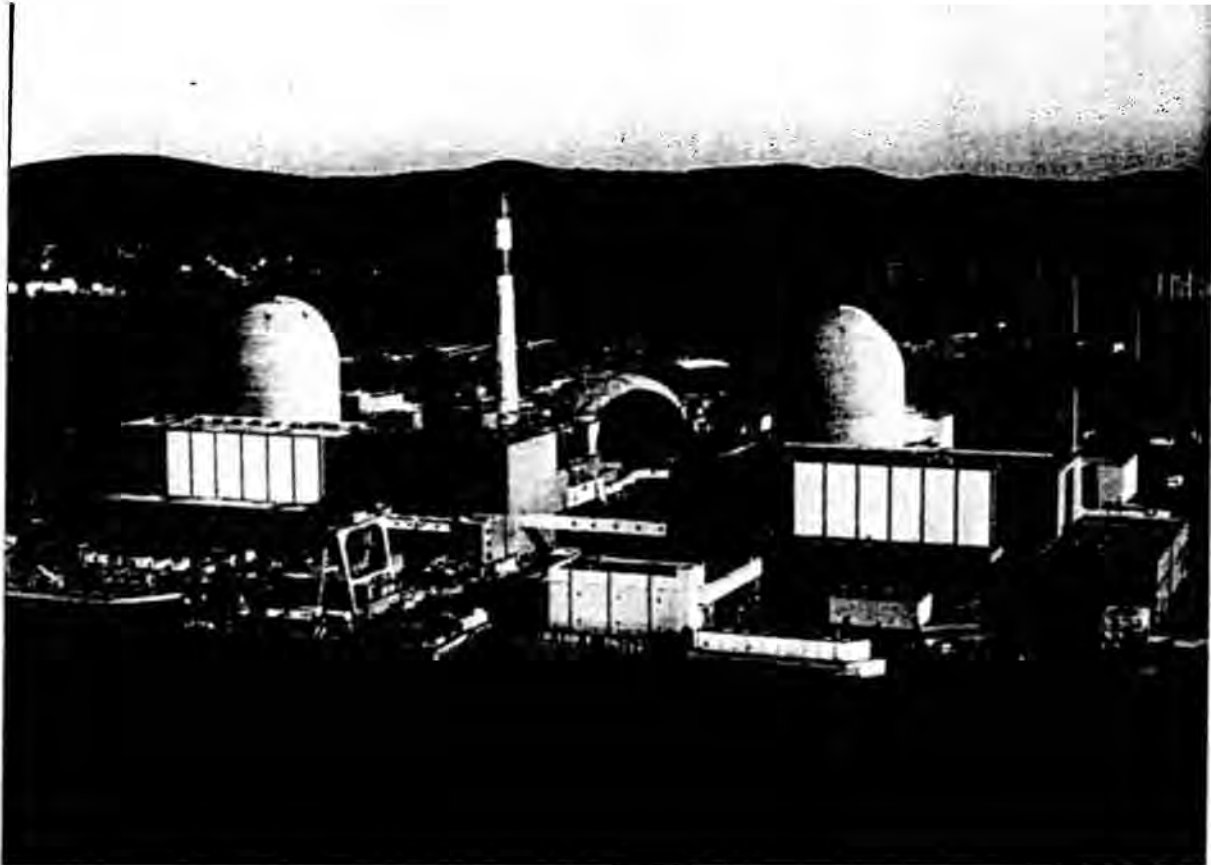


WESTCHESTER COUNTY RADIOLOGICAL EMERGENCY PLAN FOR THE INDIAN POINT ENERGY CENTER



Westchester
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Robert P. Astorino
County Executive



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NOMENCLATURE

CCH	County Commissioner of Health
CCPS	County Commissioner of Public Safety
CCPW	County Commissioner of Public Works
CDOH	County Department of Health
CDPS	County Department of Public Safety
CDOEM	County Director, Office of Emergency Management (term is used interchangeably with Deputy Commissioner of Emergency Services)
CDPW	County Department of Public Works
CE	County Executive
CEMS	County Emergency Medical Services
CFC	County Fire Commissioner
CFD's	County Fire Departments
CNFLO	County Nuclear Facilities Liaison Officer
CPIO	County Public Information Officer
CREPP	County Radiological Emergency Preparedness Plan
CRO	County Radiological Officer
CEDE	Committed Effective Dose Equivalent
DDE	Deep Dose Equivalent
CDE	Committed Dose Equivalent
DMNA	Division of Military and Naval Affairs
DOE	Department of Energy
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
ERPA	Emergency Response Planning Area
IPEC	Indian Point Energy Center
IPNPS	Indian Point Nuclear Power Station
NFO	Nuclear Facility Operators
NRC	Nuclear Regulatory Commission
NYSDOH	New York State Department of Health
NYSDPW	New York State Department of Public Works
NYSP	New York State Police
NYSEMO	New York State Emergency Management Office
PAG	Protective Action Guide
TEDE	Total Effective Dose Equivalent
TODE	Total Organ Dose Equivalent
WCREP	Westchester County Radiological Emergency Plan

**WESTCHESTER COUNTY
DEPARTMENT OF EMERGENCY SERVICES
RADIOLOGICAL EMERGENCY PLAN
VOLUME 1
CORE PLAN AND APPENDICES**

**SECTION I
INTRODUCTION
Revision 0.0**

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*Section I: Introduction***SECTION I: INTRODUCTION**

When the operating licenses for the Indian Point Energy Center, Units 1, 2 and 3 were issued, the Nuclear Regulatory Commission (NRC) completed to its satisfaction detailed reviews of the design and construction of each unit, as well as the procedures by which the units are operated (Unit 1 has subsequently been shutdown). These NRC reviews confirmed that each unit at the Indian Point Energy Center has a number of engineered safety features to minimize the offsite environmental impact of potential radiological releases and that Entergy Nuclear Northeast, the nuclear facility operator, (hereinafter referred to as “Entergy”) who operates the Indian Point Energy Center, has in effect many rigidly enforced safety features and programs associated with the handling of radioactive materials. Nevertheless, radioactive release incidents affecting public health and safety in Westchester County and the other three counties surrounding Indian Point may occur. Therefore, it is not only considered both prudent and appropriate to plan for such a contingency, but is required by Federal regulation in order to ensure that the offsite impact of such an occurrence is minimized.

A. AUTHORITY

The following laws, regulations and documents are relevant to authority to develop and implement this radiological emergency plan:

1. Westchester County Charter
2. New York State Radiological Emergency Preparedness Plan
3. New York State-Nuclear Regulatory Commission Agreement Article 7; Memorandum of Understanding, Paragraph 5.
4. New York State Defense Emergency Act
5. New York State General Municipal Law
6. New York State Executive Law, Article 2B as amended by Section 708, Laws of 1981
7. New York State Sanitary Code, Part 16
8. New York State Public Health Law, Section 201.
9. The Robert T. Stafford Disaster Relief and Emergency Assistance Act (1974) PL 93-288, as amended.
10. Federal Civil Defense Act of 1950 (Public Law 920, 81st Congress), signed January 12, 1951.

*Section I: Introduction*B. SITUATION1. Indian Point Energy Center (IPEC) Descriptiona. Site Location

The Indian Point Energy Center (IPEC) is located on the east bank of the Hudson River about 24 miles north of the New York City boundary line at Indian Point, Village of Buchanan in upper Westchester County, New York State. The station is about 0.8 miles southwest of the City of Peekskill, 8.3 miles south of West Point, 1.5 miles northeast of the Lovett Generating Station site, 4.6 miles north of the Bowline Point Generating Station site and 2.3 miles north of Montrose Point.

b. Site Area Authority and Control

The Indian Point Energy Center is owned and operated by Entergy Nuclear Northeast.

There are no residences within the site boundary. In addition, there are no public highways or railroads that traverse the site area.

Entergy has the authority to determine and control all non-emergency activities occurring within the site boundary. This includes the removal and exclusion of personnel and the removal of property from the site. Additionally, Entergy is responsible for planning and implementation of the emergency response activities at the IPEC.

The site area boundary is used for establishing effluent release limits and enables the Nuclear Facility Operator to fulfill its obligations with regard to the U.S. Nuclear Regulatory Commission requirements contained in 10CFR20. Access to the site is controlled for the purposes of protecting individuals from exposure to radiation or radioactive materials and to keep unauthorized persons outside the area.

c. Regional Topography

The Indian Point Energy Center is surrounded on almost all sides by high ground ranging from 600 to 1,000 feet above sea level. The site is on the east bank of the Hudson River which runs northeast to southwest at this point but turns sharply northwest approximately two miles northeast of the site. The west bank of the Hudson is flanked by the steep, heavily

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wooded slopes of the Dunderberg and West Mountains to the northwest (elevations 1,086 feet and 1,257 feet respectively) and Buckberg Mountain to the west-southwest (elevation 793 feet). These peaks extend to the west by other names and gradually rise to slightly higher peaks.

The general orientation of this mass of high ground is northeast to southwest. One mile northwest of the site, Dunderberg bulges to the east; north of Dunderberg and the site, high ground reaching 800 feet forms the east bank of the Hudson as the river makes a sharp turn to the northwest. To the east of the site, peaks are generally lower than those to the north and west. Spitzenberg and Blue Mountain each average about 600 feet in height and there is a weak, poorly defined series of ridges which again run mainly in a north-northeast direction. The river south of the site makes another sharp bend to the southeast and then widens as it flows in a southerly direction past Croton-on-Hudson and Haverstraw.

d. Site Description

The Indian Point Energy Center (IPEC) is approximately 239 acres in size and contains three pressurized water reactors. Unit 1 (615 MWt, 265 MWe, de-fueled and not operating), Unit 2 (3,071 MWt, 981 MWe) and Unit 3 (3,071 MWt, 981 MWe). Indian Point Unit 3 is adjacent to and south of Unit 1, and Unit 2 is adjacent to and north of Unit 1. Figure I-3 is a plot plan of all facilities at the IPEC.

The two operating plants were designed by Westinghouse Electric Corporation.

The Indian Point pressurized water reactors each contain a nuclear reactor and closed loops of pressurized water, which remove the heat energy from the reactor core and transfer the energy to a secondary water system that generates steam. The steam, in turn, drives a turbine generator set which produces electric power. This is shown in Figure I-4.

2. Westchester County Descriptiona. Westchester County Locale

The area within ten miles of the Indian Point Energy Center is located within four counties: approximately 37% Westchester, 27% Rockland, 21% Orange and 15% Putnam.

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Geo-politically, the portion of Westchester County within the approximate ten-mile emergency planning zone varies from Peekskill, a city of 22,459 (2000 census) - 0.8 miles northeast of the site, to unpopulated parkland.

The western boundary of Westchester County runs approximately through the center of the Hudson River, the northern border coinciding with the southern border of Putnam County, the eastern border coinciding with the western border of Connecticut in the north and Long Island Sound in the south and the southern border coinciding with the northern border of New York City.

At the extreme northwestern corner of the County is the Bear Mountain Bridge, approximately 3.8 miles north of the site; it is the only river-crossing within the ten-mile zone.

The Metro-North Hudson Line (MTA), runs north-south along the river and passes within one mile of the site.

Major highways within the Westchester portion of the ten-mile zone include Routes 9 and 9A running north-south, the Bear Mountain State Parkway, Routes 6, 35 and 202 all running east-west through Peekskill and the Taconic State Parkway running north-south, approximately seven miles east of the site.

b. Westchester County Infrastructure

Westchester's location in the metropolitan region is one of its premier features. The county is easily accessible to and from New York City as well as Connecticut, New Jersey, Rockland and points north such as Albany.

The road network offers a system of interconnecting routes for direct travel. Alternate roads are generally available when needed - for efficiency or preference. Road maintenance is a priority and Westchester County coordinates with the NYS Department of Transportation to promote optimal conditions on the roads. The County's SMART Commute Program provides information on ride sharing and transit as alternatives to driving alone during commute hours.

Public transportation is readily available intra-county and inter-county. Westchester's Bee Line System provides routes throughout the county, express service into Manhattan and connections to Metro-North Railroad Stations. Express bus service between White Plains and Stamford, CT is operated by Connecticut Transit. MTA Metro-North Railroad operates three rail lines with frequent daily service between 44 Westchester stations

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and New York City. For longer distances, Amtrak services the Croton-Harmon, New Rochelle and Yonkers railroad stations for points north to Canada, south to Baltimore and Washington, west to Chicago and northeast to Boston.

Westchester County's airport serves passengers in its new world-class terminal with service provided by a number of major U.S. airlines. The airport handles most types of aircraft and is the largest corporate terminal in the country.

Power in Westchester County is transmitted and distributed by Consolidated Edison and by New York State Electric and Gas. The utilities offer a number of special rate programs to qualifying customers, business and residential, which result in savings in dollars and energy. Power programs specifically for industrial and government customers are provided by and accessed through the Westchester County Public Utility Agency and the New York Power Authority.

Westchester's drinking water is provided by two major types of suppliers, municipal and private. The principal water source for both municipal and private suppliers is the New York City water supply system. The Catskill, Croton and Delaware systems are part of the New York City reservoir and aqueduct system and provide water to 85% of Westchester's residents.

Seven County-operated wastewater treatment plants located along the Hudson River and Long Island Sound shores service approximately 90% of the county's population. The remaining areas in the north county towns depend on locally-based central sewage collection and treatment districts or on subsurface sewage disposal systems located on each lot. Most solid waste is processed at the Charles Point Resource Recovery Facility in Peekskill. Recyclables are received at the County's Material Recovery Facility which separates, processes and markets materials - a proven cost-effective method of waste management.

A more detailed description of Westchester County's infrastructure can be found in the "Databook" maintained by the Westchester Planning Department. It may be accessed via the County's website at:

<http://www.westchestergov.com/planning/research/Databook/Databook.pdf>.

c. Westchester County Population

In 2008, Westchester's population was estimated to be 953,943 according to the US Census Bureau's American Community Survey. Since the 2000 Census, Westchester's population has increased by 30,484 people or 3.3

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percent, and the County's population has increased by 9.0 percent (79,077 persons) in the eighteen years since the 1990 Census.

The population distribution within the approximate 10-mile EPZ of the IPEC, is presented in Appendix G.

*Section I: Introduction*C. ASSUMPTIONS1. Background

The nature of the uranium fuel at the Indian Point Energy Center (IPEC) precludes the possibility of a nuclear explosion (a weapon-type detonation). Other types of accidents are possible, but unlikely. These accidents, should they occur, would almost certainly be contained within the reactor containment building. Nonetheless, an accidental release of radioactive materials to the offsite environment remains a remote possibility. If such a release should occur, the radioactive materials released would be comprised primarily of radioactive iodine, xenon and krypton gases. Although iodine filters will absorb most of all of the radioactive iodine released, the remaining gases vented into the atmosphere and carried by the wind into nearby areas of Westchester County could result in a potential hazard to the health and safety of the general public in the affected areas.

2. Emergency Planning Basis

A report prepared by the joint NRC-EPA task force on emergency planning entitled "***Planning Basis for the Development of State and Local Government Radiological Emergency Preparedness Plans in Support of Light Water Nuclear Power Plants***" (NUREG-0396, 12/78) recommends the creation of two Emergency Planning Zones (EPZ) around fixed nuclear power facilities. This recommendation was subsequently adopted by the Nuclear Regulatory Commission and the Federal Emergency Management Agency as the planning basis for the development of licensee, state and local radiological emergency preparedness plans, in NUREG-0654/ FEMA-REP-1 "*Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,*" which was published in January of 1980 and revised in November, 1980.

The first EPZ, the plume exposure pathway emergency planning zone, is approximately ten (10) miles in radius and is designed primarily to control radiation exposures to the general public from direct radiation exposure from the plume. The principal radiation sources associated with this pathway are: (a) whole body external exposure to gamma radiation from the plume and from deposited materials and (b) inhalation exposure from the passing radioactive plume. The time of potential exposure could range in length from hours to days.

The second, the ingestion pathway EPZ, is approximately fifty (50) miles in radius, includes the 10-mile EPZ and is designed primarily to monitor contamination from any releases. The principal sources of radiation exposure from this pathway would be from ingestion of contaminated water or foods such as milk or fresh vegetables. The time of potential exposure could range in length from hours to months.

*Section I: Introduction*D. CONCEPT OF OPERATIONS

When considering preparedness, response and recovery for the IPEC, there are general responsibilities, which are shared by all levels of government and the Nuclear Facility Operator – Entergy Nuclear Northeast. These emergencies will initially be dealt with at the County (or local) level. In accordance with Article 2B of the Executive Law of the State of New York, the County Executive may proclaim a Local State of Emergency within any part or all of the territorial limits of the County. The County Executive may also request the Governor to declare a State of Emergency, or as a result of a disaster arising from a radiological accident, the Governor may direct the County Executive and emergency service organizations to notify the public that an emergency exists and take appropriate actions according to the New York State Plan.

The County will first utilize county resources. When resources are exhausted or additional assistance is required, such assistance will be requested and provided through the New York State Emergency Management Office (SEMO). If it is necessary, the Governor will request Federal assistance. State and local resources such as airfields, command posts and communications will be made available, if possible, to support the Federal response. A liaison person for the Federal response has been designated in Part 1, Section III, of the *New York State Radiological Emergency Preparedness Plan*. This liaison person will be responsible for maintaining the list of resources available and maintaining communications with Federal agencies. The list of resources will be found in Part III, Section II, "*Lists, Maps and Resources*" of the *New York State Radiological Emergency Preparedness Plan*.

E. GENERAL RESPONSIBILITIES1. County Responsibility

It is the responsibility of the government of each county to provide resources (equipment and personnel) for the effective implementation of the protective action response options required to protect the health and property of the general public and emergency workers in the event of a radiological release incident. If protective actions are required, the county will:

- Activate its emergency operations center.
- Notify municipal officials and other appropriate public officials.
- Consider initial precautionary actions.
- Delay opening of schools, if appropriate;
 - or,
 - shelter schools pending further determination;
 - or,
 - early dismissal of schools, sending students home;
 - or,

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close school and evacuate students to a School Reception Center.

- Close parks and recreational areas.
- Initiate public information functions and participate in the Joint Information Center as a centralized source for public information and media releases.
- Clear the Hudson River of pleasure craft within the 10-mile EPZ and (possibly) close the river to commercial traffic in the potentially affected area (U.S. Coast Guard authority and action).
- Notify law enforcement officials and possibly establish Traffic Control Points.
- Notify hospitals, nursing homes and other special facilities.
- Place on stand-by transportation resources, fire and emergency medical services, field monitoring teams, Congregate Care Centers and Reception Centers and Reception Center support personnel.
- Notify FAA and Metro-North (including Conrail/CSX and Amtrak).
- Request/receive reports from agencies reporting to Emergency Operations Center.
- Consider (in consultation with the County Executives of Orange, Putnam and Rockland Counties) the declaration of a Local State of Emergency.
- In the event of a need to modify public behavior, consider (in consultation with the County Executives of Orange, Putnam and Rockland Counties) making public notification through sounding sirens followed immediately by an Emergency Alert System (EAS) radio message.
- In support of a federal response, OEM will provide liaisons to any federal operations centers that may be established, and the county will make county-owned facilities, such as the airport and Westchester County Center, available to the extent requested and feasible (Note: See section I.E.2 below. The State Operations Officer is responsible for communicating with federal responders, determining needs and relaying that information to the county EOC. To date, no pre-planned requests for facility or other support services have been made to the county.)

*Section I: Introduction*2. State Responsibility

It is the responsibility of the State of New York to recommend protective actions that would prevent or minimize radiation exposure to the population in the event of a radiological release incident. The State will also provide technical guidance and evaluation. Other than the extension of credit, assistance in the form of personnel, equipment, supplies, services and facilities may be provided when local resources are insufficient to cope with the effects of the emergency. The State shall take the necessary actions to respond to 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 assigns a State Liaison Officer who will coordinate the support for Federal agencies. This Liaison Officer will also be responsible to coordinate Federal support with the County when necessary. The State will continue to work closely with the Federal Government in all aspects of emergency management and will continue its role of intermediary between the Federal Government, local governments and private citizens (Ref. NYS Radiological Emergency Preparedness Plan, Part I, Section II.B.a. page II-1). The Operations Officer at the State Emergency Operations Center (EOC) is the designated State liaison to the Federal agencies, which have been requested to provide response support to the State (Ref. *NYS Radiological Emergency Preparedness Plan*, Part I, Section III, 1.4.).

3. Nuclear Facility Operators' Responsibility

It is the responsibility of Entergy Nuclear Northeast to provide overall assessment, evaluation and notification for response to both onsite and offsite emergency situations. The scope of their responsibility ranges from timely response action and notification in the event of minor occurrences which may lead to more serious consequences, through increasingly serious conditions, to severe events which may require immediate notification and evacuation of the public and the activation of a large emergency response organization.

4. Federal Government Responsibility

The responsibilities of the Federal government are:

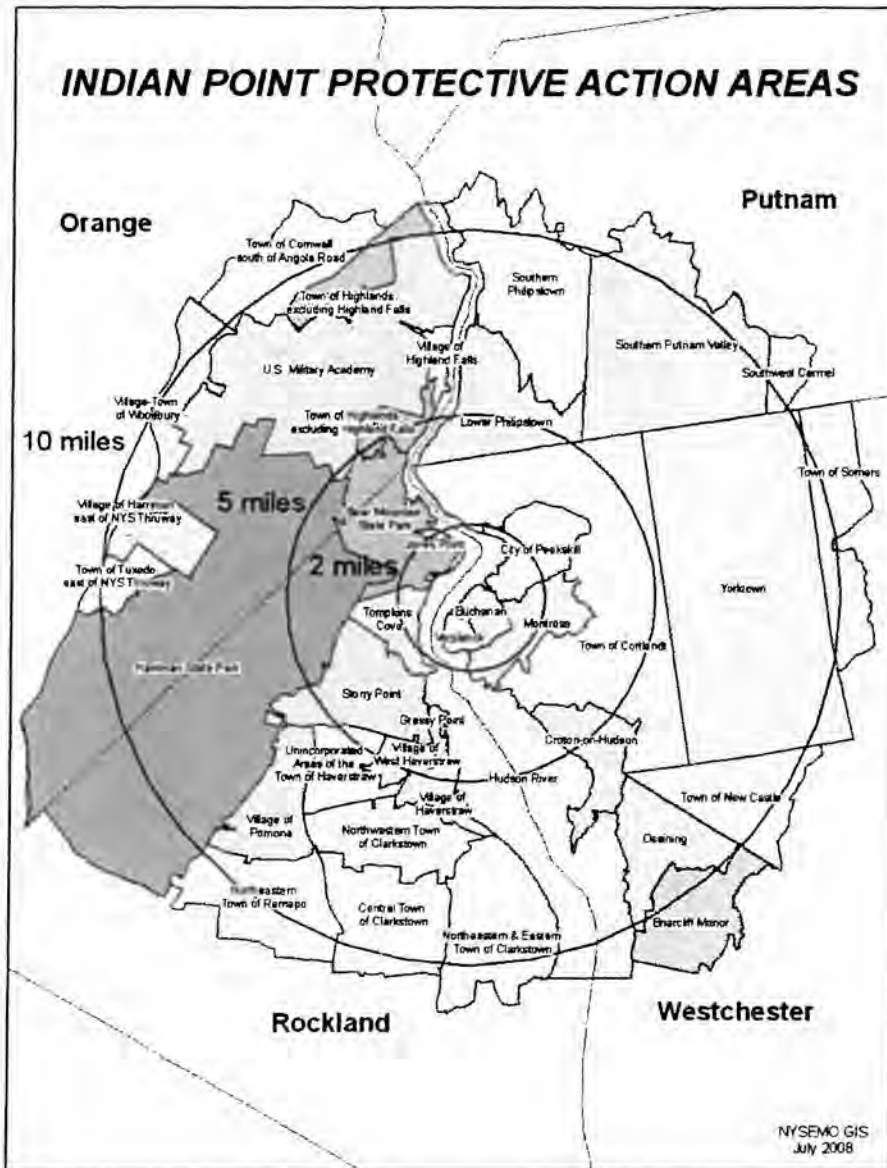
- (1) The Federal Emergency Management Agency has the lead responsibility for offsite nuclear emergency planning and response. This agency is charged with establishing policy for and coordinating civil emergency planning and assistance functions for Federal agencies.

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- (2) The U.S. Nuclear Regulatory Commission is the lead federal agency (LFA) in response to an event at a nuclear power plant, and is responsible for verifying that appropriate emergency plans have been implemented and for conducting investigative activities associated with a radiological emergency.
- (3) The U.S. Department of Energy provides radiological assistance to the LFA and state, and is responsible for providing emergency operations to assist State and local governments in protecting the health and safety of individuals, the public, and the environment in the event of a radiological incident. This is accomplished by means of the Radiological Assistance Plan (RAP), which provides for the use of all available Federal capabilities.
- (4) U.S. Environmental Protection Agency (EPA) sets standards for exposure and for certain recovery criteria (see Appendix I, 2.d and e).
- (5) The Federal Aviation Administration (FAA) is responsible for restricting air-space and regulating air traffic. In the event of an emergency at IPEC, FAA may be requested to modify usual air traffic patterns and restrictions to ensure safety and security related to air traffic.
- (6) The United States Coast Guard (USCG) is responsible for regulating the navigable waters of the United States. This includes the Hudson River along the borders of Westchester County. They will be responsible for restricting marine traffic on the river and for notifying boaters of emergency conditions.

FIGURE I-1

**INDIAN POINT NUCLEAR POWER STATION
PLUME EXPOSURE PATHWAY 0-10 MILE
EMERGENCY PLANNING ZONE**



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FIGURE I-2

**INDIAN POINT NUCLEAR POWER STATION
INGESTION EXPOSURE PATHWAY
0-50 MILE EMERGENCY PLANNING ZONE**

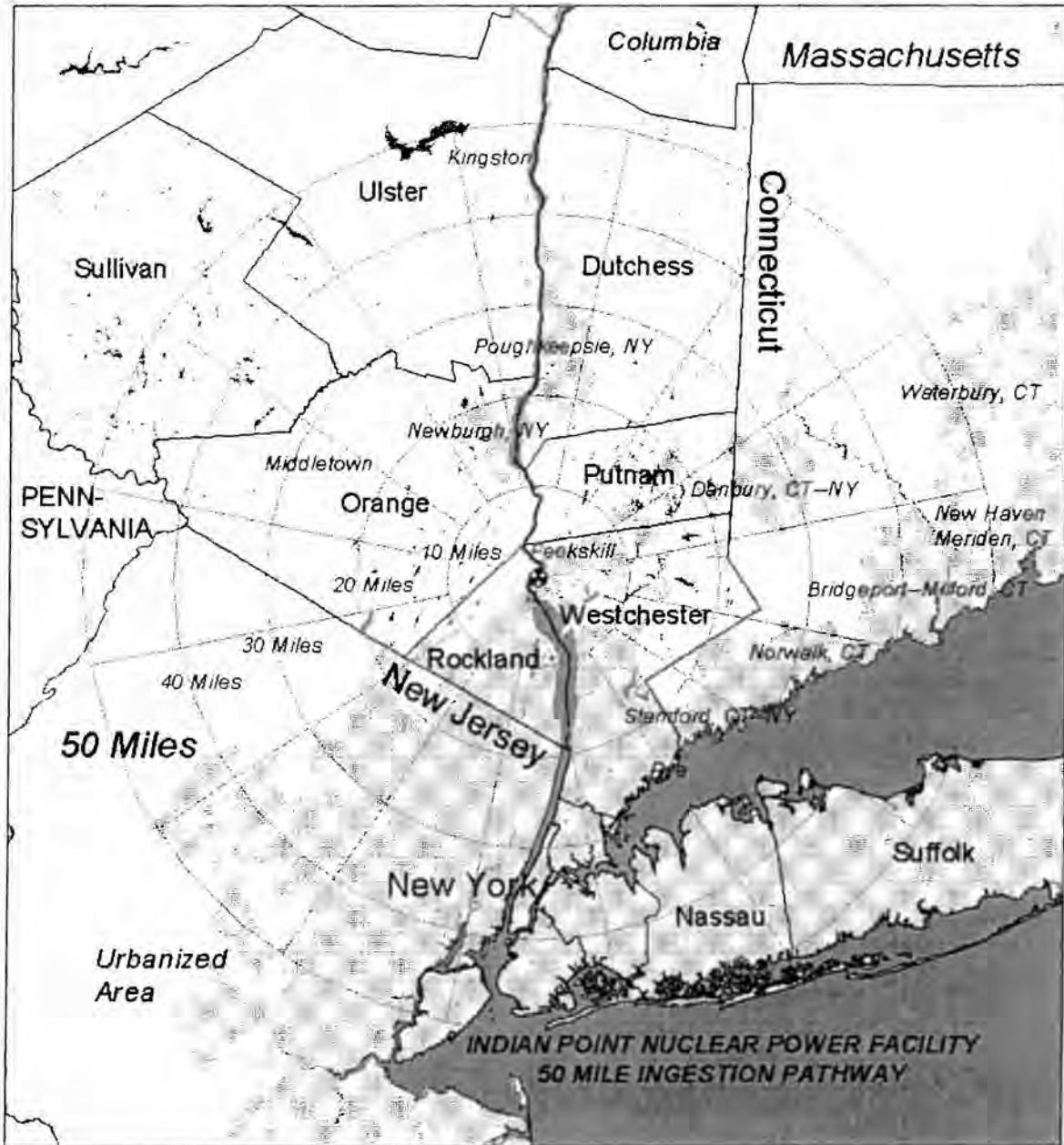


FIGURE I-3

**INDIAN POINT ENERGY CENTER
SITE PLOT PLAN**

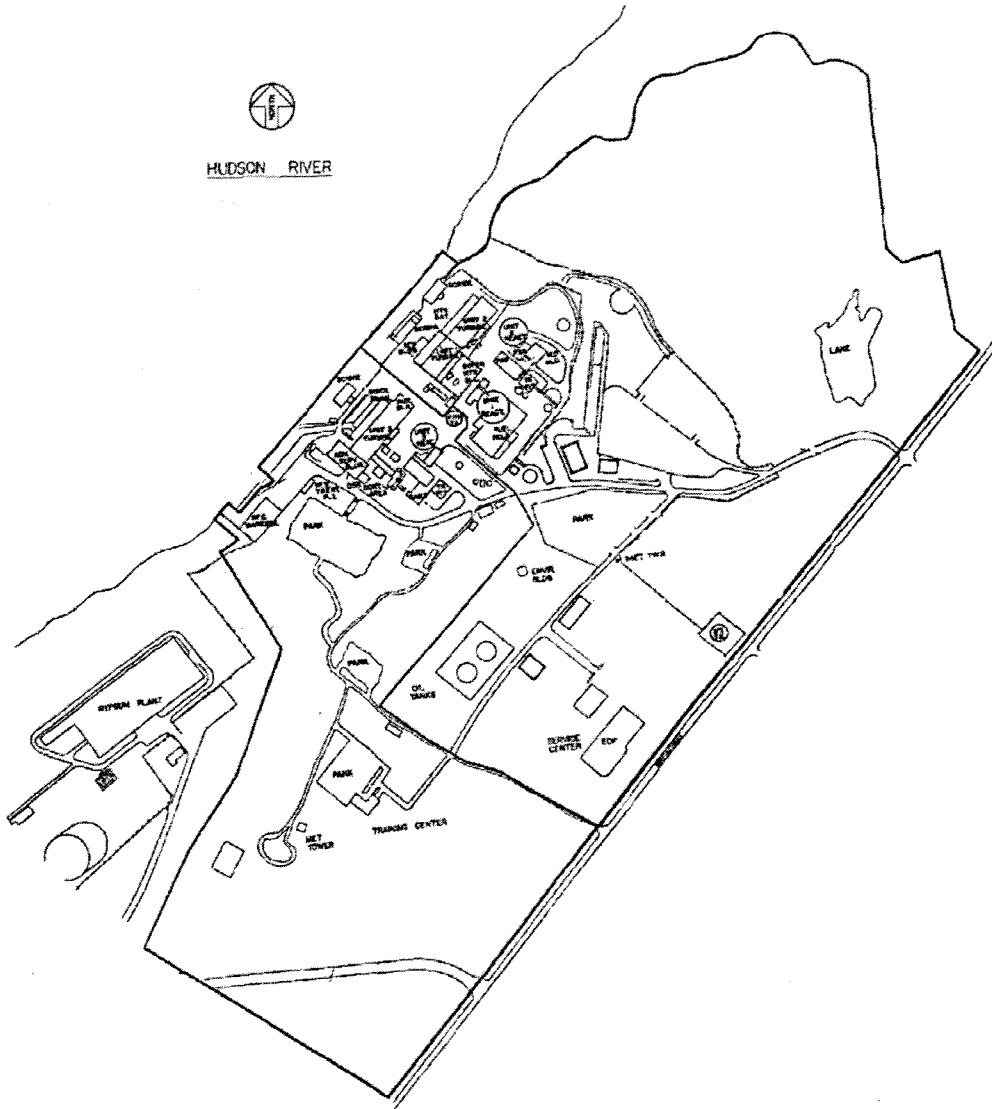
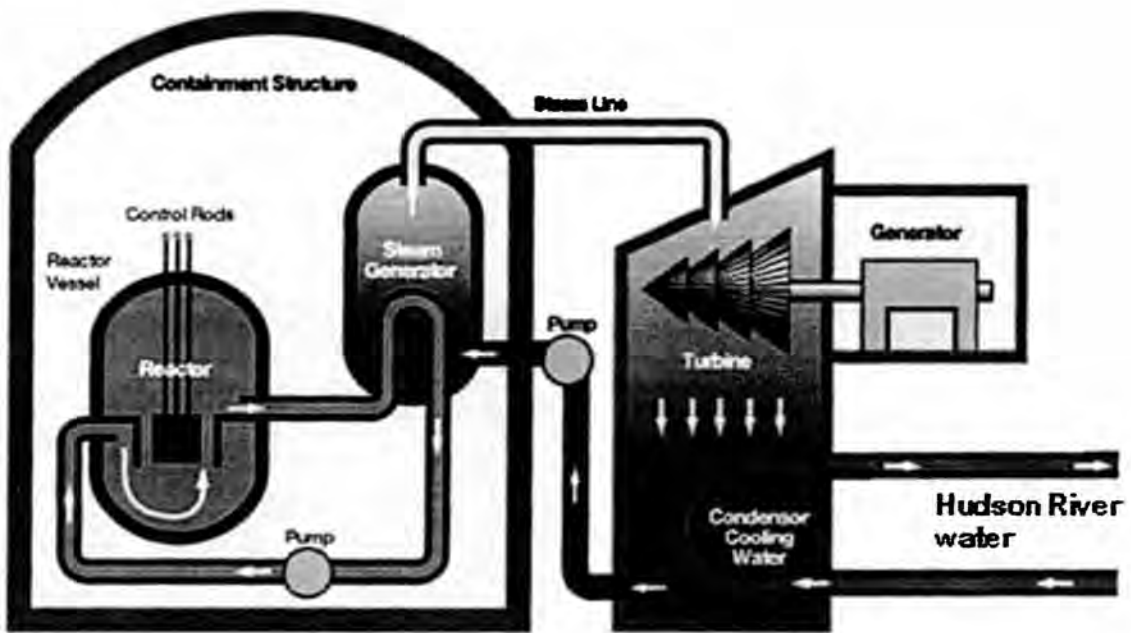


FIGURE I-4

PRESSURIZED WATER REACTOR SCHEMATIC



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**WESTCHESTER COUNTY
DEPARTMENT OF EMERGENCY SERVICES
RADIOLOGICAL EMERGENCY PLAN
VOLUME 1
CORE PLAN AND APPENDICES**

**SECTION II
PREPAREDNESS
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Section II: Preparedness

SECTION II: PREPAREDNESS

Preparedness efforts associated with the county radiological program includes plan and procedure updates, annual training, drills and exercises, equipment maintenance and outreach efforts.

A. **MISSION**

The County, State and Federal governments, as well as Entergy, have the responsibility to prepare for all hazards at the Indian Point Energy Center (IPEC). A radiological emergency is a situation in which offsite protective action might be necessary to prevent or reduce radiation exposure to population as a result of an incident at a commercial power reactor.

Adequate preparation for radiological emergencies includes, but is not limited to the following:

1. Program administration (Project Management; Updating)
2. Plan and procedure development and maintenance
3. Maintaining emergency facilities and equipment
4. Conducting exercises and drills
5. Conducting annual training
6. Public Education/Awareness

B. **PREPAREDNESS ACTIVITIES**

The Commissioner, Department of Emergency Services is responsible for the development and administration of this plan. These responsibilities include:

1. **Administration**
 - a. Controlling the distribution of copies of this plan.
 - b. Providing for the prompt distribution of amendments and updates for this plan.
 - c. Maintaining compatibility of this plan with other emergency plans.
 - d. Conducting an annual review and update of this plan for the County Executive
 - e. Coordinating the status of County radiological emergency response agencies and their procedures for implementing this plan.

Section II: Preparedness

- f. Make provisions for certification of the plan/procedures to be current on an annual basis.

2. Facilities and Equipment

- a. Maintaining up-to-date inventories of equipment resources that can be marshaled in the event of an emergency.
- b. Maintaining and ensuring the availability of the following:
 - (1) Radiation dosimetry, including direct reading, electronic and radiation badge/dosimeter of legal record (DLR), for County emergency response personnel.
 - (2) The County emergency communications network.
 - (3) The County EOC in operational readiness.
 - (4) An up-to-date telephone number listing that will be checked quarterly.

All other logistical elements of this plan are the primary responsibility of the individual County and local emergency response agencies.

- c. Providing for the quarterly (and after each use) testing of radiological instruments, equipment, warning systems and communications.
- d. Obtaining and maintaining supplies necessary to implement the plan, including but not limited to:
 - (1) Materials for reception center operations;
 - (2) Strip maps for evacuation or re-location of schools and other facilities;
 - (3) Distribution of Potassium Iodide (KI) to the public and to emergency workers.

3. Exercises and Drills

- a. Conducting required drills and exercise(s) for the County emergency response agencies in conjunction with Entergy and the State of New York. Provisions will be made for the critique of the emergency drills and exercises by qualified observers. A mechanism will also be established for using the results of drills and exercises as a basis for improving this plan.

Section II: Preparedness

- b. Pending the development of exercise scenarios by the State, NRC and FEMA before each drill and exercise, the County Office of Emergency Management (OEM) shall coordinate, with appropriate County, State and utility personnel the following information:
 - (1) The basic objectives of the drill or exercise and appropriate evaluation criteria.
 - (2) The date, time period, place and participating organizations.
 - (3) The simulated events.
 - (4) A time schedule of real and simulated initiating events.
 - (5) A narrative summary describing the conduct of the exercises or drills to include required simulated events.
 - (6) The scenario will be written to show that activities that are demonstrated will occur as a result of free play whenever possible. Free play will insure that events are occurring in the sequence desired and timing is appropriate and in sequence with the scenario.
 - (7) Arrangements for the observers will be completed by the Exercise Director. The arrangements will include housing, transportation, equipment and the time and place meetings are to be held for the observers. Each observer will be given a schedule of events with time and places included, observer/evaluator evaluation sheets with instructions on how to prepare and complete the sheets and the requirements for post-exercise meetings and critiques.
- c. Selecting official observers and controllers from Federal, State and/or local governments to evaluate the drills and exercises.

4. Training and Technical Assistance

- a. Maintaining liaison with the State and Entergy in order to fully utilize training assistance that may be provided.
- b. Establishing, in connection with the State, a suitable training program that is specifically oriented toward radiological release incidents at the IPEC for all county emergency response agencies. This training program will provide for periodic retraining on, at least, an annual basis. Training and retraining programs shall be provided in the following areas:
 - (1) Emergency preparedness overview

Section II: Preparedness

- (2) Direction and control
 - (3) Accident and dose assessment
 - (4) Radiological monitoring and decontamination
 - (5) Law enforcement and traffic control
 - (6) First aid and rescue
 - (7) Emergency Transportation
 - (8) Medical support
 - (9) Communications
 - (10) Public information and rumor control
- c. Familiarizing new county emergency response personnel with this plan.
 - d. Providing relevant, up-to-date radiological incident emergency planning information, as appropriate, to the county emergency response agencies.
5. Public Education/Awareness
- a. Developing, in conjunction with the County Public Information Officer (PIO), Entergy, the State of New York and the Federal government, a public education program to provide information about emergency planning and response to IPEC incidents.
 - b. Coordinating with the PIO, the State of New York and the Federal Government, an annual news media education program to acquaint the news media with the county radiological emergency plan.
 - c. Ensuring that the emergency information booklet is mailed to all 10-Mile EPZ residents.
 - d. Providing the news media with information concerning county response to radiation emergencies, and points of contact for release of public information in a radiological emergency. Unless otherwise indicated, the Joint Information Center, when operational, will serve to facilitate this purpose.

**WESTCHESTER COUNTY
DEPARTMENT OF EMERGENCY SERVICES
RADIOLOGICAL EMERGENCY PLAN
VOLUME 1
CORE PLAN AND APPENDICES**

**SECTION III
RESPONSE
Revision 0.0**

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Section III: Response

SECTION III: RESPONSEA. MISSION

The mission of the County Emergency Response Organization and the County Radiological Emergency Plan is to protect the health and safety of the general public of Westchester County in the event of a radiological incident at the Indian Point Energy Center.

In order to successfully execute the mission, it will be necessary to perform the following operations:

1. Monitor and assess the scope and magnitude of the incident.
2. Evaluate and decide which protective action response options should be initiated.
3. Implement the appropriate protective action response option or combination of options, if necessary. This includes:
 - a. Initial Precautionary Operations
 - b. Selective Sheltering-in-place
 - c. General Sheltering-in-place
 - d. Selective Evacuation
 - e. General Evacuation
 - f. Administration of potassium iodide (KI) to the public and to emergency workers
 - g. Isolation of Ingestion Pathways and Sources
4. In addition to the operations stated above, the successful implementation of the plan will depend on the efficient and effective coordination of the plan with the REPs of other emergency response organizations. Specifically, the plan will have to be closely coordinated with the REPs of Orange, Putnam and Rockland Counties, the New York State Radiological Emergency Preparedness Plan and the Nuclear Facility Operator Site Emergency Plans. In the case of a multi-county response, inter-county actions will be coordinated through the New York State Emergency Management Office, Region II. (Refer to the Indian Point site-specific section of the New York State Radiological Emergency Preparedness Plan).

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 Officer of a County does not elect to put such a plan into effect, the Governor shall declare a State of Emergency for that County and direct State agencies to implement those parts of the plan that may be appropriate and necessary under the direction of the Disaster Preparedness Commission. State and local resources and personnel shall be utilized in carrying out these measures. The Disaster Preparedness Commission assigns a representative to the County EOC to act at its direction in assigning

Section III: Response

missions and tasks, directing courses to control the situation, informing the public and acting in conjunction with other affected counties. These activities shall be carried out in accordance with the County's plan.

B. RESPONSE ACTIVITIES CONCEPT OF OPERATIONS

Effective implementation of the plan requires a clear understanding of the responsibilities of the people and/or organizations involved. For each emergency response activity, this section provides the following:

- Mission statement and description of the activity.
- Designation of lead responsibility.
- Designation of available assistance (primary and secondary support).

Secondary support for all response activities will be provided on an as-needed basis by all other organizations with functional responsibilities.

Table III-I summarizes the information on agency responsibilities.

The organizational structure outlined in the following paragraphs consists of existing government departments and offices and appropriate private organizations, as required for the planned emergency response or service activities. For coordination purposes, the County Emergency Response Organization consists of a "command and control" element and other specified emergency services, and is organized in a manner consistent with NIMS/ICS concepts. Each of the major emergency service functional areas will be headed by a Branch Director or titled individual from the organization who has lead responsibility. The department, organization or individual assigned to lead responsibility is responsible for obtaining agreed-upon division of responsibilities among the organizations participating in the service, exercising leadership in planning and training and reporting service performance and requirements to command and control. Participating organizations will plan for and carry out the service activities for which they are responsible.

1. Command and Control

Mission Statement: To assign missions and tasks, direct courses of action which control the operation whatever the emergency, inform the public and provide resource continuity for the County Emergency Response Organization.

Lead Responsibility: County Executive

Primary Support: County Commissioner of Emergency Services

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Description: Command and control is established both procedurally and operationally. The county uses the National Incident Management System (NIMS)/ Incident Command System (ICS) to organize and direct response activities. Operationally, the county activates an emergency operations center (EOC). The EOC is situated to include a Command Room manned by the County Executive and senior level staff. Decision-making and overall command/control is directed from the Command Room. The Operations Room of the EOC is managed by the EOC Manager who provides oversight and coordination for EOC staff. Field personnel take direction from EOC staff.

2. Alert and Notification of Public

Mission Statement: To activate the prompt Public Alert and Notification System and to establish and maintain channels of cooperation between governmental officials and the news media through which an emergency public notification program can provide essential information to the residents of Westchester County when a protective action response may be required.

Lead Responsibility: County Commissioner of Emergency Services

Primary Support: Westchester County Executive, Director of Communications, Public Information Officer, Office of Emergency Management and 60 Control.

Secondary Support: Law Enforcement Agencies, County Commissioner/Sheriff Public Safety, County Department of Parks, Recreation and Conservation and New York State Department of Parks and Recreation, New York State Police, Civil Air Patrol and U.S. Coast Guard.

Description: Alerting of the public is accomplished primarily through a siren system. The county has backup means of alerting and notifying the public, including but not limited to an automated Emergency Notification System, an automatic telephone dialing system which provides taped messages to the public.

Notification of the public is accomplished through the Emergency Alert System (EAS) messages via radio and television broadcasts. A Joint Information Center (JIC) is established as a primary means for the issuance of public information for the media.

A JIC website is also available for the public to access both emergency information and the County will post emergency information on its website as well.

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3. Evacuation

Mission Statement: To implement, as directed, the evacuation response option identified in order to insure the safety of the public.

Lead Responsibility: County Executive, in coordination with County Commissioner of Emergency Services and Commissioner of Health

Primary Support: County Commissioner of Public Safety and New York State Division of State Police; County Department of Transportation. Protective action recommendations are provided by IPEC.

Secondary Support: Local Law Enforcement Agencies, New York State Emergency Management Office and New York State Department of Transportation; County Emergency Medical Services, private transportation companies.

Note: Additional Secondary Support provided on an as-needed basis by all other organizations with functional responsibilities.

Description: Evacuation is one of several protective action options available to the county. Evacuation areas will depend upon the wind direction and plant conditions. Most likely evacuation scenarios are for a two mile radius around the plant and five miles down wind; five mile radius and ten miles down wind; or a full ten mile radius. This is known as the “keyhole” approach.

4. Reception and Congregate Care Centers

Mission Statement: To provide the resources essential to support evacuated people requiring assistance in designated Reception Centers and shelters where the care and needs of these people will be met, and to operate such Reception Centers and shelters.

Lead Responsibility: County Commissioner of Social Services for reception centers and the American Red Cross for congregate care.

Primary Support: County Commissioner of Health, County Department of Parks, Recreation and Conservation, County Department of Public Works, New York State Department of Social Services, and local fire, emergency medical services and police.

Secondary Support: Salvation Army, County Department of Senior Programs and Services, County Office of the Disabled and the Westchester Emergency Volunteer Reserve (WEVR).

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Description: The Reception Centers will be organized by the County Commissioner of Social Services to provide initial assistance to evacuees needing temporary lodging. Services provided at reception centers include activities such as registration, monitoring, decontamination (if necessary), first aid and disposition to a shelter or medical facility, as needed. These services will be provided on a priority basis, depending upon the areas that may be affected by a release. Shelters will be coordinated by the American Red Cross to provide short-term housing and food for the evacuees.

Westchester County has identified six public reception centers, all of which are approximately twenty miles from the IPEC. See the public information brochure for a location map showing all reception centers. A map is also located in the EOC.

5. Communications

Mission Statement: To provide facilities and personnel to support the emergency communication needs of essential government departments, volunteer services and the public. To provide communication facilities and personnel in the County Emergency Operations Center (EOC); to interface with the IPEC, the State of New York, affected county local governments including the City of Peekskill and appropriate Federal agencies such as the Nuclear Regulatory Commission and the U.S. Department of Energy.

Lead Responsibility: County Commissioner of Emergency Services

Primary Support: County Commissioner of Public Safety, Department of Emergency Services Chief of Communications, Department of Emergency Services 60 Control

Secondary Support: County Fire Services, County Emergency Medical Services, County Department of Information Technology and New York State Emergency Management Office, County Nuclear Facility Liaison Officer.

Description: Westchester County maintains a robust emergency communications network for daily emergency service requirements, as well as communication systems specific to response to the Indian Point. Dedicated telephone (digital/analog) systems, local government radio, commercial telephone, automated digital call-outs and local emergency service radio frequencies are all part of the county communications system. The EOC is equipped with a dedicated RECs line, Executive hotline, telephones (digital/analog) and radios. Additional communication capabilities including cell phones, satellite phones, Voice over IP phones and email are also available for use during emergencies. RACES radio volunteers supplement these resources. The county 60 Control Communications Center communicates with county fire and EMS units and is the designated County Warning Point. The

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Department of Public Safety maintains radio communications with county law enforcement and other local law enforcement agencies.

*Section III: Response*6. Fire and Rescue Service

Mission Statement: To limit the loss of life and property which could result from fire or other causes, to rescue trapped and injured persons and to insure fire prevention and suppression.

Lead Responsibility: Deputy Commissioner, County Department of Emergency Services

Primary Support: Local Fire Departments and Ambulance Corps and County Emergency Medical Services

Description: Activities that are performed under this function include, but are not limited to the following:

- a. Establishing communications with all County Fire Departments and disseminating information to them.
- b. Alerting all firefighters and bringing each department to full operational capacity.
- c. Coordinating resources and assistance requirements with other agencies, e.g. water resources, re-supply of firefighting equipment and law enforcement assistance.
- d. Updating and verifying the inventory of county-wide firefighting resources.
- e. Rendering first aid and assisting emergency transport of the injured during an evacuation or other emergency operation, as required and establishing communications with medical support facilities (hospitals).
- f. Assisting in the dissemination of evacuation warnings in affected areas if called upon to do so.

7. Law Enforcement and Traffic and Access Control

Mission Statement: To provide traffic direction and control; to insure citizen safety; to maintain law and order; to protect public and private property during emergency operations; to provide protection for critical facilities, supplies, and evacuated areas; to control access to risk areas and to assist in the dissemination of emergency announcements.

Lead Responsibility: County Commissioner of Public Safety

Primary Support: Local Law Enforcement Agencies and New York State Police

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Secondary Support: National Guard (if committed by the Governor), other State militia forces (if committed by the Governor); U.S. Coast Guard (on Hudson River); Civil Air Patrol (requested through SEMO); Federal Aviation Administration (FAA).

Description: An evacuation time estimate study and Traffic Management Plan have been developed which identify traffic control points (TCPs) to be manned in order to facilitate evacuation traffic flow. The specific points to be manned are dependent upon the evacuation scenario, and law enforcement agencies have the discretion to man any intersection based upon traffic conditions at any time or emergency classification level. Personnel required to staff key TCPs will be placed on standby at an Alert and will activate TCPs at a Site Area or General Emergency.

Access control will be established after evacuation is completed in order to secure impacted areas.

9. Public Works (Engineering)

Mission Statement: To provide overall coordination to all engineering activities for the construction, rehabilitation and repair of all essential materials and facilities in order to support and maintain emergency services.

Lead Responsibility: County Commissioner of Public Works

Primary Support: New York State Department of Transportation

Secondary Support: County Department of Parks, Recreation and Conservation and local Public Works and Highway Departments

Description: Activities which may be required under this function include, but are not limited to, the following:

- a. Coordinating debris clearance, the removal of other impediments to evacuation and emergency repairs to roads and bridges.
- b. Establishing and maintaining traffic control barricades.
- c. Provide assistance in transporting uncontaminated supplies of foodstuffs to the general public and water and stored feed for livestock to farmers.

10. Public Education/Information

Mission Statement: To educate the general public on how they will be notified and what their initial actions should be during a radiological emergency and to disseminate information to the public once a radiological emergency has occurred.

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Lead Responsibility: County Public Information Officer

Primary Support: Department of Emergency Services, Director of Communications (OCE), State Emergency Management Office PIO, Entergy PIO

Secondary Support: New York State Department of Health and U.S. Nuclear Regulatory Commission, Federal Emergency Management Agency

Description: Activities that are required under this function will be coordinated with the Nuclear Facility Operator, the State of New York and the Federal government and include:

- a. Coordination of public education programs to familiarize the general public of Westchester County with the various aspects of the plan.
- b. Preparation of press/news releases which may be issued to the news media in case of a radiological release or impending release.
- c. Establishment of procedures to access the area's Emergency Alert System for dissemination of emergency information over radio and television.
- d. Establishment of a Public Inquiry Call Center to answer questions during an emergency
- e. Establishment of rumor control procedures for specific information

11. Emergency Medical Services

Mission Statement: To coordinate emergency medical services and treatment for the ill and injured and to coordinate the movement of patients, equipment and personnel of hospitals, nursing homes or other special facilities that are health-related facilities. This includes establishing communications links between fixed and mobile medical support facilities, as well as coordination of support for the non-institutionalized mobility impaired and hearing impaired, as required.

Lead Responsibility: Department of Emergency Services, Emergency Medical Services Coordinator

Primary Support: County Emergency Medical Services, 60 Control, County Commissioner of Public Safety, County Fire Services, local Fire Departments and Ambulance Corps, and Westchester Medical Center

Secondary Support: County Department of Transportation and Civil Air Patrol

12. Transportation

Mission Statement: To provide transportation services during an emergency situation for people without the resources to transport themselves. The services provided under this activity exclude those described in association with rescue and law enforcement operations (activities - see paragraphs g and h above).

Lead Responsibility: County Commissioner, Department of Transportation

Primary Support: County Transportation Companies

Secondary Support: County Emergency Medical Services, County Department of General Services, County Department of Parks, Recreation and Conservation, National Guard (if committed by the Governor), other State militia organizations (if committed by the Governor), New York State Department of Environmental Conservation and Civil Air Patrol.

13. Social Services

Mission Statement: To provide short-term housing, food, clothing, registration, inquiry and rehabilitation; to furnish information or counseling in personal family problems due to the inability to re-enter areas which may require decontamination following an incident; to coordinate the movement and consolidation of persons from adult homes (non-health related) and to supervise and assist in the organization and training of emergency welfare services.

Lead Responsibility: County Commissioner, Department of Social Services

Primary Support: County Department of Mental Health and New York State Emergency Management Office

Secondary Support: American Red Cross, Salvation Army and County Department of Senior Programs and Services

14. Accident Assessment

Mission Statement: To assess and/or monitor the offsite consequences of a radiological emergency and to coordinate such monitoring activities. This includes the prompt offsite actions necessary to determine the potential risk to public health and safety. The Nuclear Facility Operator (NFO) has the initial responsibility for accident assessment. This will be followed by prompt, specialized radiological assessments by qualified county and state personnel. Activities that are required under this function include, but are not limited to, the following:

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- a. Determining the magnitude and disposition of radioactive releases into the air, earth's surface or surface water.
- b. Deploying field or mobile radiological assessment resources.
- c. Correlating the NFO estimates of possible offsite radiological consequences of a release with actual offsite consequences determined by field measurement.
- d. Maintaining survey and sampling stations to assess the consequences of radiological releases.

Lead Responsibility: County Commissioner of Health

Primary Support: Nuclear Facility Operator and New York State Department of Health

Secondary Support: U.S. Nuclear Regulatory Commission, New York State Department of Environmental Conservation, New York State Emergency Management Office, U.S. Department of Energy and Civil Air Patrol

15. Protective Response Evaluation

Mission Statement: To determine the proper protective action response options to be implemented based on the protective action guides and projected doses, dose rates, contamination levels and levels of airborne or waterborne radioactivity. The initial recommendations concerning protective actions to be taken will be made by the Nuclear Facility Operator. Each of the protective action response options are described in Section III.G of this plan:

Lead Responsibility: County Commissioner of Health

Primary Support: New York State Emergency Management Office and New York State Department of Health, Nuclear Facility Operator

Secondary Support: U.S. Nuclear Regulatory Commission, Commissioner of Emergency Services

Note: Other secondary support provided on an as-needed basis by all other organizations with functional responsibilities.

16. Radiological Exposure Control

Mission Statement: To control and minimize the radiological exposure of emergency response personnel and potentially affected members of the general public.

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Lead Responsibility: County Commissioner of Health

Primary Support: Supervisor, County Dose Assessment Team; County Radiological Officer; New York State Department of Health; County Department of Emergency Services

Secondary Support: Provided on an as-needed basis by all other organizations with functional responsibilities, including New York State Department of Environmental Conservation.

Description: Activities that are required under this function include, but are not limited to, the following:

- a. Protecting emergency personnel from excessive exposure to radiation and for decontamination of exposed individuals, if required. (See Section III.)
- b. Performing radiological monitoring and decontamination of evacuees, including recording estimates of radiological exposures, if necessary. (See Section IV.D.)
- c. Assessing the need for the administration of potassium iodide (KI) to the public and to emergency workers

17. IPEC Onsite Evacuation

Mission Statement: To assist IPEC in the event of an onsite evacuation.

Lead Responsibility: Entergy is responsible for directing and implementing an evacuation of the site in accordance with their onsite emergency plans. Westchester County supports that effort as necessary. Lead responsibility for the county rests with the Commissioner of Public Safety.

Primary Support: State and local law enforcement agencies

Secondary Support: Provided on an as-needed basis by all other organizations with functional role.

Description: IPEC provides Westchester County a copy of their onsite emergency plan, and has also provided a copy of IP-EP-250 which addresses release of non-essential personnel. Non-essential personnel may be released as early as an Alert. When such a decision is made by IPEC, the Westchester EOC will be notified. Upon notification, the county will provide any requested support. The Department of Public Safety will evaluate the situation for traffic control requirements. The PIO

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will also be notified in order to evaluate the need to incorporate information into news releases.

In the event of movement of EOF personnel to the alternate EOF, Westchester County will provide police escorts, if requested. Specific information on points and routes of egress are considered confidential and are not published in plans for security reasons.

C. DIRECTION AND CONTROL

1. Direction

The County Executive of Westchester County has the statutory authority for executing the County Radiological Emergency Plan. The County Executive may delegate to the Deputy County Executive or Commissioner of Emergency Services the authority to act on his/her behalf in carrying out these responsibilities. Figure III-1 illustrates the relationship between the various members of the County Emergency Response Organization. The County uses NIMS/ICS as an emergency management tool to facilitate effective direction of response activities.

In the City of Peekskill, the Commissioner of Public Safety/City Manager (or his/her designee) acts as the Emergency Management Director. It is the responsibility of the Commissioner to implement the City of Peekskill's Disaster Response Plan.

Other towns within the County Emergency Planning Zone may activate Emergency Operations Centers. Coordination with these local jurisdictions will be facilitated through county OEM and other county EOC staff assigned such responsibilities.

2. Control

a. Westchester County Emergency Operations Center

For radiological emergencies at the Indian Point Energy Center (IPEC), Westchester County will use its Emergency Operations Center (EOC) located in the Hudson Valley Transportation Management Center, 200 Bradhurst Avenue, Hawthorne, New York. The backup EOC is located in the Michaelian Office Building in White Plains, N.Y. Once the EOC is activated, provisions will be instituted to insure 24-hour operation, if necessary. Each county agency head will establish 24-hour (12-hour shift) duty assignments.

Commissioners or other agency heads will immediately initiate their respective telephone call down procedures and then report to the EOC on notification of an emergency classification of Alert, Site Area Emergency or General Emergency.

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Entergy will provide space in their Emergency Operations Facility (EOF) for the County Nuclear Facility Liaison Officer (CNFLO). Entergy has established and will maintain a communications link between the EOF and the County Emergency Operations Center for use by the CNFLO to exchange information with the County Commissioner of Health. While in the EOF, the CNFLO will also be able to communicate with the representatives of the New York State Department of Health, the Nuclear Regulatory Commission and Orange, Rockland and Putnam Counties. A description of the EOF is given in Section 7.1 of the IPEC Site Emergency Plans.

The EOF will have a considerable amount of technical information available for use by the Westchester Liaison, which includes detailed Westchester County maps showing road networks and population distributions, pre-calculated dose overlays for different radiological releases and meteorological conditions and relayed data on the prevailing radiological release rates and onsite meteorological conditions at the IPEC. The data will be analyzed at the EOF/AEOF and recommendations of protective actions will be transmitted to each County and State EOC.

b. Westchester County Emergency Communications Network

The Westchester County emergency communications network and facilities are described in Appendix E. The NFO emergency communication network and facilities are described in Section 7.2 of the IPEC Site Emergency Plan. The CNFLO will have access to the communications facilities within the EOF.

Also, the NFO will provide and maintain a communications link to the EOC for use by the CNFLO.

Both the Westchester County and the NFO emergency communications networks incorporate advance design concepts, such as emergency power sources, dedicated communications links between key points, alternate communication pathways and prearranged security procedures. Because of the importance and sensitivity of the emergency communications networks, the technical details of these design concepts are classified on a need-to-know basis.

The New York State Radiological Emergency Communications System (RECS) interconnects Warning Points operated on a 24-hour basis, the State and the four counties surrounding the Indian Point Energy Center. This provides a reliable and compatible emergency communications system (Appendix E). There is also the SEMO Southern District Local Government Net, installed as a backup radio system between the NFO, the County EOCs and County Warning Points. The system uses the local

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government radio sets. Communications between contiguous states and counties in the 50-mile ingestion exposure pathway is a New York State responsibility and will be accomplished by the State Warning Point.

The New York State/Four-County Radiological Emergency Executive "hotline" is a dedicated line with stations in the Emergency Operations Centers of Rockland, Orange, Putnam and Westchester Counties and the State of New York, as well as the Indian Point Emergency Operations Facility (EOF) and Alternate Emergency Operations Facility (AEOF), for inter-county coordination of protective actions.

Communications with field radiological monitoring teams may be accomplished by four different means:

Primary Portable mobile radio with each team.

Secondary Team may be accompanied by a RACES operator with mobile radio

Backup Transport of the team by police vehicle with police mobile radio.

The Emergency Medical communications system provides radio link between ambulances (EMS and fire), hospitals and the County EOC. This system includes fixed and mobile radio stations and operates on a 24-hour basis.

c. Release of Public Information

To insure the controlled and coordinated release of information to the public, the County Public Information Officer (PIO) is designated as the official Westchester County source for all releases of information to the news media. All other Westchester County emergency response personnel will forward all requests for information from the news media to the PIO.

The PIO, under the direction of the County Executive (CE), Director of Communications (OCE) and the Commissioner of Emergency Services will arrange for any public announcements to be made over local radio and/or TV stations via the Emergency Alert System (EAS). (Reference the Indian Point Joint Information Center Procedures, bound under separate cover.) County, State and NFO Public Information Officers shall consult with one another prior to issuing information to the public to insure that factual and consistent information will be available for reporting to the public in a timely manner at both State and local levels. Specific requests for information accrued by local jurisdiction regarding public health and safety items not covered in the joint State-local liaison will be referred to the State PIO.

d. Public Inquiry

The Westchester County PIO will participate in the Public Inquiry system designed for any emergency at Indian Point. The Public Inquiry program has two components. The primary component provides for the monitoring of broadcast and print media for news accuracy. The second component deals with response to questions, misinformation or rumors circulating through the public. A Public Inquiry team, staffed by County personnel will carry out the Public Inquiry function. The public inquiry call center will be established at the Alternate EOC in White Plains.

Westchester County will rely upon Entergy to monitor the media and identify rumors or misinformation.

3. State Direction and Control

The Governor of the State of New York may, at the request of the County Executive or upon his/her own initiative, declare that a state of emergency exists in the county; upon which declaration, responsibility for direction and control of the emergency shall pass from the county government to the State government in accordance with Article 2-b of the Executive Law of the State of New York.

It is understood that the county government generally, and the county emergency organization specifically, shall remain in place and continue to perform their normal and emergency functions albeit under State direction and control. (See Figure III-2.)

D. EMERGENCY PERSONNEL RADIOLOGICAL EXPOSURE CONTROL

Emergency Personnel Radiological Exposure Control is necessary to monitor and minimize the radiological exposure of County emergency response personnel. This includes individuals engaged in accident assessment, the rescue of endangered or injured personnel, lifesaving activities, the evacuation of affected populations and protection or prevention of property damage or loss.

If a radiological emergency occurs at the Indian Point Energy Center, emergency operations may be necessary to protect the health and safety of the public and reduce the escalation of the radiological problem. It is possible that involved emergency response personnel may be exposed to radiation and become contaminated performing their duties.

All possible measures will be taken to limit the radiation exposure of emergency workers to those values and conditions as described below except when specific lifesaving actions or extraordinary emergency operations are required.

Section III: Response

During a radiological emergency, the Commissioner of Emergency Services and the County Commissioner of Health are responsible for the radiological exposure control of emergency response personnel. Activities associated with this responsibility include, but are not limited to, the following:

1. Issuing, as appropriate, to Westchester County emergency response personnel direct-reading dosimeters, electronic dosimeters, radiation badges/DLR's, chargers and KI (if directed) upon the initiation of the execution of this plan.
2. Instructing each person performing emergency service functions inside affected areas to take dosimeter readings at 15 to 20-minute intervals. Should an indicated exposure exceed 1 REM, a report shall be made to the individual's immediate superior, and the County Radiological Officer, who will in turn ensure notification of the Commissioner of Emergency Services and the County Commissioner of Health. If the indicated exposure exceeds 1 REM per day or 3 REM total, a report should immediately be made to the County Commissioner of Health. In this case, the dosimeter reading should be recorded and the dosimeter zeroed to insure adequate recording of the emergency worker's exposure. Only the Commissioner of Health shall extend time in the 10-mile EPZ for exposure greater than 5 REM Total Effective Dose Equivalent (TEDE). All dosimeter reading changes shall be recorded on the individual's Exposure Record Card.
3. Assuring that personnel assigned specific missions inside affected areas which entail out-of-vehicle operations are provided with an Emergency Worker Reference Card and instructed on how to use appropriate protective equipment. Included shall be instructions regarding the availability and use of radio-protective drugs. (Further information regarding this subject may be found in Appendix C).
4. Recording the radiological doses received of all exposed emergency workers.
5. Establishing facilities for the decontamination of possibly contaminated emergency personnel.
6. Selecting rescue personnel for lifesaving activities utilizing the following criteria:
 - a. Rescue personnel should be volunteers or professional rescue personnel.
 - b. Rescue personnel should be broadly familiar with the consequences of exposure and contamination.
 - c. If practical, women capable of reproduction should not take part in these actions.
 - d. If practical, volunteers above the age of 45 should be selected.

Section III: Response

7. EPA 400 suggests that Emergency Worker, performing activities that protect valuable property, keep emergency radiation exposures within the following guidelines:
 - a. Planned TEDE should not exceed 10 REM.
 - b. Hands and forearms may receive an additional dose of up to 100 REM's (i.e., extremities).
 - c. Eyes may receive an additional dose of up to 30 REM's
8. EPA 400 suggests that Emergency Worker, performing life saving activities or the protection of large populations, keep emergency radiation exposures within the following guidelines:
 - a. Planned TEDE should not exceed 25 REM.
 - b. Hands and forearms may receive an additional dose of up to 250 REM's (i.e., extremities).
 - c. Eyes may receive an additional dose of up to 75 REM's
9. EPA 400 also suggests that Emergency Workers can exceed 25 REM TEDE on a voluntary basis if well informed of the risks.
10. EPA 400 also states that any female emergency worker who is "declared pregnant" (i.e., self-declared in writing) shall be limited to 500 mREM TEDE for the duration of her pregnancy.

E. ACTIVATION AND MOBILIZATION

Nuclear Regulatory Commission regulations (NUREG-0610) have established four classes of Emergency Classification Levels for nuclear power plants. Nuclear power plant licensees are required to provide for the prompt notification of local and state authorities whenever an initiating condition for any of the four Emergency Classification Levels exists. These definitions have been updated in the Westchester County REP effective 2009 to incorporate NRC recommended language related to security events. These revisions are based on the challenge posed by terrorist events rather than current plant status. Nuclear accident progression considers the unlikely occurrence of multiple failures and the defense-in-depth provided by plant design. The ECL definitions incorporate the intentional harm and destruction of a hostile action that could lead to a radiological release.

The four classes of Emergency Classification Levels by increasing severity are:

Notification of Unusual Event (NUE)

Section III: Response

Unusual events are in process or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occur.

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 beyond the site boundary.

General Emergency (GE)

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 Guideline exposure levels offsite for more than the immediate site area.

The rationale for the Notification of Unusual Event and Alert classes 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 graduation is provided to assure more complete response preparations for more serious indicators.

The Site Area Emergency class reflects conditions where some significant releases are likely or are occurring, but where a core-melt situation is not indicated based on current information. The General Emergency class involves actual or imminent substantial core degradation or melting with the potential for loss of containment. In these situations, full mobilization of emergency personnel in the near-site environs is indicated as well as the dispatch of monitoring teams and associated communications.

Section III: Response

The plan initiation scheme presented in the following sections describes applicable notification, activation and verification phases that could result from any of the four (4) classes of ECLs.

1. Notification

a. Nuclear Facility Operators' Notification Plan

The NFO notification plan is initiated when the Indian Point Energy Center (IPEC) Emergency Director determines that an initiating condition exists for any of the four Emergency Classification Levels. Upon this determination, the NFO Emergency Director shall notify the County Warning Point By activating the New York State Radiological Emergency Communications System (RECS) (Appendix E).

b. County Notification Plan

Immediately following receipt of an IPEC emergency warning, the County Warning Point (DES 60 Control) will call the agencies and persons indicated in the implementation procedures. The county's automated digital Emergency Notification System (ENS) will be used to make some of these contacts. The calls will include pertinent information received from the IPEC. The person receiving the call is responsible for making additional calls as indicated in the agency procedures. The county Warning Point is operated on a 24-hour basis. Calls from the Communication Center may be supplemented by using law enforcement personnel to personally notify agencies and persons when initial calls cannot be completed.

The County Commissioner/Sheriff will direct the notification of local municipal officials (town, city, village) through their respective chiefs of police.

2. Activation

Westchester County Emergency Operations Center is organized along NIMS/ICS lines and adheres to incident command principles. During the activation phase of the radiological emergency plan, the following key County emergency response personnel will proceed to their primary duty station: either the County Emergency Operations Center (EOC), the Nuclear Facility Operator's Emergency Operations Facility (NFO/EOF) or the Joint Information Center. This activation may occur at an Alert or higher classification.

*Section III: Response*a. County Personnel and Agency Representatives Reporting to EOC

County Executive
 Commissioner of Emergency Services
 Commissioner/Sheriff of Public Safety
 Commissioner of Health
 Information Technology staff
 Commissioner of Public Works
 Commissioner of Transportation
 Commissioner of Social Services
 Public Information Officer and staff
 Emergency Medical Services Coordinator
 Commissioner of Environmental Facilities
 Commissioner of Parks and Recreation
 Director of Community Mental Health
 Office of Emergency Management personnel
 Department of Correction

b. County Personnel Reporting to the NFO/EOF

EOF Liaison Officer (DOH)
 County Homeland Security Representative (DPS)

d. Other Representatives Reporting to the EOC

Schools' Representative
 RACES Radio Officer(s)
 New York State Department of Transportation
 New York Division of State Police
 New York State Emergency Management Office
 American Red Cross
 (also representing other Volunteer Organizations Active in Disasters, e.g.
 Salvation Army)
 Board of Legislators Representative
 Consultants and other Expert Advisors

Upon arrival at the EOC, the first responsibility of the Commissioner of Emergency Services, or designee, is to activate and confirm the operability of the secure communications links between the County, State EOC and the NFO/EOF. After the NFO/EOF-to-EOC communications link has been operationally verified, the Commissioner of Emergency Services will through his/her staff, activate and confirm the operability of the County emergency communications network.

Section III: Response

The County is capable of sustained EOC operations. Primaries and alternates have been designated for each EOC staff position. EOC procedures call for each EOC officer to plan shift changes for response to protracted events. Further, the Commissioner of the Department of Emergency Services, or his designee, acting as EOC Operations Manager, is responsible for confirming shift assignments and maintaining a shift organizational chart.

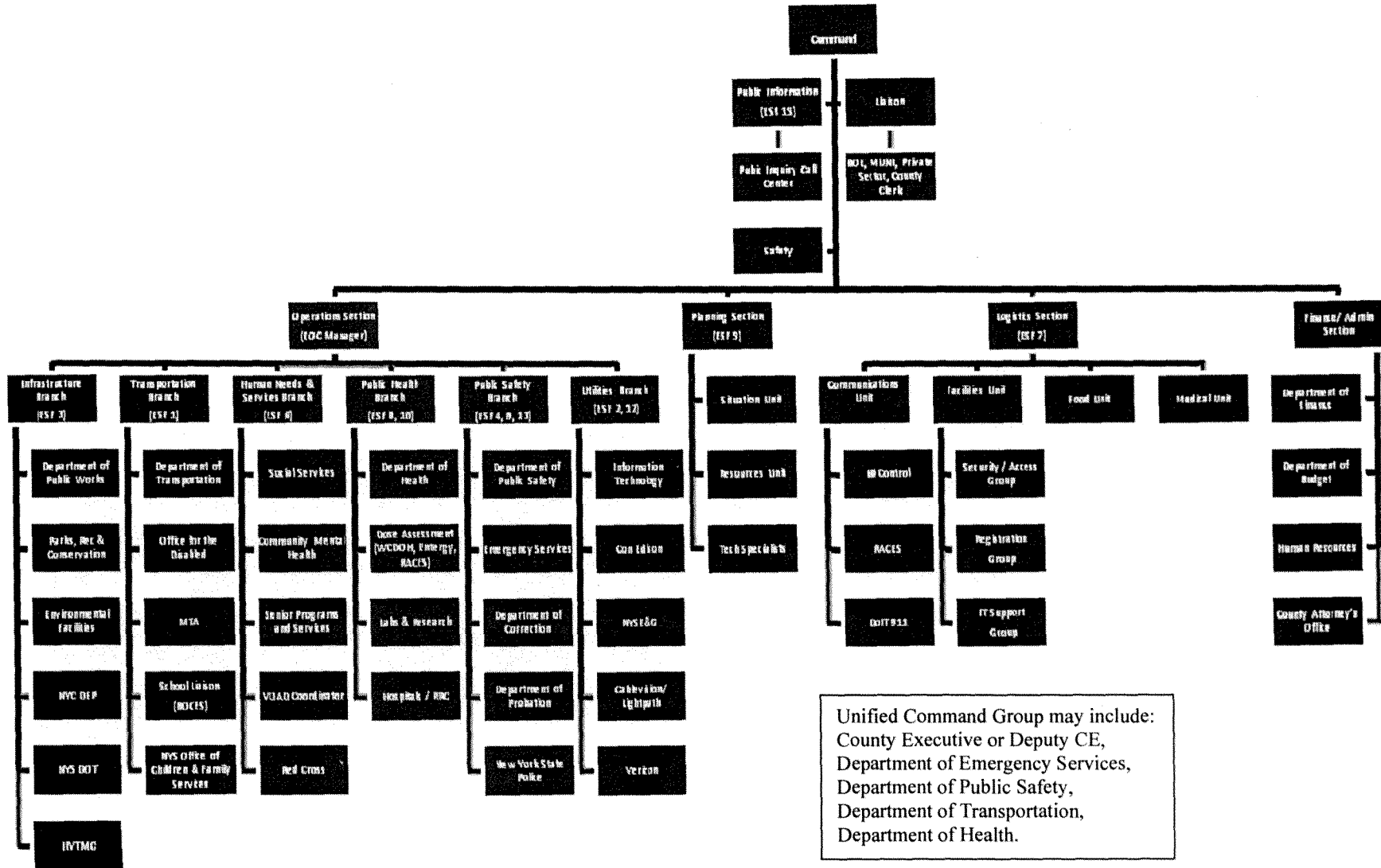
OEM staff is responsible for planning food and beverages for extended operations.

Upon arrival at the EOF, the County EOF Liaison Officer will confirm arrival at the EOF to the Health Department Representative in the EOC.

In the event the individual listed above for each agency does not respond, his/her alternate or designee will be immediately notified. A list of alternates will be maintained by the Health Department.

Section III: Response

Figure III-1: EOC Incident Command Organization



*Section III: Response*3. Verification

During the verification phase of the County Radiological Emergency Response Plan, the County Executive and the County Commissioner of Emergency Services will, either personally or through their staffs, confirm the activation and availability of emergency response personnel and resources.

4. Preliminary Public Information Release

The County Commissioner of Emergency Services will coordinate with the Director of Communications and EOC Public Information Officer, to initiate the appropriate public notification procedures to inform the general public of the existence and nature of the emergency. This initial notification of the public will be coordinated with public information personnel in the other involved jurisdictions through the Joint Information Center and existing joint information system. It will be followed by periodic information updates, as discussed in Section C, D.2.c and the Indian Point Joint Information Center Procedures. Contact with radio station for Emergency Alert System messages is via telephone.

The County PIO will also notify the State PIO, who in turn will notify the FEMA PIO of actions taken.

F. ASSESSMENT AND EVALUATION OF PROTECTIVE ACTION RESPONSE OPTIONS1. Assessment

The County Commissioner of Health (CCH) has three (3) primary resources to use during the assessment phase of the County Radiological Emergency Preparedness Plan. In assessing the impact that potential radiological release incidents at the Indian Point Energy Center (IPEC) can have on the general public of Westchester County, the CCH will have previously-developed accident analysis data and information, relayed data on the prevailing radiological release rates and onsite meteorological conditions at the IPEC and nuclear safety specialists from the County and State Health Departments, the NFO, the NRC and the U.S. Department of Energy as described in Appendix J, who will provide both diagnostic and prognostic assessments.

a. Previously-Developed Data

The CCH will have available evacuation timetables for different areas of the County. As referenced in Appendix A, evacuation timetables are available for various contingencies such as adverse weather conditions or the loss of a primary evacuation route.

*Section III: Response*b. Relayed Meteorological and Radiological Data

Relayed data from the meteorological monitors at and around IPEC will be available to the COUNTY. This information, when integrated with data from the National Weather Service, can be used to determine the actual and projected meteorological conditions for the County.

The COUNTY will also have available relayed data from numerous fixed radiation monitors at and around IPEC and mobile radiation monitoring teams which will be deployed by the NFO to the NFLO, who will in turn provide the data in hard copy to the EOC and by the U.S. Department of Energy through the RAP and FRMAP programs as described in Appendix J.

c. Incident Diagnosis and Prognosis

The COUNTY will coordinate assessment of the incident with nuclear safety specialists from the State Health Department, the Nuclear Facility Operator, the Nuclear Regulatory Commission and the U.S. Department of Energy who will be providing an on-going diagnosis and prognosis of the incident. This assessment will identify events that have occurred or are in progress that might result in major failures of plant functions that normally protect the general public. The NFO will provide information on estimates of time required to repair the release projections and the corrective actions being taken.

The COUNTY has established procedures for dose assessment. These procedures are on file in the Dose Assessment Room within the County EOC.

Dose Assessment calculations are performed by a staff made up of professional engineers and other technical staff assigned to the Westchester County Health Department. In accordance with instructions from the Dose Assessment Coordinator, the Field Monitoring Team Coordinator directs the Field Monitoring Team to location points. (See also Field Monitoring Procedures Manual, bound under separate cover.)

After completed, calculations are reported to a Dose Assessment Coordinator. After verification by the Coordinator the assessment information is reported to the County Health Commissioner and the County Commissioner of Emergency Services and after evaluation to the County Executive. The County Executive will discuss the assessment data with State officials, officials of other counties over the dedicated "Executive Hotline" and if necessary with licensee officials. Once coordination is completed, decisions will be made on what protective actions will be taken.

Section III: Response

The assessment teams' leader will be designated the Dose Assessment Coordinator (DAC). The DAC will report to the Commissioner of Health and will keep in contact with the New York State EOC. The DAC will follow the instructions that are on file at the Assessment Room of the County EOC. These instructions include:

- (1) Receiving meteorological reports.
- (2) Calculating formulas - worksheets for distances of 1, 2, 5 and 10 miles.
- (3) Calculating Projected Centerline Doses.
- (4) Calculating Release Rates, if necessary.
- (5) Identifying Potential or Actual Source Term¹
- (6) Taking Plant Parameter readings.
- (7) Activating, directing and receiving information from Field Monitoring Teams.
- (8) Means of communicating with State and Licensee Dose Assessment personnel.

2. Evaluation

a. Input Parameters and Boundary Conditions

The evaluation phase of the Westchester County Radiological Emergency Plan determines the protective action response options that should be implemented in order to successfully execute the primary mission of the Plan. To accomplish this goal, the plan has incorporated the Protective Action Guidelines (PAGs) developed by the Environmental Protection Agency (EPA) for determining appropriate responses during radiological emergencies. The EPA PAGs are presented in Table III-2.

In evaluating which of the protective action response options to implement, the Commissioner of Emergency Services and CCH will integrate the following input data and boundary conditions to establish a basis for the decision-making process:

¹ The County Dose Assessment Group uses the source term and release rates provided by the NFO which is then confirmed with the State. The County follows the dose assessment methodology provided by the Nuclear Facility Operator.

Section III: Response

(1) EPA PAGs

Current road and meteorological conditions received from the County and local law enforcement agencies, State and County Department of Transportation, County and local Highway Departments, the New York Division of State Police, the Nuclear Facility Operator and the National Weather Service.

(3) Time requirements for the implementation of the protective action response options.

(4) Plant status including incident diagnosis and prognosis received from the Nuclear Facility Operator, the State Department of Health, the County Department of Health, the Nuclear Regulatory Commission and the U.S. Department of Energy.

b. Critical Time Frames

Once the input parameters and boundary conditions have been established, the OEM and CCH will proceed to identify the critical time frames necessary to successfully complete the mission of the plan for a particular incident. Specifically, the critical time frames to be identified for a particular incident are the implementation time frames for the various protective action response options and the time frame for the safe termination of the incident.

The implementation time frame for a particular protective action response option has two components: notification time and execution time. "Notification Time" refers to the time required to notify the population-at-risk and to deploy whatever emergency response personnel and equipment is necessitated by the particular protective action response option.

"Execution Time" refers to the time after notification that is required for the completion of the particular protective action response option. When the notification time requirements for different County areas have been established, the critical time frame for the General Evacuation Response Option will have been identified.

*Section III: Response*c. Projected Doses

After the decision bases and critical time frames have been established, the County Health Department will determine the projected doses for a particular area by extrapolating projected dose rates (CDE-thyroid and TEDE) over the critical time frames for the various protective action response options and for the estimated duration of the incident. These values, when added to any doses already received in the area since the beginning of the incident, represent the projected doses for the particular county area within the time frames of interest. The projected doses approaching the PAG levels are an indication of the increasing desirability of implementing one or more of the plan protective action response options.

Besides utilizing data from radiological monitors to determine projected doses, the COUNTY will also utilize the results of the diagnostic and prognostic assessments of the incident discussed in Section C.7.a.(3).

Unless otherwise directed, dose projections will be for a 4-hour period.

d. Decision Process

Based upon the information from previous paragraphs (1), (2) and (3) above, the County Executive can make a decision as to the protective action response option to be implemented. This decision may be coordinated with the Commissioner of the New York State Department of Health, the Chairman of the Disaster Preparedness Commission, the Nuclear Facility Operator and with the Chief Executives of Orange, Rockland and Putnam Counties.

An example of one potential implementation sequence for the protective action response options is presented in Table III-3. As discussed in Section C.7.a.(3), the projected doses shown in Table III-3 can be based either on radiological monitoring data or on results from the diagnostic and prognostic assessment of the incident.

G. PROTECTIVE ACTION RESPONSE OPTIONS

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

1. Initial Precautionary Operations
2. Selective Sheltering-in-place
3. General Sheltering-in-place
4. General Evacuation
5. Immediate General Emergency
6. Administration of KI to Emergency Workers and the Public
7. Isolation of Ingestion Pathways and Sources
8. Re-Entry

Section III: Response

The protective action response options provide the County Executive (CE) with the capability to successfully execute the primary mission of the plan. These protective action response options are complementary and functionally additive. This allows the County Executive to implement more than one of the protective action response options at the same time for a particular radiological release incident. In addition, the County Executive can implement the protective action response options for the specific population-at-risk.

1. Initial Precautionary Operations

The implementation and execution of the initial precautionary operations will be in accordance with the procedures and may include the following:

- a. The temporary closing of tourist areas such as parks and campgrounds in those Westchester County areas within approximately ten miles of the Indian Point Energy Center (IPEC).
- b. The temporary closing of all elementary and secondary schools in Westchester County within approximately ten miles of IPEC.
- c. The recommending of temporary suspension of non-critical patient admissions to FDR Veterans Administration Hospital and the Hudson Valley Hospital Center at Peekskill/ Cortlandt. Agreements presently exist to facilitate such an inter-hospital transfer of patients.
- f. Activation of the Emergency Alert System (EAS) to achieve a heightened awareness of a radiological emergency at Indian Point and to recommend public attention to future EAS or news broadcasts.

2. Selective Shelter-in-place

The Selective Shelter-in-place Response Option gives the County Executive the capability of implementing effective protective action for individuals who could not be safely evacuated if a Selective or General Evacuation was necessary. 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 primary locations for implementing the Selective Shelter-in-place Response Option include FDR Veterans Administration Hospital in Montrose, the Hudson Valley Hospital Center of Peekskill/ Cortlandt and the Sing Sing Correctional Facility.

Section III: Response

3. General Sheltering-in-place

The General Shelter-in-place Response Option gives the County Executive the capability to implement an effective protective action for the general public in the event of a puff-type radiological release incident at IPEC. In addition, for those situations requiring evacuation and where evacuation cannot be implemented because of time constraints and/or impediments to highway movement, General Shelter-in-place may be implemented in lieu of evacuation.

(A puff-type radiological release is defined as a concentrated release of radionuclides of short, limited duration.) For an incident of this type, the most effective protective response action is immediate, temporary shelter-in-place for the general public in the affected areas. The viability of this response option is extremely dependent on existing meteorological conditions at the time of the incident.

The implementation and execution of the General Shelter-in-place Response Option will include notifying the general public of Westchester County in the affected areas around IPEC to remain indoors and close their windows, etc. (See Appendix D for information.) The public will also be advised to monitor future EAS and news broadcasts for possible protective action recommendations.

The decision to initiate this option will be made by the County Executive. The Director of Communications (OCE) and / or the Lead PIO, will coordinate the notification of the general public.

4. General Evacuation

The General Evacuation Response Option provides the CE with the capability to efficiently evacuate the general public from any or all areas within the 10-mile EPZ.

The evacuation time estimate study for Westchester County's portion of the ten mile EPZ is summarized in Appendix A and a complete copy is on file in the EOC. The evacuation study details the evacuation routes, traffic control points, traffic capacities and the total evacuation time requirements for evacuating different areas of the county. These evacuation times represent the estimated time required to evacuate a particular area after the general public has been notified that an evacuation is necessary. Alternate routes will be selected and announced via EAS in the event of loss of primary route/routes during adverse weather conditions. Various evacuation scenarios have been developed and are detailed in Appendix A. These include:

- Summer, midday, midweek
- Summer, midday, weekend
- Summer, evening, midweek/weekend
- Winter, midday, midweek
- Winter, midday, weekend
- Winter, evening, midweek/weekend

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Each of the above scenarios is developed for both good weather and rain and also for snow in winter scenarios. Additionally, two special events are studied:

- Autumn, midday weekend, West Point Football
- Spring, midday, midweek, West Point Graduation

The implementation and execution of the General Evacuation Response Option of the plan will include the following:

- a. The notification of all members of the general public in the areas to be evacuated of the situation and the officially recommended course of action. (See Appendix F.) This notification will include information on when and how far to evacuate, what evacuation routes to use, reception centers and how to notify authorities if any relocation assistance is needed. This operation will be directed by the CE and assisted by the other County emergency response organizations.
- b. The establishment of traffic control points at key intersections along the evacuation routes. The final traffic control point will be located beyond the boundary of the 10-mile EPZ. This operation will be coordinated by the County Commissioner/Sheriff of Public Safety (CCPS) assisted by the Westchester County local law enforcement agencies and the New York State Police.
- c. The evacuation of non-mobile residents and hard-to-move (medical) residents who are without access to other transportation. This operation will be coordinated by the Hospitals representative in the EOC assisted by the County Department of Transportation (DOT), the County Office for the Disabled and County Emergency Medical Services.
- d. The monitoring of the evacuation routes and the facilitating of the evacuation traffic flow. This operation will be coordinated by the Department of Public Safety (DPS) assisted by the county and local police, and the New York State Police.
- e. The establishment of incoming traffic control points and security patrols for evacuated areas. This operation will be coordinated by the DPS assisted by the Westchester County local law enforcement agencies and the New York State Police.
- f. Any or all patients from special facilities for whom evacuation would have a minimal medical risk will also be evacuated. This operation will be directed by the Hospitals representative in the EOC and other appropriate County officials in conjunction with the special facilities' administrators. The Commissioner of Emergency Services will coordinate whatever assistance is requested by the Hospital's representative in the EOC.

Section III: Response

5. Immediate General Emergency

By mutual agreement, Orange, Putnam, Westchester, and Rockland Counties, and New York State have agreed to issue an initial default protective action decision to shelter in place five miles around, until the four County Executives can consult with health authorities and coordinate an evacuation decision.

6. Administration of KI to Emergency Workers and the Public

Appendix C of this plan details the county plans and procedures for administration of KI to emergency workers and the public. The county Commissioner of Health is responsible for determining when to take this action. Upon Declaration of a General Emergency at IPEC by the licensee, the Commissioner of Health will order the administration of KI to emergency workers and those members of the general public in the impacted (or potentially impacted) area.

7. Isolation of Ingestion Pathways and Sources

The State of New York, through the Commissioner of Health with assistance from designated agencies is responsible for the implementation and execution of the isolation of the Ingestion Pathways and Sources Response Option contained in the State of New York Radiological Emergency Preparedness Plan.

The Isolation of Ingestion Pathways and Sources Response Option gives NY State and Westchester County the capability of implementing effective protective actions to ensure that the potential for individuals to receive radiological doses in excess of recommended limits through the various ingestion pathways is minimized. This would involve control of radioactively-contaminated drinking water and foodstuffs.

The implementation and execution of the isolation of the Ingestion Pathways and Sources Response Option will conform to the Isolation of Ingestion Pathways Guidelines contained in the State of New York Radiological Emergency Preparedness Plan and will include the following:

- a. Upon receipt of radiation monitoring results which indicate contamination of a drinking water supply or foodstuffs (ingestion of which could exceed recommended limits), the Commissioner of Health shall immediately quarantine such foodstuffs and ban the drinking of water as an initial precaution.
- b. Based upon additional examination, if isotopic concentrations exceed those specified in Tables III-4 and III-5, the County Commissioner of Health (CCH) shall coordinate the appropriate actions to be taken with the New York State Department of Health, as indicated in these tables.

- c. OEM with the CDPW shall coordinate arrangements necessary for the distribution of uncontaminated supplies of drinking water and food, as necessary.

8. Re-Entry

Authorization for any re-entry of members of the general public into previously evacuated areas shall originate with the Commissioner of Health and the County Executive.

TABLE III-2
EPA PROTECTIVE ACTION GUIDELINES

PROJECTED EXPOSURE DOSE (REM) TO THE POPULATION		<u>RECOMMENDED ACTIONS</u> ¹
TEDE < 1 OR CDE-Thyroid < 5		1. No protective action required. County/State may issue an advisory to seek shelter and await further instructions or to voluntarily evacuate. 2. Monitor environmental radiation levels.
TEDE 1 to < 5 OR CDE-Thyroid 5 to < 25		1. Conduct mandatory evacuation of populations in the predetermined area. ² 2. Seek shelter for remainder of plume EPZ and await further instructions. 3. Monitor environmental radiation levels. 4. Control access.
TEDE ≥ 5 OR CDE-Thyroid ≥ 25		1. Conduct mandatory evacuation of populations in the predetermined area. ² 2. Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. 3. Control access.

NOTE: Total Effective Dose Equivalent (TEDE)
Committed Dose Equivalent (CDE)-Thyroid

¹ These actions are recommended for planning purposes. Protective action decisions at the time of the incident must take into consideration the impact of existing constraints.

² Seeking shelter would be an alternative if evacuation was not immediately possible.

TABE III-3
EXAMPLE IMPLEMENTATION SEQUENCE

<u>PROJECTED DOSE COMMITMENT</u>		<u>PROTECTIVE ACTION RESPONSE OPTIONS IMPLEMENTED</u>
EPA 400-R-92-001 Limits		Initial Precautionary Operations
EPA 400-R-92-001 limits <1 REM TEDE OR <5 REM CDE-Thyroid		General Shelter-in-place Isolation of Ingestion Pathways Selective Evacuation Selective Shelter-in-place
1 to < 5 REM TEDE OR 5 to <25 REM CDE-Thyroid		General Evacuation Selective Evacuation Selective Shelter-in-place General Shelter-in-place Isolation of Ingestion Pathways
≥ 5 REM TEDE or ≥ 25 REM CDE-Thyroid		General Evacuation Selective Evacuation Selective Shelter-in-place General Shelter-in-place Isolation of Ingestion Pathways
<p><u>Keys:</u> (<) = Less than (>) = Greater than (≥) = Greater than or equal to</p>		
<p>This implementation sequence assumes a radiological release incident that develops over a period of time. In addition, it assumes arbitrarily that the projected doses are for an area within 2 miles of the IPEC or 5 miles downwind, projected over a 4-hour period.</p>		

TABLE III-4

**RECOMMENDED PROTECTIVE ACTION TO AVOID WHOLE BODY
AND THYROID DOSE FROM EXPOSURE TO A GASEOUS PLUME
U.S. ENVIRONMENTAL PROTECTION AGENCY
EPA 400-R-92-001**

Manual of Protective Action Guides
and Protective Actions
For Nuclear Incidents

A. PAGs for the Early Phase of a Nuclear Incident

Protective Action for General Public	PAG (projected dose)	COMMENTS
Evacuation (or shelter-in-place ^a)	1-5 REM ^b TEDE or 5-25 REM CDE-Thyroid	Evacuation (or, for some situations, shelter-in-place ^a) should normally be initiated at 1 REM.

^aShelter-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 other site-specific conditions.

^bThe 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.

Although the PAG is expressed as a range of 1-5 rem, it is emphasized that, under normal conditions, evacuation of members of the general population should be initiated for most incidents at a projected dose of 1 rem. (It should be recognized that doses to some individuals may exceed 1 rem, even if protective actions are initiated within this guidance.) It is also possible that conditions may exist at specific facilities that warrant consideration of values other than those recommended for general use here.

Shelter-in-place may be preferable to evacuation as a protective action in some situations. Because of the higher risk associated with evacuation of some special groups in the population (e.g. those who are not readily mobile), shelter-in-place may be the preferred alternative for such groups as a protective action at projected doses up to 5 rem. In addition, under unusually hazardous environmental conditions use of shelter-in-place at projected doses up to 5 rem to the general population (and up to 10 rem to special groups) may become justified. Shelter-in-place may also provide protection equal to or greater than evacuation due to the nature of the source term and/or in the presence of other site-specific conditions. Illustrative examples of situations or groups for which evacuation may not be appropriate at 1 rem include: a) the presence of severe weather, b) competing disasters, c) institutionalized persons who are not readily mobile, and d) local physical factors which impede evacuation.

TABLE III-4
(continued)

RECOMMENDED PROTECTIVE ACTION TO AVOID WHOLE BODY AND THYROID DOSE FROM EXPOSURE TO A GASEOUS PLUME
U.S. ENVIRONMENTAL PROTECTION AGENCY
EPA 400-R-92-001

B. Guidance on Dose Limits for Workers Performing Emergency Services

Dose limit ^a (REM) TEDE	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	lifesaving or protection of large populations	only on a voluntary basis to persons fully aware of the risks involved

^aTotal Effective Dose Equivalent (TEDE): Sum of external effective dose equivalent and committed effective dose equivalent to non-pregnant 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.

TABLE III-5
RECOMMENDED DERIVED INTERVENTION LEVEL (DIL)
OR CRITERION FOR EACH RADIONUCLIDE GROUP ^{(a), (b)}

All Components of the Diet

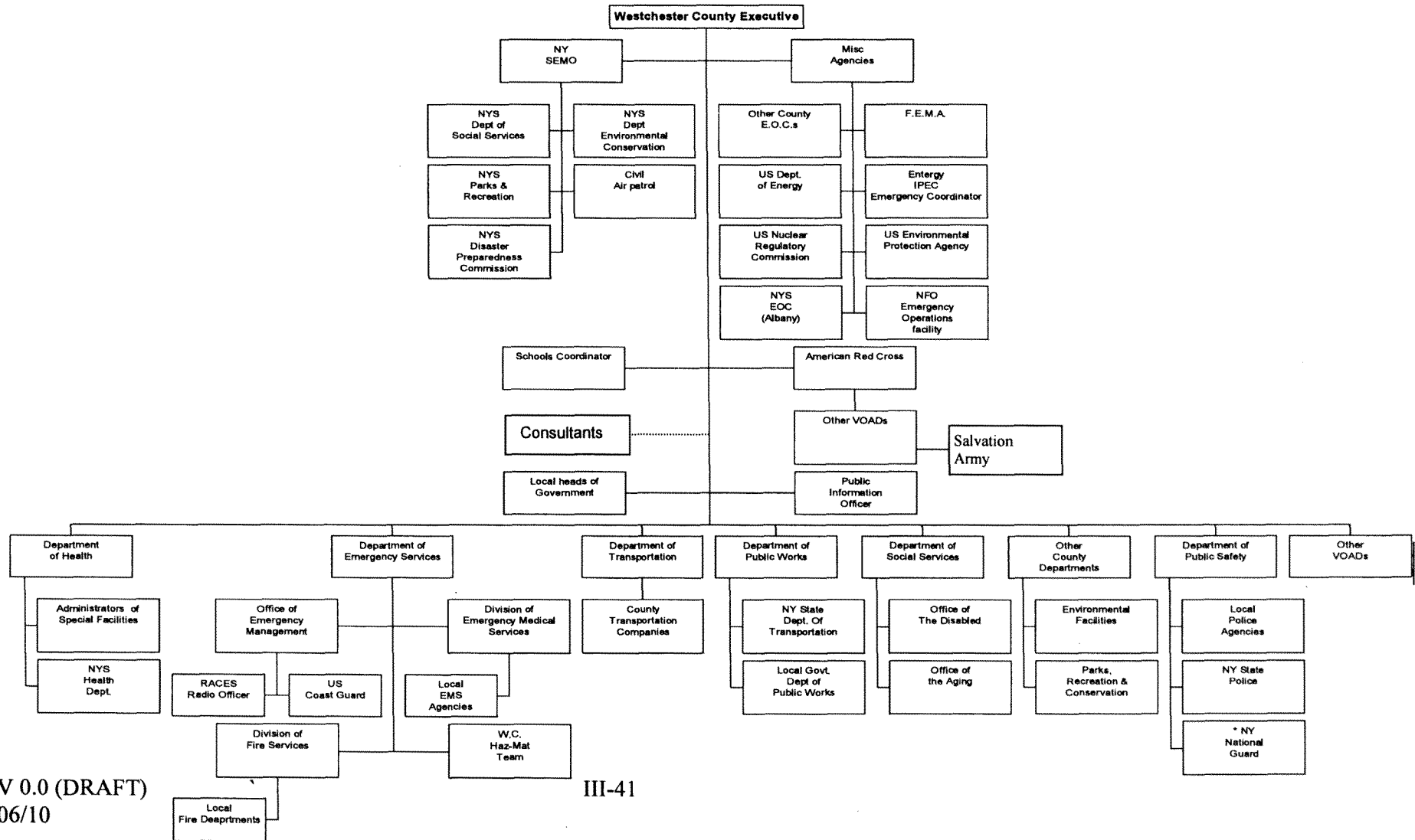
<u>Radionuclide Group</u>	<u>Bq/kg</u>		<u>(pCi/kg)</u>			
Sr-90		160		4300		
I-131		170		4600		
Cs-134 + Cs-137		1200		32,000		
Pu-238 + Pu-239 + Am-241		2		54		
Ru-103 + Ru-106 ^(c)	$\frac{C_3}{6800}$	+ $\frac{C_6}{450}$	<1	$\frac{C_3}{180,000}$	+ $\frac{C_6}{12,000}$	<1

- Notes:**
- a. The DIL for each radionuclide group (except for Ru-103 + Ru-106) is applied independently (see discussion in Appendix D of "ACCIDENTAL RADIOACTIVE CONTAMINATION OF HUMAN FOOD AND ANIMAL FEEDS: RECOMMENDATIONS FOR STATE AND LOCAL AGENCIES"; Radiation Programs Branch, division of mammography Quality and Radiation Programs, Office of Health and Industry Programs, U.S. Department of health and Human Services, food and drug Administration, August 13, 1998). Each DIL applies to the sum of the concentrations of the radionuclides in the group at the time of measurement.
 - b. Applicable to foods as prepared for consumption. For dried or concentrated products such as powdered milk or concentrated juices, adjust by a factor appropriate to reconstitution, and assume the restitution water is not contaminated. For spices, which are consumed in very small quantities, use a dilution factor of 10.
 - c. Due to the large difference in DILs for Ru-103 and Ru-106, the individual concentrations of Ru-103 and Ru-106 are divided by their respective DILs and then summed. The sum must be less than one. C₃ and C₆ are the concentrations, at the time of measurement, for Ru-103 and Ru-106, respectively (see discussion in Appendix D).

Section III: Response

FIGURE III-2

COUNTY RADIOLOGICAL EMERGENCY RESPONSE ORGANIZATIONAL RELATIONSHIPS

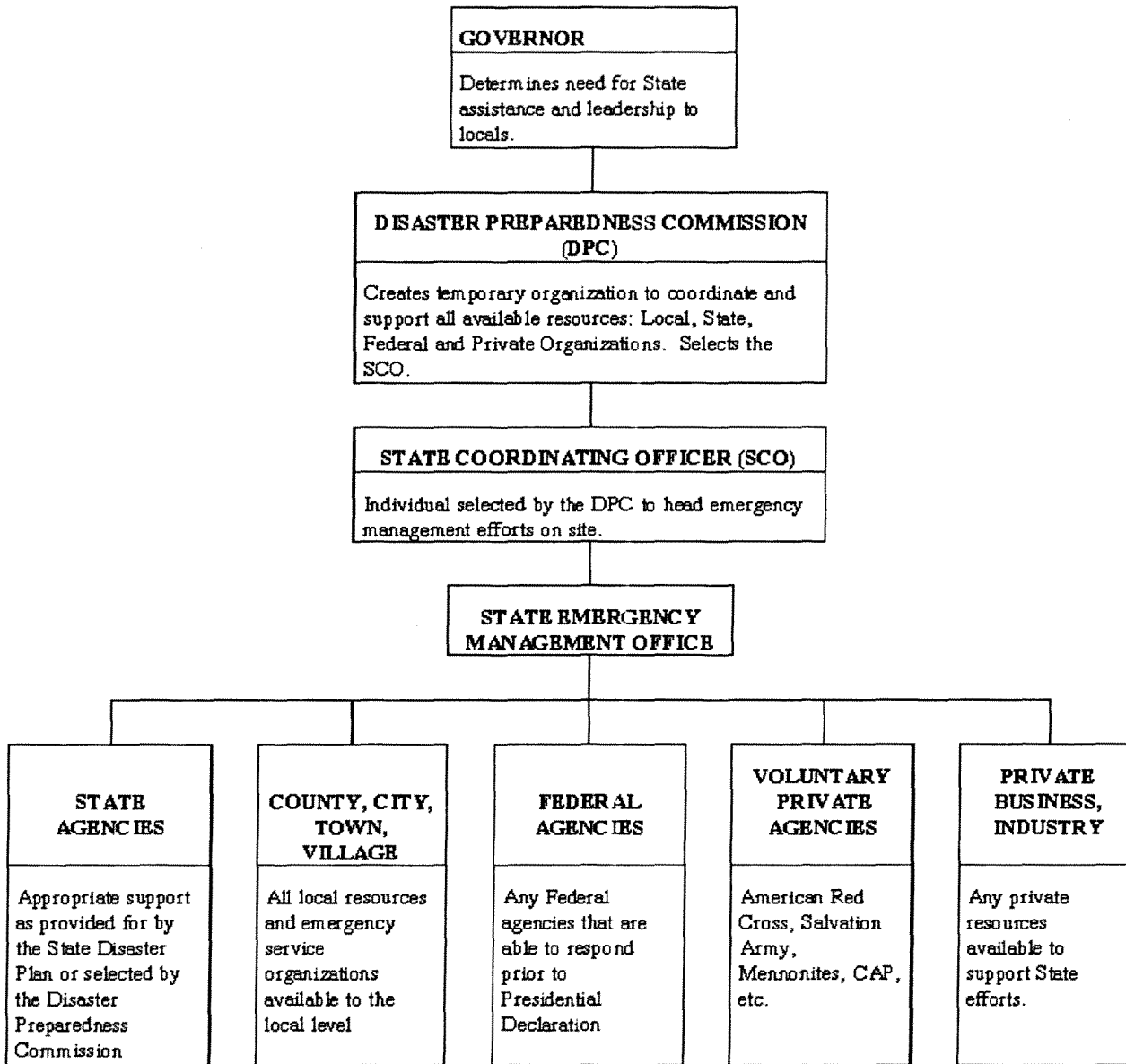


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FIGURE III-3

STATE CONCEPTUAL RESPONSE ORGANIZATIONAL STRUCTURE AFTER GUBERNATORIAL DECLARATION OF STATE DISASTER EMERGENCY¹



Notes: 1. Subject to Section 21.3(F) Article 2.B Executive Law

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**WESTCHESTER COUNTY
DEPARTMENT OF EMERGENCY SERVICES
RADIOLOGICAL EMERGENCY PLAN
VOLUME 1
CORE PLAN AND APPENDICES**

**SECTION IV
RELOCATION, RE-ENTRY, RETURN and RECOVERY
Revision 0.0**

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*Section IV: Relocation, Re-Entry, Return and Recovery***SECTION IV: RELOCATION, RE-ENTRY, RETURN AND RECOVERY****A. MISSION**

The mission of this section is to describe the details of those short term recovery/re-entry and long term operations which are unique to radiological emergencies and to provide the County Executive with the capability of implementing the safe re-entry to places of residence and/or employment for the members of the general public who have been relocated under one of the protective action response options described in Volume I, Section III.G.

The recovery phase is the final stage of the Radiological Emergency Plan. Operationally, recovery begins during the response phase and continues until restoration of community life has been completed.

Recovery operations for radiological emergencies consist of the following two operational parts:

1. Short Term Re-Entry Operations

Re-entry from a radiological emergency shall commence only after all emergency initiating conditions have been neutralized and the threat to public health and safety from a release of radiation no longer exists. The following shall be confirmed before initiating re-entry operations:

- a. Safe shutdown of the nuclear facility.
- b. Radiological materials under controlled confinement.
- c. Initiating physical phenomenon has been stabilized.

2. Intermediate and Late Phase Operations

Aside from long term radiation and medical monitoring programs, intermediate and late phase recovery operations are generic to all emergencies. For additional details and guidelines for the implementation of long-term recovery operations, refer to the New York State Disaster Preparedness and Radiological Emergency Preparedness Plans.

Intermediate and late phase operations as discussed here consist of four operational parts:

- a. Relocation of those portions of the general public that reside in areas that have been determined to have contamination levels in excess of the relocation Protective Action Guide (PAG);

Section IV: Relocation, Re-Entry, Return and Recovery

- b. Re-entry into contaminated areas for the retrieval of valuables or to conduct activities deemed necessary to support the recovery effort;
- c. Return of the general public to areas that had previously been evacuated but that have subsequently been determined to have contamination levels below the relocation PAG; and
- d. Recovery of contaminated areas for unconditional occupancy and/or use. Additional details of these operations are found in Attachment 1 of this section and in the New York State Radiological Emergency Preparedness Plan.

B. RECOVERY/RE-ENTRY OPERATIONS OVERVIEW

Recovery/re-entry operations will conform with the guidelines contained in the New York State Radiological Emergency Preparedness Plan and should include the following:

1. Determination that a threat to public health as a consequence of a release of radiation no longer exists.
2. Completion of decontamination activities, including waste disposal with assistance from County Fire Departments and from the U. S. Department of Energy.
3. Completion of radiation surveys by the New York State Department of Health (NYSDOH) which indicate that contamination levels in an evacuated area are within acceptable contamination action limits as established by the NY State Commissioner of Health. The County Department of Health (DOH) may assist the State in radiation surveys. In areas which have been contaminated, the NYSDOH and the CDOH may direct that re-entry be allowed to all but special cordoned-off areas.
4. Assessment and mitigation of the effects of an evacuation on public health and sanitation within the evacuated areas.
5. Notification to incoming traffic control check points of the areas for which re-entry is authorized and the realignment of the traffic control perimeter.
6. In conjunction with the State of New York, the Federal government and the Nuclear Facility Operator, the preparation and issuance of announcements to the communications media (e.g., newspapers, radio and television stations) and to Reception/Congregate Care Centers specifying the areas which may be re-entered.
7. Continuation of security for evacuated areas, including those for which re-entry has been approved, to prevent unauthorized entry and vandalism.

Section IV: Relocation, Re-Entry, Return and Recovery

8. Provision of transportation for those individuals who needed it during the evacuation.
9. Distribution of drinking water and foodstuffs, if necessary, for the isolation of ingestion pathways and sources.
10. Establishment of a long term radiation monitoring program for any contaminated County areas.
11. Establishment of a long term medical monitoring program for both the general public and emergency response personnel of the County.
12. In conjunction with the State of New York and FEMA, establish long-term housing for that segment of the population which has been permanently relocated.

C. RELOCATION

Following a release of radioactive material to the environment, it will be necessary to locate and define any areas in which radioactive materials were deposited. Once those contaminated areas are identified, a determination will have to be made as to whether or not individuals occupying these areas will receive radiation exposures in excess of the relocation PAG. If this is the case, these individuals will need to be relocated.

In accordance with the provisions of the State REP Plan, the following activities will be undertaken:

1. State field teams will collect various samples from the contaminated areas. (State field teams may be augmented by County Health Department field monitoring teams).
2. Samples will be analyzed at the New York Department of Health Laboratory in Albany.
3. Results will be evaluated by the State, charted and compared to the relocation PAG.
4. In coordination with the County, a restricted zone perimeter will be defined.
5. Individuals not previously evacuated from a restricted zone will be monitored, decontaminated (as necessary) and relocated.
6. Individuals previously evacuated from a restricted zone will be designed for relocation.

*Section IV: Relocation, Re-Entry, Return and Recovery*D. RE-ENTRY

1. Following the delineation of a restricted zone, continuous access control will be maintained. Access to a restricted zone may be allowed for the following reasons:
 - a. Retrieval of valuables;
 - b. Periodic security inspections;
 - c. Maintenance of essential services;
 - d. Maintenance of property or care of farm animals;
 - e. Decontamination and recovery efforts; or
 - f. Other appropriate circumstances as presented.

2. During re-entry activities it will be necessary to ensure that individual radiation exposures are controlled and that the spread of contamination is kept to a minimum. Toward that end the following measures will be instituted:
 - a. Access control points will be established at or near the boundary of the Restricted Zone;
 - b. Radiation badges/Dosimeters of Legal Record (DLR's) and direct reading dosimeters may be issued for individuals entering the Restricted Zone;
 - c. Information regarding the individual's destination, estimated length of stay, and objectives will be recorded;
 - d. If available, maps will be provided to individuals entering the Restricted Zone along with recommendations of areas to avoid;
 - e. Measures will be instituted for persons exiting the Restricted Zone to provide for the monitoring and decontamination of individuals, vehicles and equipment as well as procedures for the collection and processing of dosimetry; and
 - f. Individuals radiation exposures will be maintained in accordance with occupational exposure guidelines. (e.g., exposure levels considered safe for adult males, might not be safe for pregnant women or small children).

*Section IV: Relocation, Re-Entry, Return and Recovery*E. RETURN

Individuals who were previously evacuated, who reside in areas outside Restricted Zone, may be permitted to return for unrestricted occupancy.

The following activities may be undertaken to assist the general public during the return process. These include:

1. In conjunction with the State Disaster Preparedness Commission, and the other three counties, prepare and issue announcements to the public through the media and at reception center (if still open) and congregate care centers, specifying which areas are designed for return.
2. Provide transportation for transit-dependent individuals.

F. RECOVERY

1. The State will institute recovery efforts for those areas determined to be contaminated in an attempt to recover part of all of that area designated as a restricted zone. In addition, recovery efforts will focus on those areas contaminated at levels below the relocation PAG. If decontamination efforts are successful, the boundary of the Restricted Zone may be tightened allowing the return of additional population. Recovery efforts will include:
 - a. Scrubbing and/or flushing of hard surfaces;
 - b. Soaking and/or plowing of soil; and
 - c. Removal of soil from locations where radioactive materials have concentrated.
2. The implementation of long-term recovery operations is the primary responsibility of the State of New York and will conform with the guidelines contained in the New York State Radiological Emergency Preparedness and Disaster Preparedness Plans. The County will provide support to the State upon request.

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**APPENDIX A
EVACUATION TIME ESTIMATE
FOR
WESTCHESTER COUNTY**

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*Appendix A: Evacuation Time Estimate***APPENDIX A****EVACUATION TIME ESTIMATES FOR WESTCHESTER COUNTY**

The following evacuation time estimates have been extracted from the documents prepared by KLD Associates, Inc., entitled *“Indian Point Energy Center, Development of Evacuation Time Estimates”*, dated May 2003, and *“Indian Point Energy Center, Development of Evacuation Time Estimates, Addendum for New Protective Action Areas”*, dated June 2008. They are based on 14 scenarios as defined by ETE Table 5-1.

Complete copies of the ETE documents are on file at the Westchester County Emergency Operations Center.

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Appendix A: Evacuation Time Estimate

TABLE A-1

EVACUATION TIME ESTIMATE STUDY EXCERPTS

Table B-4. Description of Protective Action Areas in Westchester County					
KLD ID NUMBER	COUNTY	NAME	DESCRIPTION	2000 POPULATION	2008 POPULATION
1	Westchester	Briarcliff Manor	The Village of Briarcliff Manor.	7,844	8,247
6	Westchester	Ossining	The Town and Village of Ossining.	29,440	28,877
8	Westchester	Town of New Castle	The Town of New Castle west of Hardscrabble Road.	4,777	4,884
14	Westchester	Croton-on-Hudson	The Village of Croton-on-Hudson.	7,589	7,976
16	Westchester	Verplanck	The Hamlet of Verplanck.	1,273	1,345
18	Westchester	Buchanan	The Village of Buchanan.	2,184	2,290
19	Westchester	Montrose	The Hamlet of Montrose.	3,534	3,731
23	Westchester	City of Peekskill	The City of Peekskill.	22,446	25,327
24	Westchester	Town of Cortlandt	The Town of Cortlandt excluding the Hamlets of Verplanck and Montrose, and the Villages of Buchanan and Croton-on-Hudson; including Camp Smith and the FDR VA Hospital.	23,890	25,215
28	Westchester	Town of Yorktown	The Town of Yorktown.	36,333	38,307
29	Westchester	Town of Somers	The Town of Somers west of State Route 118 and Wood Street.	3,972	4,478
Total Population:				143,282	150,677

Appendix A: Evacuation Time Estimate

TABLE A-1

EVACUATION TIME ESTIMATE STUDY EXCERPTS

Table 5-1. Evacuation Scenario Definitions					
Scenario	Season	Day of Week	Time of Day	Weather	Special
1	Summer	Midweek	Midday	Good	None
2	Summer	Midweek	Midday	Rain	None
3	Summer	Weekend	Midday	Good	None
4	Summer	Weekend	Midday	Rain	None
5	Summer	Midweek, Weekend	Evening	Good	None
6	Winter	Midweek	Midday	Good	None
7	Winter	Midweek	Midday	Rain	None
8	Winter	Midweek	Midday	Snow	None
9	Winter	Weekend	Midday	Good	None
10	Winter	Weekend	Midday	Rain	None
11	Winter	Weekend	Midday	Snow	None
12	Winter	Midweek, Weekend	Evening	Good	None
13	Autumn	Weekend	Midday	Good	West Point Football
14	Spring	Midweek	Midday	Good	West Point Graduation

TABLE A-1
EVACUATION TIME ESTIMATE STUDY EXCERPTS

Table F-1. Time to Clear the Indicated Area of 100 Percent of the Evacuating Population for Westchester Portion of Region R1															
KLD ID NUMBE R	Protective Action Area	Scenario													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Briarcliff Manor														
6	Ossining														
8	Town of New Castle														
14	Croton-on-Hudson														
16	Verplanck	4:20	4:50	3:30	3:50	3:00	4:30	5:00	5:40	3:30	3:40	4:10	3:00	3:30	4:30
18	Buchanan	4:40	5:10	3:35	4:00	3:00	4:40	5:10	5:50	3:30	3:50	4:20	3:00	3:30	4:40
19	Montrose	4:40	5:10	3:50	4:00	3:50	4:50	5:10	5:50	3:50	4:00	4:50	3:50	3:50	4:50
23	City of Peekskill	5:00	5:20	4:30	4:50	3:50	5:10	5:30	5:50	4:20	4:50	5:20	3:50	4:20	5:10
24	Town of Cortlandt														
28	Town of Yorktown														
29	Town of Somers														
Region ETE:		5:00	5:20	4:30	4:50	3:50	5:10	5:30	5:50	4:20	4:50	5:20	3:50	4:20	5:10

Appendix A: Evacuation Time Estimate

TABLE A-1
EVACUATION TIME ESTIMATE STUDY EXCERPTS

Table F-2. Time to Clear the Indicated Area of 100 Percent of the Evacuating Population for Westchester Portion of Region R2															
KLD ID NUMBE R	Protective Action Area	Scenario													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Briarcliff Manor														
6	Ossining														
8	Town of New Castle														
14	Croton-on-Hudson	5:25	6:00	6:30	7:00	4:00	5:30	6:00	6:50	4:40	5:00	5:25	4:00	4:40	5:30
16	Verplanck	5:00	5:30	4:30	4:50	3:30	5:00	5:30	6:20	4:20	4:40	5:00	3:30	4:20	5:00
18	Buchanan	5:10	5:50	4:20	4:45	3:25	5:20	5:50	6:40	4:10	4:40	5:00	3:20	4:10	5:20
19	Montrose	5:20	5:50	4:40	5:10	3:55	5:20	5:50	6:40	4:30	4:50	5:10	3:50	4:30	5:20
23	City of Peekskill	5:35	6:00	4:50	5:10	4:10	5:40	6:05	6:40	4:50	5:10	5:50	4:10	4:50	5:40
24	Town of Cortlandt	5:45	6:10	5:10	5:30	4:30	5:50	6:10	7:10	5:00	5:20	6:20	4:30	5:05	5:50
28	Town of Yorktown														
29	Town of Somers														
Region ETE:		5:5 0	6:2 0	6:3 0	7:0 0	4:3 0	5:5 0	6:3 0	7:3 0	5:0 0	5:2 0	6:2 0	4:3 0	7:5 0	5:5 0

Appendix A: Evacuation Time Estimate

TABLE A-1
EVACUATION TIME ESTIMATE STUDY EXCERPTS

Table F-3. Time to Clear the Indicated Area of 100 Percent of the Evacuating Population for Westchester Portion of Region R3															
KLD ID NUMBE R	Protective Action Area	Scenario													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Briarcliff Manor	7:05	7:55	8:30	9:10	5:30	7:10	8:00	9:05	6:10	6:45	7:50	5:20	6:10	7:10
6	Ossining	6:20	7:00	8:30	9:10	4:50	6:20	7:00	7:40	5:20	5:40	6:20	4:35	5:20	6:20
8	Town of New Castle	7:05	8:00	6:20	6:55	5:35	7:15	8:00	9:05	6:10	6:45	7:50	5:20	6:10	7:15
14	Croton-on-Hudson	6:10	7:00	8:30	9:10	4:40	6:10	6:50	7:35	5:10	5:30	6:00	4:30	5:10	6:10
16	Verplanck	5:50	6:30	5:00	5:30	4:10	5:50	6:30	7:10	4:50	5:10	5:40	4:00	4:50	5:50
18	Buchanan	6:00	6:50	5:00	5:30	4:00	6:00	6:40	7:30	4:40	5:10	5:30	3:50	4:40	6:00
19	Montrose	6:10	6:50	5:30	6:00	4:45	6:10	6:50	7:30	5:10	5:30	6:15	4:30	5:10	6:10
23	City of Peekskill	6:55	7:35	5:50	6:30	5:10	7:00	7:40	8:40	5:50	6:25	7:40	5:10	5:50	7:00
24	Town of Cortlandt	7:20	8:20	6:30	7:30	6:10	7:20	8:20	9:50	6:30	7:20	9:00	6:10	6:30	7:20
28	Town of Yorktown	7:20	8:10	6:55	7:30	6:00	7:25	8:10	9:10	6:30	7:10	8:20	5:50	6:30	7:25
29	Town of Somers	7:30	8:20	7:00	7:30	6:10	7:30	8:20	9:20	6:40	7:20	8:30	5:55	6:40	7:30
Region ETE:		7:4 0	8:3 0	8:3 0	9:1 0	6:3 0	7:4 0	8:3 0	9:5 0	7:0 0	7:3 0	9:0 0	6:3 0	8:4 0	7:4 0

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**APPENDIX B
LETTERS OF AGREEMENT**

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Appendix B: Letters of Agreement

APPENDIX B

LETTERS OF AGREEMENT

The following organizations have agreements on file with OEM acknowledging their participation in the plan.

<u>Agency</u>	<u>Department/Organization</u>
FD/PD/EMS	Ardley Fire Department
FD/PD/EMS	Bedford Fire Department
FD/PD/EMS	Bedford Police Department
FD/PD/EMS	Eastchester Fire Department
FD/PD/EMS	Eastchester Police Department
FD/PD/EMS	Eastchester Volunteer Ambulance Corps
FD/PD/EMS	Fairview Fire Department
FD/PD/EMS	Grasslands Fire Brigade
FD/PD/EMS	Greenburgh Police Department
FD/PD/EMS	Greenburgh Police Department - EMS
FD/PD/EMS	Harrison Police Department
FD/PD/EMS	Harrison Fire Department
FD/PD/EMS	Harrison Volunteer Ambulance Corps
FD/PD/EMS	Hartsdale Fire Department
FD/PD/EMS	Metrocare Ambulance EMS
FD/PD/EMS	Mount Pleasant Police Department
FD/PD/EMS	Port Chester Fire Department
FD/PD/EMS	Port Chester - Rye Volunteer Ambulance Corps
FD/PD/EMS	Rye Brook Police Department
FD/PD/EMS	Valhalla Ambulance Corps
FD/PD/EMS	Westchester County Police
FD/PD/EMS	White Plains Fire Department
FD/PD/EMS	White Plains Police Department
FD/PD/EMS	Thornwood Fire Department
FD/PD/EMS	North White Plains Fire Department
School	Chappaqua Central School District
School	White Plains Public School District
School	Westchester Community College
School	St. Patrick's School
School	Port Chester-Rye Union Free School District
School	North Salem Central School District
School	Maria Regina High School
School	Katonah-Lewisboro U F S D
School	Harrison Central School District
School	Greenburgh 7 Central School District
School	Eastchester U F S D
School	Dobbs Ferry U F S D
School	Byram Hills C S D
School	Blind Brook-Rye U F S D

Appendix B: Letters of Agreement

APPENDIX B
LETTERS OF AGREEMENT
Continued

<u>Agency</u>	<u>Department/Organization</u>
School	Bedford Central School District
School	Ardsey Union Free School
Radio	Radio Amateur Civil Emergency Service
EPZ School	Hendrick Hudson School District
EPZ School	Briarcliff Manor Schools
School	PACE University
School	Our Lady of Victory Academy
EPZ School	Ossining Union Free School
School	Manhattanville College
School	Purchase College, SUNY
Ambulette	MetroCare Ambulance Group
Special	Bethel Nursing Home
Facilities	
Special	Treetops at Mohegan Lake
Facilities	
Special	
Facilities	Cedar Manor, Inc.
Tow Trucks	A&P Collision
Tow Trucks	Montague Towing
Tow Trucks	Hilltop Auto
Tow Trucks	Revolutionary Auto Body
Tow Trucks	ET towing
Tow Trucks	Sellick's Auto body
Tow Trucks	Mark's Towing
Tow Trucks	TJ's Towing
Tow Trucks	NY Recovery
Tow Trucks	RJT Motorists Services
Tow Trucks	Lisi's towing
Tow Trucks	Luposellos Garage
Tow Trucks	Bouton Mobil
Buses	White Plains Bus Company
Buses	Briarcliff Bus, Inc
Buses	County Coach Corporation
Buses	Chappaqua Transportation, Inc.
Host	Opengate
Facilities	
Host	Hudson Valley
Facilities	
Host	Hudson Valley DDSO
Facilities	
Host	Cedar Manor Nursing home
Facilities	
Host	Victoria Nursing home
Facilities	
Host	Bethal Springvale Inn
Facilities	
Host	Westchester DDSO
Facilities	
Host	Bethal Nursing home

Appendix B: Letters of Agreement

Facilities

APPENDIX B
LETTERS OF AGREEMENT
Continued

<u>Agency</u>	<u>Date*</u>	<u>Department/Organization</u>
Host Facilities	8/25/02	Deveroux Millwood Learning Center
Host Facilities	8/26/02	Field home/Adult home
Congregate Care	9-1-02	American Red Cross
Food/Bev Facilities	10-4-02	Salvation Army
	3-18-03	NY DOT

* Agreement language is drafted to be a multi-year agreement with various expiration dates.

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**APPENDIX C
IODINE PROPHY LAXIS
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*Appendix C: Iodine Prophylaxis***APPENDIX C****IODINE PROPHYLAXIS****A. NEW YORK STATE AND WESTCHESTER COUNTY POLICY**

The New York State Department of Health (NYSDOH) endorses the 2001 US. Food and Drug Administration (FDA) recommendations on potassium iodide (KI) as outlined in "Guidance on Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies," December, 2001. The State and County Departments of Health maintain that under certain specified conditions of use, KI is a safe and effective means by which to prevent radioactive iodine uptake by the thyroid gland, thereby reducing the risk of thyroid cancer in the event of a radiological emergency.

The recommendation to take KI by emergency workers and the general public will be issued on the authority of the Westchester County Commissioner of Health, or by the New York State (NYS) Commissioner of Health, or by the designee of either, during a radiological emergency where the potential to exceed the new FDA dose limits may be exceeded by the general public.

The NYS and Westchester County Departments of Health stress that KI provides protection only for the thyroid from radioactive iodines. It has no impact on the uptake by the body of other radioactive materials and provides no protection against external irradiation of any kind. Both agencies emphasize that the use of KI should be as an adjunct to recommended protective actions such as evacuation, sheltering-in-place, and control of foodstuffs.

The availability of potassium iodide is not an authorization for its use. No person will be considered to have been advised to use it without the approval of the Commissioner of Health or his/her surrogate.

All persons to whom potassium iodide is issued will be provided instructions on the use of KI.

B. PROCUREMENT OF KI SUPPLY

For Emergency Workers: Carter-Wallace Labs of New Jersey and Anbex, Inc. of New York City have been authorized by the FDA to produce KI in tablet form for use during radiological emergencies. Each tablet is 130-Milligram dosage and packed 14 tablets per container or foil strip. Westchester County maintains KI supplies for emergency workers. The Westchester County Office of Emergency Management (OEM) is responsible for, and has distributed KI to, response agencies with backup supplies maintained by OEM. KI is supplied to the County by the New York State Emergency Management Office (SEMO).

Appendix C: Iodine Prophylaxis

For the general public, the FDA approved over the counter formulation of KI includes a 130-mg, and 65 mg tablets and liquid KI.

During 2005, updated supplies of KI were received by Westchester from SEMO. Sufficient KI doses exist to provide at least one dose per 10-mile Plume Exposure Emergency Planning Zone (EPZ) resident, plus KI for members of the business community, transients, school, daycare center and nursery school populations. Additional KI will be requested from SEMO, as required.

C. KI DOSE

New York State will follow the FDA's lower radioactive exposure thresholds for KI prophylaxis as well as the new doses of KI for neonates, infants, and children, lower than those previously recommended in 1982.

Westchester County has adopted the New York State Policy on KI, provided at Attachment 1. Dose recommendations contained in that document are as follows:

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

The County stocks 130 mg tablets, Sixty-Five mg tablets and liquid KI.

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 radioactive iodine exposure, the overall benefits of KI far exceed the risks of overdosing, especially in children.

*Appendix C: Iodine Prophylaxis*D. DISTRIBUTION

1. Pre-distribution

- a. The County emergency worker supply of KI is stored at the same locations as the dosimeters. Each County agency will use their respective dosimeter distribution procedures for the bottles/sleeves of KI. Prior distribution of an adequate supply to captive populations will be/has been accomplished by the County OEM.

A back-up emergency worker supply is stored under specifications from the manufacturer by OEM. Potassium iodide should be stored at controlled room temperature between 15 and 30 degrees C (59 - 80 degrees F). The container must be tightly closed and protected from light. This backup supply allows for persons that may not usually be classified as an emergency worker (e.g. farmers that may need to care for livestock during an extended release period) to receive KI. Inventory accountability for the supply of KI will be the responsibility of those agencies/personnel to which/whom the KI was distributed.

- b. It is Westchester County's policy to pre-distribute KI to the resident and transient population of the ten mile emergency planning zone to the maximum extent possible. Four KI distribution days were conducted in Westchester County during June 2002. These events were well publicized and covered by the media. One (1) 130mg tablet was distributed for each member of the household. The distribution included a fact sheet on the makeup of KI, how it works, directions on when to take it, possible side effects and information on the means to receive KI.

The County is considering additional means to ensure most, if not all residents of the EPZ receive KI and instructions on its use, as a preparedness measure. A mass direct mailing effort is one option being considered.

- c. School and day care populations: Westchester County makes KI available to all educational institutions (public, private and parochial; faculty, staff and students). Licensed daycare centers located within the 10-mile EPZ have received a letter from the New York State Office of Children and Family Services (OCFS) instructing them to contact OEM to obtain their necessary allocation of KI. The State has conducted outreach to the school districts on the KI program and has provided some KI supplies directly to the schools. In addition, the County OEM is in the process of pro-actively distributing at the school district level.
- d. Hospitals and Nursing Homes: It is Westchester County policy to pre-distribute KI to all hospitals and nursing homes within the ten-mile emergency planning zone. Sufficient KI for patients and staff have been or will be distributed.

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- e. KI has also been offered to businesses within the 10-mile EPZ. During 2002, 3,520 KI pills were distributed to businesses. This is an ongoing process.

Note: The state and federal government are responsible for pre-distribution of KI to state and federal facilities. The State has provided KI to Sing Sing Correctional Facility.

2. Post-Accident Distribution

If the decision to administer KI is made by the State or County Commissioner of Health, those residents not having KI in their possession must be instructed on where they can obtain the appropriate doses. This information will be disseminated via the Emergency Alert System (EAS) and through other media advisories. The EAS is used any time there is a need to modify public behavior in response to emergency situations. However, it cannot be emphasized enough, that taking the primary protective action of sheltering-in-place or evacuation must remain the first priority. Any effort to distribute KI to the general public during or immediately after an event, must be done in a manner which does not interfere with these primary protective actions.

Emergency workers will be notified to take KI through emergency service communications channels.

For post-accident distribution, multiple locations are being stockpiled with KI supplies. In order to facilitate post-event distribution, KI supplies have been stockpiled at selected emergency service locations, including reception centers. Emergency personnel and county volunteers will man the KI distribution stations at the time of emergency.

KI distribution stations will be located beyond the ten-mile EPZ to ensure that evacuation times are not impacted.

In identifying potential locations for KI distribution, locations were sought that were along major evacuation routes where traffic could be quickly routed off the main roads. Signage (put up only at the time of emergency) and public information materials will direct only those needing KI pills to detour through these designated facilities. Evacuees will not leave their vehicles, but will be dispensed pills and instruction sheets by personnel manning these locations.

In addition to the KI distribution stations referenced above, the County will also make KI available at reception centers. Reception center distribution will be performed by reception center staff once a member of the public has completed registration.

EAS messages (and/or Press releases) have been drafted to support this process.

*Appendix C: Iodine Prophylaxis*E. DECISION TO ADMINISTER KI

1. To have the greatest effect in decreasing the uptake of radioactive iodine by the thyroid gland, these doses of KI should be administered up to four hours before or immediately after exposure. KI given with radioactive iodine results in a 97% block of the radioactive iodine uptake by the thyroid (Becker and Zanzonico, 1997). Uptake is blocked by 90% if KI is administered 12 hours prior to exposure. The blocking efficiency of KI is reduced to 85% if taken one hour after exposure, to 50% at 3 hours and 5 to 10% at 6 hours.
2. The use of KI is only indicated in emergencies where the public is likely to be exposed to radioactive iodine. To have the greatest effect in decreasing the uptake of radioactive iodine by the thyroid gland, KI should be administered immediately before or after exposure. In the event of accident at the Indian Point Energy Center, State and County Departments of Health will be assessing and evaluating the situation. The County Commissioner of Health, in consultation with the State Commissioner of Health and the County Executive will determine if the administration of KI is warranted. Advisories to the public will be issued via the Emergency Alert System (EAS).
3. There will be only one trigger level to recommend KI – 5 REM to the thyroid. This trigger level applies to the general public, emergency workers and captive populations. Radioiodine would only be present in the environment in sufficient quantities to exceed 5 REM child thyroid dose (CDE_T), if a General Emergency had been declared. This assumption is based on the fact that radioiodine can only be present in quantities capable of producing 5 REM CDE_T in the presence of significant core damage and loss of containment, which are criteria that would constitute a General Emergency. Upon declaration of a General Emergency, members of the public that are directed to take protective action (evacuate or shelter in place) and emergency workers shall also be directed to take KI.

F. RECORDKEEPING

1. Westchester County will maintain records of all advisories to the general public on the administration of KI.
2. The County Commissioner of Health shall maintain a log of all County emergency workers who ingest KI.
3. Captive populations will use a KI registry form that contains the following information: name, social security number, facility, and date taken.
4. Upon termination of the event, the County will forward copies of all records (including reports of side effects from KI) to the New York State Department of Health

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(NYSDoH), Bureau of Environmental Protection. Long term follow up activities will be coordinated by the NYSDoH.

ATTACHMENT 1

NEW YORK STATE POTASSIUM IODIDE POLICY

Appendix C: Iodine Prophylaxis

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

Appendix C: Iodine Prophylaxis

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 will not 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 will not be directed to ingest KI.”*
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.”*
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.”

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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

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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:

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- *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

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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 ERPA's 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

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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

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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

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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 will not be directed to ingest KI.”

Analysis

- 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 exists (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.

*Appendix C: Iodine Prophylaxis***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.

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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

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

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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.

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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

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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.

*Appendix C: Iodine Prophylaxis***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

Appendix C: Iodine Prophylaxis

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.

*Appendix C: Iodine Prophylaxis***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.

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**WESTCHESTER COUNTY
DEPARTMENT OF EMERGENCY SERVICES
RADIOLOGICAL EMERGENCY PLAN
VOLUME 1
CORE PLAN AND APPENDICES**

**APPENDIX D
SHELTER-IN-PLACE
Revision 0.0**

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*Appendix D: Shelter-In-Place***APPENDIX D****SHELTER-IN-PLACE**

The Sheltering-in-place Response Option gives the County the capability to implement an effective protective action for the general public in the event of a puff-type radiological release incident at the Indian Point Energy Center (IPEC). In addition, for those situations requiring evacuation and where evacuation cannot be implemented because of time constraints and/or impediments to highway movement (e.g. severe winter weather), Sheltering may be implemented in lieu of evacuation.

If the Sheltering-in-place Response Option is implemented, the general public and special facility administrators should be informed of the following:

1. Remain indoors and close all windows and doors.
2. Turn off all fans, air conditioning equipment and other sources of outside air, while maintaining a safe indoor temperature.
3. Close blinds and drapes.
4. Extinguish fires in fireplaces and close flues.
5. **Keep listening to the radio** for heightened awareness of a radiological emergency and for possible changes in protective actions announced via the Emergency Alert System.

Selective Sheltering-in-place

Sheltering-in-place may be preferable to evacuation as a protective action in some situations. Because of the higher risk associated with evacuation of some special groups in the population (e.g., those who are not readily mobile), Sheltering may be the preferred alternative for such groups as a protective action at projected doses up to 5 rem. In addition, under unusually hazardous environmental conditions use of Sheltering-in-place at projected doses up to 5 rem to the general population (and up to 10 rem to special groups) may become justified. Sheltering may also provide protection equal to or greater than evacuation due to the nature of the source term and/or in the presence of temporal or other site-specific conditions. Illustrative examples of situations or groups for which evacuation may not be appropriate at 1 rem include: a) the presence of severe weather, b) competing disasters, c) institutionalized persons who are not readily mobile, and d) local physical factors which impede evacuation.

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**ATTACHMENT 1
New York State
Nuclear Emergency Preparedness Subcommittee
Technical Issues Task Force**

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

Draft Revision C

September 2005

Appendix D: Shelter-In-Place

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

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

Michael J. Slobodien		
	Signature	Date

Rochester Gas and Electric (R.E. Ginna Station)

Name	Signature	Date

New York State Emergency Management Office

Name	Signature	Date

New York State Health Department

Name	Signature	Date

*Appendix D: Shelter-In-Place***Executive Summary**

This project resulted in the alignment of Licensee, State and county emergency plans with respect to the actions and terminology used to describe public protective actions during nuclear power plant incidents. The table below summarizes the protective action terms and details.

Decision/Protective Action	Expected Public Response
No Need for Protective Actions	No action
Evacuate specified ERPAs and advise the remainder of the plume EPZ to monitor the Emergency Alert System (EAS)	Evacuate if located in the specified ERPAs; remainder of the plume EPZ to continue listening to the EAS for additional information
Shelter in place	<ul style="list-style-type: none"> • 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. 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 Applicable regulations**

a. NUREG 0654 FEMA REP 1 section J.9: "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..."

b. NUREG 0654 FEMA REP 1 Supplement 3: 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

Appendix D: Shelter-In-Place

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.

c. NRC Regulatory Information Summary (RIS) 2004-13, August 2, 2004, Consideration of Sheltering in Licensee's Range of Protective Action Recommendations

d. NRC RIS 2004-13, Supp. 1, March 10, 2005, Consideration of Sheltering in Licensee's Range of Protective Action Recommendations Dated August 2004

e. NRC RIS 2005-08, June 6, 2005, Endorsement of NEI Guidance "Range of Protective Actions for Nuclear Power Plant Incidents"

3. Definitions

- 3.1 "Actual or projected severe core damage or loss of control of the facility" is equivalent to a **General Emergency**.
- 3.2 "**All remaining ERPAs monitor the Emergency Alert System (EAS)**": .
- Will always and only be used in conjunction with evacuation, and
 - 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 you are later recommended to evacuate)
 - Does not mean shelter in place
- 3.3 "**Shelter-in-place**" is an action that
- Would be recommended by the licensee for short duration releases during a General Emergency, or
 - Would be taken by persons who should be evacuated but cannot because of:
 - Transportation resource shortfalls
 - Dangerous travel conditions
 - Special populations (prisons, nursing homes, etc.)
 - Would be taken for the purpose of reducing dose
 - May include a variety of actions, including:
 - Going indoors
 - Limiting outside sources of air
 - Making preparation to evacuate
 - Listening to EAS
 - Shall be called "shelter-in-place"

*Appendix D: Shelter-In-Place***4. Implementation Considerations**

This section provides suggestions for implementing the recommendations contained above.

5.1 Licensee actions

- The Part 1 Notification Fact Sheet item 6 should be modified to read,
 - A. No Need for Protective Actions outside the site boundary
 - B. Evacuate and implement the KI Plan for the following ERPAs...
 - C. All remaining ERPAs monitor the Emergency Alert System (EAS)
- A “Note” should be added to 6B which states that “Offsite authorities should consider sheltering and take KI if evacuation is not feasible” This statement acknowledges that during an emergency, licensee typically are unaware of emergent impediments to evacuation as that information is obtained and acted upon by offsite officials.
- Licensee plans should be revised to reflect the recommendation of “shelter-in-place” for short duration releases during a General Emergency. A short duration release is defined as a controlled release of one hour or less duration.
- Licensee plans may be revised to reflect alternate arrangements that have been made with State and/or county officials to accommodate special evacuation circumstances.

5.2 County and State actions

- Emergency plans should be revised to include:
 - The addition of sheltering as a protective action for the public.
 - The above protective action may be implemented when persons who should be evacuated cannot. See decision tree in Appendix A for additional information.
 - If the public is sheltered in place during a General Emergency, KI will be recommended for administration
- Public information plans should be revised to include:
 - The purpose of monitoring EAS, and actions to take while monitoring EAS should be incorporated into public education materials and press releases.
 - “Monitor the EAS” should be incorporated into EAS follow-up messages.

Appendix D: Shelter-In-Place

- The purpose of sheltering, and actions to take in order to shelter should be incorporated into public education materials. See Appendix B for additional information on recommended actions.
- Sheltering protective action details should be incorporated into EAS follow-up messages and press releases.
- Incorporation of KI protective action details, as they relate to a recommendation to shelter-in-place, should be incorporated into public information materials, press releases, and EAS follow-up messages.

6. References

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

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

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

<http://bt.cdc.gov/radiation/shelter.asp>

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

<http://www.pep-c.org/shelterlinplace/>

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

7. Appendices

Appendix A - Protective Action Decision Tree

Appendix B – Sheltering Recommended Actions

APPENDIX A

Decision Tree

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*Appendix D: Shelter-In-Place***APPENDIX B****Recommended Actions**

Local officials on the scene are the best source of information for your particular situation. Following their instructions during and after emergencies regarding sheltering, food, water, and clean up methods is your safest choice.

Remember that instructions to shelter are usually provided for durations of a few hours, not days or weeks. There is little danger that the room in which you are taking shelter will run out of oxygen and you will suffocate.

At Home:

- Close and lock all windows and exterior doors.
- Turn off all fans, heating and air conditioning systems. Close the fireplace damper.
- Gather essential disaster supplies, such as nonperishable food, bottled water, battery-powered radios, first aid supplies, flashlights, batteries, duct tape, plastic sheeting, and plastic garbage bags, and make sure the radio is working.
- Go to an interior room without windows that's above ground level. In the case of a chemical threat, an above-ground location is preferable because some chemicals are heavier than air, and may seep into basements even if the windows are closed.
- Bring your pets with you, and be sure to bring additional food and water supplies for them.
- It is ideal to have a hard-wired telephone in the room you select. Call your emergency contact and have the phone available if you need to report a life-threatening condition. Cellular telephone equipment may be overwhelmed or damaged during an emergency.
- Use duct tape and plastic sheeting (heavier than food wrap) to seal all cracks around the door and any vents into the room.
- Keep listening to your radio or television until you are told all is safe or you are told to evacuate.

At Work:

- Close the business.
- Bring everyone into the room(s). Shut and lock the door(s).
- If there are customers, clients, or visitors in the building, provide for their safety by asking them to stay – not leave. When authorities provide directions to shelter-in-place, they want everyone to take those steps now, where they are, and not drive or walk outdoors.
- Unless there is an imminent threat, ask employees, customers, clients, and visitors to call their emergency contact to let them know where they are and that they are safe.
- Turn on call-forwarding or alternative telephone answering systems or services. If the business has voice mail or an automated attendant, change the recording to indicate that the business is closed, and that staff and visitors are remaining in the building until authorities advise it is safe to leave.
- Close and lock all windows, exterior doors, and any other openings to the outside.

Appendix D: Shelter-In-Place

- Have employees familiar with your building's mechanical systems turn off all fans, heating and air conditioning systems. Some systems automatically provide for exchange of inside air with outside air – these systems, in particular, need to be turned off, sealed, or disabled.
- Gather essential disaster supplies, such as nonperishable food, bottled water, battery-powered radios, first aid supplies, flashlights, batteries, duct tape, plastic sheeting, and plastic garbage bags.
- Select interior room(s) above the ground floor, with the fewest windows or vents. The room(s) should have adequate space for everyone to be able to sit in. Avoid overcrowding by selecting several rooms if necessary. Large storage closets, utility rooms, pantries, copy and conference rooms without exterior windows will work well. Avoid selecting a room with mechanical equipment like ventilation blowers or pipes, because this equipment may not be able to be sealed from the outdoors.
- It is ideal to have a hard-wired telephone in the room(s) you select. Call emergency contacts and have the phone available if you need to report a life-threatening condition. Cellular telephone equipment may be overwhelmed or damaged during an emergency.
- Use duct tape and plastic sheeting (heavier than food wrap) to seal all cracks around the door(s) and any vents into the room.
- Write down the names of everyone in the room, and call your business' designated emergency contact to report who is in the room with you, and their affiliation with your business (employee, visitor, client, customer.)
- Keep listening to the radio or television until you are told all is safe or you are told to evacuate.

At School:

- Close the school. Activate the school's emergency plan. Follow reverse evacuation procedures to bring students, faculty, and staff indoors.
- If there are visitors in the building, provide for their safety by asking them to stay – not leave. When authorities provide directions to shelter-in-place, they want everyone to take those steps now, where they are, and not drive or walk outdoors.
- Provide for answering telephone inquiries from concerned parents by having at least one telephone with the school's listed telephone number available in the room selected to provide shelter for the school secretary, or person designated to answer these calls. This room should also be sealed. There should be a way to communicate among all rooms where people are sheltering-in-place in the school.
- Ideally, provide for a way to make announcements over the school-wide public address system from the room where the top school official takes shelter.
- If children have cell phones, allow them to use them to call a parent or guardian to let them know that they have been asked to remain in school until further notice, and that they are safe.
- If the school has voice mail or an automated attendant, change the recording to indicate that the school is closed, students and staff are remaining in the building until authorities advise that it is safe to leave.
- Provide directions to close and lock all windows, exterior doors, and any other openings to the outside.

Appendix D: Shelter-In-Place

- Have employees familiar with your building's mechanical systems turn off all fans, heating and air conditioning systems. Some systems automatically provide for exchange of inside air with outside air – these systems, in particular, need to be turned off, sealed, or disabled.
- Gather essential disaster supplies, such as nonperishable food, bottled water, battery-powered radios, first aid supplies, flashlights, batteries, duct tape, plastic sheeting, and plastic garbage bags.
- Select interior room(s) above the ground floor, with the fewest windows or vents. The room(s) should have adequate space for everyone to be able to sit in. Avoid overcrowding by selecting several rooms if necessary. Classrooms may be used if there are no windows or the windows are sealed and can not be opened. Large storage closets, utility rooms, meeting rooms, and even a gymnasium without exterior windows will also work well.
- It is ideal to have a hard-wired telephone in the room(s) you select. Call emergency contacts and have the phone available if you need to report a life-threatening condition. Cellular telephone equipment may be overwhelmed or damaged during an emergency.
- Bring everyone into the room. Shut and lock the door.
- Use duct tape and plastic sheeting (heavier than food wrap) to seal all cracks around the door(s) and any vents into the room.
- Write down the names of everyone in the room, and call your schools' designated emergency contact to report who is in the room with you.
- Listen for an official announcement from school officials via the public address system, and stay where you are until you are told all is safe or you are told to evacuate.

In Your Vehicle

If you are driving a vehicle and hear advice to “shelter-in-place” on the radio, take these steps:

- If you are very close to home, your office, or a public building, go there immediately and go inside. Follow the sheltering recommendations for the place you pick described above.
- If you are unable to get to a home or building quickly and safely, then pull over to the side of the road. Stop your vehicle in the safest place possible. If it is sunny outside, it is preferable to stop under a bridge or in a shady spot, to avoid being overheated.
- Turn off the engine. Close windows and vents.
- If possible, seal the heating/air conditioning vents with duct tape.
- Listen to the radio regularly for updated advice and instructions.
- Stay where you are until you are told it is safe to get back on the road. Be aware that some roads may be closed or traffic detoured. Follow the directions of law enforcement officials.

Appendix D: Shelter-In-Place

Project Schedule

Task	Completion Date	Responsible Group
Agree to all "Concepts"	1/15/03	All
Develop and agree to schedule of major project milestones	1/15/03	All
Define all regulatory requirements	7/2003	
Search for current guidance and standards on sheltering in place and incorporate into analysis	7/2003	
Develop regulatory requirements matrix	7/2003	
Define all technical concepts and document the basis for each protective action <ul style="list-style-type: none"> • Evacuation • Sheltering in place • Heightened state of awareness 	7/2003	
Develop decision flowchart that incorporate the above protective actions	7/2003	
Validate each permutation in the flowchart using scenario based table-tops	7/2003	
Verify that the regulatory requirements matrix is satisfied with the new decision flowchart	7/2003	
Provide decision flowchart and basis to all stakeholders for comment and approval	12/2003	SEMO
Assess changes against 44CFR350.14 "Significant Changes"		
Develop wording changes for state plan		NYS
Develop wording changes for county plans		Counties
Develop wording changes for licensee plan		Licensees
Develop Part 1 NFS wording		All
Verify consistency of plan changes		All
Develop public information materials: <ul style="list-style-type: none"> • EAS message • Press release • Public education materials 		All
Assess plan changes against public information material changes		All
Establish public information material production schedule		Licensees
All changes effective		All

**WESTCHESTER COUNTY
DEPARTMENT OF EMERGENCY SERVICES
RADIOLOGICAL EMERGENCY PLAN
VOLUME 1
CORE PLAN AND APPENDICES**

**APPENDIX E
WESTCHESTER COUNTY
EMERGENCY COMMUNICATIONS NETWORK
Revision 0.0**

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*Appendix E: Westchester County Emergency Communications Network***APPENDIX E****WESTCHESTER COUNTY EMERGENCY COMMUNICATIONS NETWORK**

In the event of a Radiological Emergency at the Indian Point Energy Center (IPEC), the Radiological Emergency Communications System (RECS) will enable the IPEC staff to promptly notify State and County emergency response organizations. In addition, the RECS will provide for all additional communications between the IPEC Emergency Operations Facility and the Emergency Operations Centers for the State of New York and Orange, Putnam, Rockland and Westchester Counties.

The Westchester County Emergency Communications Network operates from either the Department of Emergency Services, 60 Control (County Warning Point) in Valhalla, N.Y. or the County Emergency Operations Center (EOC) at the Hudson Valley Traffic Management Center, Hawthorne, N.Y. The CWP in Valhalla is manned on a 24-hour-a-day basis.

1. **NEW YORK STATE RADIOLOGICAL EMERGENCY COMMUNICATIONS SYSTEM (RECS) FOR THE INDIAN POINT ENERGY CENTER**

a. **INTRODUCTION**

This specification defines the configuration and functional requirements for a dedicated telephone network to be used for vital communications pertaining to radiological emergencies at the Indian Point Energy Center in Buchanan, N.Y. The network connects emergency facilities at IPEC to County Warning Points and EOC's of the surrounding counties and to State emergency operating centers in Albany, N.Y.

The system consists of dedicated (not switched) transmission facilities providing multi-party communications in a conferencing mode.

b. **SYSTEM CONFIGURATION**

(1) **Site Locations**

A station set and associated accessories are provided at each of the following locations:

(a) **New York State Offices**

- (i) State Emergency Operations Center (State EOC)
State Emergency Management Office
1220 Washington Avenue
Suite 101
Albany, New York 12226

Appendix E: Westchester County Emergency Communications Network

- (ii) State Emergency Communications Center (SECC)
State Emergency Management Office
State Campus, Building #22
1220 Washington Avenue
Albany, New York 12226
- (iii) State Department of Health (State DOH)
Bureau of Environmental Radiation Protection
547 River Street at Flannigan Sq
Troy, New York 12180
- (b) New York State SEMO Region II

New York State Region II Office
171 Cheney
Poughkeepsie, New York 12601
- (c) Indian Point Energy Center

Contact: Manager Emergency Planning
 - (i) Unit 2 - Control Room (CR-2) (24 hour)

Entergy Nuclear Northeast
Indian Point Energy Center
Buchanan, New York 10511
 - (ii) Unit 3 - Control Room (CR-3) (24 hour)

Entergy Nuclear Northeast
Indian Point Energy Center
Buchanan, New York 10511
 - (iii) Emergency Operation Facility Center (EOF)

Buchanan Service Center
Entergy Nuclear Northeast
Buchanan, New York 10511
 - (iv) Alternate EOF

Entergy Nuclear Northeast
440 Hamilton Ave., 12th floor

Appendix E: Westchester County Emergency Communications Network

White Plains, NY

Appendix E: Westchester County Emergency Communications Network

(d) Orange County

Contact: County Office of Emergency Management

- (i) Orange County EOC
22 Wells Farm Road
Goshen, NY 10924
- (ii) Orange County Warning Point (Orange WP) (24 hour)
Orange County Sheriff's Office
County Jail
40 Erie Street
Goshen, New York 10924

(e) Rockland County

Contact: County Office of Fire and Emergency Services

- (i) Rockland County EOC
Fire Training Center
Pomona, New York 10970
- (ii) Rockland County Warning Point (Rockland WP) (24 hour)
Sheriff's Radio Division
Fire Training Center
Pomona, New York 10970

(f) Putnam County

Contact: Director, Bureau of Emergency Services

- (i) Putnam County EOC
Putnam County Bureau of Emergency Services
112 Old Route Six
Carmel, New York 10512
- (ii) Putnam County Warning Point
Putnam County Sheriff's Department
3 County Center
Carmel, New York 10512

Appendix E: Westchester County Emergency Communications Network(g) Westchester County

Contact: Office of Emergency Management

- (i) Westchester County Emergency Operations Center
Hudson Valley Transportation Management Center
200 Bradhurst Avenue
Hawthorne, New York 10532-1619
- (ii) Westchester County Warning Point (Westchester WP) (24-hour)
Westchester County 60 Control
Department of Emergency Services
4 Dana Road
Valhalla, New York 10532

(h) Peekskill City

Contact: Police Commissioner

Peekskill City Warning Point (Peekskill CD)
Police Headquarters
Nelson Avenue
Peekskill, New York 10566

(2) Layout

Figure E-1 identifies the network configuration. Figure E-1 is not intended to represent an exact routing plan for the network. However, the star configuration shown is required so that communications with more than one county will not be lost in the event of failure in one section. The central office is the location for any centralized hotline elements such as conference bridge, ring generators, etc.

(3) Voice Recording

All voice traffic on the RECS will be recorded for accountability purposes. Recorders will be located at the New York State Emergency Operations Center in Albany, New York. Since all voice traffic is on a conference basis, each of the recorders will receive all voice communications on the RECS from the State, counties and NFO.

Appendix E: Westchester County Emergency Communications Network(4) Functional Operation

All calls on the RECS will be on a conference basis as follows:

- (a) RECS Line calls are initiated by the NFO only;
- (b) When phone rings PICK UP handset and remain off-hook;
- (c) MONITOR the telephone speaker;
- (d) TO TALK, press the handset push-to-talk button;
- (e) When the conference is completed, HANG-UP the handset.

2. WESTCHESTER COUNTY EMERGENCY COMMUNICATIONS NETWORK

The Emergency Communications Network utilizes telephone lines, both dedicated and commercial, and radio communications as described below:

a. Department of Public Safety Communication Center

- (1) The Center utilizes a radio system and a telephone "hot line."
 - (a) The radio system includes communications links to:
 - (i) Department of Public Works (in part)
 - (ii) County corrections facilities
 - (iii) Some park and recreational areas
 - (iv) Court and offices of the District Attorney

All utilize repeater systems.
 - (b) The telephone "hot line" system facilitates simultaneous communication links with the following:
 - (i) Forty-three (43) city, town and village police departments
 - (ii) New York State Police (Hawthorne)
 - (iii) Greenwich, Connecticut local police department
- (2) The Center in Hawthorne has auxiliary power generating capabilities including a 14-day supply of fuel.

*Appendix E: Westchester County Emergency Communications Network*3. WESTCHESTER COUNTY DEPARTMENT OF EMERGENCY SERVICES (VALHALLA, N.Y.)

- a. Fire and EMS Emergency Communications Center (ECC). The ECC is capable of communicating with all fire and EMS agency within the County.
- b. The County maintains a Voice over Internet Protocol (VoIP) telecommunications systems in the EOC to communicate directly to the County's Emergency Communications Center, Department of Health and all 911 receiving hospitals within the County.

4. EMERGENCY OPERATIONS CENTER (EOC) COMMUNICATIONS

- a. The County Emergency Operations Center (EOC) located in Hawthorne, as well as the alternate EOC in White Plains, has limited communications capabilities. It has the New York State Executive Hotline, the New York State Radiological Emergency Communications System (RECS) and radio communications.

The EOC is capable of maintaining communication with the EMS and with county hospitals. Space in the EOC is set aside for the American Red Cross and the Radio Amateur Civil Emergency Service (RACES), a radio organization of ham radio operators. RACES is of great importance in the event of an emergency in that it can be utilized to maintain communications between emergency organizations and workers including field monitoring teams, police, the American Red Cross, etc.

The EOC has an emergency Uninterrupted Power Supply (UPS) and diesel generator to supply all backup power needs.

NYSPIN terminals exist at the County Warning Point.

- b. Westchester County has two mobile communications vehicles at its disposal. These vehicles are equipped with much the same radio communications capabilities as the EOC, allows coordinating efforts to be made at the scene of an emergency. The mobile communications van may be dispatched to near-scene locations to facilitate communications between local emergency services agencies and the county EOC. These units also utilize a mobile radio bridging system that allows for communications interoperability with multiple disparate radio systems.
- c. The County Public Safety Communications Center, EOC and alternate EOC have the capability to maintain telephone communication with the New York State Warning Point in Albany.

Appendix E: Westchester County Emergency Communications Network

- d. All frequencies are controlled and filed and maintained at EOC and at the emergency facilities.
- e. Communication between the Westchester County EOC and the Radiological Field Monitoring Teams (FMT) is provided through the use of local radios operating on a FM frequency with a base station adjacent to the Dose Assessment Room of the EOC. Each FTM is equipped with a Nextel (Phone and Direct Connect) with Public Safety Priority. Each team is provided with a satellite phone to ensure an additional layer of redundancy,

Backup communications are primarily provided through the use of RACES radios and cell and satellite phones. This is detailed in Attachment 1 to the *Field Monitoring Procedures Manual*

Appendix E: Westchester County Emergency Communications Network

FIGURE E-1: RECS FORM

Appendix E: Westchester County Emergency Communications Network

9.	Reported By-Communicator: _____	Telephone # _____
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Appendix E: Westchester County Emergency Communications Network

Figure E-2: RECS and Executive Hotline System Diagram

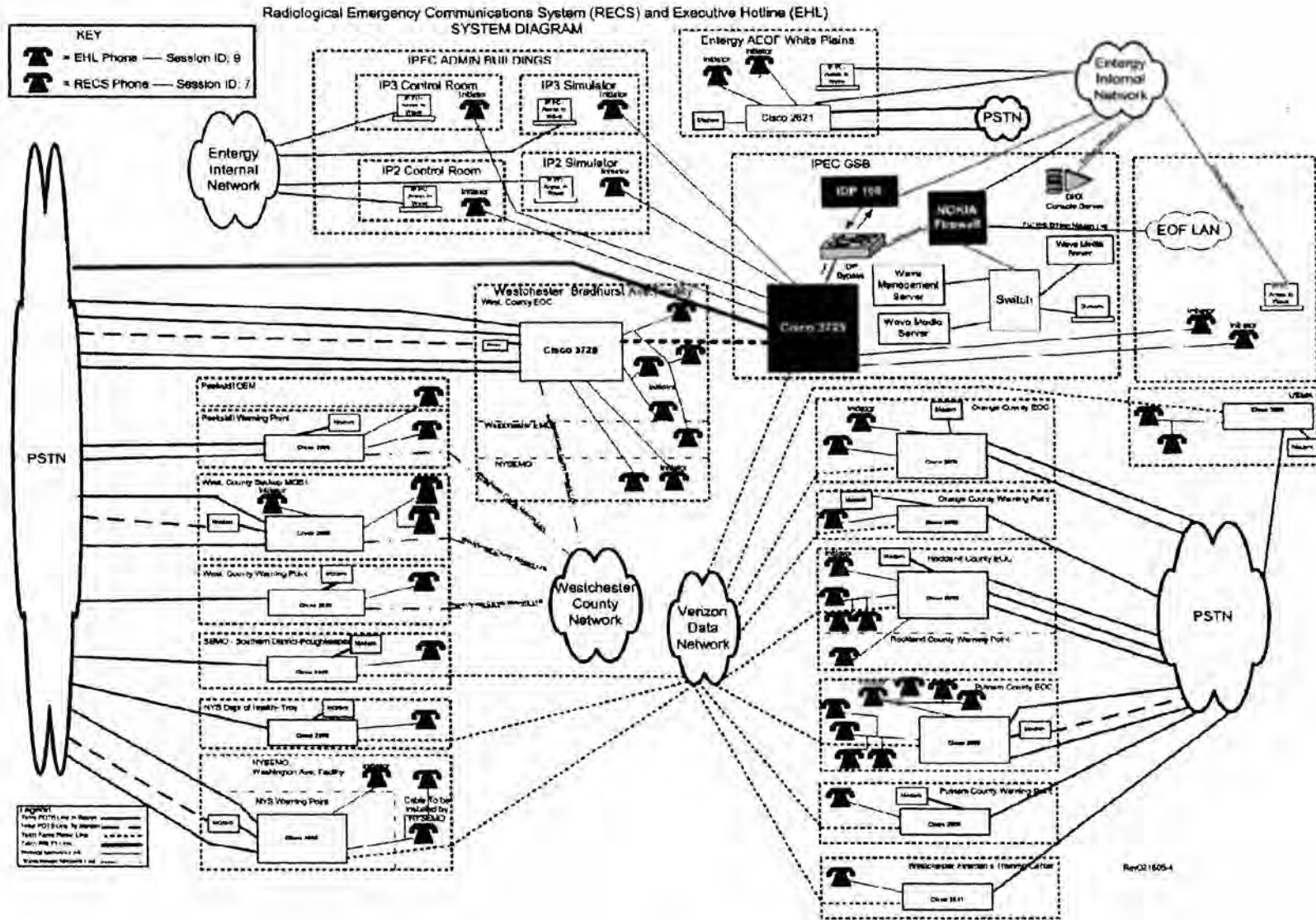
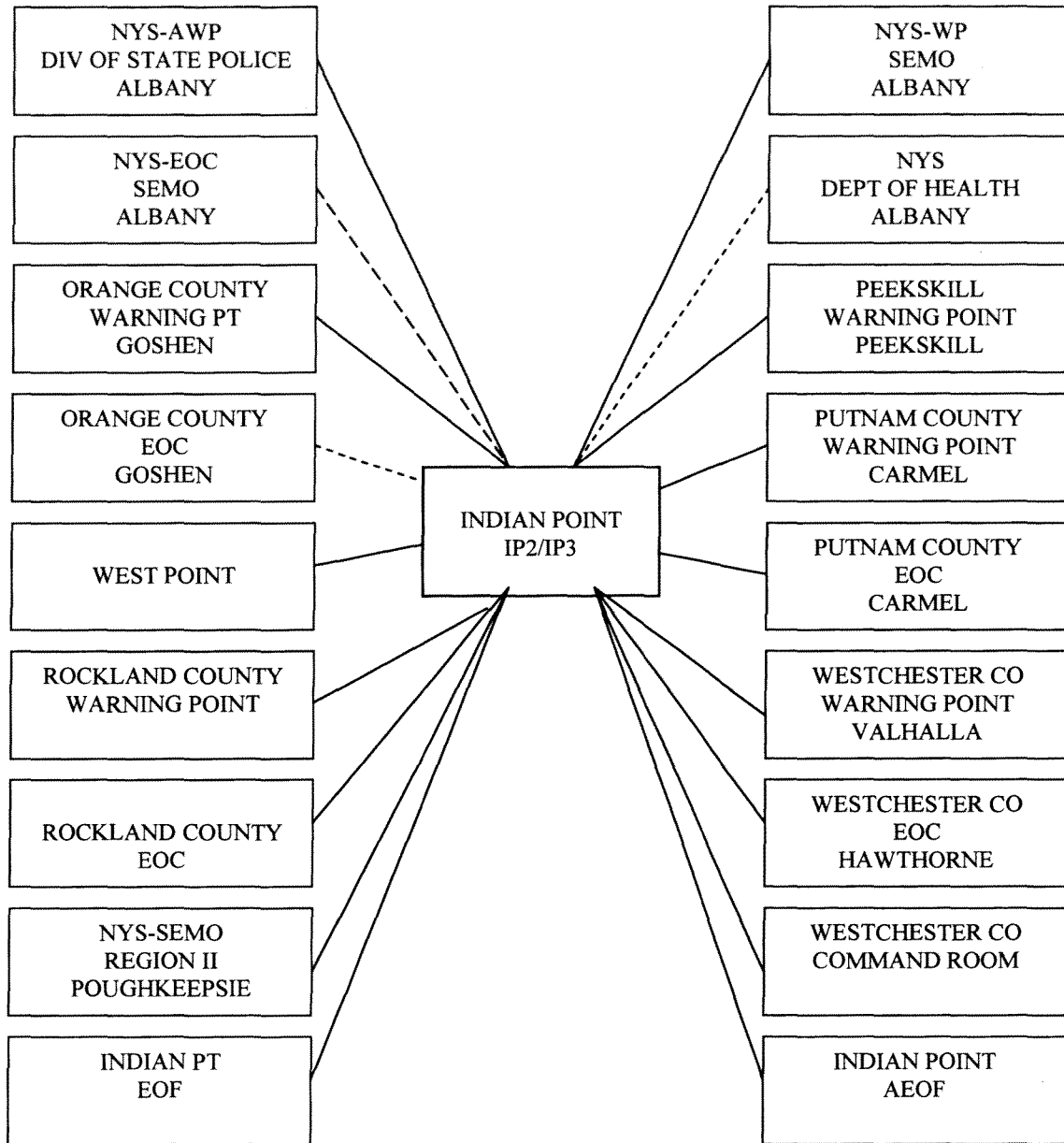


FIGURE E-3: COMMUNICATIONS DIAGRAM

Appendix E: Westchester County Emergency Communications Network



**WESTCHESTER COUNTY
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VOLUME 1
CORE PLAN AND APPENDICES**

**APPENDIX F
PUBLIC ALERT AND NOTIFICATION
Revision 0.0**

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APPENDIX F

PUBLIC ALERT AND NOTIFICATION

This Appendix presents a review of those prompt notification systems that have been established in the ten-mile Emergency Planning Zone (EPZ). One of NUREG-0654's numerous requirements for emergency planning and preparations is to promptly notify the public that an emergency situation exists and to take protective actions. This notification capability is required within the Plume EPZ, approximately a 10-mile radius around the reactor site.

Appendix 3 of NUREG-0654 discusses the primary requirements concerning public notification and for notification systems.

1. PUBLIC NOTIFICATION SYSTEMS

a. INTRODUCTION

This document provides an overview of the Public Alert and Notification System (ANS) for the 10-mile EPZ area centered on the Indian Point Energy Center. It describes the purpose, design criteria, configuration, implementation and testing schedule of the Indian Point ANS.

At the time of this writing, the IPEC siren system is in transition between the existing siren system and a new upgraded siren system that was, in part, mandated by the Energy Policy Act of 2005 and related Nuclear Regulatory Commission orders.

Westchester County retains the ability to activate both systems; however, the new siren system will be relied upon as the primary.

In anticipation of transition to the new system, this plan revision incorporates the information for the new system. Implementation procedures at the County Warning Point and the OEM reflect procedures for both systems.

(1) Background

IPEC has installed an Alert and Notification System (ANS) in the approximate 10-mile EPZ area surrounding the Indian Point Energy Center. The 10-mile EPZ area is the Plume Exposure Pathway Emergency Planning Zone (EPZ). The purpose of the ANS is to provide initial alert to the general public within the EPZ of an emergency at the Indian Point Plants. The intention of the alert signal is to instruct the public to monitor the Emergency Alert System (EAS) messages being broadcast on public media (radio/TV) for more specific information.

The responsibility for the activation of the ANS resides with the county governments who have jurisdiction in the 10-mile EPZ area. The ANS is segmented into four parts along county boundaries with the alerting devices in each segment controlled by the respective county authorities.

Appendix F: Public Alert and Notification

The Public Alert System is composed mainly of sirens and is augmented with tone alerts radios (TARs). Tone alert radios are an enhancement to the Indian Point Alert and Notification System. The radios have been distributed to supplement siren alerting for residents in EPZ areas where acoustic coverage is reduced, as well as to special facilities in the EPZ.

The tone alert radios are pre-tuned to a local EAS broadcast station that transmits EAS messages. The tone alert radios are activated automatically when an EAS message is broadcast by a commercial radio station in conjunction with siren soundings.

Entergy Nuclear is responsible for the administrative maintenance of the tone alert radio program. These activities include:

- Maintaining records of tone alert radios currently distributed by Entergy,
- Providing replacement radios to recipients as requested,
- Ensuring sufficient supplies of replacement radios,
- Identifying facilities that should be offered tone alert radios,
- Surveying tone alert radio holders annually to verify operability of tone alert radios, and to provide instructions on the use of the tone alert radios

b. SYSTEM CONFIGURATION

The existing siren system has 79 sirens in Westchester County. Attachment F-2 identifies the location of sirens for the existing system. The new siren system will have 77 sirens in Westchester County. Attachment F-3 lists the location of sirens for the new system.

The system description which follows is for the new system.

(1) Alerting Device Distribution

For effective coverage of the Indian Point EPZ, omni-directional electronic stationary sirens were selected as the alerting devices for the new ANS. Based on the siren placement guidelines presented above, the system design indicates that 172 sirens are required. The distribution is as follows:

**	Westchester	-	77
**	Rockland	-	56
**	Orange	-	23
**	Putnam	-	16
	TOTAL		172

Appendix F: Public Alert and Notification(2) Control and Communication

The communication control system uses twelve (12) communication control units (CCU) with an attached computer, running the control and monitor software. Each unit includes a CCU, computer, LCD monitor, printer, keyboard, track ball, batteries, and uninterruptible power supply, all within a rack-mounted enclosure.

Three (3) of the twelve (12) CCU's are located in Westchester County. They are located:

- in the 60 Control Communications Center, 4 Dana Road;
- the Emergency Operations Center in the Hudson Valley Traffic Management Center, 200 Bradhurst Avenue; and
- the alternate EOC located in the County Office Building, White Plains.

Six (6) CCU's are located in the following counties:

- two (2) CCU's located in Putnam County
- two (2) CCU's located in Orange County, and
- two (2) CCU's located in Rockland County.

Each county has complete activation control and monitoring over the sirens used to alert their county from all CCU's located within their county. Westchester County's and Rockland County's CCU's have the capability of controlling all 172 sirens in all four Counties. The ability to activate another County's sirens is only exercised at that County's request.

There are three (3) CCU units located at Indian Point Energy Center that have complete control and monitoring capabilities over all sirens in the system.

All CCU's, computers, and associated equipment have battery back-up power capable of providing a minimum of twenty-four (24) hours of operation in case of primary power failure. The system incorporates reliable communication and post-activation polling times of less than 3 minutes (using the IP communication path).

There are two completely separate and redundant parallel communication paths used to convey activation and monitoring messages between the CCU's and the remote sirens. The dedicated simulcast radio system uses redundant transmitters and antennas located at each of four transmitter tower sites: Tinker Hill, Grasslands, Harriman and IPEC Meteorological. The transmitter towers are linked to provide simulcast operation. The effective radiated power (ERP) from the transmitter tower is 200 watts with 50 watts (ERP) talkback power.

Appendix F: Public Alert and Notification

Using the four towers in simulcast mode, essentially 100% coverage is obtained from any one of the twelve (12) CCU locations to all siren sites. All radio communication equipment has battery backup for at least twenty-four (24) hours of operation in case of primary power loss. This simulcast radio system uses one 220 MHz frequency pair that the Indian Point Energy Center is licensed for and conforms to the existing license ERP output power for both the repeaters and the mobile units (sirens and CCU's). The 220 MHz radio system eliminates the single points of siren communication failures since every CCU can communicate to every siren in the system.

To further increase the RF system reliability, all activation transmission messages are sent out multiple times. By sending out multiple redundant activation messages, the probability of all desired sirens correctly activating, even in the presence of random radio interference.

A wireless data network that uses cellular data modems provides independent, redundant communications between all CCU's and sirens. Several methods are employed to prevent unauthorized access to the siren system via these wireless links. Data is extensively checked and is encrypted using 128 bit AES. The modems are programmed to respond only to other modems within an assigned block of static IP addresses.

c. SIREN PLACEMENT GUIDELINES

The following guidelines on siren sound levels are employed in the siren placement for the Indian Point ANS:

- (1) For non-residential areas, sirens are placed so that 60dB (C) will be the minimum outdoor siren-sound level in the area.
- (2) For residential areas with population density below 2,000 persons/square mile, sirens are placed so that 65dB (C) will be the minimum outdoor siren-sound level in the area. This is to provide effective indoor as well as outdoor coverage.
- (3) For populated areas with population density above 2,000 persons/square mile and for cities, sirens are placed so that 75dB (C) will be the minimum outdoor siren-sound level in the area for effective indoor as well as outdoor coverage.
- (4) The maximum sound level received by any member of the public is no more than 123dB (C).

The above guidelines provide adequate outdoor, as well as indoor coverage under most circumstances.

*Appendix F: Public Alert and Notification*d. ALERT AND NOTIFICATION SYSTEM TESTING AND MAINTENANCE

Entergy is responsible for testing and maintenance of the siren system. Procedures detailing the testing and maintenance of the system are on file at Entergy. The siren system testing program is as follows. The success of any test will be confirmed by feedback reported to the control station. If unsatisfactory performance is reported, a technician is dispatched by the NFO to diagnose and repair the problem.

- (1) Bi-Weekly Silent Test - A bi-weekly "Silent" test is initiated from either the County EOC or WP to ensure that the transmission path and the siren audio drivers are functional.
- (2) Short Duration – Full Volume Test - A quarterly "Growl" test is initiated from either the County EOC or WP. In this test, the sirens emit a constant tone for approximately 10 seconds.
- (3) Full Alert Siren Test - The entire siren system is tested at least annually to ensure operability. The sirens are sounded from either a County EOC or WP as if it were a real actuation. In this test the sirens emit a constant tone for approximately 4 minutes.
- (4) Preventive Maintenance – The NFO conducts a preventive maintenance program for the entire siren system including sirens, control stations and repeaters. Adjustments or repairs are made as needed according to the manufacturer's specifications. Procedures detailing the maintenance and the maintenance frequency are on file at the NFO.

e. PUBLIC NOTIFICATION(1) Emergency Alert System (EAS)

The Emergency Alert System (EAS) is a network of radio stations designed to give information to the public in the event of any emergency, including a radiological emergency at Indian Point.

(a) System Description/Capabilities

- (i) Consists of radio stations whose broadcast area includes Westchester County (see Table F-1).
- (ii) Stations should follow procedures developed for use by broadcasters to select the best EAS monitoring assignment according to specific EAS Operational (local) Area planning while considering constraints imposed by particular geographic and technical phenomena in those areas. Any detailed EAS Operational Plans developed voluntarily at the local level should be used in lieu of these procedures.

Appendix F: Public Alert and Notification

(2) Other Notification Capabilities

Westchester County uses an automated callout system for selected emergency worker notifications and general public notification.

This system is developed by Dialogic Communications Corporation (DCC) and is known as The Communicator. This system has two applications as follows.

(a) Emergency Worker Notification

The Westchester County Emergency Notification System (ENS) is used to perform automated callout of the EOC staff. Pre-recorded messages are available for both drill scenarios and real events, one for each emergency classification level. The system can be activated by the Warning Point or authorized Department of Emergency Services personnel. This activation can be done remotely by those authorized. The system has 16 lines and is programmed with the home, office, mobile and pager numbers for EOC staff. The system is able to log successfully completed calls and print a report of calls completed.

(b) Community Notification System

This feature of the Communicator is utilized for larger public notifications. It has three T-Systems connected to it with 72 lines. An additional tool used in conjunction with the system is GeoCast (GIS system) with which you can “drop and draw” specific geographic areas of the county to be notified. It is also capable of notifying special population groups such as schools and nursing homes. It will also be used as the backup in the event of siren failure.

The GeoCast automatic dialing system will also be used to replace route alerting in the event of siren failure. A distance of approximately one mile radius around the siren will be selected. A recorded message will be played for residents which advises them to tune to local EAS radio and TV stations for emergency information. This system is web-based and can be activated by OEM staff from any location.

TABLE F-1

PARTICIPATING EAS STATIONS

Broadcast stations in the Lower Hudson Valley and Catskill, New York EAS Operational Area, which are recommended in the "Planning For Emergencies" booklet, distributed in the WestchesterCounty's portion of the 10-mile EPZ around the Indian Point Energy Center include:

<u>AM Radio</u>	<u>FM Radio</u>	<u>Television</u>
WFAN 660	WRRV 92.7	WCBS Ch 2
WABC 770	WHUD 100.7	WNBC Ch 4
WCBS 880	WFAS 103.9	WNYW Ch 5
WFAS 1230		WABC Ch 7
WALL 1340		
WLNA 1420		

Emergency information could also be carried on the following stations:

<u>AM Radio</u>	<u>FM Radio</u>	<u>Television</u>
WRKL 910	WNEW 102.7	NEWS 12 HUDSON VALLEY
WTBQ 1110	WGNY 103.1	
WRCR 1300	WXPB 107.1	
WINS 1010		

TABLE F-2
LIST OF SIRENS FOR THE OLD SYSTEM

- 37-Rt. 9 & Acker Ave
- 38-Pleasantville Rd & Central Dr.
- 39-Eastern Ave & Churchill St.
- 40-Rt. 133 & Rt. 9-A
- 41-**No Alert Required**-Croton Dam Rd. & Cherry Hill Circle
- 42-Rt. 9 & Audobon Rd. (Dominican Sisters) Ossining
- 43-**No Alert Required**-Rt. 134 & Grace Lane
- 44-Somerstown Pike & Surrey Lane
- 45-end of Barnes St. -near Rt.134 & TSP, Yorktown
- 46-Spring Valley Rd. & Teatown Rd.
- 47-G.E. Training Center, Ossining
- 48-**No Alert Required**-Riverside Ave & Croton Point Ave
- 49-Old Post Rd. & Rt. 129-cemetery, Croton
- 50- **No Alert Required**-Croton Point Park
- 51-Rt. 9-A & North Riverside Ave
- 52- **No Alert Required**-Springvale Rd. & Summit Place, Crugers
- 53-Colabaugh Pond Rd & Woodlake Dr.
- 54- **No Alert Required**-Episcopal Church @ Montrose Point
- 55-Mt. Airey & Glengary Rd @Highline Crossing, Cortlandt
- 56-Rt. 129 & Fox Run Rd., Cortlandt
- 57-Hanover Ave & Hanover Hilltop Farm
- 58-Baldwin Rd. & Baptist Church Rd.
- 59-Hanover Ave & Church Pl.
- 60-Baptist Church Rd. & Hunter Brook Rd.
- 61-Broad St. & Loder Rd.
- 62-Rt. 202 & TSP
- 63-Old Crompond Rd. & Ave A-Quarry Acres
- 64- **No Alert Required**-Furnace Dock Rd. & Maple Ave, Cortlandt
- 65- **No Alert Required**-Washington Ave & Montrose Station Rd., Cortlandt
- 66- **No Alert Required**-Broadway opposite R/S #6, Buchanan
- 67- **No Alert Required**-Washington Ave & Sherman Ave @ Armory
- 68- **No Alert Required**-Washington St. & Hudson Ave, Peekskill
- 69- **No Alert Required**-Crompond Rd (Rt. 202) & Grant Ave
- 70- **No Alert Required**-Lakeview Dr. & Pemart Ave
- 71-Roa Hook Rd & Bayview Rd, Cortlandt
- 72-Gallows Hill & Pumphouse Rd., Cortlandt
- 73-Crompond (Rt.202)& Lexington Ave
- 74- **No Alert Required**-Westchester Mall @ Rt. 6, Cortlandt
- 75-Woodland Ave & Heyward St.-Mohegan Water Tanks
- 76-Rt. 132 & Suncrest Ave-Copper Beach Middle School
- 77- **No Alert Required**- Whitman Rd. & Poplar Rd.
- 78- **No Alert Required**-Wood St & Mountain Rd.
- 79-Mill St. & Rt.6
- 301- **No Alert Required**-Verplanck Ballfield-11th St. & Broadway, Verplanck
- 302- **No Alert Required**-Paulding St. & Hayden St.
- 303-Hudson St. & Wells St.

Appendix F: Public Alert and Notification

- 304-Jack Rd at end, Cortlandt
- 305- **No Alert Required**-Lee Blvd. & Hill Blvd.
- 306-Curry St. & Tulip Dr.
- 307-Lafayette Ave & Matasac Rd., Peekskill
- 308- **No Alert Required**-Townsend Rd. & Clinton Ave.-Toddville School, Cortlandt
- 309-Camp Field Reservoir @ Lindbergh
- 310-Locust Ave & Enrico Dr., Peekskill
- 311- **No Alert Required**-Beach Shopping Center @ Route 6
- 312-Dale Ave & Frederick St.-Lake Allendale, Peekskill
- 313- **No Alert Required**-Hollowbrook Lane & Root Lane
- 314- **No Alert Required**-Seward St & rear of Henderick Hudson HS, Buchanan
- 315-Croton Ave & Jacob Rd. Walter Panis HS, Cortlandt
- 316-Highland Sr. @ C.V.V.F.D. firehouse, Cortlandt
- 317- **No Alert Required**-Crugers Rd. & Dutch St., Montrose
- 318- **No Alert Required**-Route 9A & Furnace Dock Rd., Crugers
- 319-Furnace Dock Rd. near Suffrin Mtn Rd., Cortlandt
- 320- **No Alert Required**-High St. Constant Ave @ Top of Hill
- 321- **No Alert Required**-State St. & Ossining Fire Police HQ
- 322-Orchard Rd. & Pleasantville Rd., Briarcliff Manor
- 323-Stony St.-North of Rt. 202 & South of Rt.6
- 324-Barger St. off of Oregon Rd., Cortlandt
- 326-Hemlock St. & Hickory Dr. off of Granite Springs Rd.
- 327-Rt.202 & Mercer Rd.- Yorktown HS
- 328-Granite Springs Rd @ Curry St.
- 329-Lexington Ave & Strawberry Rd.
- 331-Rt. 132 & Main St-Shrub Oak
- 333 -Van Cortlandt Drive & Ridge St.
- 335- **No Alert Required**-Elm & Alder-West of 9A un Briarcliff @ college
- 358- **No Alert Required**-French Hill To Darby St.
- 380-White Hill Rd. & Mark Rd. (Wilkins Farm)
- 382- **No Alert Required**-Washington St. south east of Watch Hill Rd., Cortlandt
- 384 – Aquaduct Street and Taconic State Parkway, Town of Yorktown
- 386 – Journeys End Road and Blinn Road, Town of Yorktown

TABLE F-3
LIST OF SIRENS FOR THE NEW SYSTEM

New Siren Number	Old Siren Number	Main Road	Intersecting Road	Municipality
301	37	S. Highland Ave.	Archer and Nelson Ave.	Ossining
302	38	Pleasantville Road	Central Drive and Mulberry	Ossining
303	40	Croton Ave. and Route 133	Route 9A	Ossining
304	41	Croton Dam Road	Cherry Hill Circle	Ossining
305	42	No. Highland Ave. and Rt. 9	Audabon Drive	Ossining
306	43	56 Grace Lane --North East of 9-A	Croton Dam Road	New Castle
307	44	165-169 Somerstown Pike	Surrey Lane	New Castle
308	45	200 Barnes St.--Near Rt.134 & T.S.P.	Syska Road	Yorktown
309	46	Spring Valley Road	Teatown Road	Yorktown
310	47	G.E. Training Center - Fowler Ave.	Hillcrest Ave.	Ossining
311	49	Old Post Road	Maple St. and Rt. 129 (cemetery)	Croton
312	50	Croton Point Park	Croton Point Park Parking lot	Croton
313	51	180 No. Riverside Ave.	Old Post Road	Croton
314	53	66 Colabaugh Pond	Woodale Ave.	Cortlandt
315	55	Mt. Airy Road	Glengary Rd. at highline crossing	Cortlandt
316	56	Rt. 129 and Fox Run Road	Short Hill Road	Cortlandt
317	57	Hanover St	Croton Heights Road	Yorktown
318	58	1353 Baldwin Road	Baptist Church Road	Yorktown
319	59	Underhill Ave (W-59 on Hanover and Church)	Front St.	Yorktown
320	60	Hunter Brook Road	Baptist Church Road	Yorktown
321	62	Crompond Rd. Rt 202	Mohansic Ave.	Yorktown
322	63	Old Crompond Road	Ave A - Quarry Acres	Yorktown
323	64	Furnace Dock Road	Maple Ave.	Cortlandt
324	65	Washington St.	Montrose Station Road	Cortlandt
325	66	Broadway	Bleakley Ave and 1st Ave.	Buchanan
326	67	Washington St. - near Armory	Sherman Ave.	Peekskill
327	68	Washington St.	Hudson Ave.	Peekskill
328	70	116 Lakeview Drive	Pemart Ave.	Peekskill
329	71	Military Road	Route 202 & 6	Cortlandt
330	72	Dogwood Road	28 Gallows Hill Road	Cortlandt
331	73	Crompond Road	Locust Ave.	Yorktown
332	74	Cortlandt Town Center - Rt 6	Renee Gate Street	Cortlandt
333	75	Woodland Ave.	3482 Heyward Ave - Mohegan Water Tanks	Yorktown

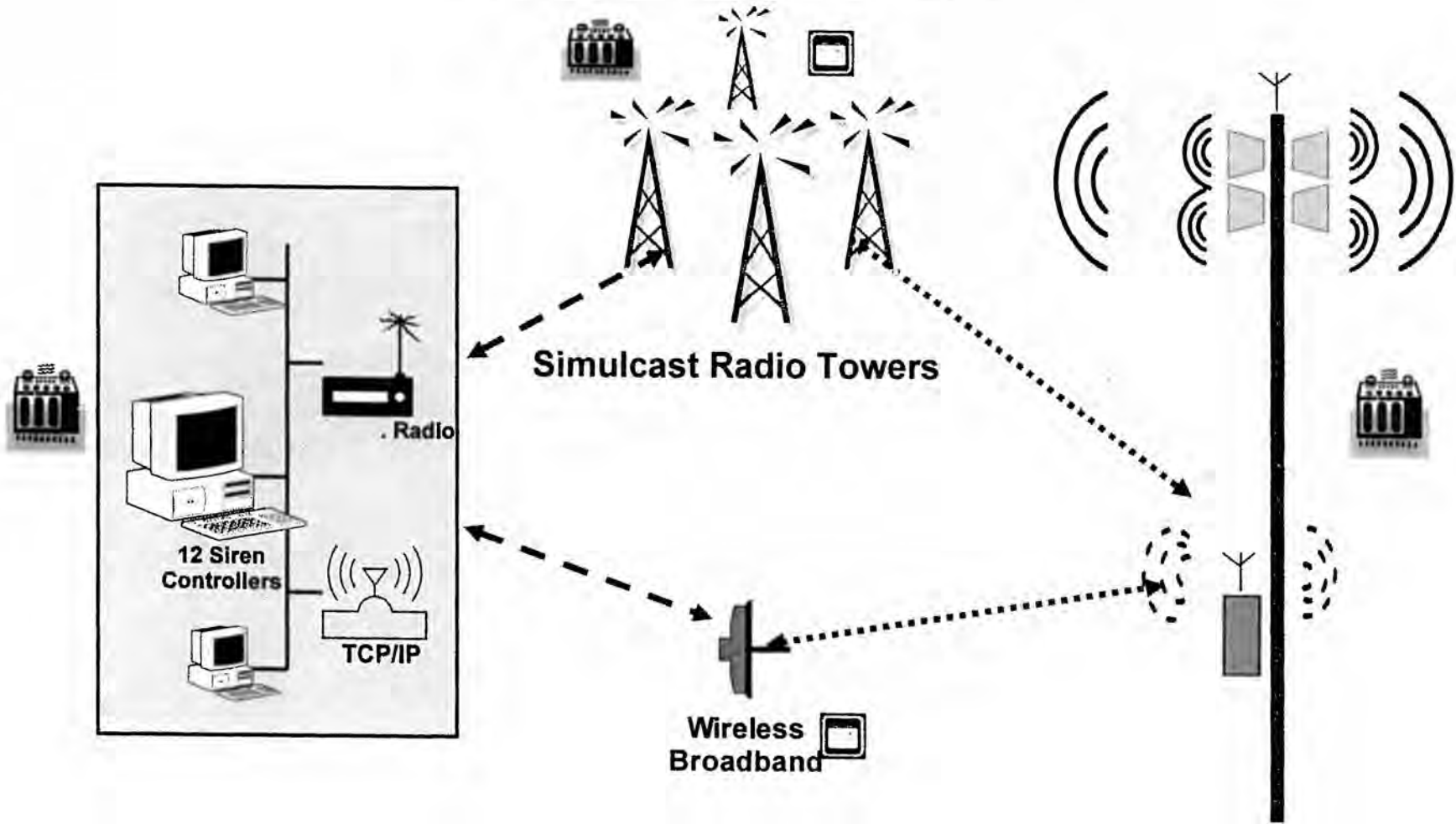
Appendix F: Public Alert and Notification

New Siren Number	Old Siren Number	Main Road	Intersecting Road	Municipality
334	76	Old Yorktown Road - Rte 132	Suncrest Ave.	Yorktown
335	79	Mill St. and Rt. 6	North Ridge Road	Yorktown
336	301	11 St. (ballfield)	Broadway	Verplanck
337	303	Hudson Ave.	Wells St.	Peekskill
338	304	Jack Road	N Camp Road	Cortlandt
339	305	Lee Blvd.	Hill Blvd.	Yorktown
340	306	Curry St.	Tulip Drive	Yorktown
341	307	Lafayette St.	Greenlawn Road	Peekskill
342	308	Townsend Road	Lexington Ave.	Cortlandt
343	309	Camp Field Reservoir	Lindbergh Place	Peekskill
344	310	253 Locust Ave.	Enrico Drive	Peekskill
345	314	210 Seward St.	Hendrick Hudson HS - Rear	Buchanan
346	315	Croton Ave	Jacob St.	Cortlandt
347	316	C.V.V.F.D. Firehouse/Spypond Rd.	Highland Drive	Cortlandt
348	317	9 Crugers Road extension	Dutch St.	Montrose
349	318	Furnace Dock Road	Rt. 9A	Cortlandt
350	319	317 Furnace Dock Road	Sniffen Mountain Rd.	Cortlandt
351	321	State St. & Ossining Fire Police Headquarters	St. Paul's St.	Ossining
352	323	3256 Stony St.--North of 202 & South of Rt. 6	Judy Road	Yorktown
353	324	8 Barger St.	Peekskill Hollow Road	Cortlandt
354	326	2789 Hemlock St.	Hickory Drive off of Granite Springs Road	Yorktown
355	327	Rt. 202 / 35 Crompond road	Mercer Rd. - Yorktown HS	Yorktown
356	328	124 Granite Springs Road	Curry St.	Yorktown
357	329	Lexington Ave. / Red Mill Road	Strawberry Road	Yorktown
358	331	Old Yorktown Road - Rt. 132	Main St.	Yorktown
359	333	Van Cortlandt Circle	Ridge St. in Schrub Oak	Yorktown
360	335	96 Elm Road	Alder Road west of 9A in Briarcliff Manor (college)	Ossining
361	358	Darby Street, End of	French Hill Road	Yorktown
362	380	1374 White Hill Road	Mark Road - Wilkens Farm	Yorktown
363	382	1518 Washington St.	Watch Hill Road	Cortlandt
364	384	522 Illington Road	Rt 134	Yorktown
365	386	1355 Journeys End Road	Blinn Road	Yorktown
366	N/A	Poplar Street	Forest Court	Yorktown
367	N/A	Broad Street	Sara Court	Yorktown
368	N/A	RT 118	500 East of Birdsall Drive	Yorktown

Appendix F: Public Alert and Notification

New Siren Number	Old Siren Number	Main Road	Intersecting Road	Municipality
369	N/A	Lake Road	Crow Hill Road	Yorktown
370	48	Riverside Ave.	Croton Point Ave.	Croton
371	322	Orchard Rd.	Pleasantville Road	Briarcliff Manor
372	54	Episcopal Church at Montrose Point Road	Sunset Road	Montrose
373	311	Main Street - Rt 6	Dayton Lane	Cortlandt
374	312	Dale Ave.	Frederick St - Lake Allendale	Peekskill
375	52	Springvale Road	Spring Place Road	Crugers
376	N/A	Radcliffe Drive	Wharton Drive	Yorktown
377	N/A	Pine Road	Scarborough Road	Briarcliff Manor

FIGURE F-1
SCHEMATIC OF NEW SIREN SYSTEM



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**WESTCHESTER COUNTY
DEPARTMENT OF EMERGENCY SERVICES
RADIOLOGICAL EMERGENCY PLAN
VOLUME 1
CORE PLAN AND APPENDICES**

**APPENDIX G
POPULATION
Revision 0.0**

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Appendix G: Population

APPENDIX G

TABLE G-1: EMERGENCY RESPONSE PLANNING AREA POPULATION*

OLD ERPA NUMBER	AREA NAME	2000 POPULATION
1	Buchanan	2,171
2	City of Peekskill	22,459
3	Verplanck	1,273
4	Montrose and Blue Mountain Res.	3,534
5	Mount Airy Section, Town of Cortlandt	957
6	Croton-on-Hudson	7,589
7	Camp Smith Military Reservation	185
8	Annsville, Van Cortlandtville, Crompond and Continental Village	11,156
9	Toddville and Quarry Acres in the Town of Cortlandt	4,486
10	Mohegan Lake and Shrub Oak	8,021
11	Northeastern Yorktown and Jefferson Valley	18,086
12	Southwestern Yorktown and Teatown	3,102
13	Southeastern Yorktown and Kitchawan	7,124
14	Granite Springs and Amawalk, Town of Somers	2,688
15	Southwestern Somers	1,284
21	Western New Castle and Milkwood	4,785
22	Ossining	29,454
47	VA Hospital, Montrose	332
48	Crugers and Oscawana	3,483
49	Furnace Woods, Pleasantside, Peekskill Heights	2,820
50	Quaker Bridge, Town of Cortlandt	471
51	Briarcliff Manor and Mount Pleasant	8,368
TOTAL		143,828

* As developed by NYSEMO, per 2000 census.

Appendix G: Population

TABLE G-2: COUNTY POPULATION

**Population and Population Change, 1980 - 2000
Westchester County and Municipalities with Town Totals**

Municipality		Population			Change		Percent Change	
		2000	1990	1980	1990 to 2000	1980 to 2000	1990 to 2000	1980 to 2000
Westchester County		923,459	874,866	866,599	48,593	56,860	6%	7%
North		264,794	246,449	226,549	18,345	38,245	7%	17%
Central		227,499	213,474	210,131	14,025	17,368	7%	8%
South		431,166	414,943	429,966	16,223	1,200	4%	0%
Cities		427,122	405,690	413,176	21,432	13,946	5%	3%
Towns		279,384	266,228	230,320	13,156	49,064	5%	21%
Villages		216,953	202,948	223,103	14,005	-6,150	7%	-3%
CITIES	Mount Vernon	68,381	67,153	66,713	1,228	1,668	2%	3%
	New Rochelle	72,182	67,265	70,794	4,917	1,388	7%	2%
	Peekskill	22,441	19,536	18,236	2,905	4,205	15%	23%
	Rye City	14,955	14,936	15,083	19	-128	0%	-1%
	White Plains	53,077	48,718	46,999	4,359	6,078	9%	13%
	Yonkers	196,086	188,082	195,351	8,004	735	4%	0%
TOWNS AND VILLAGES	BEDFORD	18,133	16,906	15,137	1,227	2,996	7%	20%
	CORLANDT	38,467	37,357	35,705	1,110	2,762	3%	8%
	Buchanan	2,189	1,970	2,041	219	148	11%	7%
	Croton-on-Hudson	7,606	7,018	6,889	588	717	8%	10%
	Cortlandt (tov)	28,672	28,369	26,775	303	1,897	1%	7%
	EASTCHESTER	31,318	30,867	32,648	451	-1,330	1%	-4%
	Bronxville	6,543	6,028	6,076	515	467	9%	8%

Appendix G: Population

Municipality		Population			Change		Percent Change	
		2000	1990	1980	1990 to 2000	1980 to 2000	1990 to 2000	1980 to 2000
TOWNS AND VILLAGES (cont.)	Tuckahoe	6,211	6,302	6,076	-91	135	-1%	2%
	Eastchester (tov)	18,564	18,537	20,305	27	-1,741	0%	-9%
	GREENBURGH	86,764	83,816	82,881	2,948	3,883	4%	5%
	Ardsley	4,269	4,272	4,183	-3	86	0%	2%
	Dobbs Ferry	10,622	9,940	10,053	682	569	7%	6%
	Elmsford	4,676	3,938	3,361	738	1,315	19%	39%
	Hastings-on-Hudson	7,648	8,000	8,573	-352	-925	-4%	-11%
	Irvington	6,631	6,348	5,774	283	857	4%	15%
	Tarrytown	11,090	10,739	10,648	351	442	3%	4%
	Greenburgh (tov)	41,828	40,579	40,289	1,249	1,539	3%	4%
	HARRISON (t/v)	24,154	23,308	23,046	846	1,108	4%	5%
	LEWISBORO	12,324	11,313	8,871	1,011	3,453	9%	39%
	MAMARONECK	28,967	27,706	29,017	1,261	-50	5%	0%
	Larchmont	6,485	6,181	6,308	304	177	5%	3%
	Mamaroneck Village (MKT)	11,341	10,294	10,281	1,047	1,060	10%	10%
	Mamaroneck (tov)	11,141	11,231	12,428	-90	-1,287	-1%	-10%
	MOUNT KISCO (v/t)	9,983	9,108	8,025	875	1,958	10%	24%
	MOUNT PLEASANT	43,221	40,590	39,298	2,631	3,923	6%	10%
	Briarcliff Manor (MTP)	686	604	795	82	-109	14%	-14%
	Pleasantville	7,172	6,592	6,749	580	423	9%	6%
	Sleepy Hollow	9,212	8,152	7,994	1,060	1,218	13%	15%
Mount Pleasant (tov)	26,151	25,242	23,760	909	2,391	4%	10%	
NEW CASTLE	17,491	16,648	15,425	843	2,066	5%	13%	
NORTH CASTLE	10,849	10,061	9,467	788	1,382	8%	15%	
NORTH SALEM	5,173	4,725	4,569	448	604	9%	13%	

Appendix G: Population

Municipality		Population			Change		Percent Change	
		2000	1990	1980	1990 to 2000	1980 to 2000	1990 to 2000	1980 to 2000
TOWNS AND VILLAGES (cont.)	OSSINING	36,534	34,124	30,680	2,410	5,854	7%	19%
	Briarcliff Manor (OST)	7,010	6,466	6,320	544	690	8%	11%
	Ossining Village	24,010	22,582	20,196	1,428	3,814	6%	19%
	Ossining (tov)	5,514	5,076	4,164	438	1,350	9%	32%
	PELHAM	11,866	11,903	12,978	-37	-1,112	0%	-9%
	Pelham	6,400	6,413	6,848	-13	-448	0%	-7%
	Pelham Manor	5,466	5,490	6,130	-24	-664	0%	-11%
	POUND RIDGE	4,726	4,550	4,009	176	717	4%	18%
	RYE	43,880	39,524	38,896	4,356	4,984	11%	13%
	Mamaroneck Village (RYE)	7,411	7,031	7,335	380	76	5%	1%
	Port Chester	27,867	24,728	23,565	3,139	4,302	13%	18%
	Rye Brook	8,602	7,765	7,996	837	606	11%	8%
	Scarsdale (v/t)	17,823	16,987	17,650	836	173	5%	1%
	SOMERS	18,346	16,216	13,133	2,130	5,213	13%	40%
	YORKTOWN	36,318	33,467	31,988	2,851	4,330	9%	14%

Source: United States Census Bureau. Prepared by the Westchester County Department of Planning.

- (tov) - Town Outside of a village(s)
- (v/t) - Coterminous Village/Town (having the same border or covering the same area)
- (RYE) - The portion of the Village of Mamaroneck within the Town of Rye
- (OST) - The portion of the Village of Briarcliff Manor within the Town of Ossining
- (MPT) - The portion of the Village of Briarcliff Manor within the Town of Mount Pleasant
- (MKT) - The portion of the Village of Mamaroneck within the Town of Mamaroneck

Appendix G: Population

TABLE G-3: 2008 POPULATION ESTIMATE

PROTECTIVE ACTION AREA	2008 POPULATION ESTIMATE
Briarcliff Manor	8,691
Buchanan	2,260
City of Peekskill	24,607
Croton-on-Hudson	7,878
Montrose	3,683
Ossining	29,022
Town of Cortlandt	24,886
Town of New Castle	4,853
Town of Somers	4,350
Verplanck	1,325
Yorktown	37,816
TOTAL EPZ POPULATION	149,371

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**WESTCHESTER COUNTY
DEPARTMENT OF EMERGENCY SERVICES
RADIOLOGICAL EMERGENCY PLAN
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**APPENDIX H
LISTING OF FACILITIES
IN
WESTCHESTER COUNTY
Revision 0.0**

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**THESE FACILITIES ARE LISTED IN
RESPECTIVE PROCEDURES AND MULTIPLE
EOC DATABASES**

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APPENDIX I

RADIOLOGICAL MONITORING AND ASSESSMENT RESOURCES

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APPENDIX IRADIOLOGICAL MONITORING AND ASSESSMENT RESOURCES

The capability for monitoring the area around the Indian Point Energy Center for released radioactivity; for following and predicting its movement and spread; and for assessing its potential health hazard presently exists under programs established by Entergy, the U.S. Nuclear Regulatory Commission, the U.S. Department of Energy, the New York State Government and County Governments. The existing and planned resources are described in this Appendix.

1. NUCLEAR FACILITY OPERATOR

The Nuclear Facility Operator (NFO) has extensive monitoring and assessment capabilities consisting of operating and planned systems and equipment.

a. Meteorological Radiological Plant Parameter Data Acquisition System (MRPDAS)(1) MRPDAS Computer System

The MRPDAS Computer System provides real-time meteorological and plant parameter data (e.g., radiation levels, temperatures) to the county so that proper accident assessments can be made during and immediately after a radiological emergency.

The system takes input from site-related meteorological and radiological instrumentation and provides information to assessment teams at the county emergency operations center.

- (a) Calculates the dispersion path of radioactive material if released into the atmosphere by the plant.
- (b) Obtains meteorological information from a backup meteorological tower when the primary tower is out of service, thus providing assurance that basic meteorological information is available during and immediately following an accidental airborne radioactivity release and providing an input to the assessment of the consequences of accidental radioactive releases to the atmosphere.
- (c) Provides simultaneous real-time meteorological data and transport and diffusion estimates in the vicinity of the site to the licensee, emergency response organizations and the NRC Staff, on demand.
- (d) Utilizes site-located radiological instruments.

- (e) Produces the present location and shape of the plume (Class A static model) and predicts its future shape and travel (Class B dynamic model). The primary value of the MRPDAS System for making protective action response decisions is the ability to produce this information.

(2) Radiological and Meteorological Instruments with Telemetric Capability

An Environmental Radiation Monitoring System consisting of 16 monitors has been installed at locations around the Indian Point Site. These devices continuously radio and telemeter radiation level readings to a dedicated central data processor. The users interrogate the central location and obtain data directly.

b. NUCLEAR ENVIRONMENTAL MONITORING

The existing Nuclear Environmental Monitoring (NEM) program has the responsibility for gathering and documenting ongoing radiological and meteorological readings in the 10-mile EPZ. In addition to access to the data available from the systems described in preceding paragraphs 1 and 2 and the operational responsibility for the equipment described in paragraph 2.b, the NEM program is responsible for the equipment represented in the Indian Point Wind Sector Map in the EOC, for teams of trained technicians utilizing special portable equipment to the emergency sampling sites (also in the Wind Sector Map) and for directing Emergency Offsite Monitoring Teams in an emergency.

(1) Offsite NEM Equipment

- (a) Environmental Radiation Monitoring System - Refer to paragraph 1.b.
- (a) Windsets - Refer also to paragraph 1.b. Additional windsets are deployed in the area around IPEC. Each installation contains a two-channel chart recorder that receives and records wind speed and direction. Charts from this equipment are periodically retrieved by the NEM program.
- (c) Thermoluminescent Dosimeters (TLD's) - TLD's deployed as shown in the Indian Point Wind Sector Map in EOC, sensitive to Gamma radiation, are gathered and read periodically by the NEM program.
- (d) Air Samplers deployed as shown in the Wind Sector Map are constantly in operation passing ambient air through a series of filters capable of trapping radioactive iodine and other radioisotopes in the air. The filters are periodically removed and analyzed by the NEM program. Activated charcoal filters are used for training, drills and exercises. Silver Zeolite filters are used for actual response. Both types are carried by field monitoring teams.

- (e) Portable Equipment - NEM teams utilize portable equipment to gather data from any of the 61 pre-designated emergency sampling locations around the Indian Point Site shown on the Wind Sector Map in the EOC. Readings taken by these teams are relayed back to the site via radio, using commercial telephones as backup. A partial list of the equipment utilized by these teams is presented in paragraph 4.

c. EMERGENCY OFFSITE MONITORING TEAMS

Entergy has trained volunteers from their staff in the operation of radiological monitoring equipment. In general, personnel utilized for this work have prior experience and have demonstrated capabilities working in areas of radioactivity exceeding normal levels. The volunteers would supplement and assist the radiation monitoring teams already assigned to the monitoring task in the event of an emergency at either Unit 2 or Unit 3.

Kits containing necessities including the following radiological equipment are maintained in a ready state and would be utilized by the teams:

- (1) RO-20 Ion Chamber, or Equivalent - This device uses a display meter to indicate the level of Gamma radiation. (Since Gamma is normally present as background radiation, readings recorded by volunteers must be evaluated by trained personnel.)
- (2) H809C Air Sampler - This device is basically a blower with a filter holder in the inlet, utilized to take samples of ambient air and pass the air through fiberglass and activated charcoal filters. These filters remove and absorb any radioisotopes from the air. Activated charcoal filters are used for training, drills and exercises. Silver Zeolite filters are used for actual response. Both types are carried by field monitoring teams.
- (3) Eberline RM-14 Radiation Monitor, or equivalent - This device is used to measure the radioactivity of filters produced by an Air Sampler (paragraph b, above).
- (4) Personnel Protection Equipment - Includes ANTI-C clothing and special respirators for use in radiation environments.
- (5) Support Equipment and Supplies - Includes spare filters, a stop watch, a filter holder, instruction kits, spare batteries, tools and spare rolls of chart paper.

2. FEDERAL RADIOLOGICAL MONITORING AND ASSESSMENT CAPABILITIES

The Federal Radiological Emergency Response Plan (FRERP) has been implemented consolidating the Federal response to a wide range of potential radiological emergencies. The FRERP is intended to facilitate and clarify the Federal role and mechanisms for providing support to State and local governments in a major radiological emergency.

The Federal Emergency Management Agency has the responsibility for coordinating Federal response to nuclear incidents. SEMO will request all federal radiological assistance through FEMA. The coordination of the logistical support necessary for this operation will be the responsibility of SEMO and FEMA.

a. FEDERAL RADIOLOGICAL MONITORING AND ASSESSMENT PLAN (FRMAP)

The Federal Monitoring and Assessment Plan (FRMAP) was developed by the U.S. DOE under 44 CFR Part 351 issued by FEMA on March 11, 1982. FRMAP is part of the FRERP and replaces the Interagency Radiological Assistance Plan (IRAP) originally published in 1965 to provide Federal technical assistance and response to radiological emergency incidents. Major provisions of the FRMAP are:

- Federal agencies will develop plans and procedures to implement the FRMAP.
- The participating agencies; NRC, EPA, USDA, HHS, DOE, DOD, and DOC will maintain facilities, equipment, and personnel to carry out their responsibilities.
- DOE will coordinate all Federal offsite monitoring and assessment operations during the emergency phase, while EPA will assume this role in the intermediate and long term phases.
- Federal response will be in support of and integrated with that of the State and local government.

b. MAJOR DOE RESOURCES

U.S. DOE radiological assistance 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. 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 to be ready to apply state-of-the-art remote sensing equipment to map large areas that may have been affected by an accidental release. A computer based system, the Atmospheric Release Advisory Capability (ARAC) uses actual weather 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

c. RADIOLOGICAL ASSISTANCE PROGRAM (RAP)

The function of the Radiological Assistance Program (RAP) is to respond, on an emergency basis, with appropriate scientific and medical advice and technical assistance to incidents involving loss of control over radioactive materials. RAP teams from the Brookhaven National Laboratory can respond to any site in NYS within 4 to 6 hours.

RAP advance teams at Knolls Atomic Power Laboratory (KAPL), environmental Measurements Laboratories (EML) and the West Valley Demonstration Project may also be able to respond to the nearest nuclear site location.

d. ENVIRONMENTAL PROTECTION AGENCY (EPA) MILK MONITORING NET

The EPA milk monitoring net is a part of the EPA's Environmental Radiation Ambient Monitoring System (ERAMS). ERAMS maintains a continuing surveillance of radioactivity in the U.S. to identify the accumulation of long lived radionuclides in the environment. ERAMS is also designed to provide short term evaluation of large scale environmental nuclear releases. During ingestion pathway incidents, ERAMS data may be utilized to collect and analyze additional milk samples marketed in areas receiving fluid milk from the affected milk shed. The results are provided to the State EOC and give them a back-up system to determine the effectiveness of preventive actions taken to reduce projected dose.

e. 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 phase; assume primary responsibility for same in long term phase.

f. 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 S-90, Cs-137 and K-40. Under emergency conditions, FDA facilities can be used to analyze milk samples taken by FDA regional field staff.

g. 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.

h. 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.

i. ACTIVATION OF DOE TEAMS

USDOE Radiological assistance 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. The DOE teams will be the primary source of information on aerial monitoring of the plume. The information supplied by this monitoring mode includes:

- exposure rates and radionuclide concentrations in the plume
- isotopic identification of radionuclides releases
- delineation of plume extent
- extent of ground deposition

Radiological Assistance teams operating from 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.

Aerial monitoring capabilities are expected to arrive from Andrews AFB, Maryland. This capability is expected to be functional for 4 hours after take-off.

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. EML team can respond to Indian Point within 2 to 3 hours.

3. NEW YORK STATE AND COUNTY GOVERNMENTS

The Radiological Monitoring and Assessment Resources of the State and Counties within the 10-mile EPZ have been evaluated, inventoried and summarized.

Present Monitoring and Assessment capabilities are available through the New York State Emergency Management Office and Department of Health and the appropriate County Emergency Management and Health Departments.

Sufficient county personnel shall be provided training in radiological field monitoring so that a total of six field teams are available for response to a radiological emergency (2 teams per shift 1 backup team and spare personnel). Each team, shall consist of three persons:

- a. Field Team Supervisor
- b. Monitor
- c. Record Keeper/Communicator

The Westchester County Department of Health has been provided with six radiological monitoring emergency kits to be used by county field monitoring teams. The contents of each kit are shown in Table I-1. A map of radiological sampling points is enclosed in each field monitoring kit and a map is posted on the wall in the Assessment Room of the EOC.

Offsite meteorological data is obtained from the licensee, and is available to the County EOC either from the EOF/AEOF, or via MRPDAS.

The Dose Assessment Coordinator from the Westchester County EOC directs Field Monitoring Teams by the use of mobile radios to any location in order to obtain required field data. It is estimated that field data can be relayed to the EOC Assessment Center within 20 minutes after arrival at field monitoring sites.

There are six field monitoring teams made up of three individuals. The training given to these teams consists of (1) the use of air sampling and air sampling equipment; (2) use of mobile radios; (3) portable radiation detection equipment; (4) use of personal dosimetry and KI.

Personnel rosters and training records are filed separately in the Westchester County EOC.

The Westchester County Field Monitoring Teams may be augmented by RACES communications.

Table I-1: Field Monitoring Team Radiological Monitoring Emergency Kit Contents

1. One CDV-700 with Headphones
2. One RO-20 or equivalent
3. One RM-14 Radiation Monitor or equivalent
4. One HP-210 Detection Probe
5. One Eberline SH-4A Probe/Sample Holder
6. One Radeco Air Pump Model H-809C or equivalent
7. One Radeco Paper Filter/Cartridge Holder for Air Pump
8. Six Silver Zeolite and Charcoal Filters
9. One Box of 24 Paper Filters
10. Three Model 611, 0-5 R Direct Reading Dosimeters
11. Three Model 742, 0-200 R Direct Reading Dosimeters
12. One Dosimeter Charger
13. Three "New Jersey" Decontamination Suit Kits (Includes)
14. One Coverall with Hood
15. One Pair of PVC Gloves
16. One Pair Latex Gloves - Extra Large
17. One Pair of PVC Boots
18. One Motorola Mobile Radio with Microphone
19. One Power Cable for Radio
20. One Magnetic Base Antenna
21. Twelve (12) D-Size Batteries (Includes Replacement Batteries)
22. One Eveready Lantern with Battery
23. One Stop Watch
24. One Screwdriver
25. Two Pencils
26. Two Wax Marking Pencils
27. One Roll of Masking Tape
28. Assorted Sizes of Plastic Sampling Bags
29. Two Water Sample Bottles
30. One Dozen Pairs of Disposable Gloves
31. Twenty Large Plastic Bags for Contaminated Items
32. One Emergency Vehicle ID Placard
33. One Westchester County Road Atlas
34. One Sector/Radius Grid Map
35. One Clipboard
36. Fuses
37. Field Monitoring Team Procedures Manual (Includes):
 - Basic Protocol
 - Radiological Sampling
 - List of Fixed Field Monitoring Sites
 - Guidelines for Use of KI
 - Phone Numbers of Response Personnel
 - List of Offsite Monitoring Teams
 - Packet of Operating Instructions for Survey Equipment
 - Air Sampling Check List
 - Sampling Check List
38. One spare 6 volt gel cell battery (for RM-14)

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**APPENDIX J
EMERGENCY RESPONSE PLANNING AREAS:
DEFINITION OF BOUNDARIES AND WESTCHESTER
POPULATION BY ERPA**

Revision 0.0

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**APPENDIX K
Public Information**

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*Appendix K: Public Information***APPENDIX K****PUBLIC INFORMATION**

Public information requirements for response to an Indian Point Energy Center radiological emergency include both pre-event (preparedness phase) and functions performed during an emergency. This section of the plan identifies both areas of public information requirements.

1. PREPAREDNESS PHASE PUBLIC INFORMATION

The Lead PIO shall assist in the development and implementation of a public education program to familiarize the public residing in the 10-mile emergency planning zone surrounding the Indian Point Energy Center and transients in this area with emergency preparedness plans, including siren notification systems, protective actions, emergency response planning area designations and other radiological emergency planning considerations.

Public education activities will include, but not necessarily be limited to the following:

- a. Develop and distribute planning information for residents of the 10-mile EPZ to include information on the County's Special Needs Registry and an "800" telephone number for seeking additional information.
- b. Develop and distribute emergency planning materials targeted for transients.

The Westchester Department of Emergency Services annually distributes emergency information stickers/posters to transient locations within the ten mile emergency planning zone. These stickers/posters provide information on siren sounding; identify the local EAS station; and direct the public to refer to additional information in telephone books. A sample is provided at Figure K-1.

- c. Participate in annual joint media education sessions (coordinated by Entergy).
- d. Provide speakers on emergency planning.

2. PUBLIC INFORMATION CONCEPT OF OPERATIONS

Westchester County has designated the County Communications Director/Chief Advisor as the County's lead spokesperson for the release of information to the public and the news media during an emergency. The release of all information to the public and the media will be coordinated via a joint information system (in accordance with NIMS/ICS concept of operations). The public information staff is part of the command function in the EOC and report to the County Executive.

Appendix K: Public Information

The joint information system consists of a Joint Information Center (JIC) located at the Hudson Valley Traffic Management Center in Hawthorne, New York, supplemented by Public Information operations at each of the four County Emergency Operations Centers. Each of these key locations is linked via telephone, video-conferencing and a shared web-based public information computer network. The JIC is operated by SEMO and includes Entergy public information staff.

News media briefings will be conducted regularly during an emergency to provide accurate and timely information to the media concerning the nature and scope of the accident, onsite accident mitigation activities, governmental offsite response activities and recommended public protective actions. Details concerning news media briefings are contained in the Hawthorne Joint Information Center Procedures Manual.

When notified of an Unusual Event via the Office of Emergency Management or the County Warning Point, the County Communications Director will assess the event from a public information view. Public information functions may be activated at the discretion of the Director of Communications, if it is envisioned that the event may generate great public interest or a need to share emergency-related information with the general public. For example, this may be the case for security related events at Indian Point. The Communications Director will notify the EOC Lead PIO and will assure they, or a qualified alternate, are available to stand by for possible escalation to a more severe event.

When notified of an Alert or higher emergency classification, the County EOC Lead PIO and PIO staff will report to their assigned positions the County EOC. The Westchester County EOC Lead Public Information Officer and staff will operate out of the EOC Public Information Work Room.

The EOC PIO staff will coordinate with the state operated JIC, also located at the Hudson Valley Traffic Management Center in Hawthorne. The JIC is operated to facilitate a coordinated public information process or system. Coordination is accomplished via numerous communications methods, including shared web-based information; some physical co-location at the JIC; video-conferencing; and telephonic communications. The County Executive and/or other County Spokesperson will participate in JIC press conferences.

EAS messages will be developed in the EOC by PIO staff, with final approval by the County Executive(s). EAS message content will be reviewed with and coordinated among the other counties via the Executive Hotline. Message formulation will be facilitated over the Public Information portal within the DisasterLAN web-based internet computer application.

Appendix K: Public Information

PIO staff may be assigned responsibility for recording the content of EAS messages and ensuring its proper transmittal and broadcast by the EAS station. An EAS encoder is available in the EOC to permit direct activation and broadcast of EAS messages from the EOC. Telephone communications are also available between the primary EAS station, WHUD, and the EOC. The EAS station also has call-back numbers to verify authenticity, when necessary.

PIO staff will also be responsible for preparing and issuing follow up news releases. News releases may be issued through a variety of means including, but not limited to, posting on the internet, group emails, faxing directly to the media and posting in the JIC.

Individuals who may serve as county spokespersons, include but are not limited to:

The County Executive
County Director of Communications/Chief Advisor
EOC Lead PIO

In addition to the above, additional senior managers may be made available to speak to specific technical issues. These individuals may include the Commissioners of Emergency Services, Health and Public Safety, or their designated representatives.

Public Inquiry

The County will staff a public inquiry telephone bank to address public questions and concerns. This function will be initiated as early as an Alert. Public Inquiry personnel will operate from the alternate EOC in White Plains. A public information staff member will supervise this operation and facilitate coordination with the EOC. Public inquiry personnel will be trained and will have access to the EOC application in order to have up-to-date information on county response actions. Any recurring rumors or frequently asked questions, will be relayed by the Public Inquiry Call Center supervisor to the Lead PIO in the county EOC. The Lead PIO will ensure such items are addressed in news releases and will coordinate with the State, Entergy and other counties via the PIO conference line and through posting to the PIO module of the DisasterLAN system.

The Westchester County Public Inquiry telephone number will be disseminated to the public via news releases at the time of emergency and will be announced during media briefings. The public will be instructed to call this number to obtain emergency information, confirm information or to clarify suspected rumors.

A Public Inquiry team member will respond to the specific inquiry of the caller, if possible. If additional information is required before a response can be given, the call could be referred to the appropriate party for response and a call back made, if necessary.

*Appendix K: Public Information*Media Inquiry

Media inquiries will be addressed by the County Director of Communications and staff. A specific telephone number has been identified for this purpose in the EOC. This telephone number will be circulated to the media via the website, in news releases and announced during press briefings.

Media Monitoring

Westchester County will rely primarily on SEMO and Entergy to perform the media monitoring function. In addition, county PIO staff may monitor local news media via televisions and radios located in the PIO workroom of the EOC.

SEMO and Entergy will coordinate a broader media monitoring function out of the JIC. An audio/visual room at the JIC will be used to monitor and record news broadcasts and bulletins carried by radio and television stations throughout the emergency. These broadcasts, as well as news reports in the print media and internet websites, will be reviewed for accuracy. This off-air monitoring and recording capability will provide the opportunity for prompt identification of inaccurate or incorrect information. Any reports requiring correction will be brought to the attention of the appropriate State, county or utility representative. Corrections will be made during briefings at the JIC, or by directly contacting the responsible station or publication.

FIGURE K-1
TRANSIENT LOCATION STICKER

Siren Information

If you hear a siren which sounds for 4 minutes, you are being notified of an emergency in your area. Turn on your radio to an Emergency Alert System (EAS) station for the most timely and accurate information.



EAS messages are broadcast on WHUD-FM radio (100.7) and most local radio stations.

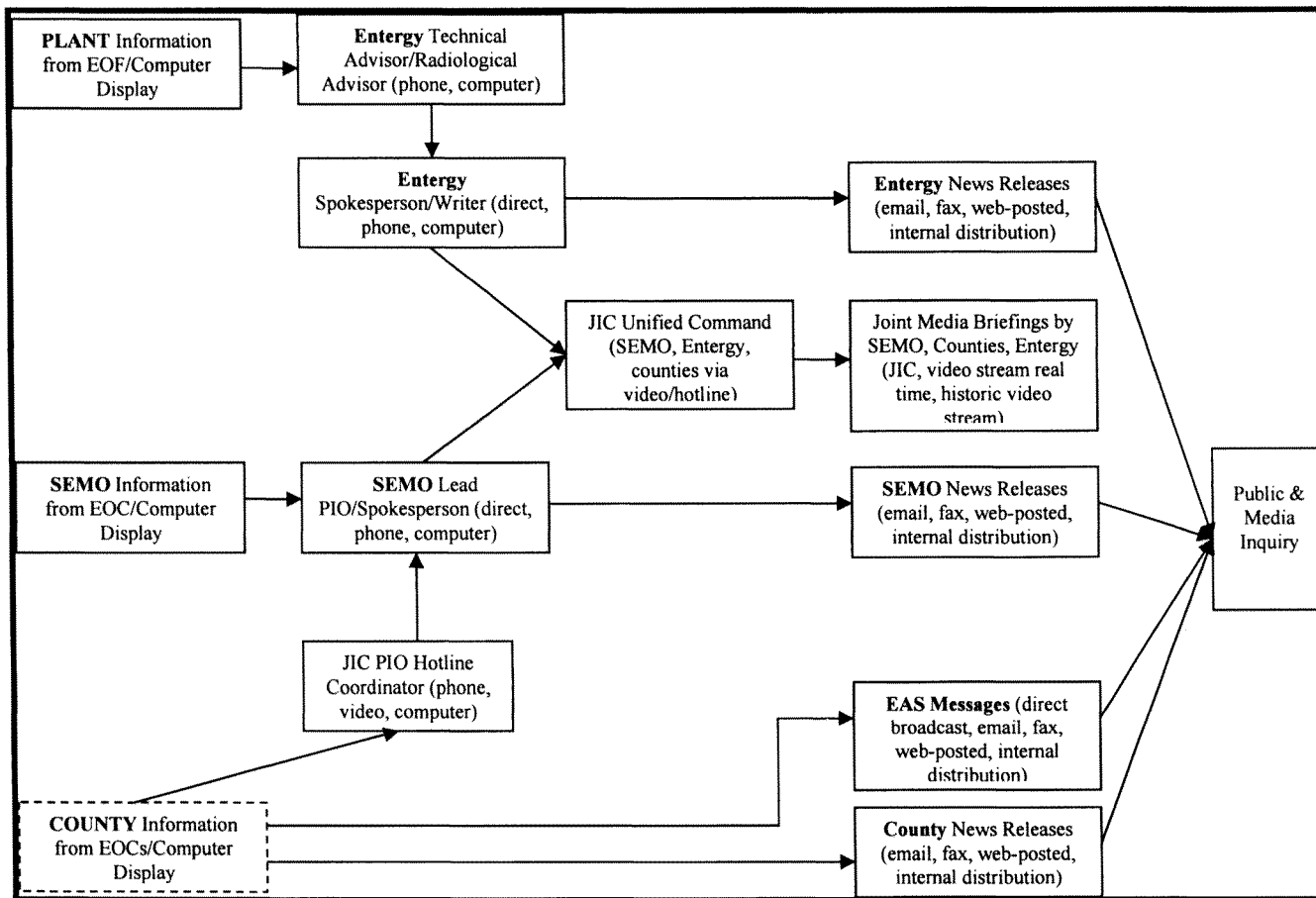


Additional information can be found in the yellow pages of a local telephone directory.

*Westchester County
Office of Emergency Management*

Appendix K: Public Information

Figure K-2: JIC Information Flow/Dissemination Diagram



APPENDIX L

SUPPORTING PLANS AND DOCUMENTS

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APPENDIX L
SUPPORTING PLANS AND DOCUMENTS

PLANS

1. Rockland County Radiological Emergency Preparedness Plan
2. Putnam County Radiological Emergency Preparedness Plan
3. Orange County Radiological Emergency Preparedness Plan
4. New York State Radiological Emergency Preparedness Plan, and State Agency Standard Operating Procedures, April 2005
5. Federal Radiological Emergency Response Plan (FRERP), Federal Register Vol. 50, No. 217, November 1985
6. Federal Radiological Monitoring and Assessment Plan (FRMAP)
7. U.S. Coast Guard Captain of the Port, New York, Radiological Emergency Response Plan
8. Westchester County Comprehensive Emergency Management Plan, draft Jan/2004
9. Indian Point Energy Center Emergency Plan, Rev 06-01
10. Hawthorne Joint Information Center Procedures, May 2007
11. Westchester County Field Monitoring Procedure, volumes 1 and 2
12. Indian Point Energy Center, Development of Evacuation Time Estimates, dated May 2003, developed by KLD Associates, Inc.

REFERENCE DOCUMENTS

1. Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness In Support of Nuclear Power Plants (NUREG-0654/FEMA-REP-1, Rev. 1)
2. NUREG-0396/EPA 520/1-78-016 Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants
3. Environmental Protection Agency, EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents

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**APPENDIX M
PLAN DISTRIBUTION**

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*Appendix M: Plan Distribution***APPENDIX M****PLAN DISTRIBUTION**

The Westchester County Radiological Emergency Plan will be reviewed at least annually and updated, as needed, on a regular basis. Changes to the plan will be distributed to official holders of the plan. All change pages will be date stamped to identify the current version. In instances where substantial revision or re-formatting has occurred, the county may elect to re-issue the entire document. Official plan copies will be numbered. An unlimited number of unofficial unnumbered copies may be made and distributed.

Controlled copies of the plan are as follows:

<u>Plan No.</u>	<u>Holder</u>
1	Westchester County Executive
2	Deputy County Executive
3	Director of Communications
4 through 6	Westchester County Office of Emergency Management
7 through 10	Westchester County Emergency Operations Center
11	Westchester County Warning Point
12 and 13	Westchester County Department of Health
14 and 15	Westchester County Department of Public Safety
16	Westchester County Department of Social Services
17	Westchester County Department of Transportation
18	Westchester County Department of Public Works
19	Village of Buchanan
20	City of Peekskill
21	Town of Cortlandt
22	Village of Croton-on-Hudson
23	Town of Yorktown
24	Town of Ossining
25	Village of Ossining
26	Village of Briarcliff Manor
27	Town of New Castle
28	Town of Somers
29	Town of Mount Pleasant
30-39	County Libraries: Croton, Montrose, Ossining, Briarcliff, Peekskill, Yorktown, Chappaqua, Somers, White Plains (2)
40	Putnam County Office of Emergency Management
41	Orange County Office of Emergency Management
42	Rockland County Office of Emergency Management
43	New York State Emergency Management Office
44	Federal Emergency Management Agency, Region 2
45	Entergy Emergency Operations Facility
46	Entergy Alternate Emergency Operations Facility
47	Westchester County Department of Information Technology

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**APPENDIX N
GLOSSARY OF TERMS**

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*Appendix N: Glossary of Terms***APPENDIX N****GLOSSARY OF TERMS**

Brief definitions of many of the terms used in this plan are given here. For more exact and detailed information, standard reference works can be consulted.

Absorbed Dose: The quantity of energy absorbed from ionization per unit mass of tissue. The "rad" is the unit of absorbed dose.

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

Alpha Detector: Instrument designed specifically to detect alpha radiation.

Alpha Particles: Positively charged particles identical with the nuclei of helium atoms. They penetrate tissues to usually less than 0.1 mm (1/250 inch) but create dense ionization and heavy absorbed doses along these short tracks.

Background Radiation: Radiation arising from material other than the one directly under consideration. Cosmic rays and natural radioactivity are always present and man-made sources may also contribute to the background radiation level.

Beta Particles: Electrons ejected from the nuclei of atoms; extremely tiny bits of matter travelling at nearly the speed of light. Their range in air can be several feet. In heavier material, such as the human body, they expend their energy within about 2 mm (1/10 inch).

Committed Dose Equivalent (CDE): The dose equivalent to organs or tissues of reference that will be received from an intake of radioactive material by an individual during the 50-year period following the intake. (Organ Dose). (EPA 400 defines CDE as the CDE plus DDE for the organ of interest).

Committed Effective Dose Equivalent (CEDE): 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 these organs or tissues. (Internal Whole Body Dose).

Contamination (Radioactivity): Deposition of radioactive material in any place where it may alarm persons, spoil experiments or make products or equipment unsuitable or unsafe for some specific use. The presence of unwanted radioactive matter.

Decay: Disintegration of the nucleus of a radionuclide in a radioactive process.

Decay Product: A nuclide, either radioactive or stable, resulting from the disintegration of a radioactive material.

Appendix N: Glossary of Terms

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

Deep Dose Equivalent (DDE): Applies to external whole-body exposure, is the dose equivalent at tissue depth of 1 cm (1000 mg/square cm). (External Whole Body Dose.)

Dose Equivalent: The product of the absorbed dose in tissue, the quality factor, and all other necessary modifying factors at the location of interest. Measured in rem.

DOE: U.S. Department of Energy provided monitoring and assessment resources to assist state and county response efforts.

Dose: The quantity of energy absorbed from ionization per unit mass of tissue. The "rad" is the unit of absorbed dose.

Dose Equivalent: A quantity that expresses all types of nuclear radiation on a common scale to indicate relative biological effects. The "rem" is the unit of dose equivalent.

Dose Rate: Absorbed dose delivered per unit time, as rads per second or rads per hour.

Dosimeter: A device that measures radiation dose, such as a film badge or ionization chamber.

Emergency Director: The individual responsible for directing onsite actions during an emergency at the nuclear plant site. (This position occupied by the Shift Supervisor until relieved by a higher ranking individual.)

Emergency Operations Center (EOC): A location at the headquarters of each offsite response agency or some other designated location that may be used to direct the action taken by designated agencies under its jurisdiction during an emergency at the Indian Point Energy Center.

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

Emergency Planning Zone (EPZ): The area surrounding the nuclear plant site for which planning has been done to assure that prompt and effective actions can be taken to protect the public in the event of a radiological incident. The EPZ is usually 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.

Evacuation: The process of removing people from a hazardous or potentially hazardous area to a safe area.

Evacuation Time Estimate: The roadway travel time required to leave the plume exposure emergency planning zone after mobilization has been completed.

Appendix N: Glossary of Terms

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

Gamma Rays: Electromagnetic radiation comparable to light. They are similar to X-rays except for their origin. They are emitted with energies characteristic of each nuclide and many are highly penetrating. Although their intensity decreases exponentially with the thickness of the absorbing material, they can travel hundreds of feet in air and penetrate completely through the body.

General Population: People permanently residing within the plume exposure emergency planning zone (not including residents of nursing homes and long-term health care facilities).

Geiger-Muller Counter (Geiger-Muller Tube): A radiation detection and measuring instrument. It consists of a gas-filled (Geiger-Muller) tube containing electrodes, between which there is an electrical voltage but no current flowing. When ionizing radiation passes through the tube, a short intense pulse of current passes from the negative electrode to the positive electrode and is measured or counted. The number of pulses per second measures the intensity of radiation. It is also often known as a Geiger Counter.

HOSTILE ACTION: For the purposes of this plan, an act toward a nuclear power plant or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidate the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included.

Incident: An occurrence that results in the loss of control of radioactive materials and involves a potential hazard to life, health or property.

Ingestion Exposure Pathway (50-Mile EPZ): For planning purposes, the area within about a fifty (50) mile radius surrounding a nuclear plant site. The principal exposure from this pathway would be from the ingestion of contaminated water or foods.

Internal Radiation: Radiation (including Alpha and Beta particles and Gamma radiation) resulting from radioactive substances within the body.

Isotopes: Forms of the same element having identical chemical properties but differing in their atomic masses. A radioisotope is an unstable isotope of an element that decays or disintegrates spontaneously, emitting radiation.

Millirem (mrem): One-thousandth (1/1000) of a Rem.

Milliroentgen (mR): One-thousandth (1/1000) of a Roentgen.

Appendix N: Glossary of Terms

Monitoring, Radiological: The operation of locating and measuring radioactive contamination by means of survey instruments that can detect and measure (as dose rates) ionizing radiations.

Nuclear Reactor: A device in which a fission chain reaction can be initiated, maintained and controlled. Its essential component is a core with fissionable fuel.

Office of Emergency Management (CDOEM): Previously known as the Office of Disaster and Emergency Services (CDDDES) in Westchester County.

Peripheral Bus System: A bus system that will provide transportation links among general public reception centers to facilitate the reuniting of transit-dependent families.

Plume Exposure Pathway (10-Mile EPZ): For planning purposes, the area within a ten (10) mile radius surrounding a nuclear plant site. The principal exposure sources from this pathway are: (a) whole body exposure to Gamma radiation from the plume and from deposit material, and (b) inhalation exposure from the passing radioactive plume.

Protective Action Guide: The projected radiological dose, or dose commitment values to individuals in the general population which warrants a protective action response following a release of radiological material.

RAD: The unit of absorbed dose in body tissue or other material.

Radiation Area: Any accessible area in which the level of radiation is such that a major portion of an individual's body could receive, in any one hour, a dose in excess of 5 millirem, or in any 5 consecutive days, a dose in excess of 100 millirem.

Radiation Badge/Dosimeter of Legal Record (DLR): The device issued to emergency workers that accurately detects and stores the individual's total radiation exposure. The readout of this device will be used as the legal record of the individual's exposure.

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

Radioassay: The analysis of any substance (food, water, soil, etc.) to determine the presence and magnitude of radioactive contamination.

Radiological: A general term referring to processes that involve nuclear radiation.

Reception Center: A pre-designated facility outside the plume exposure emergency planning zone (generally a school), at which evacuees can receive directions to congregate care centers, reunite with others, receive general information and, if necessary, receive radiological monitoring and decontamination.

Release: Escape of radioactive materials into the environment.

Appendix N: Glossary of Terms

REM: The unit of radiation dose affecting body tissue. It is equal to the absorbed dose (measured in rads) multiplied by the quality factor (which takes into account the effectiveness of different types of radiation) and by other multiplying factors. For Beta and Gamma radiation the quality factor is 1. Radiation Equivalent Man.

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.

Scenarios: Time-based characterizations of plume exposure emergency planning zone populations and their variations by time-of-day, day-of-week and season.

School Loop Bus System: A bus system linking each general public reception center with its associated school reception center to facilitate the reuniting of transit-dependent parents and their school children (activated for school-in-session scenario).

School Reception Center: A pre-designated facility outside the plume exposure emergency planning zone that will be a host facility for evacuating schools until children are picked up by their families.

Shelter: A structure or other location offering shielding from nuclear radiation in the environment.

Shelter-in-place: A protective action taken to reduce exposure to a short-term release of radiation. It involves going indoors, closing windows and doors and limiting the intake of outside air.

Shielding: Any material or barrier that attenuates radiation.

Site Boundary: Area surrounding the nuclear plant site, in which the NFO has the authority to determine and control all activities including exclusion or removal of personnel and property from the area.

Source Term: A particular type or amount of radionuclide originating at the source of a nuclear incident. In its broadest sense, "source term" also describes the conditions and mode of emission.

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

Thermoluminescent Dosimeter (TLD): A dosimetry badge worn by workers in the nuclear industry or research, used to measure possible exposure to ionizing radiation. It is characteristic of thermoluminescent material that radiation causes internal changes which make the material, when subsequently heated, give off an amount of light directly proportional to the radiation dose, which can be measured.

Appendix N: Glossary of Terms

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

Total Effective Dose Equivalent (TEDE): Whole body dose - the sum of the deep dose equivalent (for external exposure) and the committed effective dose equivalent (for internal exposure).

Total Organ Dose Equivalent-Thyroid (TODE-Thyroid): CDE Thyroid - thyroid dose - the sum of the CDE for the thyroid and the deep dose equivalent.

Transient Population: Those people who are only temporarily in, but do not permanently reside in, the plume exposure emergency planning zone.

Transit-Dependents: People who do not have access to an automobile for the purpose of leaving the plume exposure emergency planning zone at the time of an evacuation.

Whole Body Counter: A device used to identify and measure the radiation in the body (body burden) of human beings and animals; it uses heavy shielding to keep out background radiation and ultra-sensitive scintillation detectors and electronic equipment.

Whole Body Exposure: Exposure of the whole body to radiation.

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**APPENDIX O
NUREG 0654/FEMA REP-1
CROSS REFERENCE INDEX**

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Appendix O: NUREG 0654/FEMA REP-1 Cross Reference Index

APPENDIX O
NUREG 0654/FEMA REP-1
CROSS REFERENCE INDEX

0654 CRITERION NO.	CRITERION DESCRIPTION	WCREP LOCATION
A	<u>ASSIGNMENT OF RESPONSIBILITY</u>	
A1-Item	a. Identification of Response Organizations	III.B III.C III.E Table III.1
	b. Organization Concept of Operations	III.B III.C.2 III.C.3 Procedures IP-1 through IP-17
	c. Organizational Inter-Relationships (Block Diagram)	Fig. III-1 Fig. III-2 Table III-1
	d. Designation of Organization Director	III.B.1 III.C.1 III.C.3 Table III-1
	e. 24-Hour Response/Communication	III.B.5 III.C.2 Appendix E,
A2-Item	a. Specification of Functions and Responsibilities for Major Elements	III.B III.C. Table III-1 Procedures IP-1 through IP-17
A2-Item	b. Legal Basis for Organization Authority	I.A
A3	Formal Intra-Government/Organization Agreements	I.A Appendix B
A4	Designated Authority for Organization Resource Continuity	I.A III.C.1
B	<u>ONSITE EMERGENCY ORGANIZATION</u>	Not Applicable to County Radiological Emergency Preparedness Plan
C	<u>EMERGENCY RESPONSE SUPPORT AND RESOURCES</u>	
C1-Item	a. Authority to Request Rap/FRMAP Resources	I.B, I.E, I.E.D, App. I sect.2a
	b. Federal Resources	Not Applicable to County Radiological Emergency Preparedness Plan
	c. Resources to Support Federal Response	I.E.1, I.D

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C2-Item	a. Organization Representative at Near-Site Emergency Operations Facility	III.E.2.b IP-3.0
	b. Organization Representative at Offsite Governmental Emergency Operations Centers	Not Applicable to County Radiological Emergency Preparedness Plan
C3	Identification of Radiological Laboratories and Capabilities	Not Applicable to County Radiological Emergency Preparedness Plan
C4	Nuclear and Other Assistance Sources	I.E Appendix B Table III-1
D	<u>EMERGENCY CLASSIFICATION SYSTEM</u>	
D1	Facility Emergency Classification System	Not Applicable to County Radiological Emergency Preparedness Plan
D2	NUREG0610/FSAR Conditions and Postulated Accidents	Not Applicable to County Radiological Emergency Preparedness Plan
D3	Emergency Classification System	III.E IP-1.0 through IP-17
D4	State and Local Emergency Procedures	Procedure IP-1.0 through IP-17
E	<u>NOTIFICATION METHODS AND PROCEDURES</u>	
E1	Bases for Organization Notification/Verification	III.E Procedure IP-1 through IP-17
E2	Personnel Notification/Alert/Mobilization Procedures	III.E Fig. III-1, Fig. III-2 Procedure 1 through 17
E3	Contents of Initial Plant Emergency Messages	Not Applicable to County Radiological Emergency Preparedness Plan
E4	Provision for/Content of Plant Follow-Up Messages	Not Applicable to County Radiological Emergency Preparedness Plan
E5	Dissemination of Information	III.B.10 Appendix F & K JIC Procedure IP-12
E6	Mean Time for Population Notification within Plume Exposure Pathway EPZ	III.B.2 Appendix F & K
E7	Provision for Written Public Instructions	III.B.10 Appendix F & K JIC Procedures IP-12

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F	<u>EMERGENCY COMMUNICATIONS</u>	
F1-Item	a. 24 Hour Notification/Activation of Emergency Response Network	III .E.1 Appendix E
	b. Provision for Communications with Contiguous State/Local Governments	Appendix E
F1-Item	c. Provision for Communications with Federal Organizations	III.C. App. E
	d. Provision for Communications between Facility and Emergency Operations Centers	Proc. 1 through 3 Appendix E
	e. Provision for Alert/Activation of Response Organization Personnel	Proc. 1 through 17 III.E III.C
	f. Provision for Communication with NRC/Emergency Operations Facility	Not Applicable to County Radiological Emergency Preparedness Plan
F2	Coordinated Communications Link for Fixed and Mobile Medical Support Facilities	III.B.11 Appendix E Proc. IP-16 Proc. IP-10
F3	Periodic Communications System Testing	Appendix E
G	<u>PUBLIC EDUCATION AND INFORMATION</u>	
G1	Public Emergency Education/Information	III.B.10 II.B.5 JIC Procedures Procedure IP-12 Appendix K
G2	Public Emergency Education Program	III.B.10 II.B.5 JIC Procedures Appendix K
G3-Item	a. Public Information Control Point	III.B.10 JIC Procedures Appendix K
	b. Space for News Media	Not Applicable to County Radiological Emergency Preparedness Plan
G4-Item	a. Designated Public Information Spokesperson	III.B.10 III.E.4 JIC Procedures IP-12 Appendix K

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	b. Spokesperson Information Exchange	JIC Procedures Appendix K
	c. Public Inquiry	III.C.4.b.(4) JIC Procedures Procedure IP-12 Appendix K Public Inquiry Call Center Binder
G5	News Media Education Program	II.B.5 JIC Procedures Appendix K
H	<u>EMERGENCY FACILITIES AND EQUIPMENT</u>	
H1	NUREG-0696 Technical/Onsite Operational Support Centers	Not Applicable to County Radiological Emergency Preparedness Plan
H2	Principal/Alternate Operators Near-Site Emergency Operations Facility	Not Applicable to County Radiological Emergency Preparedness Plan
H3	Provision for Emergency Operations Center	III.B III.C III.E Proc. 1 and 1.1
H4	Provision for Activation/Staffing of Emergency Operations Center	III.E.2 Proc. 1 and 1.1
H5	Onsite Monitoring Systems	Not Applicable to County Radiological Emergency Preparedness Plan
H5-Item	a. Geophysical Phenomena Monitors	Not Applicable to County Radiological Emergency Preparedness Plan
	b. Radiological Monitors	Not Applicable to County Radiological Emergency Preparedness Plan
	c. Process Monitors	Not Applicable to County Radiological Emergency Preparedness Plan
	d. Fire Detectors	Not Applicable to County Radiological Emergency Preparedness Plan
H6-Item	a. Offsite Geophysical Phenomena Monitors	Not Applicable to County Radiological Emergency Preparedness Plan
	b. Offsite Radiological Monitors/Dosimetry	Not Applicable to County Radiological Emergency Preparedness Plan
	c. Laboratory Facilities	Not Applicable to County Radiological Emergency Preparedness Plan

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H7	Organization Radiological Monitoring Equipment/Meteorological Capabilities	III.B.14 III.F Appendix I
H8	Provision for Meteorological Instrumentation/Procedures	Not Applicable to County Radiological Emergency Preparedness Plan
H9	Provision for Onsite Operations Support Center	Not Applicable to County Radiological Emergency Preparedness Plan
H10	Inspection/Inventory/Calibration of Emergency Equipment/Instruments	II.B.2
H11	Inventory of Emergency Kits	Proc. 3.0, 3.1, 3.2, 3.3 and 3.4
H12	Centralized Analysis of All Field Monitoring Data	III.B.14 III.F Proc. 3.0, 3.1 and 3.2
I	<u>ACCIDENT ASSESSMENT</u>	
I1	Identification of Plant Condition Parameters and Corresponding Emergency Classes	Not Applicable to County Radiological Emergency Preparedness Plan
I2	NUREG-058 Post-Accident Sampling and Monitoring Capability	Not Applicable to County Radiological Emergency Preparedness Plan
I3-Item	a. Methods/Techniques for Source Term Determination	Not Applicable to County Radiological Emergency Preparedness Plan
	b. Methods/Techniques to Determine Release Magnitude	Not Applicable to County Radiological Emergency Preparedness Plan
I4	Onsite/Offsite Exposures and Contamination for Various Meteorological Conditions	Not Applicable to County Radiological Emergency Preparedness Plan
I5	Acquisition of Meteorological Information	Not Applicable to County Radiological Emergency Preparedness Plan
I6	Determination of Release Rate/Projected Closes Given Inoperable Instrumentation	Not Applicable to County Radiological Emergency Preparedness
I7	Capabilities for Field Monitoring within the Plume Exposure EPZ	III.B.14 III.F Appendix I Proc. 3.2

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I8	Rapid Assessment	III.B.14 III.F Appendix I Proc. 3.0, 3.1, 3.2
I9	Capability for Assessment of Actual Potential Magnitude and Location of Radiological Hazards	Proc. 3.0, 3.1, 3.2
I10	Estimation of Integrated Doses; Comparison with Protective Action Guides	Proc. 3.0, 3.1, 3.2 III.F
I11	Tracking the Radioactive Plume Using State and/or Federal Resources	Proc. 3.0, 3.1, 3.2 Appendix I
J	<u>PROTECTIVE RESPONSE</u>	
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	b. Warning of Onsite Visitors	Not Applicable to County Radiological Emergency Preparedness Plan
	c. Warning of Contractor/Construction Personnel	Not Applicable to County Radiological Emergency Preparedness Plan
	d. Warning of Persons within Facility Owner/Controlled Area	Not Applicable to County Radiological Emergency Preparedness Plan
J2	Provisions for Evacuation	III.B.17 and III.G Appendix A Procedure 1 through 17
J3	Radiological Monitoring of Personnel Evacuated from Site	Not Applicable to County Radiological Emergency Preparedness Plan
J4	Onsite Non-Essential Personnel Evacuation/Decontamination Offsite Facility	Not Applicable to County Radiological Emergency Preparedness Plan
J5	Accountability for Onsite Personnel	Not Applicable to County Radiological Emergency Preparedness Plan
J6-Item	a. Onsite Personnel Respiratory Protection	Not Applicable to County Radiological Emergency Preparedness Plan
	b. Onsite Personnel Protective Clothing	Not Applicable to County Radiological Emergency Preparedness Plan
	c. Onsite Use of Radioprotective Drugs	Not Applicable to County Radiological Emergency Preparedness Plan
J7	Prompt Notification of Offsite Authorities	Not Applicable to County Radiological Emergency Preparedness Plan

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J8	Onsite Plan Contains Plume Exposure EPZ Evacuation Time Estimates	Not Applicable to County Radiological Emergency Preparedness Plan
J9	Protective Action Guides (Personnel Exposure/Food Stuffs)	III.D III.G Proc. 3.0
J10-Item	a. Maps of Evacuation Routes/Sectors Relocation Centers	Proc. 2.0 Proc. 5.0 Public Brochure
	b. Population Distributions by Sector/Zone	Appendix G
	c. Means for Notification of Transient/Resident Population	Appendix F I.P. 12 JIC Procedures Appendix K
J10-Item	d. Protection of Impaired Persons	Proc. 9
	e. Radioprotective Drug Distribution	III.D Proc. 3.0 and 3.3 Appendix C IP-15
	f. Radioprotective Drug Administration	III.D Proc. 3.0 and 3.3 Appendix C
	g. Means of Relocation	Appendix A Procedure 1 through 17
J10-Item	h. Relocation Centers 5 to 10 Miles beyond the EPZ	Proc. 3.4 Proc. 5 IP - 9 Sec. III.B.4 Public Brochure
	i. Evacuation Routes/Traffic Capabilities	Proc. 2 Appendix A KLD Associates, Inc. "Evacuation for the Indian Point Emergency Planning Zone, Nov. 2003" (Submitted under separate cover.) ETE Addendum for New Protective Action Areas, June 2008
	j. Evacuated Area Access Control	III.B.8 Proc. 2 (See Map in EOC)

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	k. Evacuation Route Impediments/Contingency Measures	III.B.8 Proc. 7 Proc. 2, Table 4 & 5
	l. Evacuation Time Estimates for EPZ's	Appendix A Ref. KLD Associates, Inc. "Evacuation Travel Time Estimates for the Indian Point Emergency Planning Zone, Nov. 2003"
	m. Choice of Recommended Protective Actions from Plume Exposure Pathway	Appendix A Appendix D Section III.G Procedure 1.0 Procedure 3.0
J11	Protective Measures for the Ingestion Pathway	Not Applicable to County Radiological Emergency Preparedness Plan
J12	Registering and Monitoring of Evacuees	Proc. 6 Proc. 3.4
K	<u>RADIOLOGICAL EXPOSURE CONTROL</u>	
K1-Item	a. Onsite Exposure Guidelines for the Removal of Injured Persons	Not Applicable to County Radiological Emergency Preparedness Plan
	b. Onsite Exposure Guidelines for the Undertaking of Corrective Actions	Not Applicable to County Radiological Emergency Preparedness Plan
	c. Exposure Guidelines for Performing Assessment Actions	Not Applicable to County Radiological Emergency Preparedness Plan
	d. Guidelines for Providing First Aid	Not Applicable to County Radiological Emergency Preparedness Plan
	e. Guidelines for Performing Personnel Decontamination	Not Applicable to County Radiological Emergency Preparedness Plan
	f. Guidelines for Providing Ambulance Service	Not Applicable to County Radiological Emergency Preparedness Plan
	g. Guidelines for Providing Medical Treatment Services	Not Applicable to County Radiological Emergency Preparedness Plan
K2	Onsite Radiation Protection Program	Not Applicable to County Radiological Emergency Preparedness Plan
K3-Item	a. 24-hour Dosimetry Service	II.B.2 Proc. 3.0
	b. Maintenance of Dose Records	III.D Proc. 3.0 and 3.3

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K4	Authorization for Personnel Exposure in Excess of the Protective Action Guides	III.D Proc. 3.0
K5-Item	a. Determination of Need for Decontamination	Proc. 3.0 Procedure 3.4
	b. Means for Decontamination	IV.F Proc.3.0 and 3.4
K6-Item	a. Onsite Area Access Control	Not Applicable to County Radiological Emergency Preparedness Plan
	b. Onsite Drinking Water/Food Supplies Control	Not Applicable to County Radiological Emergency Preparedness Plan
	c. Criteria for the Return of Areas and Items to Normal Use	Not Applicable to County Radiological Emergency Preparedness Plan
K7	Capability for Decontamination of Relocated Onsite Personnel	Not Applicable to County Radiological Emergency Preparedness Plan
L	<u>MEDICAL AND PUBLIC HEALTH SUPPORT</u>	
L1	Local and Backup Hospitals with Ability to Evaluate Radiation Exposure/Handle Contaminated Individuals	III.B.11 Proc. 16
L2	Onsite First Aid Capability	Not Applicable to County Radiological Emergency Preparedness Plan
L3	Identification of Medical Services Facilities Equipped/Trained to Treat Radiological Accident Victims	Proc. 16 Procedure 10
L4	Transportation to Medical Facilities	III.B.11 Proc. 10
M	<u>RECOVERY AND RE-ENTRY PLANNING AND POST-ACCIDENT OPERATIONS</u>	
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M2	Designation of Facility Recovery Organization	Not Applicable to County Radiological Emergency Preparedness Plan
M3	Notification of Recovery Operation Initiation	Not Applicable to County Radiological Emergency Preparedness Plan
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	b. Exercise Critique	II.B.3
N2-Item	a. Communication Drills	II.B.3
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	d. Health Physics Drills	Not Applicable to County Radiological Emergency Preparedness Plan
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N4	Qualified Observers/Critique/Formal Evaluation of Exercises	II.B.3
N5	Improvements/Corrective Actions	II.B.2.c.
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O1-Item	a. Appropriate Individual Radiological Response Training	II.B.4
	b. Offsite Emergency Response Organization Training	II.B.4
O2	Onsite Training/Corrective Actions	Not Applicable to County Radiological Emergency Preparedness Plan
O3	Onsite First Aid Team Training	Not Applicable To County Radiological Emergency Preparedness Plan
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	b. Accident Assessment Personnel Training	II.B.4
	c. Radiological Monitoring Team Training	II.B.4 Appendix I Procedure 3.2
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	e. Onsite Repair/Damage Control Team Training	Not Applicable to County Radiological Emergency Preparedness Plan
	f. First Aid and Rescue Personnel Training	II.B.4
	g. Civil Defense/Emergency Personnel Training	II.B.4
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VOLUME 2: PROCEDURES

Implementing Procedures

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IP-17.0	Municipal Liaisons EOC Rep



DRAFT	Westchester County DEPARTMENT OF EMERGENCY SERVICES	IP-1.0
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**INDIAN POINT ENERGY CENTER
IMPLEMENTING PROCEDURE**

County Executive / Command Room

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1.0 Purpose

This procedure provides guidance for the County Executive and Commissioner of Emergency Services to implement the Westchester County Radiological Emergency Plan for the Indian Point Energy Center.

2.0 Responsibilities

2.1 The County Executive, or designee, is in charge of the county response; has overall responsibility for public safety; authorizing protective actions; declaring a local State of Emergency; and is responsible for assuring the following areas are being addressed:

- **Overall command and control of the entire emergency**
- **Alert and notification of the public** via sirens and EAS messages.
- **Accident assessment** of off site consequences of a radiological emergency
- **Protective response evaluation** to determine the proper protective actions to be implemented based on protective action guides and dose projections
- **Radiological exposure control** of emergency workers and the general public.
- **Public information** via news briefings, TV, Radio and Joint Information Center.
- **Reception and congregate care centers** for evacuated public.
- **Fire and rescue services**
- **Transportation**
- **Social Services** in support of reception and congregate care centers.
- **Public Works**
- **Emergency Medical Services**
- **Law enforcement services**

2.2 The County Commissioner of Emergency Services, or designee, serves as EOC Manager; will support the County Executive with EOC activities to implement the Westchester Indian Point Emergency Response Plan; is responsible for activating the EOC; coordinating communications with state and local response agencies; and advising the County Executive on protective action decisions.

3.0 Concept of Operations

3.1 The Westchester County Executive and DES Commissioner will operate from the County EOC Command Room to assure command and control for the overall emergency including accident assessment, protective response evaluation and radiological exposure control to protect the safety and health of the general public and emergency workers.

3.2 Westchester County operates within the National Incident Management System/Incident Command System (NIMS/ICS). The County Executive has ultimate authority for public safety and issuing protective action orders. The CE has delegated operational authority for Incident Management to the Commissioner of the Westchester County Department of Emergency Services.

The four counties will operate within a unified command to coordinate area-wide response to an Indian Point emergency.

3.3 Notifications of Unusual Event will be received by the County Warning Point, which will contact the Department of Emergency Services (DES). The DES will notify the County Executive and make selected other notifications as deemed appropriate. In most situations, no further actions will be necessary. The County Executive retains discretion to direct other actions, as deemed appropriate. In some circumstances, such as security incidents or when there is indication of potential for escalation, the County Executive may direct a partial activation of the EOC, and other facilities and response personnel.

3.4 When notified of an Alert or higher, it is county policy to activate its EOC. The following personnel (or their designees) will normally operate from the EOC Command Room:

- County Executive
- Commissioner of Emergency Services
- Commissioner of Public Safety

- Commissioner of Transportation
- Public Information Representative/Liaison
- OEM Support Staff
- SEMO Liaison

3.5 The Command Room will establish and maintain a video conferencing link with Westchester County Public information staff at the Joint Information Center in order to facilitate timely exchange and approval of public information.

3.6 In addition to video conferencing capability, the Command Room is equipped with an Executive Hotline (dedicated telephone line connecting the state, counties and utility); Radiological Emergency Communications System (RECS) line; computer terminals; computer projection system; and various office support equipment such as facsimile machines and printers.

3.7 The County Executive, in consultation with key staff, may take pre-cautionary actions, as well as make protective action decisions (e.g., shelter-in-place or evacuation) based upon available information. The following pre-cautionary actions may be taken as early as an Alert within the ten mile EPZ:

- Relocation of schools
- Clearing of parks and recreation areas
- Closing of the river to marine traffic
- Activation and mobilization of some field response personnel

3.8 The County Executive will consider declaring a local State of Emergency in accordance with state law whenever an emergency occurs or is pending which requires response resources beyond the capabilities of the county to address; or when the response requires the exercise of executive powers to address public safety issues.

3.9 The County Executive will make protective action decisions based on input from Entergy, and after consultation with the County Commissioners of Health and Emergency Services and Public Safety. In an immediate General Emergency scenario, the County Executive has pre-authorized the County Warning Point to issue a default protective action of shelter-in-place within five miles. This procedure will ensure that the public is informed of the need to take action as soon as possible. In an immediate General Emergency, the County Executive will be immediately informed of the situation and will begin the process of coordinating with the other three counties to assess the need for other actions, such as evacuation.

3.10 The County Executive and/or Commissioner of the DES may periodically brief the EOC Operations Room staff and will obtain briefings from EOC staff on the status of key response actions.

3.11 The County Executive may also consider conducting news conferences and issuing public statements on the status of county response actions and public safety issues. This will be done in coordination with County Public information and Communications staff and also coordinated with the Joint Information Center, other counties and the state.

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UNUSUAL EVENT

Unusual Event Definition:

Events have occurred or are occurring that indicate a potential degradation of the level of the safety of the plant. No releases of radioactive materials potentially requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.

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CHECKLIST 1	Unusual Event
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_____ 1. Upon notification from Indian Point of an Unusual Event, the County Warning Point (CWP) will notify the OEM. OEM will either notify, or direct the Warning Point to notify:

- _____ County Executive
- _____ Deputy County Executive
- _____ Director of Communications
- _____ Health Commissioner
- _____ DOH Deputy Commissioner
- _____ Public Safety Commissioner
- _____ DPS Deputy Commissioner
- _____ DES Commissioner
- _____ DES Deputy Commissioner

(See the Resource Section of this procedure for contact lists.)

Notes: _____

Additional notifications may be made at the discretion of the Commissioner of Emergency Services. Additional notifications should be noted below:

_____ 2. Review the Radiological Emergency Communications (RECS) Form for plant status and Emergency Action Level (EAL) information.

Notes: _____

_____ 3. Coordinate with the Director of Communications and County Public Information Officer (PIO) to determine the need for a news release. If a decision is made to issue a statement, ensure that the PIO provides copies to the other three counties, SEMO and Entergy prior to release.

Ensure any news releases are posted to the county and state websites.

CHECKLIST 1	Unusual Event, continued
--------------------	---------------------------------

_____ 4. Request OEM to confirm Emergency Operations Center (EOC) readiness in the event of escalation, including performance of a silent siren system test.

Notes: _____

_____ 5. Evaluate the need for additional actions.

Note: In the event of a security-related event, consider:

- OEM partial staffing of the EOC
- Dispatch of a DPS Rep to the Indian Point Security Incident Command Post
- Partial activation of the Joint Information Center

Notes: _____

_____ 6. Direct essential staff to stand by for possible escalation to an ALERT until the UNUSUAL EVENT is terminated and verbal confirmation is received from Indian Point.

Notes: _____

_____ 7. Upon termination, have OEM contact department staff to stand down and inform them that the UNUSUAL EVENT has been terminated.

Notes: _____

_____ 8. Ensure that OEM tracks and documents response costs.

Notes: _____

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ALERT

Alert Definition:

Events are in progress which involve actual or potential substantial reduction of the level of safety of the plant. Any releases of radioactive materials are expected to be limited to small fractions of federal exposure limits and confined to the immediate area of the plant.

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CHECKLIST 2

Alert

_____ 1. Upon notification from Indian Point of an Alert, order activation of the County EOC.

Notes: _____

_____ 2. Upon arrival at the EOC, obtain briefing update on the status of the plant from OEM and the Department of Health.

Notes: _____

_____ 3. Request status report on EOC operational readiness:

- _____ results of siren silent test
- _____ time synchronization with other counties
- _____ communications operability (RECS/Exec hotline, etc)
- _____ video link to the JIC
- _____ status of EOC staffing

_____ 4. Declare the EOC operational when all key staff have reported. Notify SEMO and other counties when the EOC is declared operational. Key staff include:

- _____ Dose Assessment Supervisor
- _____ Health Department
- _____ Transportation Department
- _____ Social Services Department
- _____ Public Safety Department
- _____ Emergency Services Department
- _____ Schools Coordinator
- _____ Red Cross (contact with ARC Headquarters)
- _____ PIO

_____ 5. Confirm Emergency Workers and Field Monitoring Teams have been notified to pick up dosimeters, Radiation Badge/DLR, Potassium Iodide (KI), and emergency exposure cards.

CHECKLIST 2

Alert, continued

_____ 6. Confirm that County PIO staff is in communication with the Joint Information Center. Request that the County PIO staff establish contact with the Primary EAS station, WHUD, and that the station review emergency procedures and remain on standby.

Notes: _____

_____ 7. Coordinate with the Director of Communications and County Public Information Officer (PIO) to determine the need for a news release. If a decision is made to issue a statement, provide copies to the other three counties, SEMO and Entergy prior to release. Ensure news releases are posted to county and state websites.

Notes: _____

_____ 8. Consider the need for pre-cautionary actions for schools:

- Delay or cancel opening of schools
- Relocate to school reception centers

Notes: _____

_____ 9. Consider the need for additional pre-cautionary actions, including the following:

- Closing of parks and recreation areas
- Clearing of the River within the 10-Mile EPZ

Note: These recommendations should be coordinated with the other three EPZ counties via the Executive Hotline.

CHECKLIST 2

Alert, continued

_____ 10. Consider implementing the following actions:

- Place the Emergency Worker Personnel Monitoring Center staff on stand-by or direct them to report to the PMC.
- Place the reception center staff for the White Plains High School and Westchester Community College and Harrison High School on stand-by or direct them to report to the first three primary reception centers, as designated.

Notes: _____

_____ 11. Brief the EOC staff on a regular basis on agency activities, plant status, potential release status, projected dose rates and weather data, or if there is a major change in events concerning EOC operations or plant status.

Notes: _____

_____ 12. Ensure that the following actions have been addressed by the EOC staff:

- Notification of schools
- Notification of hospitals, nursing homes and other special facilities
- Notification of FAA, CSX and Amtrak
- Fire, police and emergency medical services are on standby
- Transportation resources and reception centers are on standby
- At least two Field Monitoring Teams have been deployed

Notes: _____

CHECKLIST 2

Alert, continued

____ 13. Advise the EOC leads and other staff as appropriate to review their SOP's and complete their checklists.

Notes: _____

____ 14. Ensure the EOC staff has developed a 24 hour shift schedule for extended EOC operations (two 12 hour shifts) and notify replacements of schedule. Note: Have lead positions report to the EOC one half hour prior to their shift for turn over from the previous shift.

Notes: _____

____ 15. Stand by for possible escalation to an SITE AREA EMERGENCY or until the ALERT is terminated and verbal confirmation is received from Indian Point.

Notes: _____

____ 16. Ensure that all county agencies track and document response costs.

Notes: _____

____ 17. Log other actions taken.

____ 18. Upon notice of termination, have OEM contact department staff to stand down and inform them that the ALERT has been terminated. Inform EOC agency reps to notify field staff to stand down.

SITE AREA EMERGENCY

Site Area Emergency Definition:

An event has occurred which involves actual or likely major failures of plant functions needed for protection of the public. Releases of radioactive materials are not expected to exceed federal limits except near the plant boundary.

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CHECKLIST 3

Site Area Emergency

The items highlighted below should have been completed at the Alert level. If this is the initial notification of an incident at IPEC, ensure that these items are completed.

_____ 1. Activate the County EOC and assure staff respond to the EOC. OEM will confirm all positions filled.

Notes: _____

_____ 2. Upon arrival at the EOC , obtain briefing update on the status of the plant from OEM and the Department of Health.

Notes: _____

_____ 3. Request status report on EOC operational readiness:

- _____ results of siren silent test
- _____ time synchronization with other counties
- _____ communications operability (RECS/Exec hotline, etc)
- _____ video link to the JIC
- _____ status of EOC staffing

_____ 4. Declare the EOC operational when all key staff have reported. Notify SEMO and other counties when the EOC is declared operational.

Notes: _____

_____ 5. Confirm Emergency Workers and Field Monitoring Teams have been notified to pick up dosimeters, Radiation Badge/DLR, Potassium Iodide (KI), and emergency exposure cards.

Notes: _____

_____ 6. Confirm that the Joint Information Center is open and in communication with a Westchester PIO in the Westchester EOC.

Notes: _____

CHECKLIST 3

Site Area Emergency, continued

_____ 7. Coordinate with the Director of Communications and County Public Information Officer (PIO) to determine the need for a news release. If a decision is made to issue a statement, provide copies to the other three counties, SEMO and Entergy prior to release.

Notes: _____

_____ 8. Consider the need for pre-cautionary actions for schools:

- Delay or cancel opening of schools
- Relocate to school reception centers

Notes: _____

_____ 9. Consider the need for additional pre-cautionary actions, including:

- closing of parks and recreation areas
- Clearing of the River within the 10-Mile EPZ

Note: This recommendation should be coordinated with the other three EPZ counties via the Executive Hotline.

Notes: _____

_____ 10. Review the RECS Form with the Commissioner of Health to see if there is a radioactive release exceeding operating "Technical Specification Limits". If so, confer with Indian Point and have the field monitoring team supervisor take appropriate actions.

- Current plant status and why the SAE was declared.
- Wind speed and direction.
- Potential for actual release of radioactive materials to the atmosphere.

CHECKLIST 3

Site Area Emergency, continued

_____ 11. Consider implementing the following actions:

- Place the Emergency Worker Personnel Monitoring Center staff on stand-by or direct them to report to the PMC.
- Activate the first three reception centers and place the reception center staff of all others on stand-by.

Notes: _____

_____ 12. Ensure the EOC staff has developed a 24 hour shift schedule for extended EOC operations (two 12 hour shifts) and notify replacements of schedule. Note: Have lead positions report to the EOC one half hour prior to their shift for turn over from the previous shift.

_____ 13. Assure the County Commissioners of Social Services and Health have:

- Opened the White Plains, Harrison and Westchester Community College reception centers and placed the others on stand by.
- Requested the ARC to open associated congregate care centers and place remaining staff on stand by.
- Opened the Westchester County Emergency Worker PMC.

Notes: _____

_____ 14. Review dose assessments and projections with the Commissioner of Health on an ongoing basis to prepare for a Protective Action Decision (PAD) in the event of an escalation to a General Emergency.

Note: KI is ordered for the affected public at a General Emergency.

Notes: _____

CHECKLIST 3

Site Area Emergency, continued

_____ 15. Brief the EOC staff on a regular basis on agency activities, plant status, potential release status, projected dose rates and weather data, or if there is a major change in events concerning EOC operations or plant status.

Notes: _____

_____ 16. Consider the need for Declaration of a State of Emergency. See Attachment 1

_____ 17. Ensure the EOC staff has developed a 24 hour shift schedule for extended EOC operations (two 12 hour shifts) and notified replacements of schedule. Note: Have replacement personnel report to the EOC one half hour prior to their shift for turn over from the previous shift.

Notes: _____

_____ 18. Stand by for possible escalation to GE or until the SITE AREA EMERGENCY is terminated.

Notes: _____

_____ 19. Ensure that County agencies track and document all response costs.

Notes: _____

_____ 20. Log other actions taken.

GENERAL EMERGENCY

General Emergency Definition:

An event has occurred involving actual or imminent core degradation or melting with potential for loss of containment integrity. Releases of radioactive materials can reasonably be expected to exceed federal exposure limits for more than the immediate plant area.

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CHECKLIST 4 **General Emergency**

The items highlighted below should have been completed at the Alert or Site Area Emergency levels. If this is an escalation, there is no need to repeat the highlighted steps, if already completed. **In the event of the declaration of an Immediate General Emergency:**

- 1. Upon receipt of notification by the Warning Point, the DES Commissioner, or designee, may authorize 60 Control to sound sirens and issue an initial Emergency Alert System (EAS) message directing, on behalf of the four County Executives, the public within five miles of the plant to shelter-in-place.

Notes: _____

- 2. The DES Commissioner will immediately notify and consult with the County Executive.

Notes: _____

- 3. The County Executive will immediately consult with the other three County Executives to review the Entergy recommended protective actions; plant conditions; weather conditions; and the status of emergency support services and issue an updated protective action.

NOTE: When a General Emergency is declared, the County Executive will likely order at least an evacuation of the 2-mile and 5-mile downwind affected AREA's (weather and other conditions permitting). Shelter-in-place may be warranted if severe weather conditions exist e.g. heavy snow, tornadoes, floods etc. Expansion of the PAD (Protective Action Decision) out to 10 miles or other AREA's may be required depending on wind shifts, field monitoring team data or additional PAR's from the utility.

Notes: _____

- 4. Activate the County EOC and assure staff respond to the EOC. OEM will confirm all positions filled.

Notes: _____

5. Upon arrival at the EOC, obtain briefing update on the status of the plant from OEM and the Department of Health.

CHECKLIST 4**General Emergency, continued**

_____ 6. Request status report on EOC operational readiness:

- _____ results of siren silent test
- _____ time synchronization with other counties
- _____ communications operability (RECS/Exec hotline, etc)
- _____ video link to the Joint Information Center (JIC)
- _____ status of EOC staffing

_____ 7. Declare the EOC operational when all key staff has reported. Notify SEMO and other counties when the EOC is declared operational.

_____ 8. Confirm Emergency Workers and Field Monitoring Teams have been notified to pick up dosimeters, Radiation Badge/DLR, Potassium Iodide (KI), and emergency exposure cards.

_____ 9. Confirm that the county Public Information function is operational and that the Westchester Public Inquiry Call Center is open and staffed with Westchester PIO staff.

_____ 10. Coordinate with the Director of Communications and County Public Information Officer (PIO) to determine the need for a news release. If a decision is made to issue a statement, provide copies to the other three counties, SEMO and Entergy prior to release.

_____ 11. Consider the need for protective actions for schools outside the impacted areas:

- Delay or cancel opening of schools
- Shelter schools in place pending further action
- Relocate to school reception centers

_____ 12. Consider the need for additional pre-cautionary actions outside impacted areas, including the following:

- Closing of parks and recreation areas in the ten mile EPZ
- Clearing of the River within the 10-Mile EPZ

Note: These recommendations should be coordinated with the other three EPZ counties via the Executive Hotline.

_____ 13. Consider implementing the following actions:

IP 1.0

- Activate Emergency Worker PMC
- Open at least the first three reception centers.

CHECKLIST 4**General Emergency, continued**

- _____ 14. Confirm Emergency Workers and Field Monitoring Teams have been notified to pick up dosimeters, Radiation Bdge/DLR, Potassium Iodide (KI), and emergency exposure cards.
- _____ 15. Assure the field Monitoring Team Supervisor has responded and activated at least two field teams in the potentially affected areas.
- _____ 16. Assure the County Commissioner of Social Services has:
- Opened the White Plains, Westchester Community College and Harrison reception centers; additional reception centers depending upon the scope of protective action and the communities impacted; and placed the others on stand by
 - Coordinated with ARC to open associated congregate care centers
 - Opened the Westchester County Emergency Worker PMC.
- _____ 17. Once a General Emergency is declared and a Protective Action Recommendation (PAR) is received, identify the effected areas, and coordinate with Orange, Putnam and Rockland Counties to prepare for dissemination of the Four County PAD (Protective Action Decision) to the public.
- _____ 18. Issue appropriate EAS message.
- _____ 19. If any sirens fail, ensure that the ENS system is activated to provide telephone notification as backup, and that Public Safety notifies local police departments (route alerting may be needed as an additional back-up means of notification.)
- _____ 20. Advise the general population in the affected areas and all emergency workers in the ten mile EPZ to take Potassium Iodide (KI) as per the SEMO Health Department protocol and after concurrence by the Westchester Commissioner of Health.

NOTE: When a General Emergency is declared, the County Executive will likely order, at least an evacuation of the 2-mile radius and 5-mile downwind affected areas (weather and other conditions permitting).

CHECKLIST 4**General Emergency, continued**

warranted if severe weather conditions exist e.g. heavy snow, tornadoes, floods etc. Expansion of the PAD (Protective Action Decision) out to 10 miles or other areas may be required depending on wind shifts, field monitoring team data or additional PAR's from the utility.

- _____ 21. If a Local State of Emergency has not been declared, consider the need to issue one.

- _____ 22. Coordinate with SEMO and the other counties to request mobilization of the Strategic National Stockpile's radio-protective drugs.

- _____ 23. Brief the EOC staff on a regular basis on agency activities, plant status, potential release status, projected dose rates and weather data. Or if there is a major change in events concerning EOC operations or plant status.

- _____ 24. Ensure the EOC staff has developed a 24 hour shift schedule for extended EOC operations (two 12 hour shifts) and notify replacements of schedule. Note: Have lead positions report to the EOC one half hour prior to their shift for turn over from the previous shift.

- _____ 25. Once Indian Point has determined all radioactive releases are controlled and terminated and the plant is in a stable condition advise staff to enter Recovery/Re-Entry phase.

ATTACHMENT 1
EMERGENCY CLASSIFICATION LEVEL OVERVIEW

This information is intended to supplement the County Executive checklist and provide OEM an overview of all county agency response actions. It should serve as a tool to confirm all necessary actions have been accomplished.

UNUSUAL EVENT

No.	Action Item	Implementing Agency/Individual
1.0	Upon notification from Indian Point of an Unusual Event via the New York State RECS line, the Westchester County Warning Point will notify DES/OEM, and other County Organizations as directed.	County Warning Point
2.0	OEM briefs the County Executive and/or the Deputy County Executive.	DES/OEM
3.0	<p>The County Executive, in consultation with senior staff, evaluates the need for further actions.</p> <p>Note: If plant safety systems are not involved, mobilization of staff is not required. However, the County Executive has the discretion to place key staff on standby and to verify operational readiness of response facilities such as the EOC.</p>	County Executive
4.0	If the NUE is as a result of a security related event, consider the need to initiate additional actions, such as EOC activation and issuance of a news release.	County Executive DES PIO

ATTACHMENT 1

EMERGENCY CLASSIFICATION LEVEL OVERVIEW

ALERT

No.	Action Item	Implementing Agency/Individual
1.0	Upon notification from Indian Point of an ALERT via the New York State RECS line, the Westchester County Warning Point notifies County OEM.	County Warning Point
2.0	Activate the EOC and mobilize EOC staff.	County Executive Commissioner of Emergency Services
3.0	Open the Joint Information Center	SEMO/Entergy/Counties
4.0	Dispatch County Liaison to Indian Point Emergency Operations Facility (EOF)	Health Commissioner
5.0	Upon arrival at the EOC, each agency places personnel and resources on standby	All County Agencies
6.0	Upon arrival at the EOC, the County Executive receives a briefing by the Commissioner of the Department of Health and the Commissioner of Emergency Services	Commissioner of Emergency Services Commissioner of Health
7.0	School pre-cautionary actions are considered: <ul style="list-style-type: none"> - delay or cancel school opening; or - shelter schools in place; or - close schools early; or - relocate schools to school reception centers 	County Executive School Superintendents School Desk Rep.
8.0	Consider the need to close parks and recreation areas.	County Executives Department of Parks, Recreation and Conservation

ATTACHMENT 1
EMERGENCY CLASSIFICATION LEVEL OVERVIEW

ALERT

No.	Action Item	Implementing Agency/Individual
9.0	Consider clearing the River within the 10-mile EPZ. Note: This recommendation should be coordinated with the other three counties via the Executive Hotline.	County Executive U.S. Coast Guard
10.0	Monitor traffic flow and establish traffic control points as necessary.	State, County and local Police DPW
11.0	Notify hospitals, nursing homes and other special facilities.	Emergency Medical Services Mental Health Social Services Schools Coordinator
12.0	Dispatch school buses. Place other transportation services on standby. Stage resources as necessary.	Co. Department of Transportation
13.0	Place ambulances on standby.	Emergency Medical Services
14.0	Place reception center radiological monitors on standby and confirm team assignments.	Department of Health DES
15.0	Place Reception Center registration staff on standby. Note: The first three reception centers to be activated would be White Plains HS and Harrison HS, followed by Westchester Community College.	Social Services
16.0	Notify FAA, Metro North, CSX (Conrail) and Amtrak.	Co. Department of Transportation
17.0	Conduct regular briefings in the Operations Room.	County Executive DES

ATTACHMENT 1
EMERGENCY CLASSIFICATION LEVEL OVERVIEW

SITE AREA EMERGENCY

No.	Action Item	Implementing Agency/Individual
1.0	Ensure that initial pre-cautionary actions are being implemented: - EPZ schools are sheltered, closed or relocated; - Parks and recreation areas are closed; - River is cleared within the EPZ	County Executive Commissioner of Emergency Services School District Superintendents School Desk Rep. Parks, Recreation and Conservation US Coast Guard
2.0	Consider the need for additional protective actions, such as sheltering or evacuation.	County Executive Emergency Services Health Transportation Public Safety Fire and Rescue Social Services
3.0	Consult with the other three County Executives regarding protective actions and the advisability of sounding sirens and issuing Emergency Alert System (EAS) messages.	County Executive PIO
4.0	Consider Declaring a Local State of Emergency	County Executive Commissioner of Emergency Services PIO County Attorney
5.0	Schools designated as school reception centers are ready to receive students.	School Coordinator
6.0	Facilities designated as general public reception centers are activated and ready to receive evacuees.	Schools Coordinator Health Social Services

ATTACHMENT 1
EMERGENCY CLASSIFICATION LEVEL OVERVIEW

SITE AREA EMERGENCY

No.	Action Item	Implementing Agency/Individual
7.0	Traffic control points are established.	County Police DPW
8.0	Buses required for evacuation are staged.	Department of Transportation Schools Coordinator
9.0	Congregate care centers are on standby.	American Red Cross Schools Coordinator
10.0	All emergency workers in the field have been issued dosimetry and KI	Health Applicable fire, police, EMS and other affected agencies
11.0	Sheltering and evacuation arrangements are in place for institutionalized mobility impaired.	Emergency Medical Services Transportation Mental Health Social Services
12.0	Non-institutionalized mobility-impaired persons are contacted and transportation resources arranged.	Emergency Medical Services Department of Transportation Hospital Coordinator
13.0	Hearing-impaired residents of the EPZ have been contacted and advised of the emergency.	Social Services
14.0	Mental health facilities within the EPZ have been notified and are ready to take any necessary protective actions. Activities are coordinated with New York State Office of Mental Health, American Red Cross Emergency Medical Services and Westchester County Medical Center.	Mental Health
15.0	If requested, dispatch Disaster Team to reception and congregate care centers.	Mental Health

ATTACHMENT 1
EMERGENCY CLASSIFICATION LEVEL OVERVIEW

SITE AREA EMERGENCY

No.	Action Item	Implementing Agency/Individual
16.0	Hospitals in the EPZ are sheltered and ready for evacuation.	Emergency Medical Services
17.0	Correctional facilities within the EPZ have been notified and are prepared to take protective action if necessary. (Sing Sing State Correctional Facility is a State responsibility.)	County Police (notification) SEMO Corrections
18.0	Emergency Worker Personnel Monitoring Center (County Fire Training Center) is activated, operational, and ready to receive emergency workers.	Health DPW Emergency Services Public Safety
19.0	Field Monitoring Teams are dispatched.	Health RACES
20.0	County fire services have been notified and are on standby (those services performing reception center monitoring and decontamination are at reception centers.)	Fire and Rescue
21.0	All county environmental facilities have been notified and instructed to implement emergency procedures.	Environmental Facilities
22.0	Environmental facilities within the 10-mile EPZ are prepared to shelter or evacuate, in accordance with public protective action directives. In the event of evacuation, ensure procedures are followed to ensure a safe shutdown, or are placed in automatic operations mode.	Environmental Facilities
23.0	Notify FAA, Metro North, CSX (Conrail), and Amtrak.	Department of Transportation
24.0	Consider data and developed by the Dose Assessment Team from the EOF, field teams and utility technical representative.	Health Department
25.0	Conduct periodic Operations Room briefings.	County Executive Commissioner of Emergency Services

ATTACHMENT 1
EMERGENCY CLASSIFICATION LEVEL OVERVIEW

GENERAL EMERGENCY

No.	Action Item	Implementing Agency/Individual
1.0	The County Executive consults with the Commissioner of Health and utility liaison on plant status, weather conditions, projected dose rate	County Executive Health
2.0	Consult with the Commissioner of Emergency Services and other key staff to ensure: - transportation resources are staged; - traffic control points established; - roads are clear - reception centers opened and staffed - congregate care centers opened and staffed	County Executive County PIO Transportation Public Safety Public Safety/DPW Social Services/Health Red Cross
3.0	After confirming necessary equipment and personnel are in place, consider evacuation of the 2-mile radius and 5-miles downwind (weather and other conditions permitting) as a minimum protective action, as well as the administration of KI to those in evacuation areas.* * Coordinate protective action decision; siren sounding; and EAS message with the other three County Executives via the Executive Hotline. Note: Camp Smith, is a State decision FDR VA Hospital, VA decision	County Executive County Executive
4.0	Declare a Local State of Emergency, if not already declared, in coordination with the other three counties.	County Executive
5.0	Monitor implementation of any protective actions and obtain frequent updates.	County Executive Commissioner of Emergency Services

ATTACHMENT 1
EMERGENCY CLASSIFICATION LEVEL OVERVIEW

GENERAL EMERGENCY

No.	Action Item	Implementing Agency/Individual
6.0	Ensure emergency workers in the field have been issued dosimetry, KI and Radiation Exposure Control Cards.	All agencies with workers in the field. Health Radiological Safety Officer
7.0	Ensure the impacted public and emergency workers are informed of the need to take KI.	County Executive Health
8.0	Monitor the status of schools (sheltered, closed or relocated.)	Schools Coordinator
9.0	Traffic and Access Control Points are established.	County Executive Schools Coordinator Transportation DPW
10.0	Evacuated areas are patrolled.	Public Safety
11.0	County and/or State Police helicopter, or the Civil Air Patrol may conduct air reconnaissance of evacuation routes.	Public Safety Public Safety
12.0	Evacuation route impediments are identified and removed.	Public Safety DPW
13.0	Correctional facilities in the EPZ are sheltered.	State
14.0	Monitor bus operations and transportation progress for evacuation.	Transportation EMS

ATTACHMENT 1
EMERGENCY CLASSIFICATION LEVEL OVERVIEW

GENERAL EMERGENCY

No.	Action Item	Implementing Agency/Individual
15.0	At least three reception centers should be open and receiving evacuees: <ul style="list-style-type: none"> - White Plains Sr. High School - Harrison H.S. - Westchester Community College 	Social Services Health Fire and Rescue Public Safety
16.0	Open additional reception centers based upon extent of evacuation.	Social Services Health Fire and Rescue Public Safety
17.0	Associated congregate care centers should be opened and receiving evacuees.	Red Cross Social Services
18.0	Field Monitoring Teams conduct field measurements. Note: Police escort may be required.	Health Department RACES
19.0	Non-institutionalized mobility-impaired and hearing impaired persons are contacted to ensure they are aware of the emergency and needs are addressed.	Transportation EMS
20.0	Institutionalized mobility impaired within affected area are sheltered or evacuated and transportation needs are being addressed.	EMS Transportation
21.0	Hospitals in affected areas are being sheltered or evacuated.	EMS Transportation
22.0	Mental Health facilities in affected areas are being sheltered or evacuated.	Mental Health

ATTACHMENT 1
EMERGENCY CLASSIFICATION LEVEL OVERVIEW

GENERAL EMERGENCY

No.	Action Item	Implementing Agency/Individual
23.0	If requested, dispatch Disaster Team to the reception and congregate care centers, or other areas of need.	Mental Health
24.0	Monitor evacuated areas and provide support to County Police in traffic control.	Fire Services
25.0	Environmental facilities in the EPZ should be instructed to start implementing their emergency operations procedures. In the event of evacuation, implement safe shutdown procedures or place in automatic operations mode.	Environmental Facilities
26.0	County personnel whose workplace is impacted by evacuation orders will maintain contact with supervisors and confirm relocation sites.	All affected County agencies
27.0	Emergency Workers Personnel Monitoring Center (County Fire Training Center) is open and processing workers.	Health DPW Fire and Rescue Police
28.0	Confirm FAA, Metro North, CSX and Amtrak have been notified of emergency status and protective actions and have taken necessary operational steps.	Transportation
29.0	Confirm operational status of bus loops among reception centers and congregate care centers.	Transportation
30.0	Continue regular Operations Room briefing updates.	County Executive Commissioner of Emergency Services
31.0	Upon completion of General Emergency procedures, review recovery and re-entry responsibilities.	All agencies

ATTACHMENT 2

Local State of Emergency Declaration

A Local State of Emergency is hereby declared in Westchester County beginning at _____ o'clock on the _____ day of _____ (month), 200_, and ending at _____ o'clock on the _____ day of _____ (month), 200_. This Local State of Emergency shall be in effect for a period of time not to exceed _____ .

The Local State of Emergency has been declared due to a disaster and emergency condition existing be reason of the occurrence of, and imminent threat of, widespread or severe damage, injury, loss of life and property resulting from an emergency at the Indian Point Energy Center.

I, Robert P. Astorino, County Executive of the County of Westchester, hereby find and declare that the aforesaid conditions threaten and imperil the public safety and the safety of the people of the County of Westchester.

THEREFORE, as Chief Executive of the County of Westchester, I, ROBERT P. ASTORINO, have exercised the authority given to me under Article 2-b of the Executive Law of the State of New York, to preserve the public safety and hereby render all required and available assistance vital to the security, well-being and health of the citizens of this community.

ROBERT P. ASTORINO
County Executive
County of Westchester
Dated:

Attachment 3

Emergency Alert System Heads-Up Message

The Emergency Alert System has been activated by chief officials of Westchester, Rockland, Orange and Putnam Counties due to a technical malfunction at the Indian Point Nuclear Power Plant in Buchanan, New York. People living or working within 10 miles of the plant should listen to this entire message.

An Unusual Event....An Alert....A Site Area Emergency.... A General Emergency has been declared.

There has been....There has not been.... A release of radioactive materials to the environment due to the event.

While there are no protective actions called for at this time, people living within ten miles of the plant should stay tuned for any additional emergency instructions that may be necessary.

People living or working within 10 miles of the plant should consult the Community Emergency Planning for Indian Point booklet or similar pages of the phone book for detailed information. Stay tuned to this Emergency Alert System station for further information and instructions.

This is not a test.

Attachment 4

EMERGENCY ALERT SYSTEM MESSAGE
Immediate General Emergency

Date _____
Siren Time: _____
EAS Broadcast time: _____

ANNOUNCER: *This is not a test.* The Emergency Alert System has been activated by chief officials of Westchester, Rockland, Orange and Putnam Counties due to an emergency at the Indian Point Nuclear Power Plant in Buchanan, New York. Please listen to this entire message before taking any action.

A General Emergency has been declared.

There has been....*There has not been*.... A release of radioactive materials to the environment.

OR

It has not yet been determined whether there has been a radiological release of radioactive materials to the environment.

People living within five miles of the plant are directed to: stay inside their homes or businesses. If you have KI (Potassium Iodide), ingest one dose at this time.

"In Westchester, you should stay indoors if you are in Buchanan, City of Peekskill, Verplanck, Montrose, Croton-on-Hudson, and the entire Town of Cortlandt.

"In Rockland, you should stay indoors if you are in the Towns of Stony Point and Haverstraw. People in the Bear Mountain and Harriman State Parks should seek shelter.

"In Orange County, you should stay indoors if you are in the Town of Highlands, the Village of Highland Falls. People in the Harriman and Bear Mountain State Parks should seek shelter.

"In Putnam County, you should stay indoors if you are in Garrison, south of Route 403, and the Continental Village and Lake Peekskill areas.

I repeat, those living within five miles of the plant should go indoors and close windows and doors. If you have KI (Potassium Iodide), ingest one dose at this time.

People living within 10 miles of the plant should consult the Community Emergency Planning for Indian Point booklet or similar pages of the phone book for detailed information. Stay tuned to this Emergency Alert System station for further information and instructions.

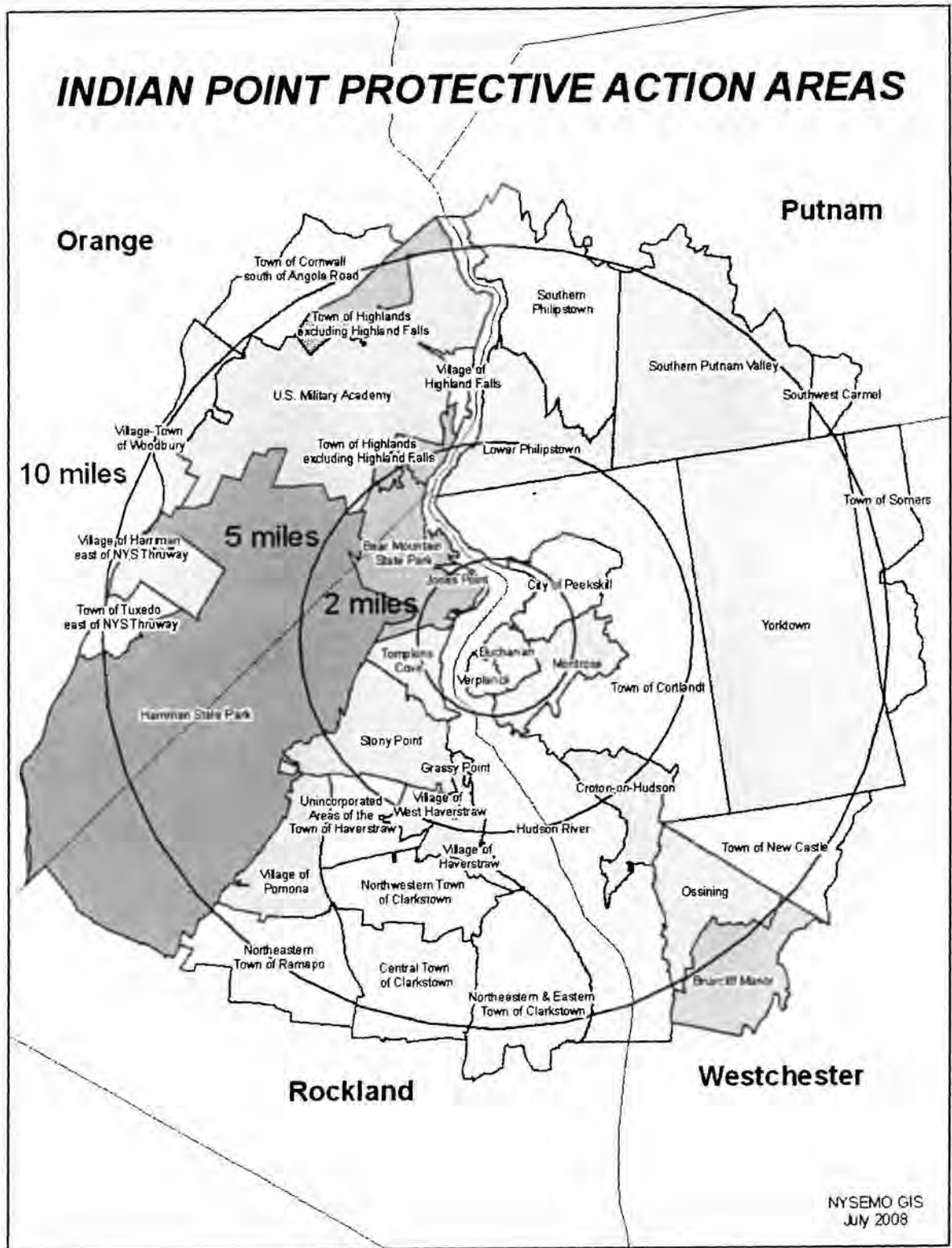
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Attachment 5
Ten Mile EPZ Map

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Attachment 6
EAS Contact Information

Emergency Alert System (EAS) radio station, WHUD:

- (1) Primary Numbers: (845)831-1525
- (2) Alternate Numbers: (845)831-1540

Note: If you are unable to make immediate contact with WHUD, both back up stations need to be contacted. Contact both:

WFAS:

- (1) Primary Numbers: (914)693-9395 [4:30AM-6:30PM M-F]
(914)806-6349, all other times
(914) 558-0592 (pager)
- (2) Alternate Numbers: (914)693-2401/5600/5700/1900/2400
(914)285-9327

and

WRRV:

(1) Primary Numbers:

Mon. through Fri. (845)471-1500
(8:30 am to 5:30 pm)

After hrs/Weekends (845)452-1015

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Attachment 7

TABLE A-1
EVACUATION TIME ESTIMATE STUDY EXCERPTS

Table F-1. Time to Clear the Indicated Area of 100 Percent of the Evacuating Population for Westchester Portion of Region R1															
KLD ID NUMBER	Protective Action Area	Scenario													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Briarcliff Manor														
6	Ossining														
8	Town of New Castle														
14	Croton-on-Hudson														
16	Verplanck	4:20	4:50	3:30	3:50	3:00	4:30	5:00	5:40	3:30	3:40	4:10	3:00	3:30	4:3
18	Buchanan	4:40	5:10	3:35	4:00	3:00	4:40	5:10	5:50	3:30	3:50	4:20	3:00	3:30	4:4
19	Montrose	4:40	5:10	3:50	4:00	3:50	4:50	5:10	5:50	3:50	4:00	4:50	3:50	3:50	4:5
23	City of Peekskill	5:00	5:20	4:30	4:50	3:50	5:10	5:30	5:50	4:20	4:50	5:20	3:50	4:20	5:1
24	Town of Cortlandt														
28	Town of Yorktown														
29	Town of Somers														
Region ETE:		5:00	5:20	4:30	4:50	3:50	5:10	5:30	5:50	4:20	4:50	5:20	3:50	4:20	5:1

Attachment 7
EVACUATION TIME ESTIMATE STUDY EXCERPTS

Table F-2. Time to Clear the Indicated Area of 100 Percent of the Evacuating Population for Westchester Portion of Region R2															
KLD ID NUMBER	Protective Action Area	Scenario													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Briarcliff Manor														
6	Ossining														
8	Town of New Castle														
14	Croton-on-Hudson	5:25	6:00	6:30	7:00	4:00	5:30	6:00	6:50	4:40	5:00	5:25	4:00	4:40	5:3
16	Verplanck	5:00	5:30	4:30	4:50	3:30	5:00	5:30	6:20	4:20	4:40	5:00	3:30	4:20	5:0
18	Buchanan	5:10	5:50	4:20	4:45	3:25	5:20	5:50	6:40	4:10	4:40	5:00	3:20	4:10	5:2
19	Montrose	5:20	5:50	4:40	5:10	3:55	5:20	5:50	6:40	4:30	4:50	5:10	3:50	4:30	5:2
23	City of Peekskill	5:35	6:00	4:50	5:10	4:10	5:40	6:05	6:40	4:50	5:10	5:50	4:10	4:50	5:4
24	Town of Cortlandt	5:45	6:10	5:10	5:30	4:30	5:50	6:10	7:10	5:00	5:20	6:20	4:30	5:05	5:5
28	Town of Yorktown														
29	Town of Somers														
Region ETE:		5:50	6:20	6:30	7:00	4:30	5:50	6:30	7:30	5:00	5:20	6:20	4:30	7:50	5:5

Attachment 7
EVACUATION TIME ESTIMATE STUDY EXCERPTS

Table F-3. Time to Clear the Indicated Area of 100 Percent of the Evacuating Population for Westchester Portion of Region R3															
KLD ID NUMBER	Protective Action Area	Scenario													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Briarcliff Manor	7:05	7:55	8:30	9:10	5:30	7:10	8:00	9:05	6:10	6:45	7:50	5:20	6:10	7:10
6	Ossining	6:20	7:00	8:30	9:10	4:50	6:20	7:00	7:40	5:20	5:40	6:20	4:35	5:20	6:20
8	Town of New Castle	7:05	8:00	6:20	6:55	5:35	7:15	8:00	9:05	6:10	6:45	7:50	5:20	6:10	7:15
14	Croton-on-Hudson	6:10	7:00	8:30	9:10	4:40	6:10	6:50	7:35	5:10	5:30	6:00	4:30	5:10	6:10
16	Verplanck	5:50	6:30	5:00	5:30	4:10	5:50	6:30	7:10	4:50	5:10	5:40	4:00	4:50	5:50
18	Buchanan	6:00	6:50	5:00	5:30	4:00	6:00	6:40	7:30	4:40	5:10	5:30	3:50	4:40	6:00
19	Montrose	6:10	6:50	5:30	6:00	4:45	6:10	6:50	7:30	5:10	5:30	6:15	4:30	5:10	6:10
23	City of Peekskill	6:55	7:35	5:50	6:30	5:10	7:00	7:40	8:40	5:50	6:25	7:40	5:10	5:50	7:00
24	Town of Cortlandt	7:20	8:20	6:30	7:30	6:10	7:20	8:20	9:50	6:30	7:20	9:00	6:10	6:30	7:20
28	Town of Yorktown	7:20	8:10	6:55	7:30	6:00	7:25	8:10	9:10	6:30	7:10	8:20	5:50	6:30	7:25
29	Town of Somers	7:30	8:20	7:00	7:30	6:10	7:30	8:20	9:20	6:40	7:20	8:30	5:55	6:40	7:30
Region ETE:		7:40	8:30	8:30	9:10	6:30	7:40	8:30	9:50	7:00	7:30	9:00	6:30	8:40	7:40

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DRAFT	Westchester County DEPARTMENT OF EMERGENCY SERVICES	IP-1.1
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**INDIAN POINT ENERGY CENTER
IMPLEMENTING PROCEDURE**

**Office of Emergency Management
EOC Operations Manager**

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1.0 Purpose

This procedure provides guidance for the Westchester Department of Emergency Services Office of Emergency Management staff to implement the Westchester County Radiological Emergency Plan for the Indian Point Energy Center.

It provides guidance on how to manage EOC operations.

2.0 Responsibilities

2.1 The Department of Emergency Services Commissioner – The Commissioner, or designee, is responsible for assuring the following areas are being addressed by the various County organizations in coordination with the County Executive :

- **Overall Command and Control**
- **Notification of the Public** via sirens, EAS messages.
- **Accident Assessment** of off site consequences of a radiological emergency and to coordinate those monitoring activities.
- **Protective Response Evaluation** to determine the proper protective actions to be implemented based on protective action guides and dose projections for consideration of evacuation or sheltering.
- **Radiological Exposure Control** to minimize radiological exposure of emergency workers and the general public.
- **Communications** via news briefings, TV, Radio, or Joint News Center.
- **Reception and Congregate Care Centers** for evacuated public.
- **Fire and Rescue Services**
- **Transportation**
- **Social Services** in support of reception and congregate care centers.
- **Public Works**
- **Emergency Medical Services**

2.2 EOC Operations Manager – The EOC Ops Manager is responsible for ensuring the facility is fully operational; obtaining accurate and timely information of the event for dissemination to the EOC floor; managing the overall operations of the EOC; conducting EOC briefings; updating the status boards; and assuring all EOC positions are filled.

2.3 DES/OEM Support Staff – The DES/OEM staff will complete the overview checklists in this SOP in support of the County Executive and DES Commissioner to assure that all facets of the Westchester Emergency Plan are being completed, as appropriate. The staff will also advise the County Executive and DES Commissioner or other EOC staff as appropriate on Plan and SOP requirements.

2.4 The EOC organization will also consist of Branch Directors who will provide oversight to assigned departments.

2.5 The Department of Public Works is responsible for ensuring all EOC support systems are functioning properly.

2.6 The IT Department is responsible for ensuring that computers are operational and that applications are fully functional.

3.0 Concept of Operations

3.1 The Westchester County EOC operates within the National Incident Management System (NIMS) and uses Incident Command System (ICS) principles. The EOC organization is organized along ICS lines of command and authority. These are detailed in the Radiological Emergency Plan.

3.2 When notified of an Unusual Event, OEM, in consultation with the County Executive, will evaluate the situation and determine whether response actions are necessary, including possible partial activation of the EOC. For IPEC security related events, the EOC and Joint Information System may be activated.

3.3 When notified of an Alert or higher event, the OEM will activate the EOC.