team Name or Number
Collector's Name	Enter Collectors Name
Org	Enter Collectors Home Organization
Location	Enter Location either GPS-Longitude/Latitude, Description (*i.e.*, Address, Mile Marker, Sector, Distance). The recommended format is degrees and decimal degrees. *(i.e.*, Longitude = W 108°.27976).
Collection Date	Enter the Date the Sample was Collected (mm-dd-yyyy)
Collection Time	Enter the Time the Sample was Collected (Military)
# of Containers	If more than one sample container is collected enter the number
Contact Dose Rate	If background permits, enter the Radiation Level with units
Remarks	Enter any pertinent information not already entered (i.e. Grab/Composite Sample, Multiple Analysis Required)
Sample Type	Check the appropriate Sample Type. Enter all available information.
Air Sample	Enter Air Sampler Type, Filter Size and Type, Date On & Off (mm-dd-yyyy), Time On & Off (Military). Enter either Start & Stop Flow Rate (Corrected) or Total Volume.
Milk Sample	Check Type of Milk Sampled, if Other describe in the remarks. Enter feed type the cattle eat. If Other, describe in the remarks. Enter Milking Date (mm-dd-yyyy) & Time (Military)
Soil Sample	Enter Depth of soil sample in cm and/or Dimensions of sample area give units. Check if Vegetation Sample was collected with soil sample. If yes enter Vegetation Sample Control Number.
Water Sample	Check Water Sample Collection Area, if Other, describe in the remarks.
Other	Check Other Sample Type, and Enter description of sample and size or volume of sample (i.e. Vegetation 1-gal sealable bags grass, Swipe 100 cm^2)
Processing Priority	Identify Rush Samples. Add Rush labels to sample bags
Split # / Dup #	If Samples are to be split, create duplicate paperwork and assign a new sample number to the dup or split.
Forms and Sample bags checked for contamination	Check exterior of sample bags and forms for contamination. This can be done with a large area wipe check in the field with a survey instrument. These should be reserved at the hot line.
Sample Remarks/ Special instructions	Enter any other descriptive information for the sample or special instructions (*i.e.*, homogenize sample)
Relinquished by	Signed by person releasing custody of the sample - must be done to a person or secured area
Date	Date relinquished
Time	Time (military) relinquished
Received by	Signed by the person receiving the sample - if relinquished to a secure area, the relinquisher must enter the secure location to which the sample is relinquished
Date	Date received or relinquished to a secure area
Time	Time (military) received or relinquished to a secure area

ELDARS Accession # _____

Sample No. _____

1. Sampling Information

Collection Team ID: Collector's Name: Org:

Location: ☐ GPS Latitude _____ Description: _____
Longitude_____ _____

Collection Date: Collection Time (Military): # of Containers: Contact Dose Rate:

Remarks:_____
_____

2. Sample Type (use only one)

Air	Sampler ID: Type: Filter Size & Type:	
	Date ON:_____ (MM/DD/YYYY) Time ON: (Military)	Date OFF: _____ (MM/DD/YYYY) Time OFF: _____ (Military)
	Start Flow: Stop Flow:	OR Total Volume: Unit:
Milk	☐ Cow ☐ Goat ☐ Other:	☐ Stored Feed ☐ Pasture ☐ Other:
	Milking Date: Milking Time:	Number of Animals sampled:
Ground	Depth of soil sample: cm	Vegetation collected with soil samples? ☐ Yes ☐ No
	Sample surface area:	If vegetation in separate container, provide sample #:
Water	☐ Surface ☐ Ground/Well ☐ Potable/Tap ☐ Other:	
Other	☐ Vegetation ☐ Feed ☐ Produce ☐ Swipe ☐ Other:	
	Describe:	

3. Sample Preparation for Transport

Processing Priority: ☐ **Contamination Check:** Forms and sample bags surveyed.

Dup Sample #: Split Sample #:

Sample Remarks/Special Instructions: _____
_____
_____
_____

4. Custody Transfer (Signatures)

Collected by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Original with Sample Copy to Field Team Coordinator Copy to SEOC

ATTACHMENT 6

TEAM, INSTRUMENT, & EQUIPMENT INFORMATION LOG

The *Team, Instrument, & Equipment Information Log* is completed and submitted to the Field Team Coordinator before leaving base.

Top portion	Complete with team member information.
Bottom portion	Complete with instrument and equipment information, including license plate information of vehicle(s).

ATTACHMENT 6 (cont.)

TEAM, INSTRUMENT, & EQUIPMENT INFORMATION LOG

Field Team Supervisor Initials _____

Team Number:			
Today's Date:		Start Time:	
Team Leader (Last, first M.I.):			
Team Leader Organization:			

TEAM MEMBERS

	Name (Last, First, M.I.)	Organization
1		
2		
3		
4		
5		

INSTRUMENT AND EQUIPMENT INFORMATION

Instrument/Equipment Number	Instrument/Equipment Type	Instrument/Equipment Number	Instrument/Equipment Type

Cellular Phone		Radio Number
Serial Number	Phone Number	
	( ) -	

VEHICLE INFORMATION

License Plate Number	State	License Plate Number	State

Revision Date – March 2002

This form must be completed and turned in to the Field Team Supervisor prior to field deployment

Original to Data Center **Yellow copy to Field Monitoring Division**

ATTACHMENT 7

EMERGENCY WORKER RADIATION EXPOSURE RECORD CARD

Emergency Worker Radiation Exposure Record Card

Name: _____
Agency: _____
Business Address:_____
_____
Telephone # (B)_____(H)_____
Social Security - Last Four Digits_____
Date of Birth: _____
Emergency Worker Assignment: _____
Electronic Dosimeter (ED)
Serial #: (provided to you at PMC) _____
Radiation Badge
Serial #:_____
Date:_____ Work Hours: _____

NEW YORK STATE

DISASTER PREPAREDNESS COMMISSION

Rev. 7/10

TOTAL INCIDENT EXPOSURE TO DATE _____

Electronic Dosimeter (ED) Reading	Time	Location/Remarks

KI used: YES / NO Directed by _____Date_____Time_____

Report Readings to Supervisor of 1 R, 3 R, 5 R

ED Total (at end of shift) _____

ATTACHMENT 8

EMERGENCY SAMPLING KIT-INVENTORY

There are three sets of kits, each with four cases, designated RED, WHITE, and BLUE. Each set of kits contains:

SAMPLE CONTAINERS:

Plastic Bags - various sizes (quart, gallon, etc.)
2 Liter Polyethylene Bottles
500-ml Polyethylene Jars
Vials with 40 grams Sodium Bisulfite preservative

SAMPLING TOOLS & CARRYING CASE:

Shovels - Garden and Snow Shovels
Trowel - (garden)
4" Putty Knife
FRMAC-style soil sampling tool (and spatula or equivalent)
Grass Shears
Knife
Hedge Trimmers or Pruners
Scissors
Tape Measure
Funnel
Stainless Steel Dipper
Sanitizer
Teflon, Electrical, or other conformable vinyl tape
Waterproof Tape - 1 roll
Masking Tape - 1 roll
Radioactive Material Warning Tape - 1 roll
Sample Tags
Sample Forms
Glassine Envelopes
Forceps
Charcoal Cartridges
Glass Fiber Filters
Clipboard, Paper, Maps, Pencils, Pens, Marking Pen
0-10 Lbs Spring Scale

ATTACHMENT 8 (cont.)

EMERGENCY SAMPLING KIT INVENTORY

INSTRUMENTS:

1 Ludlum Micro RMeter
1 Ludlum GM Meter with Pancake Probe
Personnel Dosimeters (OSLD, Film Badge, Pocket Dosimeters and charger)
1 Radeco 809C Air Pump with Sampling Head(s)
Batteries for Instruments

INSTRUCTIONS:

Sampling Procedures
Sample Forms
Monitoring Data Forms

SAMPLE CONTAMINATION CONTROL

2 - Liter Bottle Clean Water
1 - Pt. Iso-Clean, Absorbent Pads, Paper Towels, Towelettes
Heavy Duty Plastic Bags and Garbage Can for Radioactive Waste
Disposable Bench Pads
Disposable Gloves - 1 box
Work Gloves 2-Pair.
Disposable Foot Covers - 2 rolls and 1 pair heavy duty/person. Pull on Totes if available.

ATTACHMENT 9

DIRECTIONS TO WADSWORTH CENTER
at the Empire State Plaza, P-1 North Delivery Level, Albany

Points of Contact at Wadsworth Center:
Wadsworth Laboratory Director (518) 474-7161
Nuclear Emergency Officer (518) 474-3025

- **Coming from New York City or points South of Albany**

  Take the NYS Thruway (I-87) North to Exit # 23. At the Exit 23-toll plaza, follow I-787 (North).

  Exit I-787 at Exit #3 "Empire Plaza", which goes to the Empire State Plaza (ESP). On the exit ramp, bear Right and follow signs to the "Empire Plaza" complex. Stay in the Right lane, and follow signs to "P-1 North". P-1 North is the 1st turn-off on the Right, just as the roadway goes under the complex.

  Stop at the Security Booth and notify the guard that you have a "specimen" delivery. The ESP Security Guard or State Police officer will have advance notification of the specimen/sample delivery. You may be required to produce a driver's license or another form of photo ID.

  The ESP Security Guard or State Police officer will then escort you to P-1 South, Dock J, where INC Lab staff and/or Wadsworth Lab Security Personnel will take possession of the samples.

- **Coming from Buffalo or points West of Albany**

  Take the NYS Thruway (I-90) East to Exit #24. At the Exit 24-toll plaza, go straight ahead onto I-90 East. Continue on I-90 East for approximately 5.8 miles, bear Right and take I-787 South to Albany.

  Exit I-787 at Exit #3a "Empire Plaza", which goes to the Empire State Plaza (ESP). On the exit ramp, bear Right and follow signs to the "Empire Plaza" complex. Stay in the Right lane, and follow signs to "P-1 North". P-1 North is the 1st turn-off on the Right, just as the roadway goes under the complex.

  Stop at the Security Booth and notify the guard that you have a "specimen" delivery. The ESP Security Guard or State Police officer will have advance notification of the specimen/sample delivery. You may be required to produce a driver's license or another form of photo ID.

  The ESP Security Guard or State Police officer will then escort you to P-1 South, Dock J, where INC Lab staff and/or Wadsworth Lab Security Personnel will take possession of the samples.

ATTACHMENT 9 (cont.)

DIRECTIONS TO WADSWORTH CENTER

- **Coming from Plattsburgh or points North of Albany**

Take the Northway (I-87) South to Exit #1 "I-90 East/West". Where the exit ramp splits, bear Left and take I-90 East towards Boston. Continue on I-90 East for approximately 5.8 miles, bear Right and take I-787 South to Albany.

Exit I-787 at Exit #3a "Empire Plaza", which goes to the Empire State Plaza (ESP). On the exit ramp, bear Right and follow signs to the "Empire Plaza" complex. Stay in the Right lane, and follow signs to "P-1 North". P-1 North is the 1st turn-off on the Right, just as the roadway goes under the complex.

Stop at the Security Booth and notify the guard that you have a "specimen" delivery. The ESP Security Guard or State Police officer will have advance notification of the specimen/sample delivery. You may be required to produce a driver's license or another form of photo ID.

The ESP Security Guard or State Police officer will then escort you to P-1 South, Dock J, where INC Lab staff and/or Wadsworth Lab Security Personnel will take possession of the samples.

- **Coming from Binghamton or points Southwest of Albany**

Take I-88 to the intersection with the NYS Thruway (I-90). Follow I-90 East towards Albany to Exit #24. At the Exit 24-toll plaza, go straight ahead onto I-90 East. Continue on I-90 East for approximately 5.8 miles, bear Right and take I-787 South to Albany.

Exit I-787 at Exit #3a "Empire Plaza", which goes to the Empire State Plaza (ESP). On the exit ramp, bear Right and follow signs to the "Empire Plaza" complex. Stay in the Right lane, and follow signs to "P-1 North". P-1 North is the 1st turn-off on the Right, just as the roadway goes under the complex.

Stop at the Security Booth and notify the guard that you have a "specimen" delivery. The ESP Security Guard or State Police officer will have advance notification of the specimen/sample delivery. You may be required to produce a driver's license or another form of photo ID.

The ESP Security Guard or State Police officer will then escort you to P-1 South, Dock J, where INC Lab staff and/or Wadsworth Lab Security Personnel will take possession of the samples.

ATTACHMENT 9 (cont.)

DIRECTIONS TO WADSWORTH CENTER

- **From Downtown Albany**

From Capital Park (front lawn of the NY State Capital) at the intersection of State Street, Washington Avenue, and Eagle Street, follow State Street down the hill to South Pearl Street.

Turn Right on South Pearl Street and go past the Pepsi Arena to the traffic light at Market Street (3rd cross street after turning onto South Pearl Street).

Turn Right on Market Street. Proceed on Market Street up the ramp to the "Empire Plaza" (Empire State Plaza or ESP). Stay in the Right lane, and follow signs to "P-1 North". P-1 North is the 1st turn-off on the Right, just as the roadway goes under the complex.

Stop at the Security Booth and notify the guard that you have a "specimen" delivery. The ESP Security Guard or State Police officer will have advance notification of the specimen/sample delivery. You may be required to produce a driver's license or another form of photo ID.

The ESP Security Guard or State Police officer will then escort you to P-1 South, Dock J, where INC Lab staff and/or Wadsworth Lab Security Personnel will take possession of the samples.

ATTACHMENT 10

ADDITIONAL LABORATORY RESOURCES

In addition to the Wadsworth Center, samples may be sent to a number of other radiochemistry laboratories. FRMAC maintains a list of radiochemistry laboratories in the US that they may use for sample analysis.

NYS regulations require that laboratories analyzing environmental samples for NYS be approved by the Environmental Laboratory Approval Program (ELAP). A list of certified laboratories may be obtained from the Wadsworth Center.

ELAP Certified Radiochemistry Laboratories

IN STATE

NYSDOH INORGANIC & NUCLEAR CHEM LAB
WC EMPIRE STATE PLAZA D224
ALBANY NY 12237
DR. PATRICK PARSONS

(518) 474-7161

URS CORPORATION

10282 ROCK SPRINGS ROAD
WEST VALLEY NY 14171-9799
MR. DAVID M. SCALISE

(716) 942 -4160

WASTE STREAM TECHNOLOGY

302 GROTE STREET
BUFFALO NY 14207
DR. BRIAN S. SCHEPART

(716) 876 -5290

ATTACHMENT 10 (cont.)

ADDITIONAL LABORATORY RESOURCES

pCi/LABS INC

103 SOUTH GREENBUSH RD
ORANGEBURG NY 10962
DR. THOMAS KAZMIERCZAK
(845) 680 -0031

SUFFOLK CO PUBLIC & ENV HEALTH LAB

BLDG 487N, COUNTY COMPLEX 725 VETERAN'S HIGHWAY
HAUPPAUGE NY 11788
MR. RONALD HUTTIE
(631) 853 -5528

WESTCHESTER CO LABS AND RESEARCH

10 DANA ROAD
VALHALLA NY 10595
MR. DAVID L. VINCI
(914) 231 -1768

OUT OF STATE

MWH LABORATORIES
750 ROYAL OAKS DRIVE - STE 100
MONROVIA CA 91016-3629
DR. ANDREW EATON
(626) 386 -1100

HAZEN RESEARCH INC

4601 INDIANA ST
GOLDEN CO 80403
MR. JOHN C. JARVIS
(303) 279 -4501

ADDITIONAL LABORATORY RESOURCES **ATTACHMENT 10 (cont.)**

ARS INTERNATIONAL (DBA AMERICAN RADIATION SERVICES)

2609 NORTH RIVER ROAD
PORT ALLEN LA 70767
MS. VIRGENE IDEKER-MULLIGAN
(225) 381 -2991

TESTAMERICA ST LOUIS

13715 RIDER TRAIL NORTH
EARTH CITY MO 63045
MS. ELAINE WILD
(314) 298 -8566

SUMMIT ENVIRONMENTAL TECHNOLOGIES INC

3310 WIN STREET ASCOT INDUSTRIAL PARK
CUYAHOGA FALLS OH 44223
MS. CECILIA MARKOVICH
(330) 253 -8211

BENCHMARK ANALYTICS, INC.

4777 SAUCON CREEK RD
CENTER VALLEY PA 18034-9004
MR. JASON ACKERMAN
(610) 974 -8100

PACE ANALYTICAL SERVICES INC, PITTSBURGH

1638 ROSEYTOWN ROAD SUITES 2, 3 & 4
GREENSBURG PA 15601
MR. DENNIS J. LEEKE
(724) 850 -5600

GEL LABORATORIES LLC

2040 SAVAGE ROAD
CHARLESTON SC 29407
MR. JAMES WESTMORELAND (843) 556 -8171

ATTACHMENT 10 (cont.)

ADDITIONAL LABORATORY RESOURCES

EBERLINE SERVICES-OAK RIDGE LAB
601 SCARBORO ROAD
OAK RIDGE TN 37830
MR. AHMED A. HALOUMA

(865) 481 -0683

TELEDYNE BROWN ENGINEERING - ENVIRONMENTAL SERVICES
2508 QUALITY LANE
KNOXVILLE TN 37931-3133
MR. KEITH JETER

(865) 690-6819

ATTACHMENT 11

DELIVERY REQUEST FORM

This form may be used as an additional form for Empire State Plaza access.

NYS Office of General Services
Serving New York

MAIL & FREIGHT SECURITY UNIT
NYS OGS PARKING AND MAIL SERVICES

DELIVERY REQUEST FORM

Phone (518) 473-2256
Fax (518) 474-3961
E-mail: dockmaster@ogs.state.ny.us

Please complete this form to ensure your delivery/pickup is scheduled with the Empire State Plaza Mail & Freight Security Unit. Vehicles attempting entry to the ESP docks without prior authorization will not be allowed access. 24-hour notice for deliveries is required. Maximum trailer length is 48'.

STATE AGENCY OR BUSINESS NAME: _____

ADDRESS: _____

STATE CONTACT NAME: _____ **PHONE #:** _____

COMPANY PURCHASED FROM: _____ **P.O. NUMBER:** _____

DELIVERY DATE: _____ **ESTIMATED TIME OF ARRIVAL:** _____

RETURN PICK UP DATE (if required): _____ **ESTIMATED TIME OF ARRIVAL:** _____

DELIVERY COMPANY: _____

DESCRIPTION OF FREIGHT: _____

DRIVER NAME AS PRINTED ON LICENSE: _____

STATE OF ORIGIN OF DRIVER'S LICENSE: _____ **DRIVER'S LICENSE #:** _____

VEHICLE MAKE/MODEL: _____ **VEHICLE YEAR:** _____

PLATE #: _____ **STATE OF VEHICLE'S REGISTRATION** _____

RADIOLOGICAL EMERGENCY LABORATORY PROCEDURES

(Available at NYSOEM)