

[illegible]

5.4.4.5 Decontamination:

A Radiation Protection procedure provides guidance for graduated measures to be used for decontamination. The objective of decontamination is to prevent the spread of radioactive material on the individual, to the environment or to other personnel and to reduce the resultant dose. Decontamination is essentially the removal of radioactive material and is performed starting with the highest level of contamination using the simplest procedures. Continued decontamination may show diminishing effectiveness and require a decision to stop or use more potent agents.

Decontamination kits, which contain items to decontaminate the skin and for wound cleansing, are available. Decontamination should continue until it is no longer effective but not so as to abrade skin. This procedure should be effective against iodine and other contaminants.

If personnel cannot be decontaminated to the limits of Procedure RP-SUR-PERS-DECON, "Personnel Decontamination", Radiation Management Consultants may be contacted.

Instruments are available to determine contamination levels of personnel or equipment and the effectiveness of decontamination. Waste drums are available as containers for radioactive waste and emergency clothing is available, if needed.

5.4.4.6 Offsite Authority Actions:

Offsite authorities will provide assistance as needed to protect the public. In the event a Site Area Emergency is declared, this may include activating the public notification system and providing information and periodic updates of the situation through the EAS (Emergency Alert System) and/or press briefings. Resources at primary response centers will be augmented by calling other emergency services to standby status and dispatching certain emergency personnel to initiate their functions (i.e. monitoring and communications). Information from the licensee, monitoring teams and weather stations will be continually evaluated with regard to changes in protective actions already initiated for the public, such as sheltering of people or milk animals. Monitoring results and any actions taken should be reported to the licensee and others having a need to know.

5.5 General Emergency:

The General Emergency will be declared when the conditions described in Section 3.5 exist. Actions associated with the General Emergency declaration are to: (1) initiate protective actions for the public as predetermined or as indicated by actual releases; (2) provide continuous assessment of information from Ginna Station and offsite measurements; (3) provide consultation with offsite authorities; and (4) keep the public informed through updates of the situation through the Joint Emergency News Center.

5.5.1 Company Actions:

A General Emergency requires that all actions prescribed for the Site Area Emergency (see Section 5.4) be implemented. The NRC, State of New York, and county authorities, who will already have been contacted for lower classifications, will now be updated.

The Emergency Coordinator (or EOF/Recovery Manager as appropriate) may request the assistance of offsite groups which could include Radiation Management Consultants, Company medical department, and Department of Energy, Brookhaven Radiological Assistance Program. Technical personnel from other Company departments and/or consultants will be called as needed.

The Emergency Coordinator (or EOF/Recovery Manager) has the responsibility to determine the magnitude and extent of the incident by evaluating information from the Control Room and the survey teams. This information will consist of instrumentation readings and any survey results available. He shall update the State and local authorities with new survey data and other information and recommend protective actions. Protective action recommendations, if dose projection information is available, will be based on the "Manual of Protective Action Guides and Protective Action for Nuclear Incidents" EPA-400-R-92-001, October 1991, U.S. Environmental Protection Agency. A summary of recommended actions is presented in Table 5.1.

Figure 5.3 provides the scheme for Predetermined Protective Action Recommendations based upon reaching a General Emergency and present wind conditions, and reflects an initial 2 mile radius and 5 miles downwind evacuation recommendation. This methodology is contained in EPIP 2-1, which also provides guidance for upgrading an initial PAR based on pertinent factors.

In making his recommendation for sheltering or evacuation, the Emergency Coordinator (or EOF/Recovery Manager) should evaluate the weather forecast in relation to changing winds and precipitation. He should also evaluate the calculated evacuation times (Appendix G) in relation to predicted start, length and termination of a release.

Emergency staff at Wayne and Monroe Counties and New York State shall determine, by evaluating the information given by the Emergency Coordinator (or EOF/Recovery Manager as appropriate), if area evacuation or sheltering is necessary, to what extent, and how to undertake protective action including evacuation. A projection of population distribution in the 10 mile plume exposure zone is included in Appendix F. A summary of evacuation time estimates for various conditions is provided in Appendix G.

All survey and sample analysis results will be retained by the Radiation Protection and Chemistry Manager for appropriate documentation. Formal reports shall be written and distributed as required by 10CFR20 and the Ginna Technical Specifications. Information concerning the offsite consequences of the incident and protective actions to protect the public will be coordinated in accordance with the New York State Radiological Emergency Plan and County Emergency Plans. A Company spokesperson in the JENC will release the information concerning the plant, plant safeguards and its employees, and assistance being provided to State and local authorities.

Severe Accident Management Guidelines (SAMG) entry conditions are defined in the Station Emergency Operating Procedures.

5.5.2 Offsite Authorities Actions:

All actions of paragraph 5.4.4.6 for Site Area Emergency will be reviewed and enacted for a General Emergency. All emergency personnel will have been activated and all response centers are operating. Information is evaluated and forwarded to the proper authorities and the public. Protective actions will be instituted as needed for the public and milk animals.

FIGURE 5.3
EVACUATION AREAS BY ZONES
PROTECTIVE ACTION RECOMMENDATIONS BY ERPA FOR GENERAL EMERGENCY CLASSIFICATION

Wind From (Degrees)	Initial Protective Action Recommendations (Evacuation based on 2 mile radius & 5 miles downwind)	Secondary Protective Action Recommendations* (Evacuation based on 5 mile radius & 10 miles downwind)
N 349 to 11	Evacuate:W (1,2,3) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3,5,6,7) M (1,2,4,5) and implement KI Plan Shelter: Remainder of EPZ
NNE 12 to 33	Evacuate:W (1,2) M (1) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3,6,7) M (1,2,3,4,5,6,7,9) and implement KI Plan Shelter: Remainder of EPZ
NE 34 to 56	Evacuate:W (1,2) M (1) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3,7) M (1,2,3,4,5,6,7,8,9) and implement KI Plan Shelter: Remainder of EPZ
ENE 57 to 78	Evacuate:W (1,2) M (1) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3,7) M (1,2,3,4,5,6,7,8,9) and implement KI Plan Shelter: Remainder of EPZ
E 79 to 101	Evacuate:W (1,2) M (1) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3) M (1,2,3,4,6,7,8,9) and implement KI Plan Shelter: Remainder of EPZ
ESE 102 to 124	Evacuate:W (1) M (1) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3) M (1,3,6,8,9) and implement KI Plan Shelter: Remainder of EPZ
SE 125 to 146	Evacuate:W (1) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3) M (1) and implement KI Plan Shelter: Remainder of EPZ
SSE 147 to 168	Evacuate:W (1) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3) M (1) and implement KI Plan Shelter: Remainder of EPZ
S 169 to 191	Evacuate:W (1) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3) M (1) and implement KI Plan Shelter: Remainder of EPZ
SSW 192 to 213	Evacuate:W (1) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3) M (1) and implement KI Plan Shelter: Remainder of EPZ
SW 214 to 236	Evacuate:W (1,3) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3,4) M (1) and implement KI Plan Shelter: Remainder of EPZ
WSW 237 to 258	Evacuate:W (1,3) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3,4,5) M (1) and implement KI Plan Shelter: Remainder of EPZ
W 259 to 281	Evacuate:W (1,3) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3,4,5,6) M (1) and implement KI Plan Shelter: Remainder of EPZ
WNW 282 to 303	Evacuate:W (1,2,3) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3,4,5,6,7) M (1) and implement KI Plan Shelter: Remainder of EPZ
NW 304 to 326	Evacuate:W (1,2,3) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3,4,5,6,7) M (1,2) and implement KI Plan Shelter: Remainder of EPZ
NNW 327 to 348	Evacuate: W (1,2,3) and implement KI Plan Shelter: Remainder of EPZ	Evacuate: W (1,2,3,4,5,6,7) M (1,2,5) and implement KI Plan Shelter: Remainder of EPZ

* Secondary Protective Actions are recommended when dose projections or field teams indicate ≥ 1 REM TEDE beyond 5 miles

5.6 Major Release to Lake Ontario or Deer Creek:

If a major release to the Lake Ontario or Deer Creek occurs which exceeds the Technical Specification limit or the limiting concentrations specified in 10CFR20, Appendix B, Table II, Column 2, at the point of discharge, the following actions shall be taken:

The release will be classified per EPIP 1-0, "Ginna Station Event Evaluation and Classification" and appropriate notifications will be made, if necessary, per the classification and corresponding procedures. The Ontario Water District will be notified. The waste discharge will be isolated, grab samples will be obtained, and dilution will be estimated in accordance with EPIP 1-16.

The Radiation Protection section will be instructed to monitor the Ontario Water District Station water.

TABLE 5.1 Recommended Protective Actions to Reduce Whole Body and Thyroid Dose

PROJECTED DOSE TO THE POPULATION	RECOMMENDED ACTION	COMMENTS
Total Whole Body < 1 REM*	No planned protective actions. Local authorities or State may issue an advisory to seek shelter and await further instructions. Monitor environmental radiation levels.	None.
Total Whole Body ≥ 1 REM*	Conduct evacuation.* Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. Control access.	Evacuation (or for some situations, sheltering**) should be initiated at one REM. Seeking shelter would be an alternative if evacuation were not immediately possible.
Project Dose (REM) to Emergency Team Workers		
Total Whole Body ≥ 25 REM	Control exposure of emergency team members to these levels except for lifesaving mission. (Appropriate controls for emergency workers include time limitations, respirators and stable iodine.)	None.
Total Whole Body ≥ 75 REM	Control exposure of emergency team members performing lifesaving missions to this level. (Control of time of exposure will be most effective.)	None.

NOTES:

- The sum of the effective dose equivalent resulting from exposure to external sources and the committed effective dose equivalent incurred from all significant inhalation pathways during the early phase.
- ** Sheltering may be the preferred protective action when it will provide protection equal to or greater than evacuation, based on consideration of factors such as source term characteristics, and temporal or other site-specific conditions.

APPENDIX G

ANALYSIS OF EVACUATION TRAVEL TIMES

This Evacuation Time Estimate (ETE) is in strict compliance with NUREG-0654 and related guidelines. The ETE serves as one criterion for developing a Protective Action Decision (PAD). This appendix discusses the various components required to update the evacuation time estimates for the Ginna EPZ. These components are listed below:

- Evacuation Scenarios
- Weather Conditions
- Trip Generation
- Traffic Assignment
- Notification Time
- Mobilization Time
- Evacuation Travel Time Estimates
- Distribution of the Evacuation Population by Time
- Critical Roadway Links

A. Evacuation Scenarios

Evacuation travel time estimates are prepared to serve as a guide for local emergency coordinators in refining their emergency response plans and as an aid to local officials in selecting protective actions during an emergency. Evacuation travel time estimates were prepared for four distinct time-based scenarios and three distinct weather conditions for inclusion in the company's and Monroe and Wayne County RERP's.

These estimates assumed various partial as well as simultaneous evacuations of the entire EPZ. The weather scenarios included in the current Monroe and Wayne County RERP's are listed below.

Every Protective Action Recommendation (PAR) possibility for evacuation is modeled; additionally, the entire 2 mile, 5 mile and 10 mile evacuations are modeled.

Every evacuation scenario is run against the following time of year and weather conditions:

- Summer
 - Midweek and Weekend, Midday (School not in Session)
 - Good Weather
 - Rain
 - Midweek and Weekend, Evening (School not in Session)
 - Good Weather
- Winter
 - Midweek and Weekend, Midday
 - Good Weather
 - Rain
 - Snow
 - Midweek and Weekend Evening
 - Good Weather

These time-based scenarios were chosen and analyzed for the RERP's because they cover significantly different patterns of population distribution and transportation availability. Hence, the decision maker is provided with a tool for deciding the travel time required to evacuate various areas (sectors) or the entire EPZ under four different weather conditions and at different times of the day. These evacuation travel times are shown later in this section. A detailed description of the above scenarios is presented below.

Evacuation scenarios define the range of external conditions that could prevail at the time of an emergency (e.g., season, day-of-week, weather....).

Each "evacuation case" consists of calculating the ETE for one region under one scenario.

The total number of evacuation cases for Ginna is 35 regions x 12 weather scenarios which equals 420 ETE's. The regions are listed at the end of this Appendix in Table G-1.

The ETE will be calculated on the basis that the event escalates rapidly to the extent that the advisory to evacuate is virtually simultaneous with the alert.

100% of the population within the evacuation region will evacuate; a substantial percentage of the population outside of that region and outside the EPZ will also elect to voluntarily travel away from the plant.

ETE's were developed for each scenario. The process defines the region to be evacuated, identified demand (in vehicles), sub-divided into "time periods" to represent the variation of demand over time. Then, highway link capabilities were estimated based on field survey observations and on scenario-based weather conditions.

The ETE is the elapsed time for the evacuating traffic originating within the evacuation region to leave the region.

Population estimates are based upon 2000 Census data, projected to year 2003. The county specific projections are based upon growth rates estimated by comparing 1990 and 2000 Census data. Estimates of employees who commute into the EPZ are based upon the New York State Journey to Work Database, applied to the year 2000 employment data stratified on an ERPA basis. Specific major employers were also considered. Demographic data was adapted from telephone surveys conducted in Nine Mile Point EPZ due to similarity to the Ginna EPZ.

The ETE assumed 100% evacuation of the impacted region, 50% evacuation of other EPZ areas within indicated downwind distance and 35% evacuation of population within remaining areas inside the EPZ. This is displayed in Figure G-1 at the end of this Appendix..

Evacuation Regions take the form of circles or of "keyhole" configuration consisting of a circle and a sector expanding to 5 or 10 miles from the plant. The EPZ is subdivided into Emergency Response Planning Areas. Regions consist of groups of contiguous ERPAs.

The evacuation travel time depends primarily on the relationship between Traffic Demand and Highway Capacity.

When Demand exceeds over some time period, travel speed declines and the traffic environment exhibits queuing (stop-and-go), which is characteristic of congested conditions. Traffic does move, but slowly.

B. Weather Conditions

NUREG-0654 stipulates that two weather conditions, normal and adverse, be considered in the evacuation travel time analysis; however, local weather conditions in the Rochester area, particularly during the winter, suggest that two types of adverse weather conditions be considered when estimating evacuation times. Normal weather has been termed as good weather and adverse weather has been broken out into two categories -- "rainy weather" and "snowy weather". A brief synopsis of each is summarized below:

- Good Weather - Weather conditions exist that do not impede traffic flow. Good weather excludes rain, snow, fog, and ice on roadways.
- Rainy Weather - Weather conditions exist that will impede traffic flow such as rain, fog, or a light snow which may result in a wet or lightly covered road surface. The evacuation roadway network is passable during weather conditions such as these, albeit at a reduced ability to facilitate traffic.
- Snowy Weather - Snowy weather will be defined as the worst possible weather conditions when the evacuation roadway network is passable. These conditions would exist when the roads are covered and/or packed with snow, when plowed snow is located at the roadway's edge which makes it difficult to move stalled vehicles off the road, when melting snow helps to make the road surface slippery or ice covered, and when drifting snow blocks roads. The ability of the evacuation roadway network to facilitate traffic during adverse weather conditions is less than during rainy weather.

The effects of these weather conditions on the roadway capacities, and hence the evacuation travel time estimates, have been discussed earlier in Section III.

It is assumed that everyone within an ERPA that is issued an Advisory to evacuate will, in fact, respond in general accord with the planned routes.

It is assumed that no early dismissal to home of school children is contemplated. According to county policy, school children are not to be released to their parents on school grounds. All students will be evacuated to the reception centers assigned to the schools, and then released to their parents as they arrive at the reception centers. Sufficient bus resources are identified to handle 100% of the students in one wave.

"Voluntary evacuation" occurs when people in areas of the EPZ not ordered to evacuate nevertheless chose to do so. Within the annular ring defined by the distance to be evacuated (5-miles or 10-miles downwind), 50% of the people not advised to evacuate are assumed to evacuate within the same time-frame. Between the annular ring, defined by the extent of the downwind evacuation order out to the EPZ boundary, it is assumed that 35% of the people will voluntarily evacuate. This is graphically presented at the end of this Appendix in Figure G-2.

C. Trip Generation

For each traffic zone included in an ERPA, the number of evacuation trips generated by that traffic zone was estimated by trip type. The number of trips varied significantly by scenario. For example, for the Summer, Midweek, Midday Scenario, large numbers of evacuation trips were attributable to transient employees working in the EPZ. However, for the Summer, Weekend, Midday Scenario, this same trip type (employees) was much less significant because most businesses are closed.

The number of trips for each traffic zone was based on population and vehicle occupancy data. For example, if a traffic zone has a nursing home with 120 ambulatory and 15 wheelchair-bound residents, and if the facility owns one 10-passenger wheelchair van, then five vehicle trips would be generated by the nursing home (three buses provided by a bus company with 40 passengers each to evacuate the ambulatory population, and one facility-owned van and one other 5-passenger wheelchair van would be provided by a bus company to evacuate the wheelchair bound residents).

Vehicle trips generated by each zone were then converted to passenger car equivalents (PCEs) for traffic assignment purposes. Buses were weighted as the equivalent of two cars, since their primary impact would be one of increased roadway space during a slow, congested evacuation condition.

D. Traffic Assignments

The assignment of the evacuation vehicles generated by each traffic zone over designated evacuation routes was performed by a computer model developed specifically for evacuation planning studies. The model loads the network and computes the travel and delay times for all zones being analyzed in any given Sector.

This computer model is based on a static traffic assignment procedure which assumes instantaneous loading of the evacuation network and concurrent vehicular demand on all roadway segments. Although this procedure is not an exact simulation of vehicle movement during an evacuation, the static traffic assignment (which has been accepted by the Federal Emergency Management Agency) results in evacuation travel time estimates which closely resemble those of a dynamic model. A detailed description of the static traffic assignment algorithm, and the results of the comparison between static and dynamic assignment is presented in Appendix H of the full ETE report for the Ginna 10-mile Emergency Planning Zone.

E. Notification Time

The Ginna EPZ is served by a siren notification system that meets the acceptable design objectives specified in Appendix 3 of NUREG-0654. This siren system covers the entire EPZ. Tone alert radios (emergency alert receivers) are also provided to public and private schools, daycare centers, nursery schools, local police departments, and major employers located in the EPZ. The Counties' evacuation plans contain backup notification procedures such as route alerting in the event of a siren or tone alert system malfunction.

The Planning Basis Assumption for the calculation of the ETE is a rapidly accelerating accident (fast-breaking or immediate General Emergency) that requires evacuation. It is assumed that the general population will begin the task of preparing to evacuate within 10 minutes of siren alert. A rapidly escalating accident scenario assumes that the general population will evacuate over the same time frame as do the school children, the transi-dependent population, and the special facility population.

F. Confirmation Time

Mobilization time represents the time required by evacuees to perform all their necessary preparatory activities prior to starting the trip.

G. Components of the Evacuation Travel Time

The estimates of evacuation travel time include public preparation time, terminal time, and roadway travel time. Each is discussed as follows:

1. Public Preparation Time - Public preparation time during an evacuation can vary significantly. For example, patrons staying at hotels are capable of preparing to evacuate in a shorter time frame than permanent residents who are likely to have many issues to attend to. Therefore, preparation time for hotel patrons has been assumed to be shorter than that for permanent residents.

The evacuation of the Maplewood Nursing Home will require additional preparation time. Staff officials estimate they need approximately one hour to have all residents ready to load onto transportation made available by outside agencies.

2. Terminal Time - The terminal time for vehicles departing from home represents the time to drive via local residential streets and collector roads in a traffic zone to the first link of the pre-designated primary evacuation route.

For bus routes, terminal time is comprised of inbound travel time, time to travel the emergency bus route, and loading time at pickup points for transit dependant people. Inbound travel time varies depending upon the evacuation scenario.

3. Roadway Travel Time - The roadway travel time is the amount of time required for all vehicles to traverse the entire length of their evacuation route to the edge of the 10-mile radius in the EPZ, depending upon the evacuation ordered. The time depends on both normal operating speeds on the road and on delays due to congestion (where the vehicle volumes approach or exceed the capacity of the roadway at a particular location). Hence, the roadway travel time is the amount of time beginning when the first vehicle enters the evacuation route, assuming normal operating speeds, until the last vehicle leaves the sector, taking into account reduced speeds attributable to congestion.

It is assumed that everyone within the group of ERPA's forming a Region that is issued an Advisory to Evacuate will, in fact, respond in general accord with the planned routes.

Other assumptions are:

- No early dismissal of school children occurs.
- According to County policy, school children are not to be released to their parents on school grounds. All students will be evacuated to the reception centers assigned to the schools and then released to their parents as they arrive at the reception centers. Sufficient bus resources are identified to accommodate 100 percent of the students in one wave.
- A portion of those households with access to a vehicle will evacuate without waiting arrival home of all commuters. Data from the telephone survey indicates that approximately 40 percent of households with commuters, who have other vehicles available for evacuation, will not wait for the commuter to arrive home before leaving the area.
- Normal traffic flow will be assumed present at the start of the emergency.
- Access Control Points (ACP) will be staffed within approximately one hour following the siren notifications, to divert traffic attempting to enter the EPZ. Earlier activation of ACP locations would delay returning commuters.

H. Evacuation Travel Time Estimates

The evacuation travel time estimates developed for the Ginna EPZ are in accordance with the implementation procedures and other operational strategies indicated in the Monroe and Wayne County RERP's. The implementation procedures include provisions such as pre-designated evacuation routes for all ERPA's, prioritized traffic control locations and predetermined emergency bus routes with designated pickup points for the public.

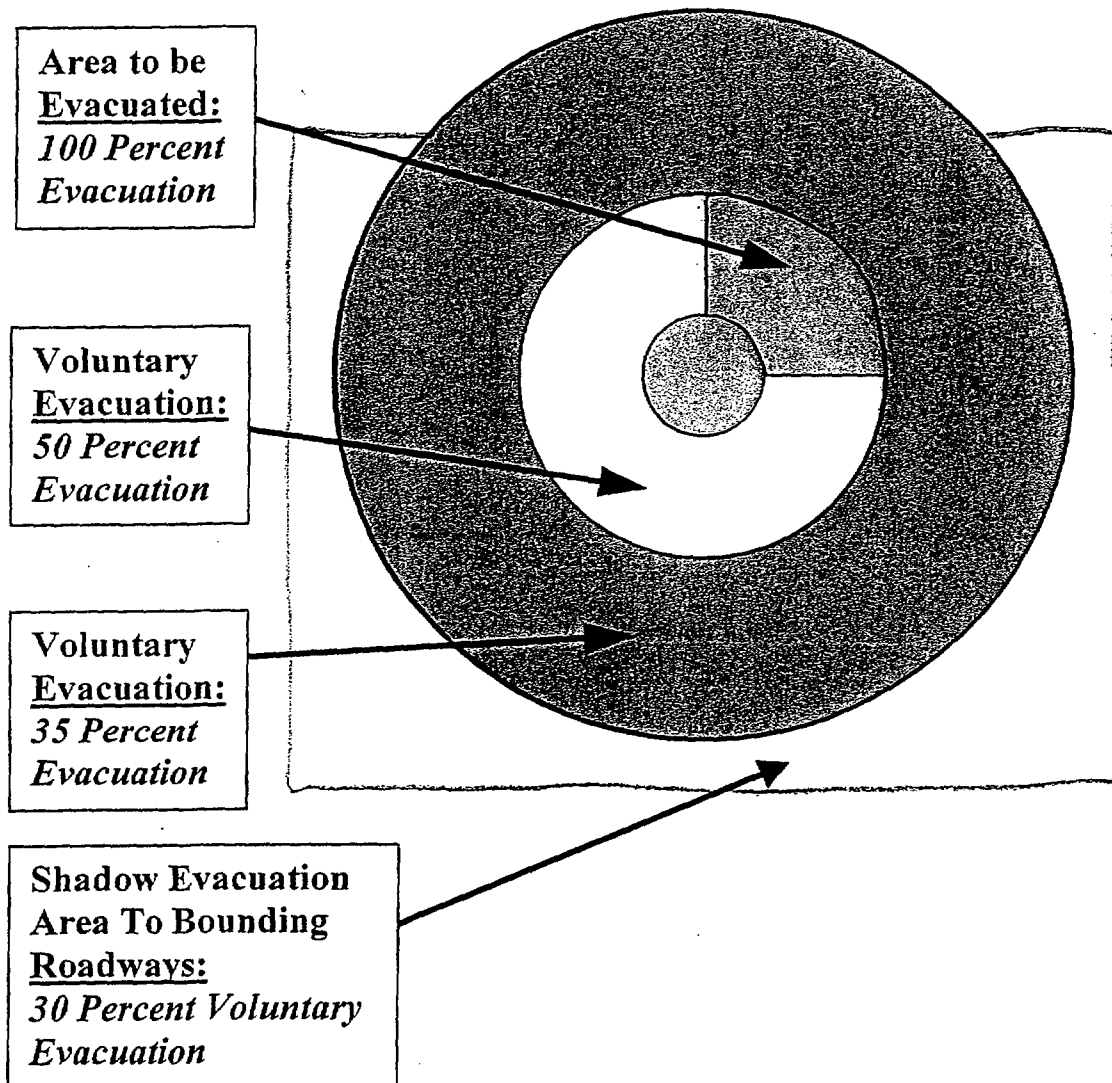
Table G-1 DEFINITION OF EVACUATION REGIONS

REGION	ERPA IN MONROE	ERPA IN WAYNE	DESCRIPTION	ERPA IN REGION
R1		W1	2 MILE RING	W1
R2	M1	W1-W3	5 MILE RING	M1, W1-W3
R3	M1-M9	W1-W7	Full EPZ	M1-M9, W1-W7
			2 MILE RING AND SECTOR TO 5 MILE	
R4		W1, W2, W3	N	W1, W2, W3
R5	M1	W1, W2	NNE	M1, W1, W2
R6	M1	W1, W2	NE	M1, W1, W2
R7	M1	W1, W2	ENE	M1, W1, W2
R8	M1	W1, W2	E	M1, W1, W2
R9	M1	W1	ESE	M1, W1
R10		W1	SE	W1
R11		W1	SSE	W1
R12		W1	S	W1
R13		W1	SSW	W1
R14		W1, W3	SW	W1, W3
R15		W1, W3	WSW	W1, W3
R16		W1, W3	W	W1, W3
R17		W1, W3	WNW	W1, W3
R18		W1, W3	NW	W1, W3
R19		W1, W3	NNW	W1, W3

Table G-1 DEFINITION OF EVACUATION REGIONS
(Continued)

REGION	ERPA IN MONROE	ERPA IN WAYNE	DESCRIPTION	ERPA IN REGION
			5 MILE RING AND SECTOR TO EPZ BOUNDARY	
R20	M1 M2, M4, M5	W1-W3, W5-W7	N	M1, M2, M4, M5, W1-W3, W5-W7
R21	M1-M5, M6, M7, M9	W1-W7, W6, W7	NNE	M1-M5, M6, M7, M9, W1-W3, W6, W7
R22	M1-M9	W1-W3, W7	NE	M1-M9, W1-W3, W7
R23	M1-M9	W1-W3, W7	ENE	M1-M9, W1-W3, W7
R24	M1, M2, M3, M4, M6-M9	W1-W3	E	M1, M2, M3, M4, M6-M9, W1-W3
R25	M1, M3, M6, M8, M9	W1-W3	ESE	M1, M3, M6, M8, M9, W1-W3
R26	M1	W1-W3	SE	M1, W1-W3
R27	M1	W1-W3	SSE	M1, W1-W3
R28	M1	W1-W3	S	M1, W1-W3
R29	M1	W1-W3	SSW	M1, W1-W3
R30	M1	W1-W3, W4	SW	M1, W1-W3, W4
R31	M1	W1-W4, W5	WSW	M1, W1-W4, W5
R32	M1	W1-W5, W6	W	M1, W1-W5, W6
R33	M1	W1-W6, W7	WNW	M1, W1-W6, W7
R34	M1, M2	W-W7	NW	M1, M2, W1-W7
R35	M1, M2, M5	W1-W3, W4, W5-W7	NNW	M1, M2, M5, W1-W3, W4, W5-W7

Figure G-2 SHADOW EVACUATION METHODOLOGY



GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. EPIP 1-18

REV. NO. 9

DISCRETIONARY ACTIONS FOR EMERGENCY CONDITIONS



RESPONSIBLE MANAGER

04/28/05

EFFECTIVE DATE

Category 1.0

This procedure contains 18 pages

EPIP 1-18**DISCRETIONARY ACTIONS FOR EMERGENCY CONDITIONS****1.0 PURPOSE**

- 1.1 The purpose of this procedure is to provide additional measures to be considered along with those pre-planned actions that are identified in the NERP and Implementing Procedures. This procedure can be implemented due to severe weather, HAZMAT events, security events or any other unforeseen event where actions need to be taken to protect employees or equipment.

2.0 RESPONSIBILITY

- 2.1 Emergency Preparedness will be available to assist in coordinating recommendations to the Plant Management.
- 2.2 The Shift Manager, Management or TSC responders can implement this procedure.

3.0 REFERENCES**3.1 Developmental References**

- 3.1.1 Effect of Hurricane Andrew on the Turkey Point Nuclear Generating Station from August 20-30, 1992 - NRC/INPO.

- 3.1.2 Industry Guidance for Responding to the NRC's October 6, 2001, Safeguards Advisory - NEI, dated November 16, 2001.

3.2 Implementing References

- 3.2.1 EPIP 1-0, Ginna Station Event Evaluation and Classification.
- 3.2.2 EPIP 1-5, Notifications
- 3.2.3 EPIP 1-6, Site Evacuation
- 3.2.4 EPIP 1-7, Accountability of Personnel
- 3.2.5 EPIP 1-8, Search and Rescue Operations
- 3.2.6 EPIP 1-9, TSC Activation
- 3.2.7 EPIP 1-11, Survey Center Activation
- 3.2.8 EPIP 3-1, EOF Activation

- 3.2.9 EPIP 3-3, Immediate Entry
- 3.2.10 EPIP 4-7, Public Information Organization Staffing
- 3.2.11 EPIP 5-7, Emergency Organization
- 3.2.12 ER-SEC Series Procedures (relative to Security Events)
- 3.2.13 EPG-2, Emergency Response Organization
- 3.2.14 ER-SC.9 , Security Event Plan
- 3.2.15 SAG-4, Inject Into Containment
- 3.2.16 SAG-5, Reduce Fission Product Release
- 3.2.17 SAG-6, Control Containment Conditions
- 3.2.18 SAG-7, Reduce Containment Hydrogen
- 3.2.18 S-9 Series Procedures (relative to the Spent Fuel Pool)

4.0 PRECAUTIONS

None.

5.0 PREREQUISITES

- 5.1 Events which pose a threat, or possible threat, of hazardous conditions to employee or public safety are imminent or in progress.

6.0 ACTIONS

NOTE: THE RECOMMENDATIONS ARE POSSIBLE ACTIONS TO BE TAKEN. SINCE EACH EVENT IS UNIQUE, NOT ALL RECOMMENDATIONS HAVE TO BE IMPLEMENTED.

6.1 Notifications

- 6.1.1 To staff the facilities, notify Emergency Preparedness per EPIP 1-5, Attachment 6, to contact the appropriate responders.
- 6.1.2 For events involving offsite assistance (e.g., fire, law enforcement, EMS, HAZMAT), notifications will be made using EPIP 1-5, Attachment 5.

6.2 Communications

6.2.1 Internal

6.2.1.1 Use the plant page to inform the plant employees of conditions.

6.2.1.2 Refer to EPIP 1-5 "Notifications" for notifications of NERP responders, offsite notifications and specialized notifications.

6.2.1.3 Refer to EPIP 1-6 for "Site Evacuation" notifications.

6.2.1.4 Use e-mail to inform specific groups (e.g., Ginna G-Ops, Ginna All Employees, Nuclear Emergency Responders) of events or conditions.

6.2.1.5 Responders with Alpha Pagers (Operations Management, Emergency Preparedness) can also be notified via e-mail.

6.2.1.6 Use the E-Plan telephone directory and emergency contact cards to assist in contacting various responders, management and support personnel.

6.2.1.7 Fax machines can also be used to relay information to groups of individuals at specific locations (e.g. TSC, EOF, JENC)

6.2.1.8 Radio communication from the Control Room can be used to contact the TSC, EOF, Survey Center, Operators, Security and the Fire Brigade. Additional radio communications are available through local law enforcement, fire departments or ambulance companies.

6.2.1.9 If no other means to communicate outside of Ginna is available, use the satellite telephone located in the TSC locker (instructions for use inside phone case) to contact Emergency Preparedness per EPIP 1-5, Attachment 6, and have EP conduct notifications.

6.2.1.10 Alternate notification methods can be delegated (EP personnel, managers) who carry copies of EPG-2 and laminated "emergency contact cards".

6.3 External

6.3.1 EPIP 1-5 "Notifications" provides instruction for notification to Wayne County, Monroe County, New York State and the NRC. Actions taken are normally coordinated from the Control Room via RECS line or commercial telephone (including fax).

6.3.2 Alternate external communication systems are available in the TSC, Simulator, Survey Center and EOF via RECS line, commercial phone and cell phone.

- 6.3.3 Alternate notification methods can be delegated to EP personnel who carry copies of EPIP 1-5 and laminated "emergency contact cards". Information to contacted personnel should also include specific contacts for fire and emergency services support and reporting location (in coordination with Security and Fire/Safety).

6.4 **Assembly/Accountability Process**

- 6.4.1 Consider implementing EPIP 1-6 "Site Evacuation", to evacuate employees from the site. Security will implement EPIP 1-7 "Accountability" to ensure that all employees are accounted for.

- 6.4.2 If employees need to be moved off plant property, direct them to the EOF.

- 6.4.3 If hazardous conditions prevent employees and emergency responders from responding directly to the site, direct them to respond to the EOF. After assembling at the EOF, TSC assessment functions can remain at the EOF if the site will be inaccessible for a long period of time.

- 6.4.3.1 When the situation is stable and it is safe for responders to report to the site, the site response personnel staged at the EOF should respond to the site.

- 6.4.3.2 Consider reporting to the Survey Center and initiate EPIP 3-3, Immediate Entry, to access the site.

- 6.4.4 Consider designation of alternate supervision to perform accountability if Security is unable to perform this function due to the event.

6.5 **Command and Control**

- 6.5.1 Refer to EPIP 1-9 "TSC Activation" and EPIP 3-1 "EOF Activation" for facility activation and transfer of command and control.

- 6.5.2 A near-site incident "command post" may need to be established to allow coordination of onsite response activities such as communications, accident assessment/mitigation, accountability, search and rescue, coordination with fire and medical services, and staging should the Control Room, TSC, OSC or other facilities become inaccessible.

- 6.5.3 Wayne County Emergency Management has a mobile command post that may be utilized.

- 6.5.4 If a near-site incident "command post" is established, communication with the EOF should be established to provide resources to the site.

- 6.5.5 Access to the plant protected area is described in procedure EPIP 3-3, "Immediate Entry".

6.6 Search and Rescue

- 6.6.1 Implement EPIP 1-8, "Search and Rescue Operations" to find missing individuals.

6.7 Plant Assessment and Mitigation

- 6.7.1 Consider the following procedures to address assessment and mitigation of an event:

- AP-CR.1
- EOPs
- ER-Fire series
- ER-SC series
- ER-SEC series
- EIPs
- SAMGs

- 6.7.2 Remote accident assessment may depend upon the availability of PPCS data and/or communication with the site. Computer terminals are located in the following areas to assist with assessment:

- Training Center
- Warehouse
- EOF
- JENC

- 6.7.3 Consider the use of fax machines located in various Ginna emergency facility locations as well as town offices, fire halls, ambulance halls and local businesses.

6.8 Dose Assessment/PARs

- 6.8.1 EPIP 2-series procedures provide instruction for obtaining meteorological data from multiple sources for performing dose assessment and protective action recommendations.

- 6.8.2 Dose Assessment can be performed in the CR, TSC or EOF with support from environmental survey teams deployed from the Survey Center or EOF.

- 6.8.3 Consider staging survey team personnel at the designated staging area (e.g., EOF) if the Survey Center is unavailable.

6.9 Exposure control and distribution of KI for emergency responders

- 6.9.1 TLD's and Self-Reading dosimetry for on site Security are maintained in the guardhouse and are obtained at the beginning of each shift.

- 6.9.2 Ginna Security, National Guard and NYS Police will be issued Self-Reading dosimeters and TLD's at the Alert level.
- 6.9.3 TLD's and Self-Reading dosimetry for offsite agencies assigned to the site is maintained in the Owner Controlled Area Checkpoint and will be obtained at the Alert level.

NOTE: THE EMERGENCY COORDINATOR WILL CONSULT WITH NYS AND COUNTY EMERGENCY MANAGEMENT VIA THE EOF PRIOR TO ISSUING KI TO OFFSITE AGENCY PERSONNEL ASSIGNED TO GINNA STATION (NATIONAL GUARD, NYS POLICE, FIRE, EMS, ETC).

- 6.9.4 Refer to EPIP 2-9, "Administration of Potassium Iodide (KI)", for distribution of KI to all emergency responders (offsite agency and Ginna).
- 6.9.5 Additional supplies of KI are located in the Technical Support Center and Survey Center.
- 6.9.6 Radiation Protection will determine the type of dosimetry to be issued and supply it to unassigned Local Law Enforcement, Fire and EMS upon their arrival to Ginna Station during an emergency.
- 6.9.7 Decontamination of emergency responders, vehicles and equipment should be accomplished at Ginna Station if conditions allow. If decontamination must be performed away from the site, County facilities such as Emergency Worker Personnel Monitoring Facilities are available by coordinating with County Representatives in the EOF and County EOC's.
- 6.9.8 Rochester General Hospital or Newark Wayne Community Hospital also have decontamination rooms that may be utilized as necessary. Refer to A-7 for notification to the hospital should decontamination be required at their facility.
- 6.9.9 The following table describes exposure control considerations for emergency workers at Ginna Station.

Emergency Response Exposure Control Considerations

	TLD's Provided	SRD's Provided	Dosimetry Inventory	KI Distribution
Ginna Security Guards	YES	YES	Some within protected area Some in OCA Checkpoint	EC Decision Consult with State and County's
National Guard	YES	YES	OCA Checkpoint	EC Decision Consult with State and County's
State Police	YES	YES	OCA Checkpoint	EC Decision Consult with State and County's
Coast Guard	Responsible for their own dosimetry	Responsible for their own dosimetry	Responsible for their own dosimetry	
Law Enforcement	YES EPIP 1-18 Supply upon entry if time permits	Escort will monitor SRD if the situation allows	Available from RP Department	Same policy as public policy
Fire	YES EPIP 1-18 Supply upon entry	Escort will monitor SRD	Available from RP Department	Same policy as public policy
EMS	YES EPIP 1-18 Supply upon entry	Escort will monitor SRD	Available from RP Department	Same policy as public policy

6.10 Public Information

- 6.10.1 EPIP 4-series procedures provide instruction on Joint Emergency News Center (JENC) operation and Public Information.
- 6.10.2 Security will be further pressured by media requests to approach the site. Offsite agencies will be required to restrict access to plant area. Public Relations and government agencies are to stress the JENC as the central clearinghouse for public information.
- 6.10.3 Consider activation of the Public Inquiry and Media Monitoring portion of the JENC. Provide information to the JENC to provide information to the public and spouses of Ginna personnel.

6.11 Relocation

- 6.11.1 Consider the establishment of alternate work locations for "non-essential" site personnel.
- 6.11.2 Contact Corporate Information Services (IS) at ext. 4300 to provide communications to the newly established work locations.
- 6.11.3 Consider relocation of Survey Team Equipment, in accordance with EPIP 1-11, to the EOF if the Survey Center is unuseable. Contact a Maintenance Assessment Manager listed in EPG-2 to make arrangements to transport equipment to the alternate location.
- 6.11.4 Each Ginna department should consider identification of business critical information and equipment needed for recovery such as drawings, procedures, vendor manuals, survey equipment.

6.12 Alternate AC and DC Power

- 6.12.1 Implement existing ER series procedures to the extent practical to restore power.
- 6.12.2 Technical Assessment Manager refer to Attachment 1, Alternate AC and DC Power Supplies and Table 1, Equipment Ratings.
- 6.12.3 Technical Assessment Manager and Operations Assessment Manager discuss options and impact on 10CFR50.54(x).
- 6.12.4 Provide recommendations to the Emergency Coordinator for implementation.

6.13 Back-up Mechanical Pump Capability

- 6.13.1 Implement existing ER series procedures to the extent possible to restore equipment.
- 6.13.2 Implement existing SC series procedures to the extent possible to respond to the event and enlist offsite support.
- 6.13.3 Technical Assessment Manager refer to Table 1, Equipment Ratings, and Table 2, Back-up Mechanical Pump Capability.
- 6.13.4 Technical Assessment Manager and Operations Assessment Manager discuss options for use of onsite vs. Offsite pumping capabilities and the impact on 10CFR50.54(x).
- 6.13.5 Provide recommendations to the Emergency Coordinator for implementation.

6.14 Fission Product Scrubbing from a Failed Containment

- 6.14.1 Reference existing Severe Accident Management Guidelines (SAMGs) SAG-4, SAG-5, SAG-6 and SAG-7 to the extent practical.
- 6.14.2 Technical Assessment Manager refer to Attachment 2, Fission Product Scrubbing From A Failed Containment, and Table 2, Back-up Mechanical Pump Capability.
- 6.14.3 Technical Assessment Manager and Operations Assessment Manager discuss options, reactivity monitoring requirements and the impact on 10CFR50.54(x).
- 6.14.4 Provide recommendations to the Emergency Coordinator for implementation.

6.15 Emergency Spent Fuel Pit Cooling

- 6.15.1 Implement existing S-9 series procedures to the extent practical to restore SFP cooling.
- 6.15.2 Technical Assessment Manager refer to Attachment 3, Emergency Spent Fuel Pool Cooling.
- 6.15.3 Technical Assessment Manager and Operations Assessment Manager discuss options and impact on 10CFR 50.54(x).
- 6.15.4 Provide recommendations to the Emergency Coordinator for implementation.

6.16 Emergency Containment Cooling

- 6.16.1 Implement existing S-23.2.3, Containment Mini Purge System Operation, or AP-SW.1 or AP-SW.2 to the extent possible to restore containment cooling. If unable to restore containment cooling, then continue with the following steps.
- 6.1.6.2 Technical Assessment Manager, refer to Attachment 6, Emergency Containment Cooling.
- 6.16.3 Technical Assessment Manager and Operations Assessment Manager, discuss options and impact on 10 CFR 50.54(x).
- 6.16.4 Provide recommendations to the Emergency Coordinator for implementation.

7.0 Attachments

- 1. Alternate AC and DC Power Supplies
- 2. Fission Product Scrubbing From A Failed Containment
- 3. Emergency Spent Fuel Pool Cooling
- 4. Table 1, Equipment Ratings
- 5. Table 2, Back-up Mechanical Pump Capability
- 6. Emergency Containment Cooling

ALTERNATE AC AND DC POWER SUPPLIES

Following is a list of possible first response actions that could be taken to mitigate loss of power to equipment on site. Level of response varies depending on the magnitude of the loss of existing on-site power supplies, availability of distribution equipment (buses, panels, etc.), and what equipment needs to be supplied.

At this time, contacts have been made with outside suppliers to determine potential availability, but no arrangements have been made with them to provide the backup equipment. An evaluation of the timeliness of our needs must be completed, and then we can recommend specific actions to put a plan in place. Costs associated with having generators, cable, and transformers available on demand can be determined at that time, and those costs will vary with response time required.

Alternate AC Power Supplies:

1. Diesel Generators can be cross-tied between systems depending on where the need is and what is available. Cable to run directly to motor loads or buses, again depending on condition and need, would be taken from our warehouse procured from local suppliers, including RG&E. Attached equipment data provides equipment ratings of existing generators, and the requirements of loads that may need to be supplied.
2. 480 volt power may be supplied from the 12 kv overhead distribution line that comes onto the site from the east. A small transformer exists (300 kva rating) near the Nuclear Assessment building, and a separate transformer could be brought on-site to provide power if the line was still energized.
3. Bring separate diesel generator(s) on site, and connect at buses or directly to loads as conditions and needs warrant. A 1000 kw size is assumed to be adequate for a first response action, which would allow a combination of loads as selected by Operations from the attached list. Portable units can be made available on short notice, depending on immediate availability from: Wegmans (1300 kw unit), Aggreko out of Albany, Penn-Detroit out of Syracuse. Wegmans, if available, could be here in approximately two hours, Aggreko or Penn would take up to eight hours.
4. For 120 VAC instrument loads, portable generators of 5 kw available at local retail stores would be adequate to power up individual instrument buses, racks, or the ABELIP and IBELIP racks locally if needed. This would supply a minimum amount of instrumentation to monitor shutdown parameters.

Alternate DC Power Supplies:

1. Using existing on-site DC, capability to cross-tie to TSC battery/TSC battery charger. However, condition of interties or SR DC distribution system may preclude this. Cables can be run from TSC batteries to required loads or load centers.
2. Use of Security UPS battery is not recommended as it should be reserved for security systems.

ALTERNATE AC AND DC POWER SUPPLIES (Continued)

3. Portable DC power supplies used by maintenance are AC powered and can provide enough DC to supply individual panels locally.
4. Larger DC power supplies, or battery chargers, can be obtained from suppliers and set up where needed, assuming 480 VAC supply power available.
5. Movement of a 125 VDC battery string of adequate size would most likely be impractical. However, such batteries exist and would be available from outside suppliers and could be moved here in approximately 8 hours as a last resort.

Other Equipment:

Valves can be hand operated. It would not normally be reasonable to run power to individual valves. If a panel or MCC can be picked up, then the valve would be powered.

Offsite Power Equipment Supplier Contacts:**480 Volt Diesel Generators**

Wegmans	1300 kw generator
Contact: Wegmans Security Center	(585) 429-3030

Aggreko, Inc. (Albany area)	1250 kw - 1750 kw
Contact: Mike Smith	(518) 235- 9604, [REDACTED]

Penn-Detroit Diesel	60 kw - 1400 kw
Contact: Kurt Schultz	(315) 451-3840

120 VAC Power

Grounds Maintenance	5 kva generator
Contact: Keith Merkel	

Chase Pitkin Webster	2.5 kva - 10 kvs portable generators
	(585) 872-4010

125 VDC Power Supplies

JM Schaeffer (Syracuse)	
Contact: Carl Phillips	(315) 463-5223

Cable or Transformers not on-site

Contact RG&E Energy Control Center	(585) 724-8944
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Prepared By: Paul Swift 4/21/05

FISSION PRODUCT SCRUBBING FROM A FAILED CONTAINMENT

With respect to fission product scrubbing from a failed containment, SAMGs SAG-4, SAG-5, SAG-6 and SAG-7 provide instructions to inject into containment, reduce releases, control conditions and reduce hydrogen. If they are unsuccessful, then an external pump and water source, such as a fire truck, will be used but it is not always prudent to spray water into an area if the core has melted. In addition, if the core hasn't melted but there is a loss of cooling accident (LOCA), you're now spraying unborated water into the sump, which may cause reactivity issues.

The TSC Technical Assessment Manager will provide some guidance for Scrubbing A Failed Containment, with increased monitoring of reactivity.

- For the scenario where there is a hole in the outside of containment and an accident (LOCA) going on inside, we would want the pumper truck to cover the opening with a "light rain type" of spray pattern similar to what comes out of the containment spray nozzles. We would not want just a concentrated stream directed at the opening.
- If guidance on drop size is desired, UFSAR 6.2.2.2.6 specifies 1000 microns or about .04" diameter drops.
- Depending on the hole size and orientation on the structure, we would like to aim the spray to minimize to the extent practical direct water entry into the containment so as not to potentially cause sump boron concentration concerns.

EMERGENCY SPENT FUEL POOL COOLING

NOTE: IF ACCESS IS LIMITED INTO THE AUXILIARY BUILDING AND EMERGENCY MAKE-UP WATER INTO THE SPENT FUEL POOL (SFP) IS DESIRED, THE FOLLOWING STEPS WILL SUPPLY FIRE WATER INTO THE SFP VIA THE SFP SKIMMER PIPING LOCATED IN THE INTERMEDIATE BUILDING HOT SIDE.

NOTE: USE OF THE FOLLOWING METHOD OF MAKE-UP TO THE SFP IS FOR EMERGENCY CONDITIONS ONLY. IT HAS THE POTENTIAL TO VIOLATE ITS LCO 3.7.12 REQUIREMENTS AND, HENCE, 10CFR505.54(X) SHOULD BE CONSIDERED IF TAKING THIS ACTION.

1. Obtain key number 79 for the EOP locker (gray locker on the top floor of Turbine Building on the east wall near the Auxiliary Operator Office). Get the spool piece to connect a 1 - 1/2" fire hose to a 2" - 150 pound flange.
2. Ensure SFP skimmer pump is secured.
3. Close V-788B.
4. Remove blank flange from piping immediately upstream of V-788B (IB Hot Side near door to Auxiliary Building).
5. Connect the fire hose from an available supply (Hose Reel 21 on the North wall of the Primary Sample Room is preferred if available) to flange immediately upstream of V-788B using fittings obtained in step 1.
6. Open fire water supply valve (V-5199T if using Hose Reel 21) slowly to supply water to SFP.
7. Verify fire water pump running.
8. If possible, visually verify water make-up to SFP directly or via security camera 30.
9. Monitor available remote SFP indication (i.e., R-5, AR-K-29).

TABLE 1 - EQUIPMENT RATINGS

Diesel Generator A and B 1950 KW (Continuous)
(480 Volt) 2250 KW (2 hours)
2300 KW (½ hour)

TSC Diesel Generator 260 KW
(480 Volt)

Security Diesel Generator 135 KW
(480 Volt)

Motor	Rated HP	Max. Loading	KW
Safety Injection Pumps	350 HP	368 HP	291
RHR Pumps	200	173	139
Containment Fans	300	256	205
Service Water Pumps	300	308	246
Containment Spray Pumps	200	220	183
CCW Pumps	150	150	124
Aux. Feedwater Pumps	250	280	223
Standby AFW Pumps	300	300	249
Charging Pumps	150	150	124
Spent Fuel pool Pump B	100	100	75
Spent Fuel Pool Pump Spare Skid (600 gpm @ 65# D/P)	50	57	42

120 VAC Instrument Power

Equipment	Rating	Max. Load
Instrument Bus feed (Inverters, CVTs)	7.5 kva	6.4 kw
Twinco Panels (fed from Twinco CVTs)	2 kva	1.7 kw

TABLE 1 - EQUIPMENT RATINGS
(Continued)

Equipment	Capacity	Normal Load A	Normal Load B
Battery Charges A1, B1	200 amps	55 amps	50 amps
Battery Chargers A2, B2	150 amps	50 amps	30 amps
TSC Battery Charger	500 amps	95 amps	
Vital Batteries BYCA, BYCB	1495 amp-hrs	N/A	
TSC Battery	2880 amp-hrs	N/A	
Security Battery	250 amp-hrs	N/A	

TABLE 2 - BACK-UP MECHANICAL PUMP CAPABILITY

UTILIZATION & DEMAND								
Source	GPM	TDAFWP Oil Hx (GPM)	SBAFWP (GPM)	Containmen t Recirc Fan (GPM)	Spent Fuel Pool Hx "A" (GPM)	CCW Hx (GPM)	D/G Hx (GPM)	Fission Product Scrubbing (GPM)
Onsite Fire Pump (3)	2,000	25	200	1,050	600	3,500 (2)	277/400 (1)	500/1,000 (onsite monitor nozzles)
Ontario Water Authority (D/G back-up)	1,500	⁽¹⁾ DA-ME-98-138 ⁽²⁾ Maximum flow as per design basis. Actual GPM may be significantly less. ⁽³⁾ Assumption both pumps in service (1) one dedicated for fire suppression only.						
Available through Wayne County 911 Center Refer to SC-3.3.2, Attachment C, for complete resource list								
Fire Dept. Drafting Discharge Canal (limited to one pumper)	1,250							
Portable Pumps (discharge canal)	500							
Tanker Truck Relay portable Pond	1,250							
Portable Hydrant/Relay	1,000							

EMERGENCY CONTAINMENT COOLING

NOTE: THE FOLLOWING IS GUIDANCE FOR THE TSC. IF THIS CONTINGENCY IS REQUIRED, SPECIFIC DIRECTION WILL BE CASE DEPENDENT AND PROVIDED BY THE TSC.

ALIGNMENT OF THE EAST SW HEADER

NOTE: THIS WILL ALIGN COOLING WATER TO EITHER THE A OR THE B CNMT RECIRC FAN AND TDAFW PUMP SUCTION.

1. Isolate east header y closing valves 4623, 4627, 4628, 4625 and 4756
2. Have fitters remove 16" diameter blind flange on east side and drain header.
3. Have fitters install pre-staged flange, in IB sub-basement, to the east header.
4. Run hose(s) from either the S-15 drain connection, if fire trucks are hooked up to the building connections, or directly from trucks. The hose(s) can be run down the hatch near the MDAFW pumps. Hook hose(s) to connections on flange (2 - 2 ½" connections available.)
5. Pressurize lines and line up an available fan cooler. (Opening V-4627 will give you flow to the A CNMT recirc fan. Opening V4628 will give you flow to the B CNMT recirc fan.) Trip open 4561 or 4562.

ALIGNMENT OF THE WEST SW HEADER

NOTE: THIS WILL ALIGN COOLING WATER TO EITHER THE C OR D CNMT RECIRC FAN.

1. Isolate west header by closing valves 4626, 4639, 4663, 4664, 4640, 4642 and 4641.
2. Have fitters remove 16" diameter blind flange on west side and drain header.
3. Have fitters install a pre-staged flange, in IB sub-basement, to the west header.
4. Run hose(s) from either the S-15 drain connection, if fire trucks are hooked up to the building connections, or directly from the trucks. The hose(s) can be run down the hatch near the MDAFW pumps. Hook hose(s) to connection on flange (2 - 2½" connections.)
5. Pressurize lines and line up an available fan cooler. (Opening V-4641 will give you flow to the C CNMT recirc fan. Opening V-4642 will give you flow to the D CNMT recirc fan.) Trip to open 4561 or 4562.

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. EPIP 1-17

REV. NO. 7

PLANNING FOR ADVERSE WEATHER



RESPONSIBLE MANAGER

03/11/05

EFFECTIVE DATE

Category 1.0

This procedure contains 6 pages

EPIP 1-17**PLANNING FOR ADVERSE WEATHER****1.0 PURPOSE**

- 1.1 This procedure provides actions for the Nuclear Operations Group to consider for preparation of the site and personnel for severe weather at Ginna Station. ER-SC.1 does not have to be entered to use this procedure.
- 1.2 This procedure may still be of some limited use if severe weather was not forecasted but conditions deteriorate without warning.

2.0 RESPONSIBILITY

- 2.1 Emergency Preparedness is responsible for coordinating recommendations for the Nuclear Operations Group (NOG).

3.0 REFERENCES**3.1 Developmental References**

- 3.1.1 Florida Power & Light Company, Turkey Point Units 3 and 4, EPIP 20106 - Natural Emergencies (8/11/92)
- 3.1.2 INPO SOER 02-01, Severe Weather
- 3.1.3 INPO SOER 01-01, Severe Storm Results in SCRAM of Three Units and Loss of Safety System Functions Due to Partial Plant Flooding
- 3.1.4 NUREG-1474, Effect of Hurricane Andrew on the Turkey Point Nuclear Generating Station from August 0-30, 1992

3.2 Implementing References

- 3.2.1 EPIP 1-0, Ginna Station Event Evaluation and Classification.
- 3.2.2 ER-SC.1, Adverse Weather
- 3.2.3 A-52.9, Overtime Work Policy For Operations Personnel
- 3.2.4 A-52.10, Overtime Work Policy For Key Maintenance Personnel
- 3.2.5 10 CFR50.54, Conditions of License

4.0 PRECAUTIONS

None.

5.0 PREREQUISITES

5.1 Severe weather is forecasted for the Rochester area by means of a weather warning by WOKR weather service or the National Weather Service (NWS). Reliable information on approaching severe weather disturbances is expected to be available from:

- a. WHAM weather service
- b. Contract meteorological services
- c. National Weather Service

5.2 Weather conditions at the site have degraded or may be degraded to the point that plant personnel and normal plant activities may be affected.

6.0 ACTIONS

NOTE: IN THE EVENT THAT SEVERE WEATHER IS FORECASTED FOR THE ROCHESTER AREA, THE FOLLOWING ACTIONS SHOULD BE TAKEN AS APPROPRIATE. THE RECOMMENDATIONS ARE POSSIBLE ACTIONS TO BE TAKEN. SINCE EACH WEATHER EVENT IS UNIQUE, NOT ALL RECOMMENDATIONS HAVE TO BE IMPLEMENTED. EACH MANAGER SHOULD CHOOSE THE APPROPRIATE ACTIONS BASED IN THE FORECAST.

6.1 Recommendations to the Plant Manager:

- 6.1.1 Tie down or move to a more secure location, equipment and other items that may be dislodged by the forecasted weather.
- 6.1.2 Perform communications checks of all emergency communication systems in the TSC, EOF, Control Room and Survey Center.
- 6.1.3 Ensure all portable radios are operational and all spare batteries are fully charged.
- 6.1.4 Coordinate the following:
 - a. Obtain and properly store the necessary supplies for Operations, Maintenance, Security, and support personnel staying on site during the storm. Consider the following supplies:
 - 1. food items
 - 2. water, beverages
 - 3. paper plates, cups
 - 4. plastic utensils
 - 5. paper towels
 - 6. soap

- b. Make arrangements for obtaining portable bedding as required by the amount of staff expected to remain on site through the storm.
- c. Ensure medical support (staff) and adequate medical supplies are available.
- d. For personnel safety, consider the need for the following plant announcements:
 - stop all outside activities
 - remain away from glass windows
 - seek shelter in lower elevations of the plant
 - report to your supervisor to perform a "head count" for your work group
 - limit travel between buildings.

6.1.5 Make arrangements for personnel who might be required to support the plant during and immediately following the storm to be available and onsite.

6.1.6 If food service is going to be required to support long term operations, contact the Ginna cafeteria staff.

Contact:

Home:

Cellular:



6.1.7 Consult with Emergency Preparedness personnel to inform the state and counties of the circumstances and to provide additional support as necessary.

6.1.8 Consult with corporate officials on arranging for support personnel and equipment to be transported to the site after passage of the severe weather.

6.1.9 Volunteers who remain at the plant during the severe weather should be identified and accounted for.

6.1.10 All unnecessary personnel and all visitors in the Protected Area should be advised to leave when a severe weather warning is issued for the area, assuming that sufficient time is available to reach a safe location. Otherwise, provide them with protection onsite.

6.1.11 Release non-essential personnel in a phased, controlled manner as the severe weather preparations are completed or as personal circumstances dictate. Ensure release of personnel is far enough in advance of severe weather to allow personnel to arrive safely at their homes and avoid any undue traffic congestion. During or after the severe weather, contact the county emergency managers to determine road conditions to ensure the safety of personnel arriving or departing the site.

6.1.12 Order all unnecessary work stopped.

- 6.1.13 During and following the storm, plant management may use 10CFR50.54(x). Examples would be to suspend fire watches and security patrols.
- 6.1.14 Establish a shift schedule for the additional response personnel that are providing continuous plant support.
- 6.1.15 Brief the Nuclear Operations Group (NOG) response personnel who will remain onsite and corporate executives on the severe weather, safety precautions, expected duties, potential problems, contingencies and communications systems using e-mail and telephone calls.
- 6.1.16 Prior to the forecasted storm, perform walkdowns of the plant exterior and site with key managers to inspect for and reduce potential missiles.
- 6.1.17 Consider assembling all personnel in the power block or other safe location prior to the arrival of the severe weather. If unexpected severe weather occurs, consider establishing a point of contact for each building so that if an emergency exists, and assistance is needed, it can be coordinated promptly. This should include the white house, simulator, training center, warehouse and manor house.
- 6.1.18 Ensure appropriate notifications are made when its safe to return to work.
- 6.2 Recommendations to the Maintenance Manager:
 - 6.2.1 Ensure scaffolding that would be exposed to high winds is removed or secured.
 - 6.2.2 Survey construction sites to ensure all light material is either tied down, secured or placed indoors.
 - 6.2.3 Secure electrical services to temporary facilities, if necessary.
 - 6.2.4 If time permits, disassemble and remove temporary and portable buildings or structures that could be damaged by strong winds.
 - 6.2.5 Solicit volunteers for round-the-clock staffing maintenance activities. Attempt to resolve any personal considerations. Follow guidelines in A-52.10. If there are conflicts, bring them to the attention of the Plant Manager.
 - 6.2.6 Designate storm duty vehicles. Establish location for storm duty vehicles inside a protected area. Ensure these vehicles are serviced and refueled.
- 6.3 Recommendations to the Operations Manager:
 - 6.3.1 Determine, if it is necessary, to position operators in buildings that would be inaccessible because of the inability to move between buildings during the height of the severe weather. This will ensure that they will be available to take corrective action if failures occur during the severe weather (i.e., screenhouse).

- 6.3.2 Make arrangements for sufficient Operations personnel who might be required to be at the plant during and immediately following the storm in order to provide the necessary coverage. Follow guidelines in A-52.9. If there are conflicts, bring them to the attention of the Plant Manager.
- 6.3.3 If the operator rounds on outside equipment are to be temporarily suspended during the severe weather, have the shift supervisor document the decision.
- 6.3.4 If appropriate, perform an operability run on each emergency diesel generator.
- 6.3.5 Suspend unnecessary water usage. (i.e. AVT regenerations).
- 6.3.6 Fill the condensate storage tanks and demineralized water storage tanks.
- 6.3.7 Verify battery chargers and applicable station vital batteries are operational.
- 6.3.8 Ensure that adequate inventories of hydrogen and nitrogen are available to accommodate a unit shutdown and subsequent startup.
- 6.3.9 Review procedures that might be required as a result of the storm (e.g. loss of offsite power).
- 6.3.10 Notify Emergency Preparedness to increase siren system surveillance to ensure possible out of service sirens are identified.
- 6.3.11 If appropriate, perform a test of the security and TSC diesels.
- 6.3.12 Make permissible liquid and gaseous releases before the severe weather arrives; waste water and waste gas inventories should be at a minimum.
- 6.3.13 Ensure adequate inventories of chemicals (such as boric acid, ammonia, hydrazine) are available and staged.
- 6.3.14 Suspend all fuel movement, if applicable; place all refueling equipment in a safe condition.
- 6.3.15 Arrange to have fuel oil storage tanks for the emergency diesel generators topped off.
- 6.4 Recommendations to the Radiation Protection and Chemistry Managers:
 - 6.4.1 Ensure that all batch radioactive release permits are completed so waste tank inventories are at a minimum, prior to the onset of severe weather.

- 6.4.2 Instruct radiation protection personnel to inspect outside areas for radioactive materials that need to be stored inside or protected from severe weather. The radioactive waste stored on site is to be adequately protected from the elements. This will prevent the spread of low level radioactive waste during the severe weather.
- 6.4.3 Make arrangements for sufficient personnel to be at the plant during the storm in order to provide the necessary coverage for a time period during which the plant may be inaccessible.
- 6.4.4 Ensure adequate make up water is available.
- 6.5 Recommendations to the Security Manager:
 - 6.5.1 If time permits prior to the severe weather, ensure that all visitors have been asked to leave the site.
 - 6.5.2 Account for all personnel who are to remain on site.
 - 6.5.3 Make arrangements for sufficient security personnel who might be required to support the plant during and immediately following the severe weather to be available and onsite.
 - 6.5.4 Determine if and when security patrols outside are to be temporarily suspended during the storm. Document this decision.
- 6.6 Post Storm Assessment
 - 6.6.1 Plant management should assess the impact of the severe weather on plant safety and determine whether to remain at power or, if the plant is shutdown, to restart.
 - 6.6.2 Ginna Emergency Preparedness will contact Monroe and Wayne County Emergency Management Offices to determine the status of offsite emergency preparedness and will report to plant management.
 - 6.2.2.1 Emergency Preparedness group should verify operability of siren system and individual sirens by performing silent testing as required. Further assessment of siren equipment and power to sites should be performed at siren locations that may have been physically damaged, to the extent deemed appropriate for the severity and region of the storm.
 - 6.6.3 Plant management will keep the NRC informed of actions and status.
- 7.0 Attachments

None.

GINNA STATION

CONTROLLED COPY NUMBER 03

PROCEDURE NO. EPIP 2-1

REV. NO. 22

PROTECTIVE ACTION RECOMMENDATIONS



RESPONSIBLE MANAGER

01/21/05

EFFECTIVE DATE

CATEGORY 1.0

THIS PROCEDURE CONTAINS 12 PAGES

EPIP 2-1PROTECTIVE ACTION RECOMMENDATIONS**1.0 PURPOSE:**

- 1.1 The purpose of this procedure is to provide guidance to the Shift Supervisor, Emergency Coordinator or EOF/Recovery Manager in making protective action recommendations to offsite authorities.

2.0 RESPONSIBILITY:

- 2.1 The Shift Supervisor, Emergency Coordinator (TSC) or EOF/Recovery Manager is responsible for making protective action recommendations to Wayne County, Monroe County and New York State, depending on command and control status.
- 2.2 The decision to implement any protective actions is solely the responsibility of the local authorities.

3.0 REFERENCES:**3.1 Developmental References****3.1.1 Nuclear Emergency Response Plan****3.1.2 EPA-400, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (1991)****3.1.3 Evacuation Travel Time Estimates - Ginna Emergency Planning Zone, February 2004.****3.1.4 NUREG/BR - 0150 Response Technical Manual (RTM-93)****3.1.5 Food and Drug Administration (FDA) "Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies", December 2001.****3.1.6 NUREG-1633, "Assessment of the Use of Potassium Iodide (KI) as a Supplemental Public Protective Action During Severe Reactor Accidents".****3.1.7 NRC RIS 2003-12 "Clarification of NRC Guidance for Modifying Protective Actions"****3.2 Implementing References****3.2.1 EPIP 1-0, Ginna Station Event Evaluation and Classification**

- 3.2.2 EPIP 1-5, Notification
- 3.2.3 EPIP 2-3, Emergency Release Rate Determination
- 3.2.4 EPIP 2-4, Emergency Dose Projections - Manual Method
- 3.2.5 EPIP 2-18, Control Room Dose Assessment
- 3.2.6 EPIP 2-5, Emergency Dose Projections - Personal Computer Method
- 3.2.7 EPIP 2-6, Emergency Dose Projections - MIDAS Program

4.0 **PRECAUTIONS:**

None.

5.0 **PREREQUISITES:**

None.

6.0 **INSTRUCTIONS:**

NOTE: PROTECTIVE ACTION RECOMMENDATIONS (PARs) WILL ONLY REFLECT GINNA RECOMMENDATIONS, NOT ACTIONS IMPLEMENTED BY OFFSITE OFFICIALS.

- 6.1 Obtain the event classification using EPIP 1-0.
- 6.2 **UNUSUAL EVENT, ALERT and SITE AREA EMERGENCY.**
 - 6.2.1 Report on EPIP 1-5, Attachment 3a, Item 7:

A. No need for protective actions outside the site boundary.
- 6.3 **GENERAL EMERGENCY**
 - 6.3.1 Protective Action Recommendations shall be issued with the initial declaration of a General Emergency.
 - 6.3.2 Using Attachment 1, Page 1 of 2, and the current wind direction, determine the initial ERPAs to be evacuated. The Counties will implement their KI plans for any evacuated ERPA. Any ERPA not evacuated will be sheltered.
 - 6.3.3 Record in EPIP 1-5, Attachment 3a, Item 7, the Protective Actions Recommended.

NOTE: ONCE AN ERPA HAS BEEN RECOMMENDED TO EVACUATE, THAT RECOMMENDATION WILL CONTINUE. AN ERPA PAR STATUS CANNOT BE CHANGED FROM “EVACUATE” TO “SHELTER”.

6.3.4 After the initial PAR has been made, re-evaluate the PARs based on the following to determine if secondary PARs are required or if initial PARs need to be modified.:

- a. Dose Assessment*
- b. Survey Team data*
- c. EPA Protective Action Guidelines (Attachment 2)
- d. Wind shifts

* = If exposures in non-evacuated areas indicate that evacuation is warranted, use Attachment 1 page 2 of 2 to expand Protective Action Recommendations to an evacuated area of 5 mile radius and 10 miles downwind.

6.3.5 If the EPA guidelines for evacuation or sheltering are exceeded beyond the 10 mile emergency planning zone and protective actions are required, specify the areas using roads, rivers, bodies of water or town boundaries.

6.3.6 If an ERPA is recommended for evacuation and the county decides to shelter the ERPA instead, the KI plan should still be implemented for that ERPA.

6.3.7 The Evacuation Travel Time Estimate information (Attachment 3) is used by offsite agencies to determine the correct Protective Action Decision (PAD).

It is assumed by everyone within an ERPA that is issued an Advisory to Evacuate will, in fact, respond in general accord with the planned routes.

It is assumed that no early dismissal to home of school children is contemplated. According to county policy, school children are not to be released to their parents on school grounds. All students will be evacuated to the reception centers assigned to the schools and then released to their parents as they arrive at the reception centers. Sufficient bus resources are identified to handle 100% of the students in one wave.

“Voluntary Evacuation” occurs when people in areas of the EPZ not ordered to evacuate, nevertheless choose to do so. Within the annular ring defined by the distance to be evacuated (5-miles or 10miles downwind), 50% of the people not advised to evacuate are assumed to evacuate within the same time frame. Between the annular ring, defined by the extent of the downwind evacuation order out to the EPZ boundary, it is assumed that 35% of the people will deliberately evacuate. This is graphically presented in Attachment 4.

"Shadow Evacuation" occurs when people in areas outside the EPZ choose to relocate during the course of the evacuation. These people can use the same roads as evacuees from the EPZ and can potentially delay evacuees from leaving the area at risk. The shadow evacuation is in Monroe County. It is an area southwest of the EPZ. It is defined by the edge of the EPZ boundary out to Interstate 590, Irondequoit Bay and State Road 31 out to the Monroe-Wayne County line. It is assumed that 30% of the people will evacuate voluntarily. This is graphically presented in Attachment 5.

- 6.3.8 In the event that there are questions about ERPA populations, use the table below to provide information:

<u>ERPA</u>	<u>Population</u>	<u>ERPA</u>	<u>Population</u>
W-1	3,877	M-1	3,973
W-2	6,043	M-2	482
W-3	1,081	M-3	359
W-4	2,227	M-4	6,965
W-5	3,976	M-5	1,324
W-6	2,181	M-6	6,893
W-7	4,579	M-7	7,624
		M-8	3,100
		M-9	<u>3,930</u>
Wayne County Totals	23,964	Monroe County Totals	34,650

7.0 ATTACHMENTS:

1. Evacuation Areas by Zones
2. Projected Dose to the Population and Recommended Actions
3. Evacuation Times Estimates
4. Assumed Evacuation Response within the EPZ
5. Ginna EPZ and Shadow Region
6. Emergency Response Planning Areas (ERPAs)

**EVACUATION AREAS BY ZONES
PROTECTIVE ACTION RECOMMENDATIONS BY ERPA FOR
GENERAL EMERGENCY CLASSIFICATION**

Wind From	(Degrees)	Initial Protective Action Recommendations (Evacuation based on 2 mile radius & 5 miles downwind)
N	349 to 11	Evacuate: W (1,2,3) and implement KI plan Shelter: All remaining ERPAs
NNE	12 to 33	Evacuate: W (1,2) M (1) and implement KI plan Shelter: All remaining ERPAs
NE	34 to 56	Evacuate: W (1,2) M (1) and implement KI plan Shelter: All remaining ERPAs
ENE	57 to 78	Evacuate: W (1,2) M (1) and implement KI plan Shelter: All remaining ERPAs
E	79 to 101	Evacuate: W (1,2) M (1) and implement KI plan Shelter: All remaining ERPAs
ESE	102 to 124	Evacuate: W (1) M (1) and implement KI plan Shelter: All remaining ERPAs
SE	125 to 146	Evacuate: W (1) and implement KI plan Shelter: All remaining ERPAs
SSE	147 to 168	Evacuate: W (1) and implement KI plan Shelter: All remaining ERPAs
S	169 to 191	Evacuate: W (1) and implement KI plan Shelter: All remaining ERPAs
SSW	192 to 213	Evacuate: W (1) and implement KI plan Shelter: All remaining ERPAs
SW	214 to 236	Evacuate: W (1,3) and implement KI plan Shelter: All remaining ERPAs
WSW	237 to 258	Evacuate: W (1,3) and implement KI plan Shelter: All remaining ERPAs
W	259 to 281	Evacuate: W (1,3) and implement KI plan Shelter: All remaining ERPAs
WNW	282 to 303	Evacuate: W (1,2,3) and implement KI plan Shelter: All remaining ERPAs
NW	304 to 326	Evacuate: W (1,2,3) and implement KI plan Shelter: All remaining ERPAs
NNW	327 to 348	Evacuate: W (1,2,3) and implement KI plan Shelter: All remaining ERPAs

EPIP 2-1:6

EVACUATION AREAS BY ZONES PROTECTIVE ACTION RECOMMENDATIONS BY ERPA FOR GENERAL EMERGENCY CLASSIFICATION

Attachment 1, Rev, 22
Page 2 of 2

Wind From	(Degrees)	Initial Protective Action Recommendations (Evacuation based on 2 mile radius & 5 miles downwind)	Secondary Protective Action Recommendations (Evacuation based on 5 mile radius & 10 miles downwind)
N	349 to 11	Evacuate: W (1, 2, 3) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3, 5, 6, 7) M (1, 2, 4, 5) and implement KI plan Shelter: All remaining ERPAs
NNE	12 to 33	Evacuate: W (1, 2) M (1) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3, 6, 7) M (1, 2, 3, 4, 5, 6, 7, 9) and implement KI plan Shelter: All remaining ERPAs
NE	34 to 56	Evacuate: W (1, 2) M (1) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3, 7) M (1, 2, 3, 4, 5, 6, 7, 8, 9) and implement KI plan Shelter: All remaining ERPAs
ENE	57 to 78	Evacuate: W (1, 2) M (1) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3, 7) M (1, 2, 3, 4, 5, 6, 7, 8, 9) and implement KI plan Shelter: All remaining ERPAs
E	79 to 101	Evacuate: W (1, 2) M (1) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3) M (1, 2, 3, 4, 6, 7, 8, 9) and implement KI plan Shelter: All remaining ERPAs
ESE	102 to 124	Evacuate: W (1) M (1) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3) M (1, 3, 6, 8, 9) and implement KI plan Shelter: All remaining ERPAs
SE	125 to 146	Evacuate: W (1) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3) M (1) and implement KI plan Shelter: All remaining ERPAs
SSE	147 to 168	Evacuate: W (1) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3) M (1) and implement KI plan Shelter: All remaining ERPAs
S	169 to 191	Evacuate: W (1) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3) M (1) and implement KI plan Shelter: All remaining ERPAs
SSW	192 to 213	Evacuate: W (1) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3) M (1) and implement KI plan Shelter: All remaining ERPAs
SW	214 to 236	Evacuate: W (1, 3) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3, 4) M (1) and implement KI plan Shelter: All remaining ERPAs
WSW	237 to 258	Evacuate: W (1, 3) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3, 4, 5) M (1) and implement KI plan Shelter: All remaining ERPAs
W	259 to 281	Evacuate: W (1, 3) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3, 4, 5, 6) M (1) and implement KI plan Shelter: All remaining ERPAs
WNW	282 to 303	Evacuate: W (1, 2, 3) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3, 4, 5, 6, 7) M (1) and implement KI plan Shelter: All remaining ERPAs
NW	304 to 326	Evacuate: W (1, 2, 3) and implement KI plan Shelter: All remaining ERPAs	Evacuate: W (1, 2, 3, 4, 5, 6, 7) M (1, 2) and implement KI plan Shelter: All remaining ERPAs
NNW	327 to 348	Evacuate: W (1, 2, 3) and implement KI plan	Evacuate: W (1, 2, 3, 4, 5, 6, 7) M (1, 2, 5) and implement KI plan

* Secondary Protective Actions are recommended when dose projections or field teams indicate ≥ 1 REM TEDE beyond 5 miles.

PROJECTED DOSE TO THE POPULATION AND RECOMMENDED ACTIONS

PROJECTED DOSE TO THE POPULATION	RECOMMENDED ACTIONS	COMMENTS
Total Whole Body < 1 REM*	No planned protective actions. Local authorities or State may issue an advisory to seek shelter and await further instructions. Monitor environmental radiation levels.	None.
Total Whole Body \geq 1 REM* Committed Dose Equivalent to the thyroid (child) \geq 5 REM.	Conduct evacuation.* Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. Control access. Implement KI plan.	Evacuation (or for some situation, sheltering**) should be initiated at one REM. Seeking shelter would be an alternative if evacuation were not immediately possible.
Project Dose (REM) to Emergency Team Workers		
Total Whole Body 25 REM	Control exposure of emergency team members to these levels except for lifesaving mission. (Appropriate controls for emergency workers include time limitations, respirators and stable iodine.)	None.
Total Whole Body 75 REM	Control exposure of emergency team members performing lifesaving missions to this level. (Control of time of exposure will be most effective.)	None.

NOTES:

- * The sum of the effective dose equivalent resulting from exposure to external sources and the committed effective dose equivalent incurred from all significant inhalation pathways during the early phase.
- ** Sheltering may be the preferred protective action when it will provide protection equal to or greater than evacuation, based on consideration of factors such as source term characteristics and temporal or other site-specific conditions.

Evacuation Time Estimate for Initial Protective Action Recommendations

Evacuated Area is a 2 mile radius and 5 miles downwind

Time to Clear the Indicated Area of 95% of the Affected Population

Evacuated Areas All ERPA's not evacuated are to be sheltered		Summer		Summer		Summer	Winter			Winter			Winter
		Midweek		Weekend		Midweek Weekend	Midweek			Weekend			Midweek Weekend
		Midday		Midday		Evening	Midday			Midday			Evening
Region	ERPA's	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Snow	Good Weather	Rain	Snow	Good Weather
N 349 to 11	W-1,2,3	2:05	2:10	1:50	1:50	1:50	2:05	2:10	2:20	1:50	1:50	2:15	1:50
NNE 12 to 33	W-1,2 M-1	2:30	2:35	1:50	1:50	1:45	2:15	2:35	3:35	1:50	1:50	2:15	1:45
NE 34 to 56	W-1,2 M-1	2:30	2:35	1:50	1:50	1:45	2:15	2:35	3:35	1:50	1:50	2:15	1:45
ENE 57 to 78	W-1,2 M-1	2:30	2:35	1:50	1:50	1:45	2:15	2:35	3:35	1:50	1:50	2:15	1:45
E 79 to 101	W-1,2 M-1	2:30	2:35	1:50	1:50	1:45	2:15	2:35	3:35	1:50	1:50	2:15	1:45
ESE 102 to 124	W-1 M-1	2:15	2:50	1:45	1:50	1:45	2:15	2:45	3:25	1:45	1:50	2:15	1:45
SE 147 to 168	W-1	2:25	2:25	2:05	2:10	2:05	2:25	2:25	2:50	2:05	2:10	2:50	2:05
SSE 147 to 168	W-1	2:25	2:25	2:05	2:10	2:05	2:25	2:25	2:50	2:05	2:10	2:50	2:05
S 169 to 191	W-1	2:25	2:25	2:05	2:10	2:05	2:25	2:25	2:50	2:05	2:10	2:50	2:05
SSW 192 to 213	W-1	2:25	2:25	2:05	2:10	2:05	2:25	2:25	2:50	2:05	2:10	2:50	2:05
SW 214 to 236	W-1,3	2:25	2:25	2:05	2:10	2:05	2:25	2:25	2:50	2:05	2:10	2:50	2:05
WSW 237 to 258	W-1,3	2:25	2:25	2:05	2:10	2:05	2:25	2:25	2:50	2:05	2:10	2:45	2:05
W 259 to 281	W-1,3	2:25	2:25	2:05	2:10	2:05	2:25	2:25	2:50	2:05	2:10	2:45	2:05
WNW 282 to 303	W-1,2,3	2:25	2:25	2:05	2:15	2:05	2:25	2:25	2:50	2:05	2:15	2:45	2:05
NW 304 to 326	W-1,2,3	2:25	2:25	2:05	2:15	2:05	2:25	2:25	2:50	2:05	2:15	2:45	2:05
NNW 327 to 348	W-1,2,3	2:25	2:25	2:05	2:15	2:05	2:25	2:25	2:50	2:05	2:15	2:45	2:05

Evacuation Time Estimate for Secondary Protective Action Recommendations
(Implemented when dose projections or field teams indicate ≥ 1 REM TEDE beyond 5 miles)

Evacuated Area is a 5 mile radius and 10 miles downwind

Time to Clear the Indicated Area of 95% of the Affected Population

Evacuated Areas All ERPA's not evacuated are to be sheltered		Summer		Summer		Summer	Winter			Winter			Winter
		Midweek		Weekend		Midweek Weekend	Midweek			Weekend			Midweek Weekend
		Midday		Midday		Evening	Midday			Midday			Evening
Region	ERPA's	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Snow	Good Weather	Rain	Snow	Good Weather
N 349 to 11	W-1,2,3,5,6,7 M-1,2,4,5	2:40	3:00	2:00	2:10	1:55	2:45	3:00	3:35	2:00	2:10	2:40	1:55
NNE 12 to 33	W-1,2,3,6,7 M-1,2,3,4,5,6,7,9	5:10	5:35	3:05	3:25	2:50	5:15	5:45	6:45	3:10	3:25	4:30	2:50
NE 34 to 56	W-1,2,3,7 M-1,2,3,4,5,6,7,8,9	5:20	5:45	3:25	3:45	3:05	5:30	5:55	6:55	3:20	3:40	4:40	3:05
ENE 57 to 78	W-1,2,3,7 M-12,3,4,5,6,7,8,9	5:20	5:45	3:25	3:45	3:05	5:30	5:55	6:55	3:20	3:40	4:45	3:05
E 79 to 101	W-1,2,3 M-1,2,3,4,6,7,8,9	5:20	5:45	3:25	3:45	3:05	5:30	5:55	6:55	3:20	3:40	4:45	3:05
ESE 102 to 124	W-1,2,3 M-1,3,6,8,9	4:35	5:00	3:05	3:20	2:40	4:40	5:00	5:55	3:00	3:20	4:05	2:40
SE 147 to 168	W-1,2,3 M-1	2:45	2:55	1:50	1:50	1:50	2:50	3:15	4:15	1:50	1:55	2:20	1:50
SSE 147 to 168	W-1,2,3 M-1	2:45	2:55	1:50	1:50	1:50	2:50	3:15	4:15	1:50	1:55	2:20	1:50
S 169 to 191	W-1,2,3 M-1	2:45	2:55	1:50	1:50	1:50	2:50	3:15	4:15	1:50	1:55	2:20	1:50
SSW 192 to 213	W-1,2,3 M-1	2:45	2:55	1:50	1:50	1:50	2:50	3:15	4:15	1:50	1:55	2:20	1:50
SW 214 to 236	W-1,2,3,4 M-1	2:45	2:55	1:50	1:50	1:50	2:50	3:15	4:15	1:50	1:55	2:20	1:50
WSW 237 to 258	W-1,2,3,4,5 M-1	2:45	2:55	1:50	1:55	1:50	2:45	3:10	4:15	1:50	1:55	2:25	1:50
W 259 to 281	W-1,2,3,4,5,6 M-1	2:40	2:50	1:50	1:55	1:50	2:40	3:05	4:05	1:50	1:55	2:25	1:50
WNW 282 to 303	W-1,2,3,4,5,6,7 M-1	2:40	2:50	2:00	2:10	1:55	2:35	3:00	4:00	1:55	2:05	2:35	1:55
NW 304 to 326	W-1,2,3,4,5,6,7 M-1,2	2:40	2:55	1:55	2:05	1:55	2:45	3:00	3:40	1:55	2:05	2:35	1:55
NNW 327 to 348	W-1,2,3,4,5,6,7 M-1,2,5	2:40	2:55	1:55	2:05	1:55	2:35	3:00	3:50	1:55	2:05	2:35	1:55

ASSUMED EVACUATION RESPONSE WITHIN THE EPZ

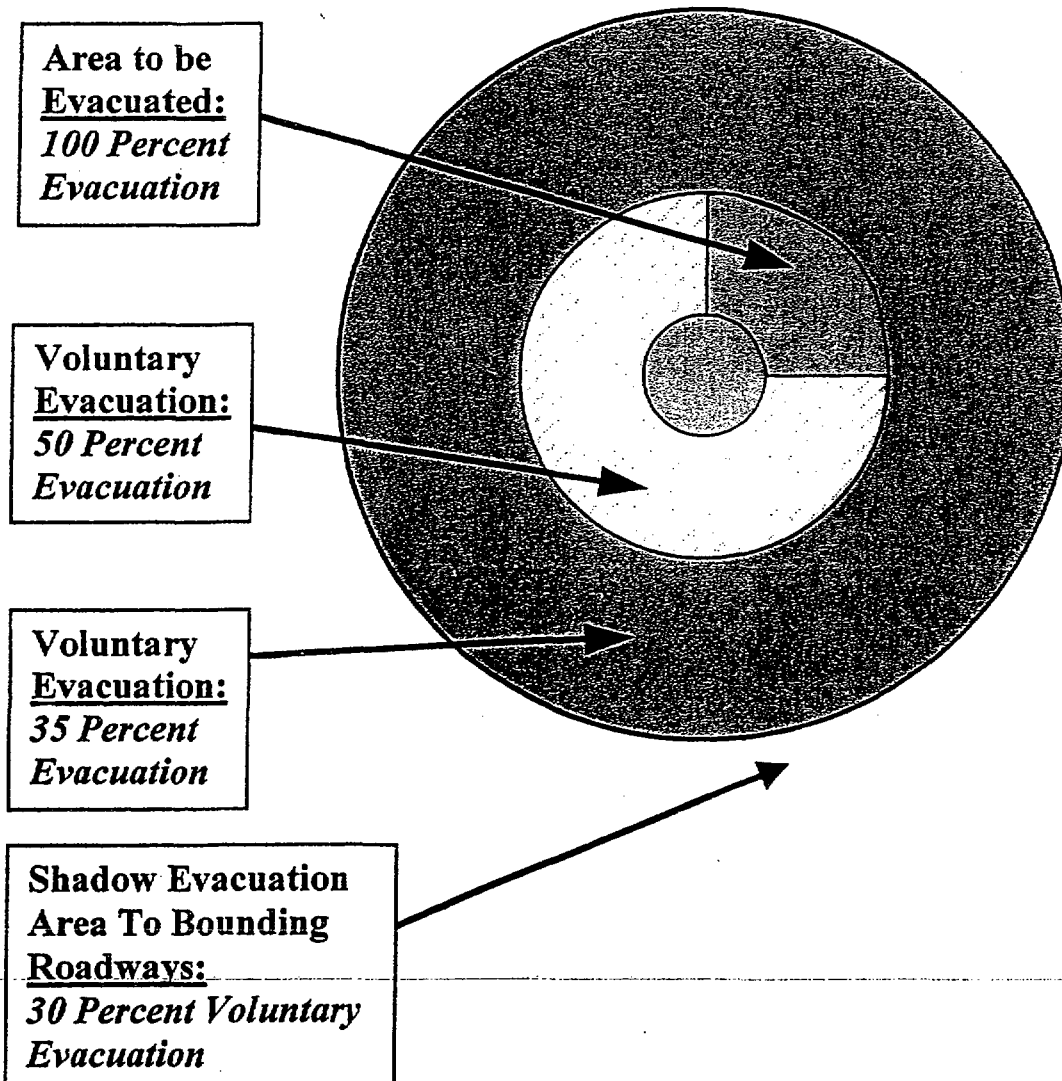
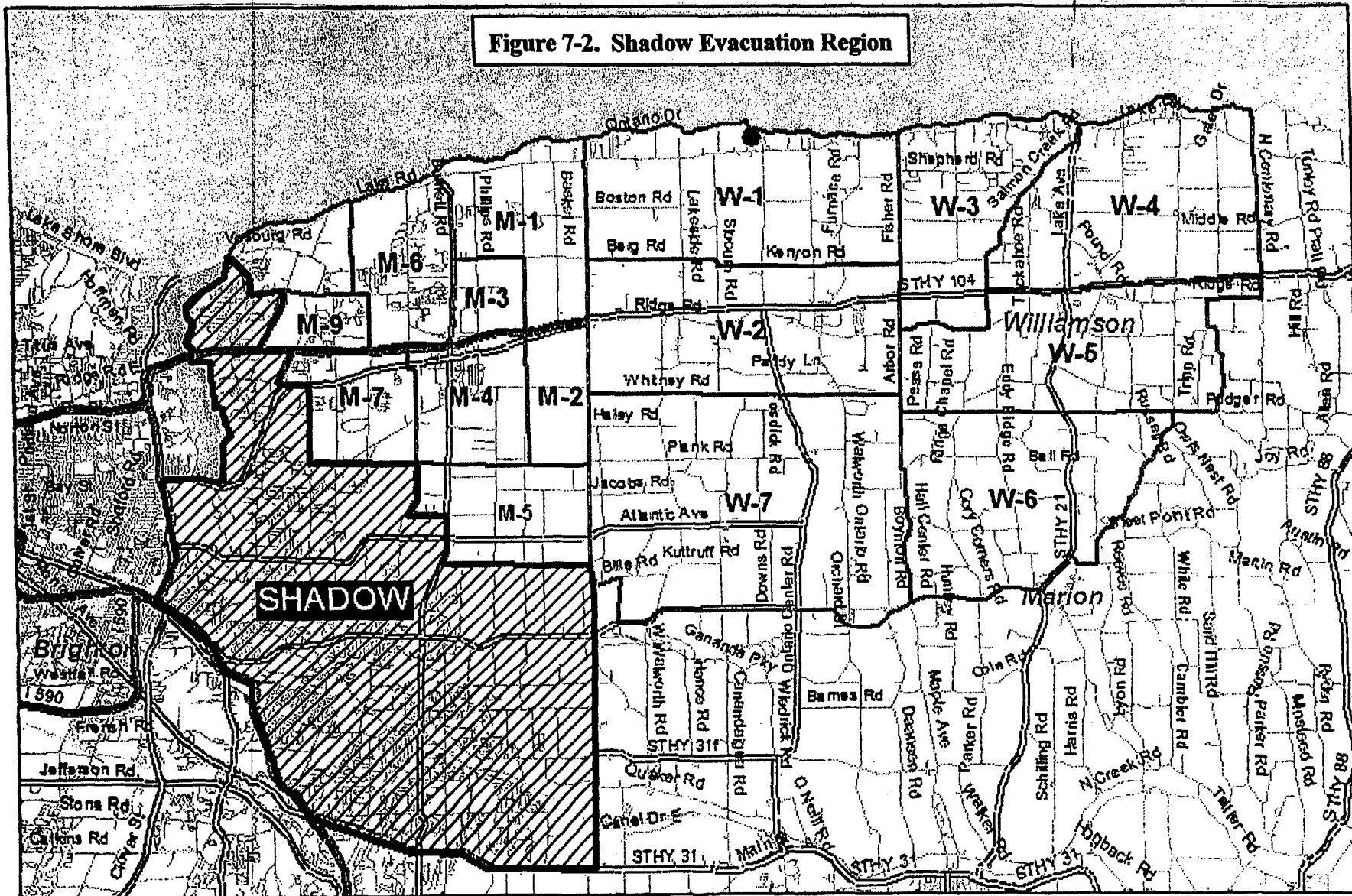
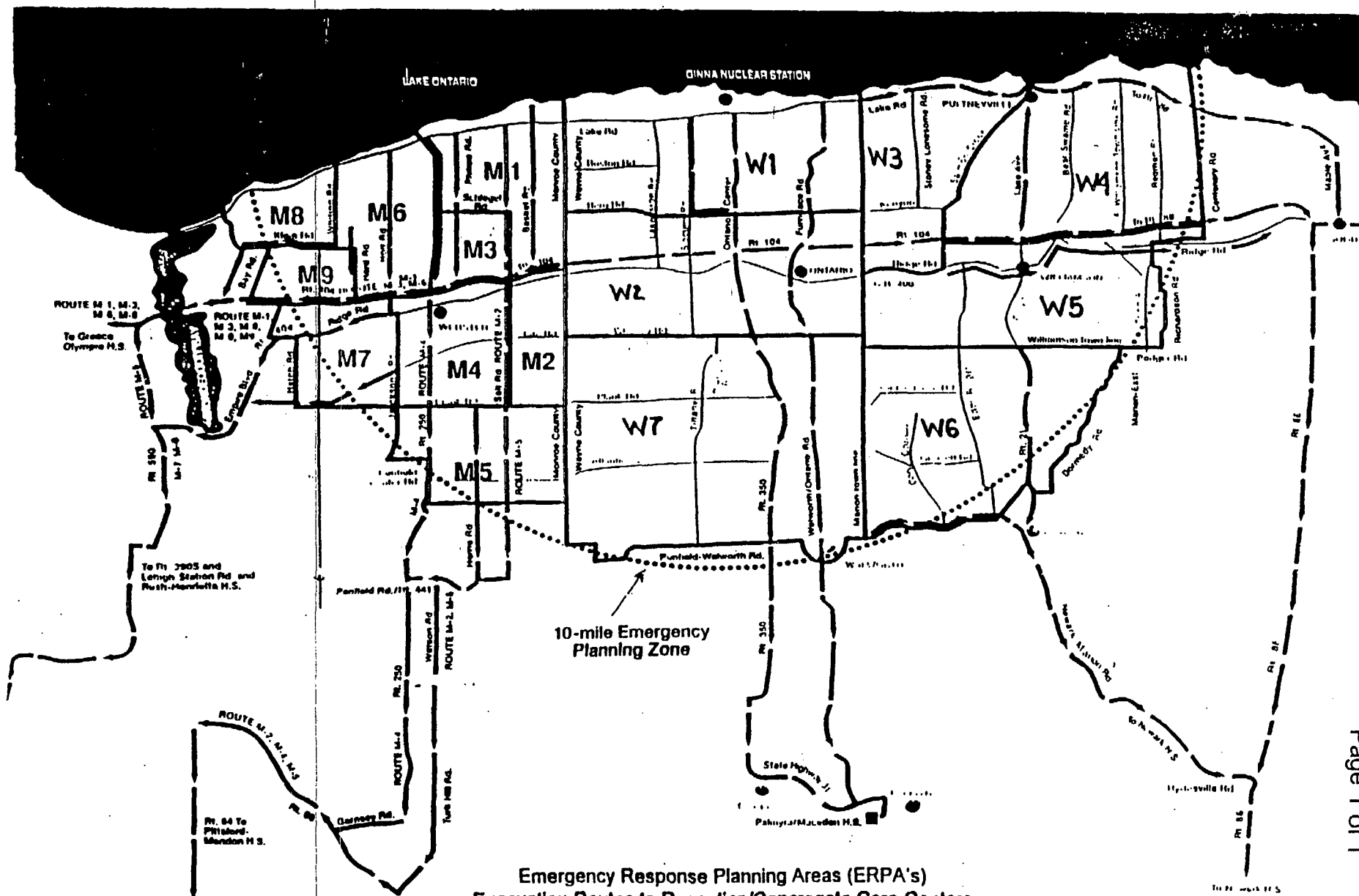


Figure 7-2. Shadow Evacuation Region







U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL WEATHER SERVICE

587 Aero Drive
Buffalo, NY 14225

A - 10

January 14, 2005

Mr. Peter Polfleit
Corporate Nuclear Emergency Planner
Constellation Energy/Ginna Nuclear Power Plant
1503 Lake Road
Ontario, NY 14519

Dear Mr. Polfleit:

The National Weather Service in Buffalo, NY is committed to provide meteorological support, upon request, in the event of an accident or other declared emergency occurring at any nuclear power facility within its County Warning Area. This support, resources permitting, will normally be in the form of site specific forecasts of wind, temperature and precipitation at the surface and aloft. All forecasts would normally be coordinated through local and state emergency management agencies.

In addition, upon request and resources permitting, our office would assign a meteorologist to serve as a coordinator at an Emergency Operations Facility. The meteorologist would act as a liaison between National Weather Service forecasters and emergency response officials to expedite requests and dissemination of the site specific weather forecasts.

In order to provide the best possible support to the Ginna facility, our office should be notified of any alert or emergency as soon as possible. In the event we are unable to provide the necessary support, the National Weather Service Forecast Office in Cleveland, OH will provide back-up. The following *unlisted* telephone numbers are available for your use:

National Weather Service Forecast Office, Buffalo NY
(716) 565-0013
(716) 565-0014
(716) 565-9002 (FAX)

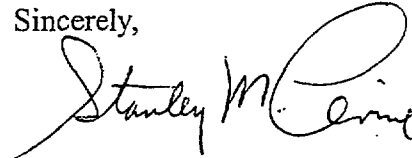
National Weather Service Forecast Office, Cleveland OH
(216) 265-2380
(216) 265-2381
(216) 265-2371 (FAX)

Requests for activation of the NOAA Weather Radio warning alarm and the Emergency Alert System (EAS) Specific Message Area Encoder (SAME) at Rochester during an emergency should be coordinated through local and New York State Emergency Management officials using the procedures specified in existing Memoranda of Understanding.



Finally, the National Weather Service Forecast Office in Buffalo will participate in all Federal and New York State observed exercises and the associated pre-exercise drills.

Sincerely,

A handwritten signature in black ink, appearing to read "Stanley M. Levine". The signature is fluid and cursive, with the first name "Stanley" being more legible than the last name "Levine".

Stanley M. Levine
Warning Coordination Meteorologist

cc: W/ER1x1 - Richard Watling
WCM, WFO CLE - Gary Garnet
Operations Planning Officer, Monroe OEP - S. Macaluso