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ENTERGY NUCLEAR NORTHEAST
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
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DOCUMENT TRANSMITTAL AND RECEIPT ACKNOWLEDGEMENT FORM

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FROM: CATHY IZYK - EMERGENCY PLANNING DEPARTMENT

SUBJECT: EMERGENCY PLAN AND IMPLEMENTING PROCEDURES

Enclosed are revisions to your assigned copy of the JAFNPP Emergency Plan and Implementing Procedures. Please remove and **DISCARD** the old pages. Insert the attached, initial and date this routing sheet and return the completed routing sheet to ***Cathy Izyk in the Emergency Planning Department within 15 days.*** If this transmittal is not returned within 15 days, your name will be removed from the controlled list.

PLEASE NOTE: EFFECTIVE DATE IS 9/7/01!

VOLUME 1 Update List Dated September 7, 2001			
DOCUMENT	PAGES	REV. #	INITIALS/DATE
APPENDIX C	REPLACE ALL	24	
SECTION 4	REPLACE ALL	17	
SECTION 7	**Please replace procedure, but keep the maps that are in the sheet protectors. Please put the attached stickers on those maps (pages 32 & 36)**	23	

VOLUME 2 Update List Dated September 7, 2001			
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EAP-4.1	REPLACE ALL	13	

VOLUME 3 Update List Dated September 7, 2001			
DOCUMENT	PAGES	REV. #	INITIALS/DATE
EAP-32	REPLACE ALL	7	

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FIGURE 7-4

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FIGURE 7-6

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EMERGENCY PLAN / VOLUME 1
UPDATE LIST

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APPENDIX E	OSWEGO COUNTY PLANS AND PROCEDURES	REV. 5	04/01
APPENDIX F	TYPICAL SUPPORT COMPANIES AND ORGANIZATIONS	REV. 11	04/01
APPENDIX G	DELETED (2/98)		
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APPENDIX J	SUPPORTING DOCUMENTS	REV. 8	04/01
APPENDIX K	EVACUATION TRAVEL TIME ESTIMATES AND POPULATION DISTRIBUTION FOR THE JAF/NINE MILE POINT EMERGENCY PLANNING ZONE	REV. 6	04/01
APPENDIX L	NUREG-0654/FEMA-REP-1 CROSS REFERENCE	REV. 11	04/01
APPENDIX M	DELETED (5/84)		
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ENTERGY NUCLEAR NORTHEAST
JAMES A. FITZPATRICK NUCLEAR POWER PLANT

EMERGENCY PLAN VOLUME 1

PROCEDURE NO: SECTION 4

TITLE: EMERGENCY CONDITIONS*

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SECTION 4

EMERGENCY CONDITIONS*

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SECTION 4

EMERGENCY CONDITONS*

4.0 EMERGENCY CONDITIONS

4.1 Classification System

This plan and its associated implementing procedures provide the means for responding to a wide range of emergency conditions. These emergency conditions have been categorized into four emergency classes which cover the spectrum of postulated accidents. The classification system used in this plan has been developed based on the guidance contained in NUREG-0654, Revision 1, November 1980. Appendix 1, "Emergency Action Level Guidelines for Nuclear Power Plants" and NUMARC/NESP-007, "Methodology for Development of Emergency Action Levels" and is compatible with the systems used by county and state agencies.

Emergency conditions will be evaluated using Implementing Procedure IAP-2, Classification of Emergency Conditions. That procedure contains event categories, initiating conditions, and emergency action levels for each of the four emergency classes. The emergency action levels are specific plant conditions, instrument readings, alarms, or other conditions that indicate that an abnormal condition exists which warrants the declaration of an emergency and implementation of the emergency plan.

The purpose of the emergency classification system is to initiate a planned response to a given severity of accident. JAFNPP, county, and state plans and implementing procedures provide for specific emergency organization, notification, emergency facility activation, and preliminary actions to be taken based on the level of emergency that is declared.

As the emergency situation changes, the emergency class will be reviewed and revised in accordance with IAP-2. This allows for the augmentation of emergency personnel and resources to respond to a more severe emergency and provides for an orderly close out of the emergency and entry into recovery operations once the situation has been controlled.

Facility activation may be modified by the Emergency Director if the safety of incoming personnel may be jeopardized by a security event or other event hazardous to incoming personnel.

4.1.1 Unusual Event

This class applies to an unusual plant condition which either has occurred or is impending. This plant condition could eventually lead to a potential degradation in overall safety. Inherently, however, this is a situation in which sufficient time is available to take precautionary and constructive steps to prevent a more serious event or to mitigate any consequences that may occur.

The primary purpose for this class is to ensure that the plant operating staff recognizes initiating conditions, takes appropriate action such as assessment and verification, and comes to a state of readiness to respond if the condition becomes more severe. The Unusual Event class requires that off site authorities be notified of the event.

No protective actions will be recommended to state and county authorities for an Unusual Event and no offsite agency response is required. The TSC, OSC, or other facilities may be activated as a precautionary measure, or to assist as needed.

4.1.2 Alert

An Alert emergency class is declared when events are in progress or have occurred which involve an actual or potential substantial degradation of the level of plant safety. Although the potential for limited releases of radioactivity in excess of technical specification limits may exist, the initial assessment leading to this class indicates that it is unlikely that a public hazard will be created. An Alert requires response by the plant emergency organization, augmentation of on site emergency resources and constitutes the lowest level where emergency off site response may be required.

The declaration of an Alert results in the activation of the Technical Support Center (TSC), Emergency Operations Facility (EOF), Operational Support Center (OSC) and the Joint News Center (JNC). The JNC may be declared operational prior to a Site Area Emergency at the discretion of the JNC Director, or designee. Also prompt initial and follow-up notification is provided to federal, state, and local authorities.

At the Alert classification, the EOF and/or JNC may be deactivated at the discretion of the Emergency Director if operation is not necessary based upon conditions or events. (This decision should be discussed with State and County prior to deactivation of the EOF or JNC.)

Although initial and follow-up notification to state and county authorities will include projected off site exposures, if applicable, no protective actions will be recommended to those authorities since the exposures possible during an Alert are below the Protective Action Guides (PAG).

4.1.3 Site Area Emergency

The Site Area Emergency class is declared when events are in progress or have occurred which involve actual or probable major failures of plant functions needed for protection of the public. Many events within this class constitute an actual or clear potential for significant releases of radioactive material to the environment. These releases, however, are not normally in excess of the PAGs.

The Technical Support Center (TSC), Operational Support Center (OSC), Emergency Operations Facility (EOF) and Joint News Center will be activated for a Site Area Emergency.

The declaration of a Site Area Emergency requires the notification of federal, state, and county authorities so that they may activate their emergency operation centers and dispatch key emergency personnel.

4.1.4 General Emergency

The General Emergency class is declared when events are in process or have occurred which involve actual or imminent substantial core degradation or melting with the potential for loss of containment integrity and significant releases of radioactivity to the environment.

The Technical Support Center (TSC), Operational Support Center (OSC), Emergency Operations Facility (EOF), and Joint News Center will be activated for a General Emergency.

The declaration of a General Emergency requires the notification of federal, state, and county authorities so that they may activate their emergency operating centers and dispatch key emergency personnel. A General Emergency involves the potential or actual release of airborne radioactivity which may result in off site projected exposures that would exceed the limits specified in the USEPA Protective Action Guides. The Emergency Director will recommend protective actions to state and county authorities based on actual measurements, projections, or calculations.

It is the responsibility of state and county authorities to implement off site protective actions and to provide an independent determination of the type and extent of such actions.

4.2 Spectrum of Postulated Accidents

The Emergency Action Levels contained in IAP-2 Classification of Emergency Conditions provide the ability for classifying approximately sixty discrete types and levels of events. However, in order to develop the maximum projected exposure information contained in Figure 4.2, it was necessary to evaluate several discrete accidents. The discrete accidents addressed in this section are those which are defined in the JAFNPP FSAR Update as "design basis accidents."

4.2.1 Control Rod Drop Accident

An accident that results in radioactive material release from the fuel with the Reactor Coolant Pressure Boundary, Primary Containment and Secondary Containment intact.

As an example, this accident is postulated to occur with the reactor in hot standby, critical condition, and is expected to result in the failure of about 330 fuel rods. With the elimination of the automatic closure of the Main Steam Isolation Valves (MSIVs) on high radiation fission products will be transported to the offgas system and subsequently out the stack. This will result in a whole body dose at the site boundary of 1.46 rem, and thyroid dose of zero due to the holdup capability of the offgas system.

4.2.2 Refueling Accident

An accident that results in radioactive material release directly to the Secondary Containment with the Primary Containment not intact.

As an example, this accident is postulated to occur with the reactor in shutdown condition with the vessel head removed. A fuel assembly is assumed to drop onto the top of the core, resulting in the failure of about 440 fuel rods. The refueling floor ventilation radiation monitoring system alarms, isolates the ventilation system, and starts operation of the Standby Gas Treatment System (SGTS), within about one minute.

Noble gases and radioiodines are released to the reactor coolant, migrate to the secondary containment, and are released to the environment through the SGTS.

4.2.3 Main Steam Line Break

An accident that results in radioactive material releases outside the Secondary Containment.

As an example, this accident is postulated to occur with the reactor operating at rated conditions. The steam line break occurs outside the secondary containment and releases reactor coolant for a period no longer than 10.5 seconds, until complete closure of the MSIVs. Noble gases and radioiodines in the coolant are assumed to be released directly to the environment.

An estimate of the resultant exposures as shown in Figure 4.2 is for worst case conditions. Actual exposures are proportional to the fission product activity in the steam, as monitored by the off-gas release rate prior to the accident. The exposures in Figure 4.2 are based on the assumption that the off-gas release rate is at the upper limiting condition for operation.

4.2.4 Loss of Coolant Accident (LOCA)

An accident that results in radioactive material release directly to the Primary Containment.

As an example, this accident is postulated to involve a complete circumferential break of a recirculating loop pipe inside the primary containment with the reactor operating at full power. The accident results in the release of a significant quantity of fission products into the primary containment, leakage into the secondary containment, and release to the environment through the SGTS.

4.2.5 Other Accident Types

Additional accident types have been included for the purposes of dose assessment. The types allow for the variability of isotopic mixtures and, by pre-establishing isotopic mixtures and developing a ratio of containment to atmosphere leakage, allow for simplified use. These include accidents "Containment Design Basis Accident" and "Severe Accident."

4.3 **Figures, Forms, and Attachments**

Figure 4.1 Recommended Protective Actions for the General Population and Emergency Workers

Figure 4.2 Maximum Estimated Doses Resulting From Design Basis Accidents

FIGURE 4.1

RECOMMENDED PROTECTIVE ACTIONS FOR THE GENERAL POPULATION AND EMERGENCY WORKERS (1)

PAGs for the Early Phase of a Nuclear Incident

Protective Action	PAG (projected dose)	Comments
Evacuation(or sheltering[a])	1 - 5 rem[b]	Evacuation (or, for some situations, sheltering[a]) should normally be initiated at 1 rem.
Administration of stable iodine	25 rem[c]	Requires approval of State medical officials

[a]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.

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

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

Guidance on Dose Limits for Workers Performing Emergency Services

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

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

(1) Reference: Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, EPA-400-R-02-001, May 1992.

FIGURE 4.2

MAXIMUM ESTIMATED DOSES RESULTING FROM DESIGN BASIS ACCIDENTS

	Maximum Estimated Dose (rem)			
	Whole Body		Thyroid	
Postulated Accident	0-2 Hours 3000 Feet	0-30 Days 3.4 Miles	0-2 Hours 3000 Feet	0-30 Days 3.4 Miles
Control Rod Drop	0.24	0.25	3.94	7.84
Refueling	0.22	____	4.38	____
Main Steam Line Break	0.01	____	13.6	____
Loss of Coolant	0.97	1.60	11.4	32.5

Estimated doses taken from Chapter 14 of the JAFNPP FSAR

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ENTERGY NUCLEAR NORTHEAST
JAMES A. FITZPATRICK NUCLEAR POWER PLANT

EMERGENCY PLAN VOLUME 1

PROCEDURE NO.: SECTION 7

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SECTION 7

EMERGENCY FACILITIES AND EQUIPMENT*

7.0 EMERGENCY FACILITIES AND EQUIPMENT

Identified and described in this section of the Plan are the emergency response facilities; communications systems; assessment, protective, first aid, and decontamination facilities; and equipment which is available for the Entergy response to an emergency at JAFNPP. (Facility activation may be modified by the Emergency Director if the safety of incoming personnel may be jeopardized by a security event or other event hazardous to incoming personnel).

7.1 Emergency Response Facilities

The emergency response facilities are identified and described in this section.

7.1.1 Control Room

The Control Room is the primary location in which plant conditions are monitored and controlled and corrective actions are taken to mitigate emergency conditions. The room is equipped with instrumentation and controls for major plant systems. It is the facility in which initial accident assessment, emergency classification, and emergency response occurs. Meteorological and radiological instrumentation provide data for dose calculations. Emergency communications systems for in-plant and out-of-plant communications are also provided.

Initially, the on-duty Shift Manager will assume the role of Emergency Director and the Control Room will be the primary location for assessment and coordination of corrective and protective actions for essentially all emergency conditions. The Control Room is staffed as specified in the JAFNPP Emergency Plan.

Emergency control functions which are initially conducted in the Control Room will be transferred to the Technical Support Center or the Emergency Operations Facility, as soon as it is feasible to do so, for events which constitute an Alert, Site Area Emergency or a General Emergency. This transfer of emergency control functions may also be implemented for less severe events, at the discretion of the Emergency Director.

The primary consideration is to ensure that the activities and the number of personnel involved with the emergency in and around the Control Room shall not impair the safe and orderly shutdown of the reactor or the operation of plant safety systems.

7.1.2 Technical Support Center (TSC)

The TSC is a facility external to the Main Control Room from which plant management and technical support personnel may operate during emergency situations. It is also the facility from which technical support is provided during recovery operations. Upon activation, the TSC succeeds the Main Control Room as the emergency response command post and functions in this capacity until the EOF is operational. The TSC will be operational within approximately sixty minutes of the declaration of an ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY. It may also be activated for an UNUSUAL EVENT at the discretion of the Emergency Director. The activation of the TSC is described in EAP-14.1, TECHNICAL SUPPORT CENTER ACTIVATION*. The TSC is located in the old Administration Building on the second floor within a two minute walk of the Main Control Room. The TSC is close to normal plant administrative offices which can provide additional documentation and equipment use in the TSC.

Assessment activities as well as coordination of corrective and protective actions for most emergency situations will be performed in this facility. These functions may include:

1. Providing guidance to the Control Room operating personnel.

2. Providing plant systems support for management personnel in the EOF during recovery operations.

3. Communication with other emergency response centers.

4. Providing direction to emergency coordinators.

5. Making recommendations to offsite agencies regarding protective actions, as necessary.

6. Acting as the primary information source to the EOF and the NRC for plant operations.

7. Initial communications with Public Information Personnel.

This center provides an area outside of the Control Room in which to conduct the technical support functions necessary for the control of an emergency situation. These functions include:

1. Capability to display real-time plant status.
2. Capability to transmit plant status data.
3. Capability to communicate with the Control Room and the NRC.
4. Availability of plant systems drawing and other documents for decision making purposes.

The TSC is equipped with appropriate communications and other equipment to perform the above mentioned functions.

7.1.3 Operations Support Center (OSC)

The OSC is located on the 272' elevation of the old Administration Building, and is the staging and dispatch area for all:

1. Maintenance and Instrument and Control technicians from which personnel will be selected and dispatched to emergency assignments.

2. Rad Protections and Chemistry technicians who will be dispatched to obtain in-plant radiation measurements and samples.

3. Damage Control Teams.

4. Search and Rescue Teams.

The OSC is located near a Health Physics checkpoint. The issuance of personnel dosimetry, as well as monitoring and decontamination of personnel, may be accomplished in the OSC. Some specialized equipment is available for use in the OSC and is listed in procedure SAP-2. The Operational Support Center has communications equipment, with which to control OSC related activities, either installed or readily available.

The OSC will be activated upon the declaration of an ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY. It may also be activated for an UNUSUAL EVENT at the discretion of the Emergency Director. Activation and operation of the OSC will be in accordance with EAP-14.5, OPERATIONAL SUPPORT CENTER ACTIVATION*.

7.1.4 Alternate Operational Support Center (AOSC)

The AOSC is located in a work area adjacent to the JAFNPP Control Room. If conditions warrant, and as directed by the JAFNPP Emergency Director, OSC personnel shall move to and equip this facility. The AOSC is an area with same habitability design as the JAFNPP Control Room. (The 300ft elevation outside the Control Room and within the TSC ventilation boundary may also be used if habitability conditions warrant. This area has the same habitability design as the TSC). Additional locations may be established as directed by the Emergency Director, if needed.

7.1.5 Emergency Operation Facility (EOF)

The Emergency Operation Facility is located near the Oswego County Airport on Rt. 176. This location is outside of JAFNPP security fence and the 10 mile EPZ and is within 20 minutes ground travel time from the TSC. The EOF will be the location where the following functions are to be performed.

1. Overall management of Entergy emergency response and recovery resources.

2. Evaluation, coordination, and communication of Entergy emergency response activities with Federal, State, and County emergency response organizations.

3. Verification of the magnitude and effects of actual or potential radioactive releases from JAFNPP, as initially calculated in the TSC or Control Room.

4. Receipt and coordination of field radiological survey data and sample media at the adjacent Environmental Lab.

5. Making recommendations to offsite agencies regarding protective actions.

The EOF will be activated following the declaration of an ALERT, SITE AREA EMERGENCY or GENERAL EMERGENCY. The EOF will be staffed within approximately one hour. The activation of the EOF is described in EAP-14.2, EMERGENCY OPERATIONS FACILITY ACTIVATION*.

The Emergency Operations Facility also services for Recovery. This area has sufficient space available for personnel and equipment necessary for planning and arranging recovery activities. Systems are provided for communications with other centers.

Space will be provided for a limited number of the news media at appropriate times.

7.1.6 Joint News Center (JNC)

The Joint News Center is located next to the Oswego County Airport on Co. Rt. 176 in the Town of Volney. This facility will serve as the central location for release of all information from Entergy, as well as from local and State agencies to the news media.

The JNC is equipped to accommodate the news media for large briefings and conferences. Videotaping capability for briefings is included. Telephones are provided for the use of reporters. Off-air radio and television monitoring and recording capability is provided to alert Entergy and other representatives to incorrect information or rumors which may be broadcast. This information will then be corrected during briefings.

Rumor control will also be provided using a group of telephones at the JNC. Responses to media telephone inquiries will be handled by additional telephones at the JNC.

The Joint News Center will be activated at the declaration of an ALERT, a SITE AREA EMERGENCY or GENERAL EMERGENCY. It may also be activated at a lesser emergency classification at the discretion of the Entergy Spokesperson.

The facility may be declared operational at the discretion of the Entergy Spokesperson prior to a Site Area Emergency.

7.1.7 Oswego County Emergency Operations Center (OCEOC)

The Oswego County Emergency Operations Center is located in the Emergency Management Office, County Branch Building, Fulton, NY. The County Warning Point is located at the E-911 Center. Communication systems are manned 24-hours per day at this warning point. Upon activation by the Oswego County Emergency Management Office, communications, planning and coordination personnel will be available for emergency response.

A representative from JAFNPP will be dispatched to this facility to act as a liaison between the County and Entergy for certain declared emergencies.

7.1.8 State Emergency Operations Center

The State Emergency Operations Center is located in the substructure of the Public Security Building No. 22, State Office Building Campus, Albany, NY. State Warning Point communication systems and the New York State Emergency Management Office are also located in this center. Communications systems operate on the around-the-clock basis. Upon activation, planning and coordination personnel will be available for emergency response.

7.2 Communications System

The JAFNPP communication capabilities include multiple systems and redundancies which ensure the performance of vital functions in transmitting and receiving information throughout the course of an emergency. Figure 7.1 shows the communication systems available and the primary communication links. As can be seen on the diagram, multiple communication modes and paths are available for emergency communications.

Following is a list of available communications systems along with a brief description of each:

7.2.1 Page/Party System (In-Plant)

- Control Room
- Technical Support Center
- Operational Support Center
- Office Area
- Other Plant Areas

The page/party system (Gaitronics) is comprised of a page channel connected to loudspeakers throughout the plant and three channels. System functions allow multiple personnel to participate in a conversation on each of the channels. The page system is also used for announcements and plant alarms. The alarm mode must be initialized from the Control Room, but the conversation features are available in all emergency response facilities onsite and throughout the plant.

7.2.2 Sound Powered Phone System (In-Plant)

- Control Room
- Technical Support Center
- Other Plant Areas

The sound-powered phone system allows point-to-point Communications as well as multi-point communication without interference from cross-talk. This system is normally used for maintenance and testing but can be used for conversations between individuals performing specialized tasks (e.g. an individuals in the Control Room and a technical specialist in the Technical Support Center). This system is operational from the relay room accessible from the TSC and Control Room.

7.2.3 Telephone System

- Control Room
- Operational Support Center
- Technical Support Center
- Emergency Operations Facility
- Other Plant Areas
- Entergy Headquarters
- Various Offsite Agencies

The plant telephone systems can be used for in-plant as well as outside communications. The system can be used for point-to-point or multi-point communications. Normal telephone lines are available at each emergency center.

The phone systems include many automated or programmable features that improve notification and allow communications flexibility. Cellular or satellite phones are also available at various locations.

7.2.4 Dedicated Telephone Links

7.2.4.1 Radiological Emergency Communications system (RECS)

The Radiological Emergency Communications System is a dedicated telephone network to be used for communications pertaining to nuclear emergencies at JAFNPP. The RECS system is available 24 hours per day, 7 days per week and is tested by New York State periodically.

The system consists of dedicated transmission telephones providing multi-party communication in a conferencing mode.

A station set is normally located at each of the following locations:

1. New York State Emergency Operations Center

2. New York State Warning Point

3. Alternate State Warning Point

4. State Department of Health

5. SEMO Regional Office

6. Oswego County Emergency Operations Center

7. Oswego County E-911 Center (Warning Point)

8. Nine Mile Point Control Rooms

9. Nine Mile Point TSC and EOF

10. JAFNPP Control Room

11. JAFNPP Technical Support Center

12. JAFNPP Emergency Operations Facility

13. SEMO Technical Resources

7.2.4.2 Other Dedicated or Special Lines

In addition to the RECS system, the following dedicated or special telephone connections exist.

a. Control Room to:
NRC
Technical Support Center
NMPNS
EOF
OSC

b. Technical Support Center to:
NRC
Control Room
Entergy Headquarters
NMPNS
Emergency Operations Facility
Operational Support Center
Alternate Operational Support Center

c. Emergency Operations Facility to:
NRC
Technical Support Center
Operational Support Center
JAFNPP Rad Support Coordinator
Control Room

7.2.4.3 NRC Health Physics Network (HPN), FTS2000 Phones

This telephone system is part of the FTS2000. It is used to transmit health physics (radiological) data or other data to the NRC during an emergency. JAFNPP facilities at which these telephones are located include:

- Technical Support Center
- Emergency Operations Facility
- Several FTS2000 telephones exist at the TSC and EOF

7.2.5 Radio System

The JAFNPP radio system utilizes various frequencies at the following locations:

- Control Room radio console
- Technical Support Center radio console
- Emergency Operations Facility radio console
- Oswego County radio console
- Security Force radio console
- Portable Units
- Mobile Units

The radio system is intended to serve as a redundant communications system to the telephone system for initial notification and relaying assessment information as necessary. It is also used, in conjunction with cellular phones, to communicate with radiological survey teams.

7.2.6 Data Links

Plant Data System to:

- Technical Support Center
- Emergency Operations Facility
- Joint News Center
- New York State
- NRC Operations Center

7.2.7 Hard Copy Transceivers (Telecopy)

- Oswego County Emergency Management Office
- Entergy Headquarters
- Technical Support Center
- Emergency Operations Facility
- Joint News Center
- New York State Emergency Management Office
- Other Services as necessary

7.2.8 Public Notification System

In order to provide prompt notification to the public of emergency conditions, a public notification system has been installed in the plume exposure EPZ.
This system involves alerting the population with sirens and tone alert radios. In accordance with instructions provided during periodic public information programs (Section 8 of the Plan), the alerted population will turn to pre-designated radio stations for emergency information and instructions. The Niagara Nohawk Power Corporation, in conjunction with Entergy Nuclear Northeast, shall provide the hardware for this public warning system within the plume exposure pathway EPZ. The design objective of this system is to have the capability to essentially complete the initial notification of the public within the plume exposure pathway EPZ within about 15 minutes. This shall be accomplished by two different warning systems, an outdoor system and an indoor system.

The hardware consists of fixed outdoor sirens located in heavily populated areas within the 10 mile EPZ and tone alert radios in residences and commercial buildings in areas where siren coverage is not practical. The sirens can be activated remotely by radio from Oswego County E-911 Center or the Oswego County EOC and the tone alert radios can be activated by the National Weather Service at the request of Oswego County.

The responsibility for activation of the public warning system rests with the Oswego County Emergency Management Office. This organization will activate the warning system and supply appropriate emergency messages to the Emergency Alert System (EAS) station serving the jurisdiction in accordance with the provisions of their emergency response plans.

The Oswego County notification plan utilizes both outdoor sirens and radio tone alert receivers. This system has been effectively designed to use both outdoor and indoor warning devices so that all NUREG-0654 design criteria are met, i.e.;

1. Capability of providing both an alert signal and an informational or instructional message on an area-wide basis throughout the 10-mile EPZ within 15 minutes of an offsite agency decision to implement protective actions.

2. The initial notification system will assure that direct coverage of essentially 100 percent of the population within 5 miles of the site.

3. Special arrangements shall be made to assure 100 percent of the population who may not have received initial notification within the 10-mile EPZ are notified within 45 minutes.

The Physical and administrative means, incorporated in the final warning system design, necessary to satisfy the above requirements, are summarized as follows:

7.2.8.1 Outdoor Warning Sirens

The prompt notification system utilizes outdoor warning sirens to alert the population within the 10-mile EPZ, in medium-to-high density areas, and in areas with substantial transient populations.

All inhabited areas within the 5-mile EPZ have been covered with sirens to assure that the alerting signal is received within 15 minutes. In addition, beach areas along Lake Ontario between the 5 and 10-mile EPZ were also covered by sirens. These areas are likely to be occupied by many transients and therefore, the effectiveness of tone alert receivers would be limited.

A total of 37 sirens were utilized to satisfy the criteria of the selected alerting system plan. The siren system is comprised of the following types of three-signal sirens:

Power input (240/208 Volt)

Siren Size	Number
125 dB	31
115 dB	6

Figure 7.4 "Siren Locations Map" shows the siren location and approximate coverage area of each siren. Figure 7.5 provides a verbal description of each siren's location.

In accordance with 10CFR50.72(b)(1)(v), a major loss of offsite notification system capabilities which could include sirens requires an NRC notification. This notification will be made when there has been a simultaneous failure of nineteen (19) or more sirens for one (1) hour or more, or a simultaneous failure of four (4) or more sirens lasting 12 hours or more, or notification has been received that the Tone Alert Radio/Emergency Alert System has been out of service for one (1) hour or more.

The prompt notification system surrounding the JAFNPP is completely contained within Oswego County. The siren system is radio controlled using an Oswego County designated frequency. The contact for the county is:

Director
Emergency Management Office
200 North Second Street
Fulton, NY 13069

7.2.8.2 Tone Alert Receivers

The low density populated area in the 10-mile EPZ which does not lie within the effective range of warning sirens will be alerted through the use of automatic tone alert radio receivers located in each residence and commercial building. For the most part, the areas to be covered by the tone alerts are in rural low density populated sections between the 5 miles and the 10-mile EPZ boundary.

The warning system contains ≈1300 tone alert receivers.

The tone alert system will be activated by the National Oceanic and Atmospheric Administration NOAA) weather transmitter located in Syracuse, New York.

Activation of the system will be as follows:

- State or local emergency management personnel will request NOAA to activate the prompt notification system.

NOAA would transmit the alert signal through its station, then broadcast a pre-taped message which would state that there is an emergency condition at the nuclear plant, and to turn to the local commercial EAS station for further details.

7.2.8.3 Supplemental Systems

The use of alerting systems has been discussed previously. Although the use of mobile systems and the EAS radio network have not been identified as primary elements of the alerting system, they will provide supplemental support to the plan. The EAS system is directed by a procedure manual entitled "The Oswego County Emergency Alert System".

7.2.8.4 Mobile Systems

Within the 10-mile EPZ, there are a variety of vehicles used by police and fire emergency personnel. Since their availability cannot be guaranteed, they must be considered as supplemental to the system. In the event of a serious emergency, many of these vehicles would be identified to support evacuation plans and thus may be considered essential elements of the warning plan. If necessary these resources will be activated by the Director, Oswego County Emergency Management Office, in accordance with the Oswego County Radiological Emergency Preparedness Plan.

7.3 Assessment Facilities and Systems

7.3.1 Onsite Assessment Facilities

Initially following an emergency, the primary onsite emergency assessment facility is the Control Room. This assessment function is transferred to the TSC after that facility has been activated. These facilities are described in Section 7.1.

Post-accident radiological samples may be analyzed in the JAFNPP radiochemistry laboratory if background radiation levels permit. This in-plant laboratory has full computer/HPGe gamma spectral, gross beta and gross alpha analysis capabilities.

7.3.2 Offsite Assessment Facilities

In addition to the in-plant radiochemistry laboratory, there is an offsite Environmental Laboratory, located adjacent to the EOF, which can be used for post-accident radiological sample analysis. This environmental laboratory has full computer/HPGe gamma spectral, gross beta and gross alpha analysis capabilities.

Post-accident radiological samples can be sent to the Nine Mile Point Nuclear Power Station radiochemistry laboratory in the event that the JAFNPP in-plant and environmental laboratories are unavailable for any reason, such as high background radiation levels, or operation at full capacity.

If the above facility cannot perform the analyses or cannot handle the number of analyses required, samples can be sent to the R.E. Ginna Nuclear Power Plant laboratory, located near Rochester, about an hour away by car. This laboratory also has similar capabilities to the JAFNPP laboratory.

7.3.3 Assessment System

7.3.3.1 Plant Radiation Monitoring Systems

This system, consisting of process and area radiation monitors, provides for personnel protection and accident assessment by measuring and recording radiation levels and radioactivity concentrations at strategically selected locations throughout the plant. The systems are described in the following paragraphs.

- <u>Post-Accident sampling System</u>

  The post-accident sampling system shall provide means of obtaining primary and secondary containment atmosphere samples for determination of gas composition by means of gas chromatography, and for performing radiochemical analysis of noble gas, iodine, and particulate activities. Liquid samples shall be taken from the suppression pool and from the reactor coolant system under design conditions of temperature and pressure.

The system is designed in accordance with the criteria set forth in NUGEG-0578 with regard to post-accident sampling system performance and scope of radiochemical analysis.

An in-line conductivity cell is used as the primary indicator of liquid chemical concentrations and changing chemical conditions. For rapid characterization of samples, pH paper may be used to establish pH to within ±0.5 pH units at high conductivities. The post-accident laboratory will have the ability to perform accurate chloride and pH determinations. The use of an in-line conductivity cell adequately satisfies the immediate need for chemical information without detailed analysis and eliminates unnecessary personnel exposure and the risk of major laboratory contamination. The system has the capability to provide a 1 to 1000 dilution of liquid samples to permit handling using existing facilities. Specific provisions for boron analysis are not included in the system. The only time boron would be present in the reactor coolant system is when the injection of sodium pentaborate was manually initiated from the Control Room via the standby liquid control system. In this case, an increase in reactor coolant system conductivity would indicate injection of the sodium pentaborate solution.

Liquid samples may be drawn from the reactor coolant system via instrument lines in the reactor water recirculation system and the shutdown cooling configuration of the residual heat removal system. The suppression pool may be sampled from the core spray pumps or via the suppression pool cooling mode of the residual heat removal system.

Provisions have been made to obtain gas samples from the drywell and suppression pool atmospheres and from the secondary containment (Reactor Building).

The gas sampling system is designed to operate at pressures from sub-atmospheric up to the design pressures of the primary and secondary containments. Heat-traced sample lines prevent precipitation

and subsequent loss of iodine in the lines. Gas samples may be passed through a particulate filter and silver zeolite filter for the determination of particulate activity and total iodine by analysis of the samples in a gamma spectrometer system. The system provides for grab sampling to allow analysis of gaseous activity as well as the dilution of high activity samples.

- Main Steam Line Radiation Monitoring System

  The objective of the main steam line monitoring system is to continuously monitor for the gross release of fission products from the fuel. Indication of such a failure will initiate an alarm condition. The monitoring system consists of four gamma sensitive ionization chambers, logarithmic radiation monitor and dual pen recorder.

- Off-Gas Radiation Monitoring System

  The objective of the off-gas radiation monitoring system is to continuously monitor radioactive effluents from the main condenser to the environment via the off-gas treatment system. This radiation monitoring system initiates closure of the off-gas isolation valve after a time delay when off-gas radiation levels exceed a preset limit. This system consists of two identical channels each consisting of a gamma sensitive ionization chamber and logarithmic radiation monitor. Both channels provide input to a dual pen recorder. The off-gas system is also equipped with sampling sub-system to allow for periodic grab sampling for laboratory analysis.

- Main Stack (Off-Gas Vent Pipe) Radiation Monitor

  This subsystem monitors the release of radioactive material to the environment via the main stack, which receives inputs from the off-gas system and the standby gas treatment system. Isokinetic probes in the stack provide a representative sample of the effluent to the detection system. This system consists of a pair of gamma sensitive scintillation detectors. The output of these detectors is displayed in the Control Room on logarithmic radiation monitors and multipen recorders.

  The High Range Effluent Monitoring System consists of three noble gas monitoring units connected in line with existing effluent monitors. One unit each is connected upstream of the turbine building exhaust sampler, the radwaste building exhaust sampler, and main stack effluent monitor.

  Each monitoring unit contains two redundant ion chamber detectors. Associated with each detector is a meter type readout module in the main Control Room panel 09-2, having a range of 1E-1 to 1E+7 mR/hr. In addition to meter readouts, these modules supply digital outputs for annunciation of failure, high radiation ("alert") and high-high radiation. They also supply analog outputs for trend recording and computer logging.

  The monitoring units also supply analog and digital outputs to the plant process computer. Digital outputs indicate failure, high, or high-high radiation conditions.

- Service Water and Reactor Building Closed Loop Cooling Water System Monitors

Each of these systems provides cooling water to various heat exchangers for the cooling of systems which may contain radioactive material. These continuous monitoring systems are used to detect leakage and prevent an inadvertent release of radioactive material to the environment. Each of these monitors consists of a gamma-sensitive scintillation detector in a shielded sampling chamber. Activity above a preset level is annunciated in the Control Room.

- Radioactive Waste Effluent Radiation Monitor

  This subsystem is used for the control of discharges of low activity liquids. It is similar in design to other water monitoring systems. In the event activity exceeds a predetermined level, the trip unit of this system sends an isolation signal to the discharge valve of the liquid radwaste system.

- Ventilation Monitoring Systems

  Ventilation monitoring systems are used to continuously monitor releases from building ventilation systems, provide alarms when releases approach preset levels, isolate ventilation systems to protect the environment, and maintain habitability of the Control Room. The monitors for the radwaste building, turbine building and reactor building are similar. They consist of a sampling pump, sample chamber, GM radiation detector, and logarithmic display. The monitors also contain in-line particulate and activated charcoal filters which are analyzed to provide a precise determination of releases to the environment. Alarms for high activity and inoperable detectors are provided in the Control Room. The reactor building ventilation monitors have two channels.

If effluent activity exceeds a preset level on either channel, the normal reactor building ventilation system is isolated and the standby gas treatment system is initiated.

The Control Room air inlet is continuously monitored by an in-line GM-type radiation detector. Indication is provided in the Control Room and an alarm is received if activity in the Control Room ventilation intake approaches preset levels.

- Drywell Continuous Airborne Radioactivity Monitors

  The drywell continuous airborne radioactivity monitor consists of two redundant systems. Each of these contain a sampling pump, sample chamber, gamma sensitive scintillation detector and filter chambers. Each system provides continuous indication of particulate, halogen and noble gas activity.

- Iodine Monitoring

  Routine monitoring of ventilation exhausts for iodine is accomplished by the use of in-line activated charcoal filters. These filters are periodically changed and analyzed in a gamma spectrometer. Routine grab sampling is performed using portable sampling pumps fitted with particulate and activated charcoal filters and are similarly analyzed. Continuous air monitors are also located in various areas of the plant and monitor gross airborne activity as well as halogen activity.

  Monitoring during off-normal conditions can be accomplished by the use of portable sampling pumps equipped with particulate filter and silver zeolite cartridge. The silver zeolite cartridge can be analyzed in a low background area using a count rate meter for immediate determination of total iodine.

Cartridges can be analyzed using gamma spectrometry in either the JAFNPP counting laboratory, the environmental laboratory, or the adjacent NMPNS laboratory. The silver zeolite cartridges have an iodine retention in excess of 99% while retaining only traces of noble gases. Particulates are removed using a pre-filter. Thus gamma spectrometry is not necessarily required to make a rapid estimation of airborne radioiodine. The count rate obtained using the silver zeolite cartridge is then multiplied by a correction factor to determine the concentration of airborne radioiodine. Using this method it is possible to attain the required minumum detectable activity of 1E-7 μCi/cc.

- Containment Radiation Monitors

Monitoring of radiation levels within the primary containment (drywell) is accomplished using two redundant high-range (1E+8 rem/hr) ionization chambers. These detectors are located in approximately opposite locations in the drywell. Indications of radiation levels and alarms for high radiation conditions are provided in the Control Room.

As an aid in assessing the extent of potential core damage, plots have been developed which can be used to correlate containment radiation monitor reading versus time to varying percentages of fuel inventory in containment. The information obtained from these plots can also be correlated to the source term available for release and can thus be used in determining potential offsite protective action recommendation. These plots have been incorporated into EAP-4.1, RELEASE RATE DETERMINATION*.

- Area Radiation Monitoring System

  The area radiation monitoring system consists of thirty units located throughout the plant. Each unit consists of gamma-sensitive GM tube encased in a protective cylinder. Indication of radiation levels is provided in the Control Room on logarithmic radiation monitors and multi-point recorder. Local indication is provided at many locations. The most common ranges are 0.1 to 1000 mR/hr. Monitors in areas such as laboratories, offices and Control Room range from 0.01 to 100 mR/hr. A high range radiation monitor on the refueling floor ranges from 0.1 to 1000 R/hr.

- High Range Effluent Monitor (HREM)

  Three HREM systems have been installed at JAF. The systems were installed to monitor unusually high level stack, turbine building and radwaste building noble gas releases. Each system consists of a large volume sample chamber and two independent gamma sensitive instrument channels. The instrument readouts and recorders are located on a back panel in the main control room. Computer and annunciator alarms alert plant operators of unusual noble gas releases. A detailed HREM interpretation is contained in SP-03.08, GASEOUS EFFLUENT MONITORS.

7.3.3.2 Fire Protection Systems

Fire protection in the plant is provided by a complete network of fire suppression and extinguishing systems. These systems are associated with fire alarms and are activated by a variety of thermal and products of combustion fire detection devices located throughout the plant.

7.3.3.3 Geophysical Phenomena Monitoring System

Monitors are provided for detecting and recording natural phenomena events which could result in plant damage due to ground motion or structural vibration and stress.

Backup information can be obtained from the NMPNPS which also has seismic detectors or a local National Weather Service Station.

Hydrologic conditions (e.g., floods, low water, hurricanes) would be observed by the shift operating crew and / or information would be provided by the U.S. Coast Guard, or a local National Weather Service Station.

7.3.3.4 Environmental Radiological Monitoring Systems

There are 15 environmental radiological monitoring stations, as shown in Figure

7.2 and 7.3. The inner ring of monitoring stations, designated the onsite monitoring stations, surround the plant at a radius of approximately 2000 feet from the plant. The outer ring of monitoring stations, designated the offsite monitoring stations, surround the plant at a radius which varies from approximately 6 to 15 miles from the plant.

Each of the 15 monitoring stations continuously collects a particulate and iodine air sample. A continuously operating sample pump draws air through a two inch diameter glass fiber filter followed in the flow path by a two inch diameter by one inch thick charcoal cartridge.

The Technical Specification Environmental Monitoring Stations located at the site boundary, (R1, R2, R3 and R4), and the offsite Environmental Station (R5) each have a direct radiation monitor. The radiation monitor are Eberline Model ERM-2 which consist of a GM detector with an associated power supply and provides a digital dose rate readout. Historical (prior month) monitor readings may be obtained using a computer (PC) interface to access the monitors internal storage ROM. Each radiation monitor has an operating range of 1 μR / hr to 100 mR / hr. The radiation monitors are used to detect and measure dose rates resulting from possible plume releases of radioactive material from the plant.

Each of the 15 monitoring stations has the capability for collecting precipitation samples, if required.

7.3.3.5 Environmental TLD Monitoring Systems

The environmental TLD monitoring system is comprised of TLD stations placed on and around the site as shown in Figures 7.2 and 7.3.

The first group of TLDs is located within the site boundary. This group consists of TLD stations ranging in distance from adjacent to the plant buildings to approximately 0.9 miles from the plant.
The second group of TLDs is located beyond the site boundary. This offsite set consists of TLD stations ranging in distance from approximately 0.6 to 12 miles from the plant.

The current placement of environmental TLDs is in accordance with the approved Technical Specifications for the site and conforms to the NRC Radiological Assessment Branch Technical Position.

Each environmental TLD station is comprised of TLDs sealed in a polyethylene package to ensure dosimeter integrity. The TLD packages are further protected by placement in plastic enclosures, or by tape sealing to supporting surfaces.

The TLDs are collected, replaced and evaluated quarterly.

7.3.3.6 Emergency TLD Monitoring System

In addition to the environmental TLD monitoring system, a second group of TLDs called emergency TLDs has been placed in various locations aroung the site (as described in procedure EAP-5.3). These TLDs are evaluated as necessary.

The TLD chips are renewed quarterly.

7.3.3.7 Meteorological Measuring System

Wind speed, wind direction and temperature sensors are installed on an isolated tower at elevations of approximately 30 feet, 100 feet and 200 feet above grade. The data collected by these sensors are telemetered to the JAFNPP Control Room and TSC and are continuously recorded on strip charts.

This data is also available in the CR, TSC and the EOF in digital form.

Joint frequency distributions of wind speed and direction by atmospheric stability class are maintained to aid in the evaluation of radiation doses which may result from the release of radioactive material from the plant.

As a backup to the primary meteorological measuring system, JAFNPP has an onsite atmospheric sensor with the ability to measure the wind speed and direction at the approximately 90 foot level. The recorders for the backup system are located on the same Control Room and TSC panel as the recorders for the primary system, thus permitting instantaneous, real time readings from two sources. A 30 foot inland tower is also an additional source of meteorological data. These sensors also have digital readouts in the CR, TSC and EOF.

Offsite backup for meteorological data is available from the National Weather Service by telephone.

An additional source of meteorological information is available through an online information service. The information service collects weather information comprised of surface and upper air reports, satellite and radar information and other meteorological data on a continuous basis from sources around the world. Access to this data is available by JAF personnel through an internet computer link.

7.3.3.8 Emergency Radiological Survey Teams

Survey teams may be dispatched to provide immediate support for both onsite and offsite emergency condition assessment. Teams will be provided survey kits composed of adequate portable instrumentation and instruction packages to permit the monitoring of airborne gamma and radioiodine levels and the acquisition of environmental media samples. A listing of available equipment for use by the survey teams is contained in SAP-2, EMERGENCY EQUIPMENT INVENTORY*.

The teams' activities will be controlled by the Emergency Director, Radiological Support Coordinator, or designee. Cellular phone and / or radio contact will be provided between the plant and survey teams.

Initial responsibilities for each team will include direct radiation measurements and the collection of airborne particulate and iodine samples. Following field evaluations, the collected samples will be individually packaged and identified to permit subsequent re-evaluation, if required. Monitoring locations for the initial surveys may be the locations identified in Figures 7.2, 7.3 and 7.6 and/or other locations as determined by the Rad Support Coordinator, Emergency Director, or designee.

The survey teams may participate in the collection of samples from the fixed assessment systems described in Sections 7.3.3.4, 7.3.3.5 and 7.3.3.6. The teams will also expand their sampling activities to include collection of environmental media as dictated by the Emergency Director, Rad Support Coordinator, or designee. Representative media referenced in the Site Radiological Environmental Monitoring Program will be sampled on an increased frequency commensurate with prevailing conditions. In addition to the airborne particulate samples, airborne iodine samples and the TLDs previously described, environmental media samples may include milk, soil, water and vegetation.

A full description of the radiological monitoring capabilities is described in Section 6, EMERGENCY MEASURES*, 6.2.2 Field Radiological Assessment.

7.3.3.9 Process Monitors

Plant parameters such as reactor coolant system level and pressure, containment pressure and temperature and various system flow rates are indicated in the Control Room.

Such parameters are also available in the TSC and EOF via the Safety Parameter Display System(SPDS).

7.4 Protective Facilities

Facilities are provided which ensure adequate radiological protection for personnel assigned to emergency duties in the plant, and for the accommodation of other personnel evacuated from areas that may be affected by radiation and / or airborne radioactivity.

7.4.1 Plant Control Room

In addition to serving as the initial control location for emergency situations, the plant Control Room has the following features which provide protection for personnel who may have emergency or operational duties throughout the course of any emergency:

1. Adequate shielding by concrete walls to permit continuous occupancy under severe accident conditions.

2. An independent emergency air supply system, equipped with absolute and activated charcoal filters.

3. Continuous monitoring of radiation levels in the Control Room and throughout the plant by the ARM system, with readout in the Control Room.

4. Emergency lighting and power supplied by a 125V dc system and battery packs.

5. Communications system, as described in Section 7.2.

Additional details regarding the design and inherent protective capabilities of the plant Control Room are discussed in the JAFNPP FSAR.

7.4.2 Technical Support Center (TSC)

The TSC serves as the long range emergency control facility. To allow for long-term human occupancy during an emergency situation, the following personnel protective features have been incorporated into design.

1. Adequate shielding by concrete walls to permit continuous long-term occupancy under severe accident conditions. (Certain areas of the TSC may not be used under certain radiological conditions).

2. An air supply equipped with HEPA filters to provide proper breathing air during a severe radiological accident.

3. Communications systems as described in Section 7.2.

4. Emergency lighting and power supplied by a 125V dc system and battery packs.

5. Continuous monitoring of radiation and airborne activity levels in the TSC.

7.4.3 Primary Assembly Areas

Specific locations at the plant are designated for assembly of personnel in the event of a Protected Area Evacuation. These areas provide space to accommodate personnel who may be at the plant. They are located on the basis of logical access routes and physical separation from likely areas of radiation and / or airborne radioactivity. See Procedure EAP-10, PROTECTED AREA EVACUATION* for a listing of primary assembly areas.

7.4.4 Remote Assembly Area

The Niagara Mohawk Service Center, which is normally an electrical maintenance service dispatch center, is designated as a remote assembly area.

This facility is located approximately 11 miles from the site and away from the prevailing downwind direction, on Howard Road in the Town of Volney (Fulton, N.Y.).

Employee vehicles shall be used to transport employees to the Remote Assembly Area. Backup bus transportation is available from the Oswego County Emergency Management Office upon the Emergency Director's request. Evacuated personnel and vehicles can be decontaminated at this site if necessary.

7.5 Onsite First Aid and Medical Facilities

First aid treatment facilities, equipped with industrial first aid supplies, are located on the first floor of the Administration / Support Building and the Training Building lobby area.

7.6 Decontamination Facilities for Emergency Personnel

The personnel decontamination facilities at the JAFNPP and/or the EOF will be the primary facilities for decontaminating emergency personnel. If those facilities are unavailable for any reason, emergency personnel may be decontaminated at the NMPNPS facility.

The liquid waste from each of these decontamination facilities would be disposed of in the respective plant or facility liquid radwaste system. Solid waste would be disposed of in containers provided for this purpose.

A typical listing of personnel decontamination equipment is contained in the Radiation Protection Procedures.

7.7 Damage Control Equipment

Damage control equipment consists of normal and special purpose tools and devices used for maintenance functions throughout the plant. Personnel assigned to damage control teams are trained and participate in drills and exercises in accordance with SAP-1, MAINTAINING EMERGENCY PREPAREDNESS*. Guidance for damage control teams is contained in EAP-13, DAMAGE CONTROL*.

7.8 Control of Emergency Equipment

A list of emergency equipment and kits is included in Appendix I, EMERGENCY EQUIPMENT KITS*. The frequency of emergency equipment maintenance is specified in procedure SAP-2.

7.9 Federal Response Support

Information vital to Federal Response Support is contained in Appendix N, TYPICAL FEDERAL SUPPORT RESOURCES*. Information on security access is presented in EAP-23, EMERGENCY ACCESS CONTROL*.

7.10 Figures, Forms and Attachments

Figure 7.1 Emergency Communications Network

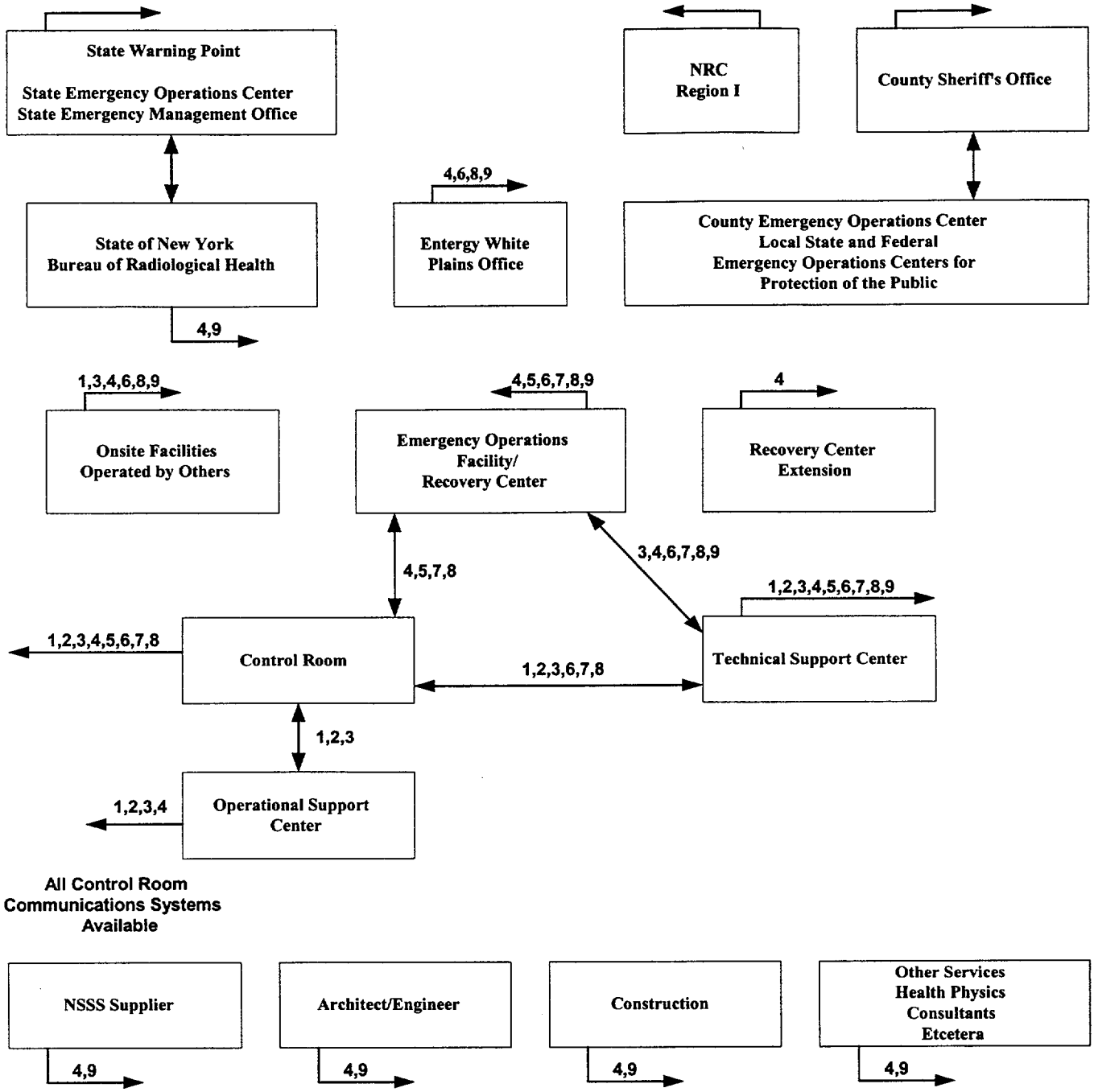
Figure 7.2 Onsite Environmental Station and TLD Locations

Figure 7.3 Offsite Environmental Station and TLD Locations

Figure 7.4 Siren Locations Map

Figure 7.5 Verbal Description of Siren Locations

Figure 7.6 Offsite Survey Locations Map



Communications Systems
(Corresponding Numbers)

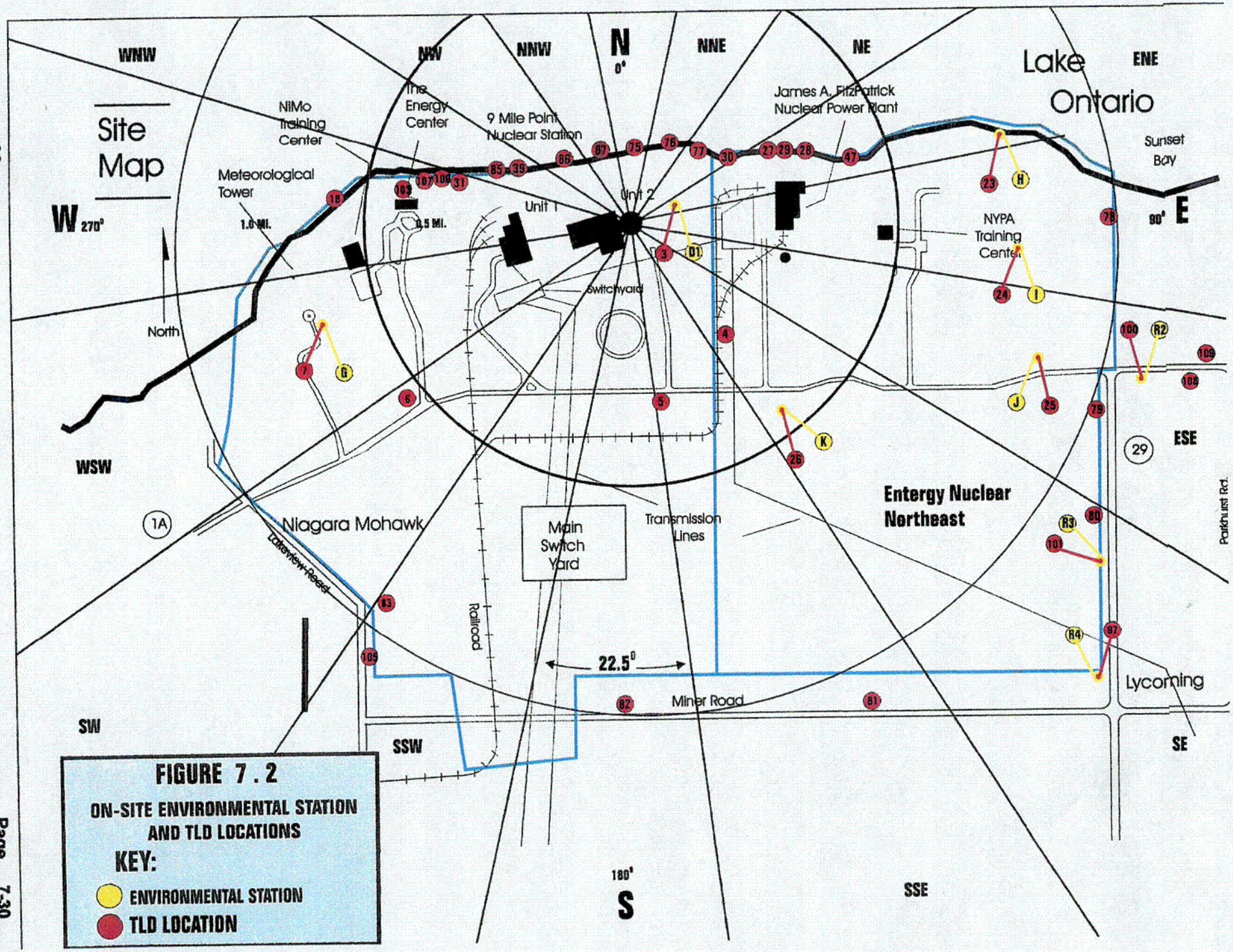
1. Page/Party System (In-Plant)
2. Sound-Powered Phone System (In-Plant)
3. Telephone - In-Plant
4. Telephone - Outside/Normal Line
5. Telephone - Auto Dial
6. Telephone - Dedicated Line
7. Radio
8. Data Link
9. Hardcopy Transceiver (Telecopy)

NOTE: For actual services, see text

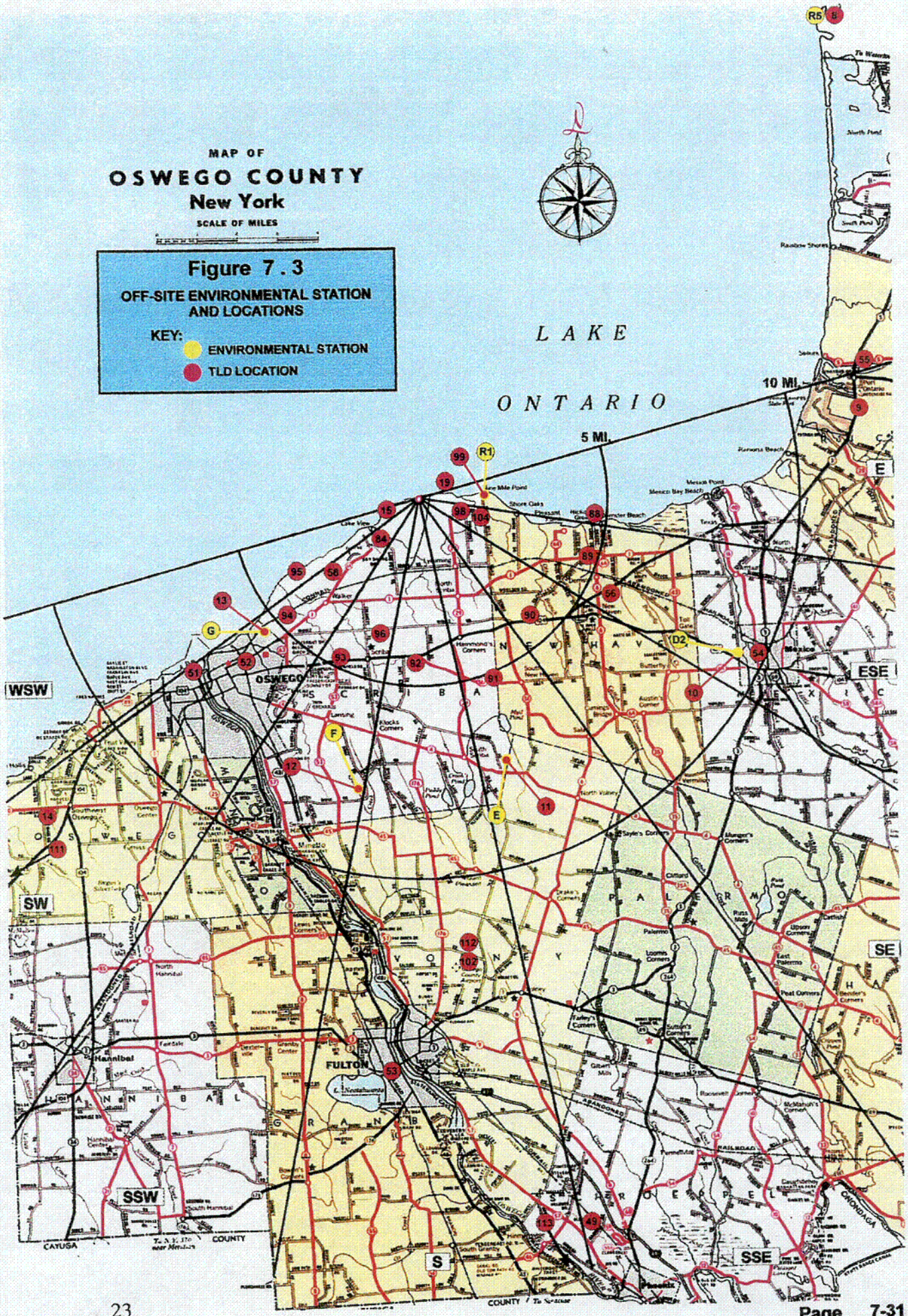
J.A. FITZPATRICK NUCLEAR POWER PLANT
EMERGENCY PLAN
ENTERGY NUCLEAR NORTHEAST

FIGURE 7.1
EMERGENCY COMMUNICATIONS NETWORK

g:\eplanprocedures\volume1\fig7-22.vds


Site Map
N 0°
NNE
NE
ENE
E 90°
ESE
SSE
S 180°
SSW
SW
WSW
W 270°
WNW
NNW
NW
Lake Ontario
Sunset Bay
James A. FitzPatrick Nuclear Power Plant
9 Mile Point Nuclear Station
The Energy Center
NiMo Training Center
Meteorological Tower
1.0 MI.
0.5 MI.
Unit 1
Unit 2
Switchyard
NYPA Training Center
North
Entergy Nuclear Northeast
Niagara Mohawk
Main Switch Yard
Transmission Lines
Lakeview Road
Railroad
Miner Road
Parkhurst Rd.
Lycoming
22.5°
1A
29
FIGURE 7.2
ON-SITE ENVIRONMENTAL STATION AND TLD LOCATIONS
KEY:
ENVIRONMENTAL STATION
TLD LOCATION

C01


MAP OF
OSWEGO COUNTY
New York
SCALE OF MILES
Figure 7.3
OFF-SITE ENVIRONMENTAL STATION AND LOCATIONS
KEY:
ENVIRONMENTAL STATION
TLD LOCATION
LAKE
ONTARIO
10 MI.
5 MI.
WSW
SW
SSW
S
SSE
SE
ESE
E
OSWEGO
FULTON
Hannibal
Mexico
CAYUGA
COUNTY
ONONDAGA

C02

FIGURE 7.5

VERBAL DESCRIPTION OF SIREN LOCATIONS

Siren Number	Description of Siren Locations
1.	West of Nine Mile #1 on Lake Road by staging area. Approximately 0.9 miles west of EIC driveway.
2.	East end of Lake Road just west of junction of Nine Mile Point Road.
3.	Pleasant Point Road (Co. Rt. 44) off North Road (Co. Rt. 1) toward lake 0.5 miles. Access is by wooden gate on east side of road.
4.	Intersection of North Road (Co. Rt. 1) and Dempster Beach Road.
5.	Butterfly Road off - North Road (Co. Rt. 1) where North Road and Rt. 104B meet. Turn toward lake next to trailer (white sign says Butterfly Shores). Proceed down dirt road for 0.9 miles. Siren is on west side of road.
6.	Mexico Point Drive off Rt. 104B. Turn at Donahues Bar. Siren is 0.5 miles from Rt. 104B.
7.	Hagar Road off Rt. 3 just before The Pines Golf Course. Go to end of paved road (1.1 miles) then turn left on dirt road. Siren is 0.3 mile on left side of dirt road.
8.	Co. Rt. 51A, 1.3 miles east of Co. Rt. 29.
9.	Corner of Rt. 104 West and Fred Haynes Blvd.
10.	Intersection of West Utica St. and Third Avenue.
11.	Off East 9th St. - by East Side Pool behind City Garage: behind Fort Ontario (Crisafulli) Skating Rink. Do not drive on grass behind skating rink.
12.	End of Burt St. past West Third St. at dead end. Next to Niagara Mohawk Substation.
13.	Gardenier Road - bottom of hill before from Johnson Road.
14.	Maple Avenue (Co. Rt. 20) - top of hill from West Fifth St. Rd. across from Galletta's Greenhouse.
15.	Use Alcan entrance off Lake Rd. (Co. Rt. 1) marked "Shipping and Central Receiving". Proceed 0.5 miles down entrance road, this will take you past the parking lot to a dirt road on the left. Take dirt road for approximately 0.4 miles and turn left at sign marked "Private Road - Keep Out". Siren is less than 0.1 miles on right.

FIGURE 7.5
(continued)

Siren Number	Description of Siren Locations
16.	Lake Road (Co. Rt. 1A) 0.5 miles east of Alcan main entrance and intersection of Co. Rt. 1 and 1A.
17.	On North Road (Co. Rt. 1) 0.5 miles east of Lakeview Road (between Lakeview Rd. and Co. Rt. 29) near transmission lines.
18.	Co. Rt. 29 at the Lycoming Fire House (intersection of Miner Road and Co. Rt. 29).
19.	Middle Road ¼ mile east of Kocher Road (Co. Rt. 63)
20.	Old Scriba Fire Barn / new recreation facility - intersection of Creamery Road / Klocks Corner Rd and Rt. 104 West.
21.	On Duke Road near the intersection of Co. Rt. 51A.
22.	City Line Road behind Wine Creek Inn at top - south of Speedway.
23.	Dutch Ridge Road, just South of Hall Road (Co. Rt. 4).
24.	Old Rt. 57 across from Riverside Cemetery (1.9 miles north of Minetto bridge - 0.5 miles south of Sheriff's office).
25.	Benson Avenue (Co. Rt. 25) at Minetto Fire House.
26.	Old Rt. 57, 1.3 miles south of Minetto bridge and 1.0 mile north of Rt. 481.
27.	March Road between Kingdom Road and Rt. 481.
28.	Middle Road, 0.2 miles east of Co. Rt. 29.
29.	North Road (Co. Rt. 1) 0.2 miles east of Shore Oaks Drive.
30.	Rt. 104B just north of the interestion of Rt. 104 East.
31.	Sundown Road just West of Co. Rt. 35 in Vermillion.
32.	Co. Rt. 16 by Flat Rock Campsite. (1.1 miles from Rt. 104B on Co. Rt. 16) (1.8 miles from Rt. 104 in Mexico).
33.	Rt. 104 and Lincoln Avenue, Mexico. At NMPC Substation East Side of Mexico past Co. Rt. 69 heading east - just before second bridge on Rt. 104.

FIGURE 7.5
(continued)

Siren Number	Description of Siren Locations
34.	Rt. 104 east between Middle Road and Keefe Road. Leatherstocking Club Shooting Range.
35.	O'Conner Road - 0.4 miles east of Co. Rt. 29, next to power lines.
36.	Corner of West Utica and Sixth Streets.
37.	Corner of Doolittle Road and Co. Rt. 8, Minetto.

CONTROLLED COPY # 34

ENTERGY NUCLEAR NORTHEAST
JAMES A. FITZPATRICK NUCLEAR POWER PLANT

EMERGENCY PLAN VOLUME 1

PROCEDURE NO.: APPENDIX C

TITLE: LETTERS OF AGREEMENT*

PORC Review: Meeting No.: N/A Date: N/A

Approved By: S.BONO by direction
Director of Safety Assurance

Approved By:
Emergency Planning ~~Coordinator~~

Effective Date: September 7, 2001

PERIODIC REVIEW DUE DATE: August 2002

Rev. No. 24

APPENDIX C

LETTERS OF AGREEMENT*

Table of Contents

NAME/AGENCY	LETTER OF AGREEMENT	DATE	PAGE
1.	Mr. Daniel Olsson, DO Chair, Hospital Emergency Preparedness & Disaster Planning Committee STATE UNIVERSITY OF NY HEALTH SCIENCE CENTER University Hospital 750 East Adams Street Syracuse, NY 13210 315/464-4363	May 18, 2001	C-1
2.	Mr. Reuel A. Todd, Sheriff COUNTY OF OSWEGO SHERIFF'S DEPARTMENT 39 Churchill Road Oswego, NY 13126 315/349-3307	April 26, 2001	C-2
3.	Mr. Richard Rossi Nuclear Account Manager GENERAL ELECTRIC COMPANY 2015 Spring Road Suite 301 Oak Brook, ILL 60523 630/573-3930	January 12, 2000	C-3
4.	Mr. David M. Smith Director of Marketing NUMANCO, L.L.C. 7633 East 63rd Place, 4th Floor Tulsa, OK 74133 800/556-7572 Ext. 421	May 11, 2001	C-4
5.	Mr. D. J. Patel Project Manager STONE and WEBSTER ENGINEERING CORP. P. O. Box 2703 New York, NY 10116 212/290-6489	April 20, 2001	C-5

NAME/AGENCY	LETTER OF AGREEMENT	DATE	PAGE
6.	Mr. Michael Battle, P.G. Vice President EA ENGINEERING, SCIENCE and TECHNOLOGY The Maple Building 3 Washington Center Newburgh, NY 12550 845/565-8100	January 3, 2001	C-6
7.	Mr. Joseph E. Amico VP, Sales & Marketing Duratek 302 W. Main Street Suite 204 P.O. Box 1137 Avon, CT 06001 860/677-0457	January 3, 2001	C-7
8.	Mr. Corte J. Spencer Administrator & CEO OSWEGO HOSPITAL 110 West Street Oswego, NY 13126 315/349-5511	January 8, 2001	C-8
9.	Mr. Roger E. Linnemann, M.D. President RADIATION MANAGEMENT CONSULTANTS 3021 Darnell Rd. Philadelphia, PA 19154 215/824-1300	May 11, 2001	C-9 C-10
10.	Mr. Edward F. Jacoby, Jr. Director NEW YORK STATE EMERGENCY MANAGEMENT OFFICE 1220 Washington Avenue Building 22, Suite 101 Albany, NY 12226-2251 518/457-2222	May 17, 2001	C-11
11.	Mr. Andrew G. Cook Vice President, Sales & Marketing FRAMATOME TECHNOLOGIES 155 Mill Ridge Road Lynchburg, VA 24502-4341 804/832-3045	May 30, 2001	C-12

NAME/AGENCY	LETTER OF AGREEMENT	DATE	PAGE
12.	Mr. John R. Hinds Fire Coordinator OSWEGO COUNTY FIRE CONTROL 200 North Street Fulton, NY 13069 315/591-9142	January 01, 2001	C-13
13.	Mr. David P. Igyarto Acting Director, Plant Operations Division INSTITUTE OF NUCLEAR POWER OPERATIONS (INPO) 700 Galleria Parkway, NW Atlanta, GA 30339-5957 770/644-8000	November 15, 2000	C-14
14.	David D. O'Brien, Jr., M.D., P.C. 22 West Oneida Street Oswego, NY 13126 315/343-4348	January 08, 2001	C-15
15.	Mr. Edward J. Geers Chief OSWEGO, FIRE DEPARTMENT 35 E. Cayuga St. Oswego, NY 13126 315/343-2161	January 17, 2001	C-16
16.	Mr. Welton C. Beaty PIM Program Manager POOLED EQUIPMENT INVENTORY CO. PEICO. P.O. Box 2625 Birmingham, AL 35202 205/992-7085	January 5, 2001	C-17 C-18
17.	Ms. Patricia E. Egan Director OSWEGO COUNTY EMERGENCY MANAGEMENT OFFICE 200 North 2nd Street Fulton, NY 13069 315/591-9150	January 03, 2001	C-19

NAME/AGENCY	LETTER OF AGREEMENT	DATE	PAGE
18.	Alan R. Latham, Ph.D. Laboratory Director TELEDYNE BROWN ENGINEERING ENVIRONMENTAL SERVICES 2508 Quality Lane Knoxville, TN 37931-3133 865/690-6819	December 29, 2000	C-20
19.	Mr. Steven M. Centore Brookhaven Group Manager DEPARTMENT OF ENERGY Brookhaven Group P.O. Box 5000 Upton, NY 11973 631/344-7309	January 17, 2001	C-21
20a.	Mr. Carl D. Terry VP-Nuclear Safety Assessment & Support NINE MILE POINT NUCLEAR POWER STATIONS Nos. 1 & 2 P. O. Box 32 Lycoming, NY 13093	February 22, 1999	C-22 C-23
NOTE:	Joint Agreement: JAFNPP, Nine Mile Point Nuclear Power Station, R.E. Ginna Nuclear Power Plant		
20b.	Mr. Robert C. Mecredy VP-Nuclear Operations R.E. Ginna Nuclear Power Plant ROCHESTER GAS & ELECTRIC PLANT 89 East Avenue Rochester, NY 14649	March 14, 1999	C-22 C-23
NOTE:	Joint Agreement: JAFNPP, Nine Mile Point Nuclear Power Station, R.E. Ginna Nuclear Power Plant		
21.	Mr. Al Kaupa Senior Chemist Baltimore Gas & Electric Company 1000 Brandon Shores Road Baltimore Maryland 21226 401/787-6603	February 24, 2000 (Still in effect as of above date)	C-24 C-25

750 East Adams Street
Syracuse, NY 13210

Department of Emergency Medicine

Tel 315.464.4363
Fax 315.464.6229

www.upstate.edu

State University of New York
Upstate Medical University

May 18, 2001

New York Power Authority
Entergy Nuclear Northeast
Attn: Nicholas Avrakotos
Emergency Planning Coordinator
PO Box 110
Lycoming, NY 13093

Dear Mr. Avrakotos:

This letter is in response to your May 10, 2001 fax requesting an update to University Hospital's commitment as a primary referral hospital in the event of a Radiological Disaster at the Entergy Nuclear Northeast. Please allow me to reaffirm University Hospital's commitment in providing assistance in a Radiological Disaster that is consistent with our original letter of agreement dated November 30, 1987.

Should you require any additional information concerning our commitment and response, I can be contacted at 315-464-4363.

Sincerely,

Daniel Olsson, DO
Chair, Hospital Emergency Preparedness
& Disaster Planning Committee

ml
cc: Ben Moore, III
Executive Director
University Hospital

Ann Sexlore, Ph. D.
University Hospital

OSWEGO COUNTY SHERIFF'S OFFICE

ADMINISTRATION
(315) 349-3307
Fax (315) 349-3483
ROAD PATROL
(315) 349-3411
FAX (315) 349-3303
CRIMINAL INVESTIGATION
(315) 349-3301

REUEL A. TODD
SHERIFF

ROBERT J. LIGHTHALL
UNDERSHERIFF

CIVIL DIVISION
(315) 349-3302
1-800-582-7583
JAIL DIVISION
(315) 349-3300
FAX (315) 349-3349

39 Churchill Road, Oswego, New York 13126-6613

April 26, 2001

Entergy Nuclear Northeast
James A. FitzPatrick Nuclear Power Plant
P.O. Box 110
Lycoming, New York 13093

Attention: Nicholas Avrakotos

Dear Sir:

Reference is made to your letter of December 12, 2001 requesting an annual updating of our letter of agreement regarding emergency assistance availability of the Oswego County Sheriff's Office.

Our organization's assistance will continue to be available for an emergency at the plant. We are willing to cooperate fully implementing any and all law enforcement functions necessary for security measures such as traffic or crowd control, with the existing emergency procedure plans.

Since the primary function of this office is law enforcement, it is out intent to assist, in any way possible, Entergy Nuclear Northeast and its officials, at the James A. FitzPatrick Nuclear Power Plant in the event of a mock or actual emergency.

If necessary, to contact me personally, feel free to call me at 349-3307.

Sincerely,

Reuel A. Todd
Sheriff

RT:lsb

GE Nuclear Energy

2015 Spring Road
Suite 301
Oak Brook, IL 60523
(630) 573-3930

F-R-2001-005
June 27, 2001

Mr. Kurt Szeluga
Entergy Nuclear Northeast
James A. FitzPatrick Nuclear Power Plant
P.O. Box 41
Lycoming, NY 13093

SUBJECT: BWR Emergency Program

REFERENCE: 1) Entergy PO Contract No. 4500500351, dated January 10, 2001
2) GE Service Information Letter No. 324, Revision 6, BWR Emergency Support Program, dated September 18, 1998

Dear Mr. Szeluga:

GE will provide standby assistance to Entergy Nuclear Notheast for Emergency Support at the James A. FitzPatrick Nuclear Power Plant as described in Reference 2. Any emergency support services will be provided under the Reference 1 Contract Order.

Please contact me if you need further information on the BWR Emergency Support Program.

Sincerely,

Richard Rossi
Account Executive
(630) 573-3930

** TOTAL PAGE.001 **

NUMANCO LLC.
"Our Power is in Our People"

May 11,2001

Entergy Nuclear Northeast
James A. Fitzpatrick Nuclear Power Plant
ATTN:Mr. Nicholas Avrakotos
Emergency Planning Coordinator
P.O. Box 110
Lycoming, NY 13093

Dear Mr. Avrakotos:

NUMANCO, LLC is pleased to offer our support during emergency situations as follows:

1. NUMANCO will provide contract services to JAFNP during an emergency situation as personnel availability permits.

2. NUMANCO will assist JAFNP personnel in 24-hours per day scheduling for personnel in Health Physics support positions.

NUMANCO understands the need to develop and maintain effective contingency plans in the event of an unforeseen emergency at JAFNP, and we are available to support your organization if the need arises.

I understand this agreement is binding only upon receipt of an acknowledgement letter from JAFNP. Upon receipt of the acknowledgement letter, NUMANCO will forward appropriate insurance documents.

If you require additional information please contact me at 800-556-7572 ext. 421.

Sincerely,

David M. Smith
Director of Marketing
NUMANCO, LLC

One Memorial Place • 7633 East 63rd Place, 4th Floor • Tulsa, Oklahoma 74133
(918) 252-9111 • (800) 556-7572 • FAX (918) 459-3490
numanco@worldnet.att.net

Mr. Michael J. Colomb
Site Executive Officer
Entergy Nuclear Northeast
Entergy Nuclear Operations, Inc.
James A. FitzPatrick Nuclear Power Plant
P.O. Box 110
Lycoming, NY 13093

April 20, 2001

W.O. 56611.05

EJS-30600

PROVIDE SITE EMERGENCY SUPPORT
JAMES A. FITZPATRICK NUCLEAR POWER PLANT

In the past, Stone & Webster, Inc. has responded numerous times to site requirements and has provided personnel to work at the plant for direct support and assistance to the JAF plant staff. We appreciate the Entergy's request of Stone & Webster, Inc. to continue these efforts and welcome the opportunity to offer our assistance again in the future for any emergency at the plant.

We offer this letter as a positive response to your letter JAFP-00-0286g. Please be assured of our commitment to the continued support of the James A. FitzPatrick Nuclear Power Plant and its staff.

Should you have any questions or require additional information, please call me at (212) 290-6489.

D. J. Patel
Project Manager

Stone & Webster, Inc.
One Penn Plaza, 250 W. 34th Street
New York, New York 10119
Phone: 212.290.6000
Fax: 212.290.7094, 7095

EA Engineering, Science, and Technology

The Maple Building
3 Washington Center
Newburgh, NY 12550
Telephone: 914-565-8100
Fax: 914-565-8203

3 January 2001

Mr. Nicholas Avrakotos
Entergy Nuclear Northeast
Entergy Nuclear Operations, Inc.
James A. FitzPatrick Nuclear Power Plant
P.O. Box 110
Lycoming, New York 13093

Dear Mr. Avrakotos:

In response to your letter dated 12 December 2000, EA Engineering, Science, and Technology wishes to confirm the availability of its onsite personnel to assist Entergy Nuclear Northeast in the event of an emergency at the James A. FitzPatrick Nuclear Power Plant. EA has two full-time staff members available to provide assistance consistent with their training, capabilities, and experience. Their time would be billed at the overtime labor rate schedule established in our contract.

It is EA's understanding that our staff will receive appropriate technical support for Entergy. Also, Entergy will assume full responsibility for protection of EA's workers from radiological exposures/releases, and all other safety and health risks/hazards, and indemnify EA against any and all claims that might result.

If you have any questions, or need our services, please do not hesitate to contact Mary Alice Koeneke, Site Manager, at (315) 342-1419, or myself at (845) 565-8100.

Sincerely yours,

Michael S. Battle, P.G.
Vice President

MSB/mkp

cc: M. Koeneke

DURATEK
302 West Main Street, Suite 204
P. O. Box 1137
Avon, Connecticut 06001
860/677-0457

January 3, 2001
N00-01-001

Mr. Nicholas Avrakotos
Emergency Planning Coordinator
Entergy Nuclear Northeast
James A. FitzPatrick NPP
P. O. Box 110
Lycoming, NY 13093

Dear Mr. Avrakotos:

In response to Mr. Michael J. Colomb's letter of December 15, 2000, GTS Duratek will continue to make our resources available in response to an emergency at your plant.

We currently have one technician assigned to your site to operate our radwaste processing systems. In addition, Duratek has two technicians and equipment next door at Nine Mile 1 and 2. These resources are also available to respond to an emergency at your facility.

We are pleased to be the radwaste contractor at your facility. Duratek will cooperate in any way we can to support your plant needs.

Very truly yours,

Joseph E. Amico
VP, Sales & Marketing

JEA/ptp

Oswego Hospital
An Affiliate of Oswego Health

January 8, 2001

Entergy Nuclear Northeast
James A. FitzPatrick Nuclear Power Plant
Attn: Nicholas Avrakotos
Emergency Planning Coordinator
P.O. Box 110
Lycoming, New York 13093

Dear Mr. Avrakotos:

This letter is to renew the agreement between Oswego Hospital and Entergy Nuclear Northeast / James A. FitzPatrick Nuclear Power Plant. The Hospital will continue to plan and work cooperatively for the care of persons who become ill or injured at your Plant. We understand that some of these patients may be radioactively contaminated and we are prepared to provide appropriate care for them.

Our response will continue to be in accordance with the guidelines established by Oswego Hospital and Entergy Nuclear Northeast / James A. FitzPatrick Nuclear Power Plant. We appreciate your assistance in helping to prepare and maintain this document. The prime contact person for you to work with will be Ms. Gail Greenwood, Chief Operating Officer.

We are pleased that this cooperative effort will continue to satisfy the requirements for the Joint Commission on Accreditation of Health Care Organizations and the Nuclear Regulatory Commission.

Cordially,

Corte J. Spencer
Administrator & C.E.O.

/jmq
cc: Ms. G. Greenwood, COO

RMC
Radiation Management Consultants

May 11, 2001

Entergy Nuclear Operations, Inc.
Entergy, Nuclear Northeast
James A. FitzPatrick Nuclear Power Plant
Attn: Mr. Nicholas Avrakotos
Emergency Planning Coordinator
P. O. Box 110
Lycoming, NY 13093

SUBJECT: Emergency Medical Assistance Program for 2001.

Dear Mr. Avrakotos:

This confirms an agreement between Radiation Management Consultants (RMC) and Entergy, Nuclear Northeast wherein RMC agrees to furnish certain services to the James A. FitzPatrick Nuclear Station. These services comprise a program that is identified by RMC as an Emergency Medical Assistance Program (EMAP). This agreement remains in effect from January 1, 2000 through December 31, 2000. The EMAP program contains the following provisions:

1. Twenty-four hour per day availability of expert medical consultation on management of radiation injuries.

2. Twenty-four hour per day availability of RMC's Radiation Emergency Medical Team (REM-Team) comprised of physicians, Certified Health Physicists and a technician with portable instrumentation to travel to your location and assist hospital personnel, attending physicians and/or plant personnel in the initial evaluation and treatment of radiation injuries.

3. Availability of and assistance with transfer of patients to Definitive Care Centers established at Northwestern Memorial Hospital, Chicago, IL for treatment of radiation injuries and Loyola University Medical Center, Chicago IL for the treatment of burns.

3021 Darnell Road • Philadelphia, PA 19154 • (215) 824-1300 • FAX# (215) 824-1371

Twenty-four hour per day availability of RMC's dose assessment capabilities including:

a. Bioassay laboratory for urine, fecal, sputum and tissue analysis
b. Mobile Whole Body Counter
c. Experienced Certified Health Physicists and Physician Team for evaluation and treatment of radiation exposures.

5. Annual training for the plant personnel in the handling and treatment of injured/contaminated patient(s).

6. Annual training for EMS personnel in the rescue and transport of injured/contaminated patient(s).

7. Annual training for hospital personnel in the handling, treatment and evaluation of injured/contaminated patient(s).

8. Annual radiation emergency medical drill to include preparation of accident scenarios, two drill observers and drill evaluation reports related to observations made at the plant, ambulance and hospital.

9. Annual inventories of support hospital radiation emergency medical supplies and equipment.

10. Performance of annual telephone number verification as well as a review of the hospital procedural manual; revise and distribute changes to the manual under controlled document distribution system.

11. Accident Response: consultation and laboratory services under RMC's employment and control are at no extra charge except for travel, lodging and meals.

12. Preparation of incident/accident reports for NRC and other regulatory bodies at no additional charge.

13. Legal and medical appearances as required and requested by New York Power Authority.

RADIATION MANAGEMENT CONSULTANTS, INC.

Roger E. Linnemann, M.D.
President

New York State Emergency Management Office
1220 Washington Avenue
Building 22, Suite 101
Albany, NY 12226-2251

Edward F. Jacoby, Jr., Director

May 17, 2001

Mr. Nicholas Avrakotos
Emergency Planning Coordinator
Entergy Nuclear Northeast
James A. Fitzpatrick Nuclear Power Plant
P.O. Box 110
Lycoming, New York 13093

Dear Mr. Avrakotos:

This serves to update the annual agreement between Entergy Nuclear Northeast (ENN) and the State Emergency Management Office for the Radiological Emergency Preparedness Program.

In the event of an emergency at ENN's James A. Fitzpatrick Nuclear Power Plant, New York State will respond in accordance with procedures contained within the State Radiological Emergency Preparedness Plan. Notification to New York State of the emergency should be initiated via the Radiological Emergency Communication System hotline. The state will also continue to participate in necessary training exercises and drills.

Please contact me at (518) 457-2222 if I can be of further assistance.

Sincerely,

Edward F. Jacoby, Jr.
Director

EFJ:lw

Warning Point: (518) 457-2200 **Fax: (518) 457-9930** **Executive Office: (518) 457-2222**

FRAMATOME ANP

May 30, 2001
FANP-01-1409

New York Power Authority
James A. Fitzpatrick Nuclear Power Plant
P.O. Box 110
Lycoming, NY 13093

Attention: Nicholas Avrakotos, Emergency Planning Coordinator

Dear Sir:

This agreement letter is between Framatome ANP Inc. and Entergy Nuclear Northeast James A. Fitzpatrick Nuclear Power Plant to work cooperatively in efforts for radiological emergency preparedness at JAFNPP.

Our response will continue to be in accordance with the guidelines established by our organization and Entergy Nuclear Northeast. It is our understanding that besides the accidents typical of other industrial activities, an emergency at your facility could involve radiological exposures and releases, and in such a situation trained employees would provide technical support.

The designated point of contact at Framatome ANP Inc. is Mr. Don Janecek; the first alternate is Mr. Bill Fields; and the second alternate is Mr. Stephen Seitz. Messrs. Janecek and Fields are located in our Lynchburg, VA office. Mr. Seitz is located in East Lyme, CT. The phone numbers for these individuals are as follows:

Primary Contact	Mr. Don Janecek	(804) 832-2614 (Work) (804) 942-3057 (Cell)	(804) 832-8251 (Home)
First Alternate	Mr. Bill Fields	(804) 832-2853 (Work) (888) 668-7508 (Pager)	(804) 385-9690 (Home)
Second Alternate	Mr. Stephen Seitz	(860) 691-1629 (Work) (800) 583-5062 (Pager)	(860) 739-3608 (Home)

Should you require any further clarification, please contact me at (804) 832-3045 in Lynchburg.

Very truly yours,

Andrew G. Cook
Vice President, Sales & Marketing

AGC/lbm

155 Mill Ridge Road Lynchburg, VA 24502-4341 Tel: 804-832-3700 www.framatech.com

OFFICE OF THE OSWEGO COUNTY FIRE COORDINATOR

200 North Second Street • Fulton, New York 13069

John R. Hinds
Fire Coordinator

Office: (315) 591-9142
Fax: (315) 591-9146

January 1, 2001

Mr. Nicholas Avrakotos
Entergy Nuclear Northeast
James A. FitzPatrick Nuclear Power Plant
PO Box 110
Lycoming, New York 13093

Dear Mr. Avrakotos:

This letter is to renew the agreement between Oswego County's volunteer fire departments and the James A. FitzPatrick Nuclear Power Plant to plan and work cooperatively for fire prevention and firefighting at the site.

Firefighting assistance will be available during an emergency at the plant as outlined in the Oswego County Mutual Aid Plan which is registered with the New York State Office of Fire Prevention and Control, and was adopted by the Oswego County Legislature in November 1984.

It is our understanding that besides the accidents typical of industrial activities, an emergency at your facility could involve radiological exposures and releases, and in such a situation, trained plant employees would provide technical support to our firefighters.

Sincerely,

John R. Hinds
Oswego County Fire Coordinator

:kmr
nypaltr.wpd

INPO

Institute of Nuclear Power Operations

700 Galleria Parkway, SE
Suite 100
Atlanta, GA 30339-5957
770-644-8000
FAX 770-644-8549

November 15, 2000

Dear Administrative Point of Contact:

This letter certifies that the plant emergency assistance agreement between INPO and its member utilities remains in effect. In the event of an emergency at your utility, INPO will assist you in acquiring the help of other organizations in the industry, as described in Section 1 of the *Emergency Resources Manual,* INPO 86-032, (Revision 11). If requested, INPO will provide the following assistance:

- facilitate technical information flow from the affected utility to the nuclear industry
- locate replacement equipment and personnel with technical expertise
- obtain technical information and industry experience regarding plant component and systems
- provide an INPO liaison to facilitate interface

This agreement will remain in effect until terminated in writing. Should you have questions, please call me at (770) 644-8210 or via e-mail to igyartodp@inpo.org.

Sincerely,

David P. Igyarto
Acting Director
Plant Operations Division

DPI:eb

cc: Emergency Preparedness Point of Contact
INPO Coordinator
Mr. Gary R. Leidich

L00-5Q025

Cardiology

David D. O'Brien Jr., M.D., P.C.

Internal medicine

22 West Oneida Street
Oswego, New York 13126

Telephone: (315) 343-4348 Fax: (315) 343-4348

January 8, 2001

Entergy Nuclear Northeast
James A. FitzPatrick Nuclear Power Plant
PO Box 41
Lycoming, New York 13093

Attention: Nicholas Avrakotos
Emergency Planning Coordinator

Dear Mr. Avrakotos,

This letter is to renew the agreement between Dr. David D. O'Brien Jr. and the Entergy Nuclear Northeast's James A FitzPatrick Nuclear Power Plant to work cooperatively in medical emergencies.

The response will be in accordance with the guidelines established by my medical practice and the New York Power Authority. It is my understanding that I shall be available for emergencies at the Oswego Hospital Emergency room which involve radiological exposures and releases and contamination of employees at such times that I am present in the community. In such a situation I also understand that trained employees will be available to provide technical support.

Very Truly Yours,

David D. O'Brien Jr MD

David D. O'Brien Jr. M.D., P.C.
DDO/ALP

BUREAU OF FIRE
EDWARD J. GEERS
FIRE CHIEF

THE CITY OF OSWEGO
35 East Cayuga Street
Oswego, New York 13126
315-343-2161 • Fax: 315-343-0243

Est. 1876
DEPARTMENT OF PUBLIC SAFETY

January 17, 2001

Entergy Nuclear Northeast
James A. Fitzpatrick Nuclear Power Plant
Attn: Nicholas Avrakotos
Emergency Planning coordinator
P.O. Box 110
Lycoming, NY 13093

Dear Mr. Avrakotos,

This letter is confirm the agreement between the Oswego Fire Department and Entergy Nuclear Northeast, James A. Fitzpatrick NPP to provide our services in an emergency situation.

Respectfully,

Edward J. Geers
Chief
Oswego Fire Department

EJG/b

Pooled Equipment Inventory Co.- PEICo
Post Office Box 2625
Birmingham, Alabama 35202
Telephone (205) 992-7085
Telecopy (205) 992-5271

POOLED INVENTORY MANAGEMENT
PIM

Welton C. Beaty
PIM Program Manager

January 5, 2001

Entergy Nuclear Northeast
James A. Fitzpatrick Nuclear Power Plant
P.O. Box 110
Lycoming, NY 13093

Attention: Mr. Nicholas Avrakotos
Emergency Planning Coordinator

RE: Annual Updating of Agreement Letters

Dear Sir:

Pooled Equipment Inventory Company (PEICo) and Southern Company Energy Solutions (SCES) would be available for services identified in your letter of December 12, 2000 under the terms of the Participation Contract between NYPA and PEICo (currently being assigned to Entergy) and under the terms of the Management Contract between PEICo and SCES.

I am also enclosing a copy of my letter of January 5, 2001 on PASS Cask Emergency Planning that is distributed annually to Equipment Committee members. Fitzpatrick's designated PIM representative is Ed Conger.

If you have any questions or comments, please do not hesitate to call me.

Sincerely,

Welton C. Beaty

File: PIM-R-1

k/JPM/WCB/Navrak2.doc/mfs

Pooled Equipment Inventory Co. - PEICo
Post Office Box 2625
Birmingham, Alabama 35202
Telephone (205) 992-7085
Telecopy (205) 992-5271

POOLED INVENTORY MANAGEMENT
PIM

Welton C. Beaty
PIM Program Manager

January 5, 2001

Re: Letter of Agreement Regarding Withdrawal of Post Accident Sample Shipping Cask (PASS Cask; Emergency Planning)

To: EC Members - #D24AE101A001 and A002

Regarding Emergency Planning for withdrawal of the PIM PASS Casks, Equipment Committees D24AE101A001 and A002, please be advised that Southern Company Energy Solutions (SCES), as agent for PEICo, will support your organizations in accordance with the PEICo-Participating Utility Contracts, the SCES-PEICo Contract, the PIM Rules & Procedures, and any additional instructions we receive in accordance with these contracts.

The PIM Rules & Procedures Section 14.0 defines the process for withdrawing equipment from the PIM Facility. The following SCES personnel are currently authorized to direct shipment from the PIM Facility:

NAME	TITLE	DAYTIME	OFF HOURS
J. G. Adkins	PIM QA Manager	205/992-6198	205/980-1929
W. C. Beaty	PIM Program Mgr.	205/992-7085	205/655-7014
G. E. Huddleston	Financial/Contracts Mgr.	205/992-6358	205/823-5398
R. H. Smith	Project Engineer	205/992-6820	205/822-4097
J. E. Seagraves	Facilities & Inventory Manager	901/948-0277	901/382-6414

Also, the following Facility personnel may be directed to initiate preparation for shipment:

NAME	TITLE	DAYTIME	OFF HOURS
Kevin Block	Hake Project Manager	901/947-7821	888/512-7375

Please let me know if you have any questions regarding withdrawal of the PASS Casks.

Sincerely,

Welton C. Beaty

File: D24AE101 A001
D24AE101 A002

S:\WORKGROUPS\SCS ENGINEERING\SOUTHERN COMPANY ENERGY SOLUTIONS\JOINT PROJECTS MANAGEMENT (JPM)\Subfolders by Individual\Beaty, Chris\MSWDOCS\PIM\PASSCAS.DOC/mfs

OSWEGO COUNTY
EMERGENCY MANAGEMENT OFFICE

PATRICIA E. EGAN, DIRECTOR
THERESA LEIB, ASSISTANT TO THE DIRECTOR

200 NORTH 2ND STREET
FULTON, NEW YORK 13069
(315) 591-9150
FAX: (315) 591-9176

January 3, 2001

Entergy Nuclear Northeast
James A. FitzPatrick Nuclear Power Plant
Attn: Nicholas Avrakotos
Emergency Planning Coordinator
P.O. Box 110
Lycoming, New York 13093

Dear Mr. Avrakotos:

The cooperation and assistance that Oswego County has received in the past from the personnel of the New York Power Authority has been outstanding and we in Emergency Management look forward to continuing this mutual relationship.

Be assured that this office will continue to participate in all emergency planning endeavors and provide whatever assistance that may be required in the event of an accident and/or incident at the James A. FitzPatrick Nuclear Power Plant.

Sincerely,

Patricia E. Egan

Patricia Egan
Director

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133
Phone: (865) 690-6819
Fax: (865) 690-6187

December 29, 2000

Entergy Nuclear Northeast
Entergy Nuclear Operations, Inc.
James A. Fitzpatrick Nuclear Power Plant
Attn: Michael J. Colomb
P.O. Box 110
Lycoming, NY 13093

Dear Mr. Colomb:

This agreement letter is between Teledyne Brown Engineering Environmental Services and Entergy's James A. Fitzpatrick Nuclear Power Plant (JAFNPP) to plan and work co-operatively in efforts for Radiological Emergency Preparedness at JAFNPP.

Our response will continue to be in accordance with the guidelines established by our organization and Entergy. It is our understanding that besides the accidents typical of other industrial activities, an emergency at your facility could involve radiological exposures and releases, and in such a situation, trained plant employees would provide technical support.

The prime contact person on our staff for you to work with will be Alan R. Latham, Laboratory Director, Environmental Analysis, whose telephone number is (865) 690-6819 (Knoxville, TN).

Sincerely,

Alan R. Latham, Ph.D.
Laboratory Director

ARL:lw
AL2000122902006

Department of Energy
Brookhaven Group
P.O. Box 5000
Upton, New York 11973

January 17, 2001

TO: DISTRIBUTION LIST

SUBJECT: DEPARTMENT OF ENERGY'S (DOE) RADIOLOGICAL ASSISTANCE PROGRAM (RAP) MEMORANDUM OF UNDERSTANDING

As most of you are aware, the Department of Energy's (DOE) Brookhaven Area Office (BAO) is the Regional Coordinating Office (RCO) for DOE's Region 1, which is comprised of the eleven northeastern states. As the RCO, BAO is responsible for coordinating DOE emergency assistance, upon request from any state, county, local, or tribal agency requesting DOE support to an event involving nuclear/radiological material. In the past, BAO annually issued letters re-stating our RCO responsibilities to the eleven states and various nuclear utilities in Region 1. This annual letter was a burden, not only on BAO for issuing them, but also for each of the recipients to maintain them to demonstrate current status.

In an effort to streamline this process, BAO is reviewing the requirement for re-issuing the letters on an annual basis, as well as determining if they are even required at all. Numerous federal laws, regulations, and DOE Orders, that are readily available to the public via the Internet, already require DOE to maintain an ever-ready response capability for coping with any nuclear/radiological incident. Our letters merely reiterated what was already required. The possible elimination of the annual letters would in no way impact the assistance or support that BAO is required to provide and has maintained over the years. BAO, as the RCO for DOE Region 1, will carry out that assistance required by law, regulation, and implementing DOE Orders.

As BAO researches the requirement for the annual letters, the letters that previously were in place shall remain in effect until further notice. If you have any questions or would like further details, you can reach me at (631) 344-7309.

Sincerely,

Steven M. Centore
Regional Response Coordinator

A component of the DOE Chicago Operations Office

Date February 5, 1999

LETTER OF AGREEMENT BETWEEN

James A. FitzPatrick Nuclear Power Plant,
Nine Mile Point Nuclear Power Stations,
and
R.E. Ginna Nuclear Power Plant

In the event of a radiological emergency or other situations resulting in the urgent need for additional equipment and/or personal assistance at the James A. FitzPatrick Nuclear Power Plant, Nine Mile Point Nuclear Power Stations or R.E. Ginna Nuclear Power Plant, the following agreement has been made with respect to mutual aid, as available, in any or all of the following areas, to:

1) Assist with equipment and personnel in monitoring and evaluation of onsite and offsite radiological situations.

2) Provide personnel for assistance at offsite emergency centers.

3) Assist in communications between emergency centers, the control room and off-duty plant personnel or outside agencies.

4) Allow use of laboratory and counting room.

5) Allow use of environmental laboratory facilities.

6) Allow use of whole body counting facilities.

7) Provide personnel for in-plant recovery operations, as available.

8) Provide personnel to assist in the Joint Information Center.

9) Allow use of personnel decontamination facilities and equipment.

It is understood that these services would constitute a back-up capability and would not serve as a primary response force.

For New York Power Authority:

Date 2/10/99

Title Site Executive Officer

For Niagara Mohawk Power Corporation:

Date 2/22/99

Title Vice President - NSAS

For Rochester Gas and Electric Corporation:

Date 3/14/99

Title Vice President, Nuclear Operations

James A. FitzPatrick
Nuclear Power Plant
P.O. Box 41
Lycoming, New York 13093

315-342-3840

New York Power Authority

Michael J. Colomb
Site Executive Officer

February 24, 2000
JAFP-00-0038

Mr. Al Kaupa
Senior Chemist
Baltimore Gas & Electric Company
1000 Brandon Shores Rd.
Baltimore, Maryland 21226

SUBJECT: MUTUAL ASSISTANCE - THERMAL LUMINESCENT DOSIMETER DATA

Dear Mr. Kaupa:

1. This will constitute the agreement between Baltimore Gas & Electric Company ("BGE"), which operates the Calvert Cliffs Nuclear Power Plant ("CCNPP") and the New York Power Authority ("NYPA"), which operates the James A. FitzPatrick Nuclear Power Plant ("JAF"), for the provision of mutual assistance to provide Thermal Luminescent Dosimeter ("TLD") reader services (the "Services") if either party's TLD reader becomes unavailable. The major tool used by both plants to measure direct radiation is the TLD using a Panasonic Automatic Reader (UD-716AGL).

   - As set forth in this letter of understanding, a party will provide the Services to the other if the requesting party's TLD reader is temporarily unavailable.

   - A party will promptly request Services by telephone to the other party's representative when such Services will be needed. The representatives are:

     JAF: Barrie Gorman, Environmental Supervisor
     (315-593-5740)

     CCNPP: Al Kaupa, Senior Chemist
     (410-787-6603)

2. The party providing the Services will charge and be paid by the other at the rate of $15 per TLD.

3. The requesting party's representative will determine the need for transit or QC TLDs at the time the request is made.

4. Following the reading of TLDs, the results will be transmitted to the other party as soon as practical by method and format agreed upon when the notification is made.

5. The requesting party will bear all costs of shipping TLDs.

6. If there are any alleged or actual errors or defects of any kind in the Services, the parties' sole liability to, and sole remedy from, each other will be re-performance of the affected portion(s) of the Services without additional charge.

7. Under no circumstances will the parties be liable to each other for damages of any kind, without limitation, including negligence, arising from this agreement including any use of the Services.

8. This agreement constitutes the entire agreement between BGE and NYPA as to the subject matter hereof and supersedes all prior communications and understandings between the parties. No changes or waiver of any of the provisions hereof will be effective unless contained in writing and signed by BGE and NYPA.

9. Either party may terminate the agreement without penalty at any time with 30 days notice in writing.

Please indicate BGE's approval of the above agreement by forwarding a signed copy of this letter to me.

Sincerely,

New York Power Authority

By: _____
Barrie Gorman, Environmental Supervisor
James A. FitzPatrick Nuclear Power Plant

Concurred By: _____
Michael J. Colomb, Site Executive Officer
James A. FitzPatrick Nuclear Power Plant

AGREED AND ACCEPTED:

Baltimore Gas & Electric Company

By: _____
Al Kaupa, Senior Chemist
Calvert Cliffs Nuclear Power Plant

EMERGENCY PLAN IMPLEMENTING PROCEDURES/VOLUME 2
UPDATE LIST

CONTROLLED COPY # 34

Date of Issue: September 7, 2001

Procedure Number	Procedure Title	Revision Number	Date of Last Review	Use of Procedure
N/A	TABLE OF CONTENTS	REV. 19	02/98	N/A
IAP-1	EMERGENCY PLAN IMPLEMENTATION CHECKLIST	REV. 24	02/01	Continuous
IAP-2	CLASSIFICATION OF EMERGENCY CONDITIONS	REV. 20	12/98	Continuous
EAP-1.1	OFFSITE NOTIFICATIONS	REV. 44	01/01	Informational
EAP-2	PERSONNEL INJURY	REV. 24	01/01	Informational
EAP-3	FIRE	REV. 21	08/00	Informational
EAP-4	DOSE ASSESSMENT CALCULATIONS	REV. 29	12/98	Reference
EAP-4.1	RELEASE RATE DETERMINATION	REV. 13	09/01	Reference
EAP-5.1	DELETED (02/94)			
EAP-5.2	DELETED (04/91)			
EAP-5.3	ONSITE/OFFSITE DOWNWIND SURVEYS AND ENVIRONMENTAL MONITORING	REV. 7	07/00	Informational
EAP-6	IN-PLANT EMERGENCY SURVEY/ENTRY	REV. 15	02/98	Informational
EAP-7.1	DELETED (02/94)			
EAP-7.2	DELETED (02/94)			
EAP-8	PERSONNEL ACCOUNTABILITY	REV. 53	08/01	Reference
EAP-9	SEARCH AND RESCUE OPERATIONS	REV. 9	02/98	Informational
EAP-10	PROTECTED AREA EVACUATION	REV. 14	02/98	Informational
EAP-11	SITE EVACUATION	REV. 16	05/01	Informational
EAP-12	DOSE ESTIMATED FROM AN ACCIDENTAL RELEASE OF RADIOACTIVE MATERIAL TO LAKE ONTARIO	REV. 10	08/99	Reference
EAP-13	DAMAGE CONTROL	REV. 13	12/98	Informational
EAP-14.1	TECHNICAL SUPPORT CENTER ACTIVATION	REV. 21	08/00	Informational
EAP-14.2	EMERGENCY OPERATIONS FACILITY ACTIVATION	REV. 19	07/00	Informational
EAP-14.5	OPERATIONAL SUPPORT CENTER ACTIVATION AND OPERATION	REV. 14	03/00	Informational

EMERGENCY PLAN IMPLEMENTING PROCEDURES/VOLUME 2
UPDATE LIST

Date of Issue: September 7, 2001

Procedure Number	Procedure Title	Revision Number	Date of Last Review	Use of Procedure
EAP-14.6	HABITABILITY OF THE EMERGENCY FACILITIES	REV. 14	10/98	Informational
EAP-15	EMERGENCY RADIATION EXPOSURE CRITERIA AND CONTROL	REV. 10	02/00	Informational
EAP-16	PUBLIC INFORMATION PROCEDURE	REV. 6	02/98	Informational
EAP-17	EMERGENCY ORGANIZATION STAFFING	REV. 95	08/01	Informational
EAP-18	DELETED (12/93)			
EAP-19	EMERGENCY USE OF POTASSIUM IODINE (KI)	REV. 21	04/01	Informational
EAP-20	POST ACCIDENT SAMPLE, OFFSITE SHIPMENT AND ANALYSIS	REV. 8	02/98	Reference
EAP-21	DELETED (12/85)			
EAP-22	DELETED (02/98)			
EAP-23	EMERGENCY ACCESS CONTROL	REV. 10	02/98	Informational
EAP-24	EOF VEHICLE AND PERSONNEL DECONTAMINATION	REV. 8	02/98	Informational
EAP-25	DELETED (02/94)			

NEW YORK POWER AUTHORITY
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
EMERGENCY PLAN IMPLEMENTING PROCEDURE

RELEASE RATE DETERMINATION*
EAP-4.1
REVISION 13

REVIEWED BY: PLANT OPERATING REVIEW COMMITTEE

MEETING NO. N/A DATE: N/A

APPROVED BY: _____ DATE: 8-24-01
RESPONSIBLE PROCEDURE ~~OWNER~~

EFFECTIVE DATE: September 7, 2001

FIRST ISSUE ☐ FULL REVISION ☐ LIMITED REVISION ☒

INFORMATIONAL USE	TSR
ADMINISTRATIVE	CONTROLLED #: 34

PERIODIC REVIEW DATE: FEBRUARY 2002

REVISION SUMMARY SHEET

REV. NO.

13
- Changes are made due to Improved Technician Specification (ITS) program.
- On Attachment 1, page one added words "([CTS] Technical Specifications, Appendix B, Section 3.2.a.1 [ITS] 5.5.4)"

12
- On Attachment 11, page 1 of 2 and 2 of 2, changed Noble Gas Vent release to 1432 and changed Noble Gas Stack release to 333. On page 24, added step 3 to show determination for obtaining setpoint release rates that are described in the ODCM.

11
- Removed the GM - Support Services approval line from the cover sheet per AP-02.04.
- On attachment 1, changed Stack count from "cpm" to cps.
- On attachment 3, added note pertaining to containment leak rate and dose rates at site boundary.
- Corrected the Reactor Building default K factor in step 4.1.1.D and attachment 1.
- Added brackets on Stack Release charts on pages 6, 8, and 17.
- Section 4.1.1.D, changed wording to use existing K Factor data unless an updated one is available based upon recent Chemistry sample data.

10
- Added a note in section 4.1.3 and added more information for clearer instructions on use of the EDAMS for windows program.
- Editorial Correction to Attachment 12 to correctly identify refuel accident source term to be consistent with EAP-4.

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1.0 PURPOSE

This procedure provides instructions for manually estimating release rates in the event of an accidental release of radioactivity to the environment.

2.0 REFERENCES

2.1 Performance References

None

2.2 Developmental References

2.2.1 EAP-5.3, ONSITE/OFFSITE DOWNWIND SURVEYS AND ENVIRONMENTAL MONITORING*

2.2.2 EAP-42, OBTAINING METEOROLOGICAL DATA*

2.2.3 NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

2.2.4 JAF FSAR Chapter 14

2.2.5 EAP-4, DOSE ASSESSMENT CALCULATIONS*

2.2.6 High Range Containment Monitor Response to Post Accident Fission Product Releases - James A. FitzPatrick Nuclear Power Plant, SL-4370, Sergeant Lundy, May 1985

3.0 INITIATING EVENTS

3.1 An emergency classification has been declared as defined in IAP-2, and

3.2 A release of radioactivity exceeding technical specifications is suspected or underway.

4.0 PROCEDURE

4.1 Release Rate Determination

NOTE: Use Attachment 11 to calculate the percent of Tech. Spec. in order to determine if the Tech. Spec. release rate has been exceeded and for completion of the NRC Event Notification Worksheet, EAP-1.1, Attachment 6.

4.1.1 Low Range Effluent Monitor calculation

A. Record date, time and name of individual performing calculations in upper right-hand corner of Attachment 1.

B. Record observed gross count rate with appropriate units for the Reactor Building (RxB), Refuel Floor (RF), Radwaste (RW), Turbine Building (TB) and/or Stack. This data may be obtained from the EPIC computer. **IF** computer points are unavailable, Control Room **AND/OR** local monitors can be used for this data.

NOTE: For stack releases, it is important to determine whether any dilution fan is operating.

C. For **Building Vent Releases**, multiply the gross count rate (cpm) by the default K factor listed in table on following page, until update K factors are available based on recent chemistry sample data.

D. For **Stack Releases**, multiply the gross count rate (cps) by the default K factor listed below, unless an updated K factor is available based on recent Chemistry sample data.

Monitor	K Factor	Normal Flow RatesBased on (cfm)
Reactor Bldg.(Pt. 3337)	3.2E-1 µCi/sec/cpm	61,000
Refuel Floor(Pt. 3338)	3.7E-1 µCi/sec/cpm	70,000
Radwaste Bldg.(Pt. 3340)	1.7E-1 µCi/sec/cpm	32,500
Turbine Bldg.(Pt. 3339)	5.6E-1 µCi/sec/cpm	107,000
Stack(Pt. 3336)	6.0E-1 µCi/sec/cps	6,600

IF flow rates differ from the Normal Flow Rates listed above, **THEN** a correction to the K factor is necessary as follows:

$$K_{(corrected)} = \left[\frac{\text{New Flow Rate}}{\text{Normal Flow Rate}}\right] \times \left[K\ \text{Factor}_{(listed)}\right]$$

NOTE: The accuracy of ventilation flow rate indications at the low end of an instrument range should be confirmed with appropriate instrument calibration procedures.

E. An estimate of the iodine release rate can be obtained by multiplying the I/NG ratio from a chemistry sample by the NG release rate. **IF** a chemistry sample is not available, **THEN** the iodine release rate can be estimated by multiplying a default I/NG ratio by the NG release rate. For default release rates and I/NG ratio, refer to Attachment 12.

F. **IF** the low range effluent monitors are inoperative or off-scale, **THEN** the appropriate high range effluent monitor must be used.

4.1.2 **High Range Effluent Monitor (HREM) Calculation**

A. Record date, time and individual performing calculation in upper right-hand corner of Attachment 2.

B. Record observed dose rate for the Stack, Turbine Building (TB) and/or Radwaste (RW). This data may be obtained from the EPIC computer. **IF** computer points are unavailable, **THEN** Control Room monitors can be used for this data.

NOTE: For stack releases, it is important to determine whether any dilution fan is operating.

C. Multiply the dose rate by the K factor listed below.

NOTE: These conversion constants are based on normal flow rates listed below. A conversion factor of 0.45 (μCi/cc)/(mR/hr) was applied to the normal flow rate. This value is given by General Electric and is based on the monitor response to Xe-133.

HREM	K FACTOR	NORMAL FLOW RATES (cfm)*
STACK		
One SGT train operating	1.40 (Ci/sec)/(mR/hr)	based on 6,600
One SGT train and one stack dilution fan operating	2.54 (Ci/sec)/(mR/hr)	based on 12,000
TURBINE BLDG	22.6 (Ci/sec)/(mR/hr)	based on 107,000
RADWASTE BLDG	6.85 (Ci/sec)/(mR/hr)	based on 32,500

***IF** flow rates differ from the Normal Flow Rates listed above, then a correction to the K factor is necessary as follows:

$$K_{(corrected)} = \left[\frac{\text{New Flow Rate}}{\text{Normal Flow Rate}}\right] \times \left[K\ \text{Factor}_{(listed)}\right]$$

D. An estimate of the iodine release rate can be obtained by multiplying the I/NG ratio from a chemistry sample by the NG release rate. **IF** a chemistry sample is not available, the iodine release rate can be estimated by multiplying a default I/NG ratio by the NG release rate. For default release rates and I/NG ratios, refer to Attachment 12.

E. A back calculated release rate may be estimated from field survey data in lieu of or in addition to the estimate from low and high range effluent monitors.

4.1.3 **Back Calculations from Downwind Survey Dose Rate Data using EDAMS**

A. Start the EDAMS program and from the EDAMS icons, select "EDAMS".

NOTE: The mouse does NOT work in this DOS Sub-routine.

B. Select "Release Rate Calculations".

C. Select "James A. FitzPatrick".

D. Select "Back calculate".

E. Enter the time survey data was obtained (24-hour format).

F. Enter a number representing one of the accident types listed.

G. Enter the wind speed (mi/hr).

H. Enter "E" for elevated/stack or "G" for ground/vent release.

I. Enter the stability class (A - G).

J. Enter the three (3) foot closed window reading from the ion chamber (mR/hr).

K. Enter the downwind distance that the above reading was obtained. (Use 0.87 miles if the reading is taken at the site boundary.)

L. Hit the F9 key to calculate. Record or print the results.

4.1.4 **Release Rate Estimation Using Containment High Range Radiation Monitor Data**

A. Record date, time and individual performing calculations in upper right-hand corner of Attachment 3.

B. Record containment rad monitor I.D. (i.e., either 27-RE-104 A or B) in Column 1 or an average of the two.

C. Record the containment rad monitors average reading (dose rate) or the individual monitor reading (dose rate) in Column 2. Obtain readings from EPIC.

D. Record the time the containment rad monitor dose rate was observed in Column 3.

E. Record the time of shutdown in Column 4.

F. Determine the time in hours after shutdown that the containment radiation monitor reading was taken (Column 4 - Column 3) and record in Column 5.

NOTE: Ensure that credit is taken for any dilution provided to the value calculated in step 4.1.4.G prior to it entering the effluent pathway to the environment (i.e. dilution by Reactor Building volume, etc.).

G. Determine and record in Column 6 the calculated concentration in containment for the time after shutdown reading using the curves in Attachment 4 and the following core damage estimates:

Attachment 4 Location on Graph	**Calculated Concentration* (Ci/cc)**
Area above Case #1	5.20E-2
Area between Case #1 and Case #2	3.45E-2
Area between Case #2 and Case #3	1.09E-2
Area between Case #3 and Case #4	3.30E-4
Area between Case #4 and Case #5	1.91E-5
Area between Case #5 and Case #6	1.91E-6
Area below Case #6	Normal
*Concentrations derived using EAP-44 estimates of core inventory and a containment volume of 7.42E+9cc (i.e. drywell and torus gas space volume).	

H. Determine the expected flow rate (cc/sec) to the environment and record in Column 7. Assistance from TSC engineering staff may be necessary in determining flow rates.

I. Determine the estimated release rate by multiplying Column 6 by Column 7. Record in Column 8.

NOTE: EPIC provides release rates based on default K factors and normal flow rates.

4.1.5 **Obtaining Release Rate Using EPIC**

A. Call up the Radioactivity Release Control (RRC) display on EPIC.

B. Obtain and record release rate data from RRC display for release pathway of concern.

4.2 Default Accident Source Terms

4.2.1 Various types of design basis accidents have been analyzed and source terms estimated. Refer to Attachment 12 for estimated values.

4.2.2 In addition, source term estimates have been developed based on differing amounts of core damage for accidents resulting in leakage of activity through the drywell boundary.

A. Attachments 5 through 10 provide correlation between stack source term estimates for given containment leak rates and containment high range radiation monitor readings.

B. These attachments can be used to project what a release rate may be given a break in containment and containment failure imminent.

C. These source terms are only estimates and should be input with the understanding of the assumptions used in their development.

D. The source terms correspond to test cases in the Sergeant Lundy study "High Range Containment Monitor Response to Post Accident Fission Product Release" and are plotted on Attachments 5 through 10. These graphs are based on calculation JAF-89-003 filed in the original procedure EAP-4 master file.

4.3 Unmonitored Release

All likely release pathways are monitored. If there is a release through an unmonitored pathway, the release should be evaluated based on a source term (area monitors, process monitors, and/or local grab samples, as appropriate) or back calculations from downwind readings as described in Section 4.1.3 of this procedure.

5.0 ATTACHMENTS

1. FLOW CHART TO DETERMINE RELEASE RATE FROM LOW RANGE EFFLUENT MONITORS
2. FLOW CHART TO DETERMINE RELEASE RATE FROM HIGH RANGE EFFLUENT MONITORS (HREM)
3. WORK SHEET TO DETERMINE RELEASE RATE FROM CONTAINMENT RAD MONITORS
4. FITZPATRICK HRCRM READINESS
5. 1.5% LEAKAGE SOURCE TERM ESTIMATE
6. 10% LEAKAGE SOURCE TERM ESTIMATE
7. 25% LEAKAGE SOURCE TERM ESTIMATE
8. 50% LEAKAGE SOURCE TERM ESTIMATE
9. 100% LEAKAGE SOURCE TERM ESTIMATE
10. CASTASTROPHIC LEAKEAGE SOURCE TERM ESTIMATE
11. CALCULATION METHOD FOR DETERMINING PERCENT OF TECHNICAL SPECIFICATION FOR NRC EVENT NOTIFICATION WORKSHEET
12. ANALYZED ACCIDENT TYPES

FLOW CHART TO DETERMINE RELEASE RATE FROM LOW RANGE EFFLUENT MONITORS

DATA: Rx B _____ (cpm) RF _____ (cpm) RW _____ (cpm)

Stack _____ (cps) TB _____ (cpm)

DATE:
TIME:
NAME:

Rx B (cpm)	EPIC Pt. I.D. 3337	(cpm) x (*) = RR (µCi/s) _____ x ( ) = _____
Refuel Floor (cpm)	EPIC Pt. I.D. 3338	(cpm) x (*) = RR (µCi/s) _____ x ( ) = _____
Radwaste (cpm)	EPIC Pt. I.D. 3340	(cpm) x (*) = RR (µCi/s) _____ x ( ) = _____
Turbine Building (cpm)	EPIC Pt. I.D. 3339	(cpm) x (*) = RR (µCi/s) _____ x ( ) = _____
Stack (cps)	EPIC Pt. I.D. 3336	(cps) x (*) = RR (µCi/s) _____ x ( ) = _____

CHEM SAMPLE → YES / NO

Actual Iodine Release Rate (RR)
(Actual I/NG Ratio) x RR(NG) = RR(Iodine) Ci/sec
_____ x _____ = _____ Ci/sec

Estimated Iodine Release Rate (RR)
(**) x RR(NG) = RR (Iodine) Ci/sec
_____ x _____ = _____ Ci/sec

Noble Gas Release Rate RR(NG)
RR (µCi/sec) ÷ 1.0E6 = RR(NG) Ci/sec
_____ ÷ 1.0E6 = _____ Ci/sec

Refer to Section 4.1.1. C and D for additional guidance

Monitor	K Factor *	Normal Flow Rates Based on (cfm)
Reactor Bldg. (Pt. 3337)	3.2E-1 µCi/sec/cpm	61,000
Refuel Floor (Pt. 3338)	3.7E-1 µCi/sec/cpm	70,000
Radwaste Bldg. (Pt. 3340)	1.7E-1 µCi/sec/cpm	32,500
Turbine Bldg. (Pt. 3339)	5.6E-1 µCi/sec/cpm	107,000
Stack (Pt. 3336)	6.0E-1 µCi/sec/cps	6,600

IF flow rates differ from the Normal Flow Rates listed above,
THEN a correction to the K factor is necessary as follows:

$$K_{(corrected)} = \left[\frac{\text{New Flow Rate}}{\text{Normal Flow Rate}}\right] X \left[K\ \text{Factor}_{(listed)}\right]$$

Iodine / Noble Gas Ratio	RATIOS **
Loss of Coolant Accident	2.98E-03
Control Rod Drop	9.93E-03
Refueling Accident	1.24E-04
Steam Line Break Single Phase	1.79E+01
Steam Line Break Two Phase	1.79E+01
Containment Design Basis Accident	2.13E-02

NOTE: The accuracy of ventilation flow rate indications at the low end of an instrument range should be confirmed with appropriate instrument calibration procedures.

FLOW CHART TO DETERMINE RELEASE RATE FROM HIGH RANGE EFFLUENT MONITORS (HREM)

DATA: Stack _____ (mR/hr)

TB _____ (mR/hr) RW _____ (mR/hr)

DATE:	
TIME:	
NAME:	

Stack (HREM) 1 SBGT Train (mR/hr)	EPIC Pt. I.D. 1191	(mR/hr)	(1.40)* =	RR (Ci/s)
		_____	(1.40) =	_____
Stack (HREM) 1 SBGT 1 Fan (mR/hr)	EPIC Pt. I.D. 1191	(mR/hr)	(2.54)* =	RR (Ci/s)
		_____	(2.54) =	_____
TB (HREM) (mR/hr)	EPIC Pt. I.D. 1194	(mR/hr)	(22.6)* =	RR (Ci/s)
		_____	(22.6) =	_____
Radwaste (HREM) (mR/hr)	EPIC Pt. I.D. 1195	(mR/hr)	(6.85)* =	RR (Ci/s)
		_____	(6.85) =	_____

Noble Gas Release Rate RR (NG) (Ci/sec)

_____

CHEM SAMPLE

YES

Actual Iodine Release Rate (RR)

(Actual I/NG Ratio) x RR(NG) = RR(Iodine) Ci/sec

_____ x _____ = _____

NO

Estimated Iodine Release (RR) Rate

(**) x RR(NG) = RR(Iodine) Ci/sec

( ) x _____ = _____

* Based on G. E. Data for monitor response under **normal flow rates** listed on page 7.

Iodine / Noble Gas Ratio	RATIOS **
Loss of Coolant Accident	2.98E-03
Control Rod Drop	9.93E-03
Refueling Accident	1.24E-04
Steam Line Break Single Phase	1.79E+01
Steam Line Break Two Phase	1.79E+01
Containment Design Basis Accident	2.13E-02

WORK SHEET TO DETERMINE RELEASE RATE FROM CONTAINMENT RAD MONITORS

DATE: _____

TIME: _____

NAME:

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6		Column 7		Column 8
Containment Rad Monitor I.D.	Containment Rad Monitor Dose Rate (R/Hr)	Time of Reading	Time of Shutdown	Time of Reading After Shutdown (Hr) ΔT	Calculated Concentration in containment (ci/cc)		Expected Flow Rate to Environment *(cc/sec)		Estimated Release Rate (Ci/sec)
						x		=	
						x		=	

*To convert cfm to cc/sec, multiply cfm by 472 from CRC handbook of Chemistry and Physics, 64th Edition, pg. F-308.

Attachment 4 Location on Graph	Calculated Concentration* (Ci/cc)
Area above Case #1	5.20E-2
Area between Case #1 and Case #2	3.45E-2
Area between Case #2 and Case #3	1.09E-2
Area between Case #3 and Case #4	3.30E-4
Area between Case #4 and Case #5	1.91E-5
Area between Case #5 and Case #6	1.91E-6
Area below Case #6	Normal

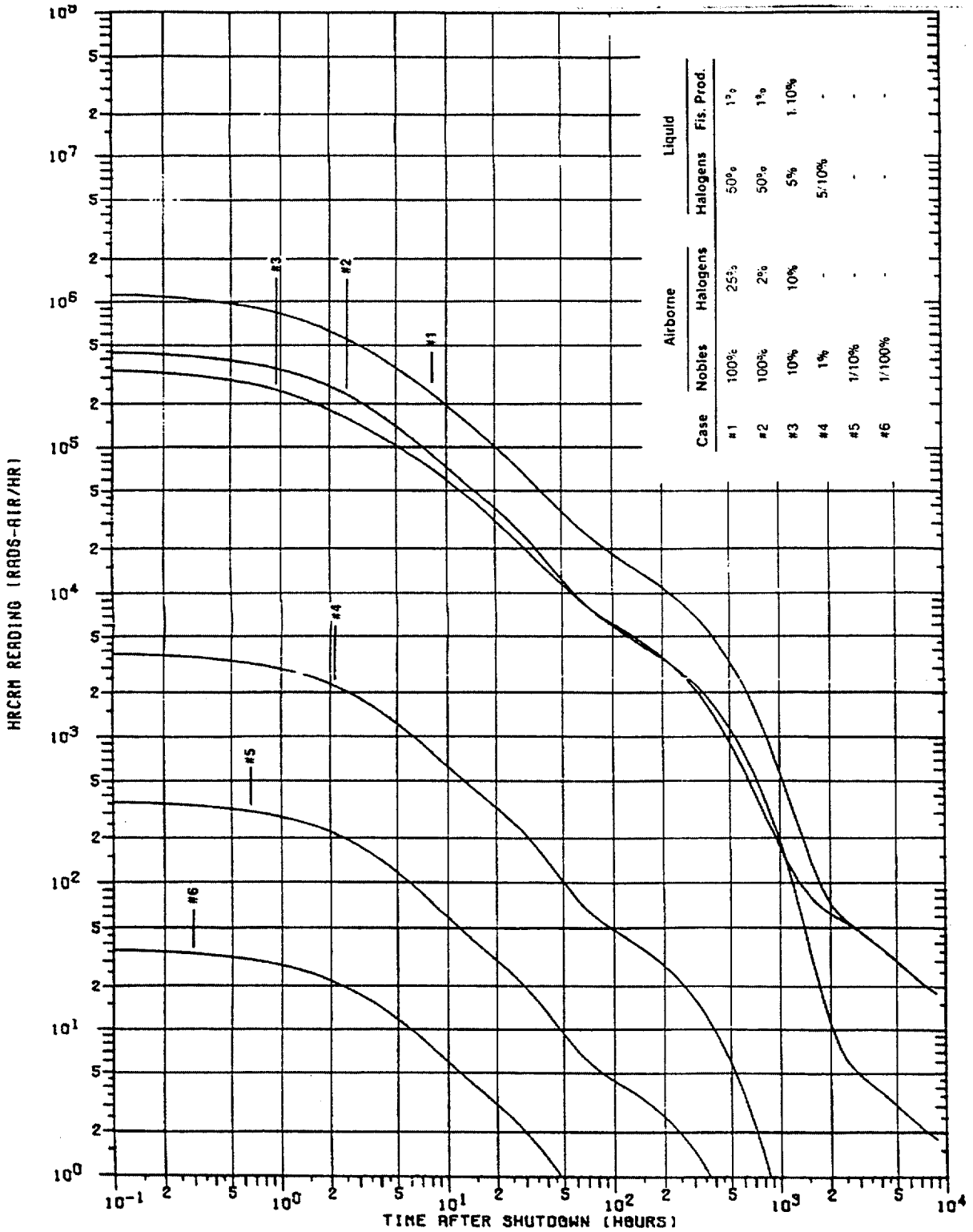
*Concentrations derived using EAP-44 estimates of core inventory and a containment volume of 7.42E+9cc (i.e. drywell and torus gas space volume).

Note: The Primary Containment and Reactor Building leak rate default value is 1.5% per day. The as-left Primary Containment leak rate calculated after RO-13 was approximately 1,437 scf/day.

The dose rate at the site boundary for 100% of Tech Spec's, per section 3.2.a, volume 1B, is 500 mr/yr whole body from noble gas, 1,500 mr/yr for any organ from iodines and particulates with half lives greater than 8 days.

Attachment 4 **Page 1 of 1**

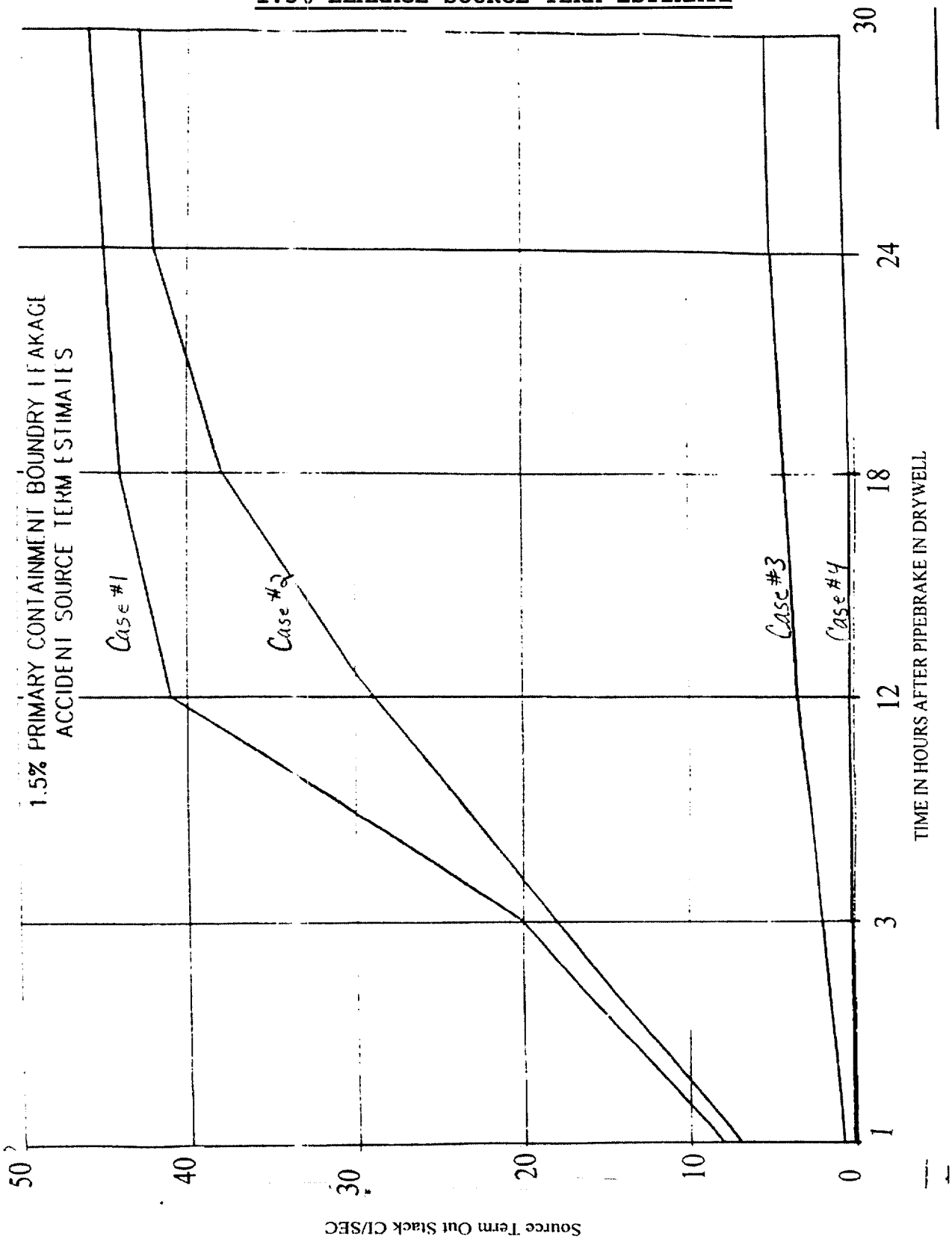
FITZPATRICK HRCRM READINGS



FITZPATRICK - HRCRM READINGS

Attachment 5 **Page 1 of 1**

1.5% LEAKAGE SOURCE TERM ESTIMATE



Attachment 6

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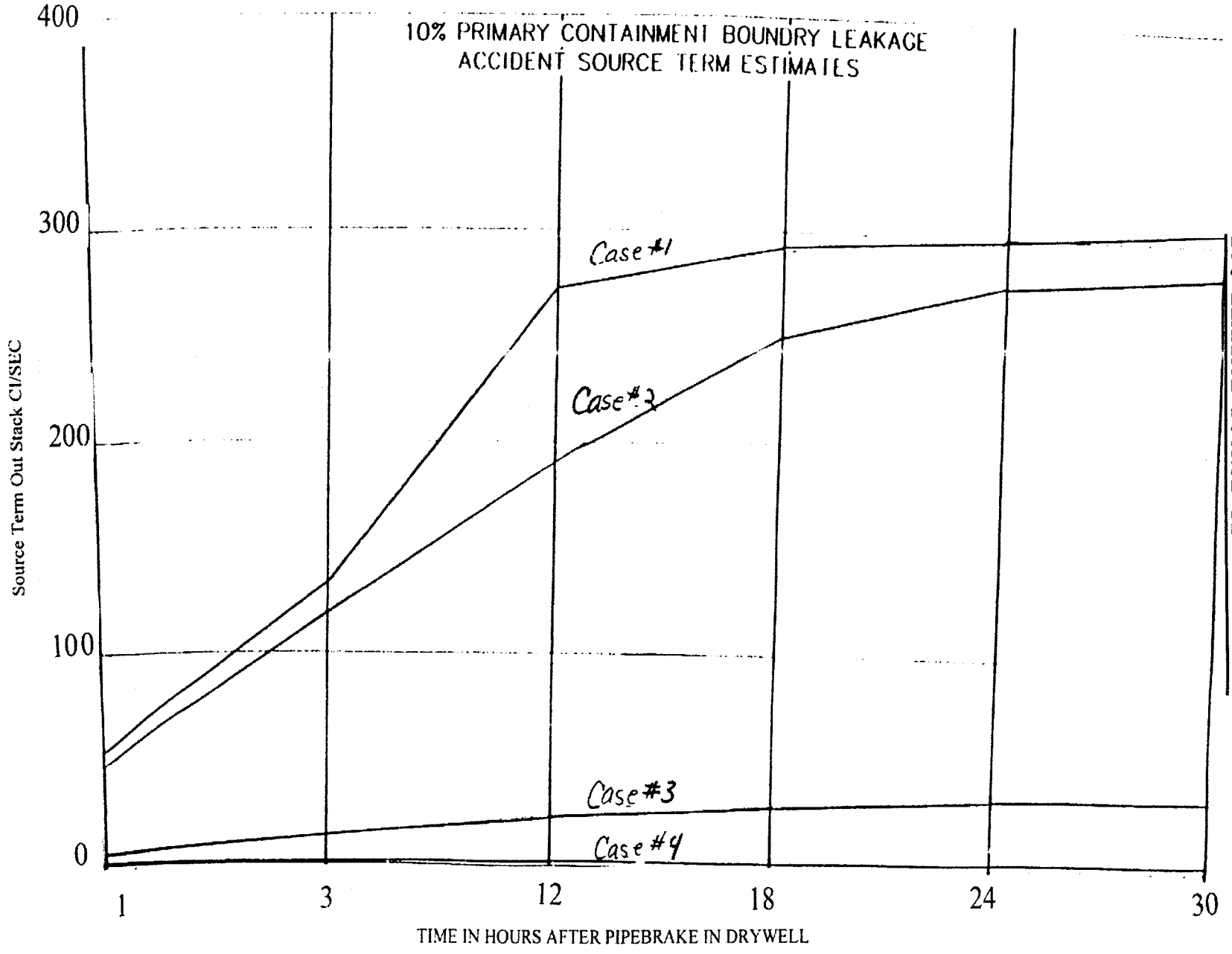
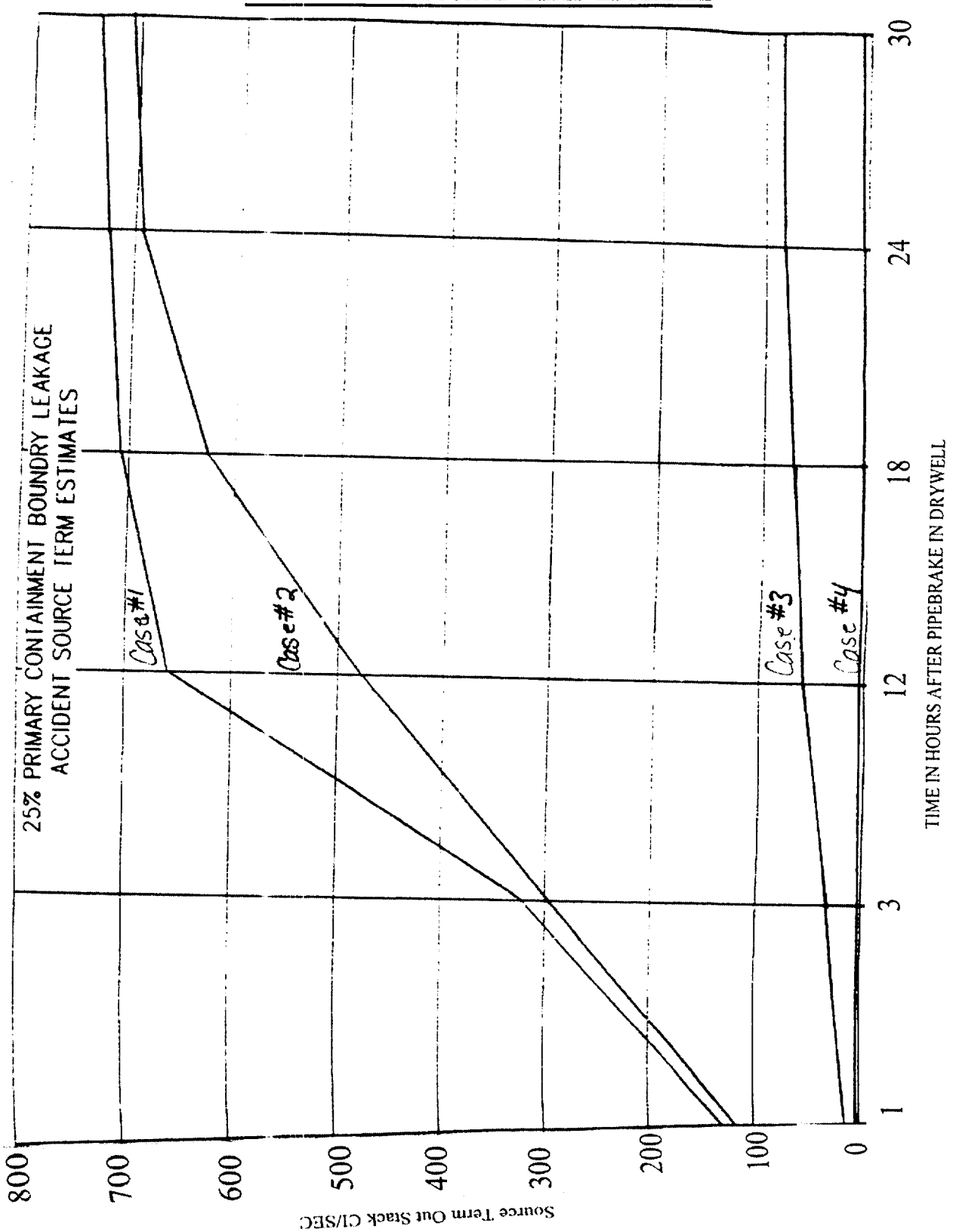
10% LEAKAGE SOURCE TERM ESTIMATE



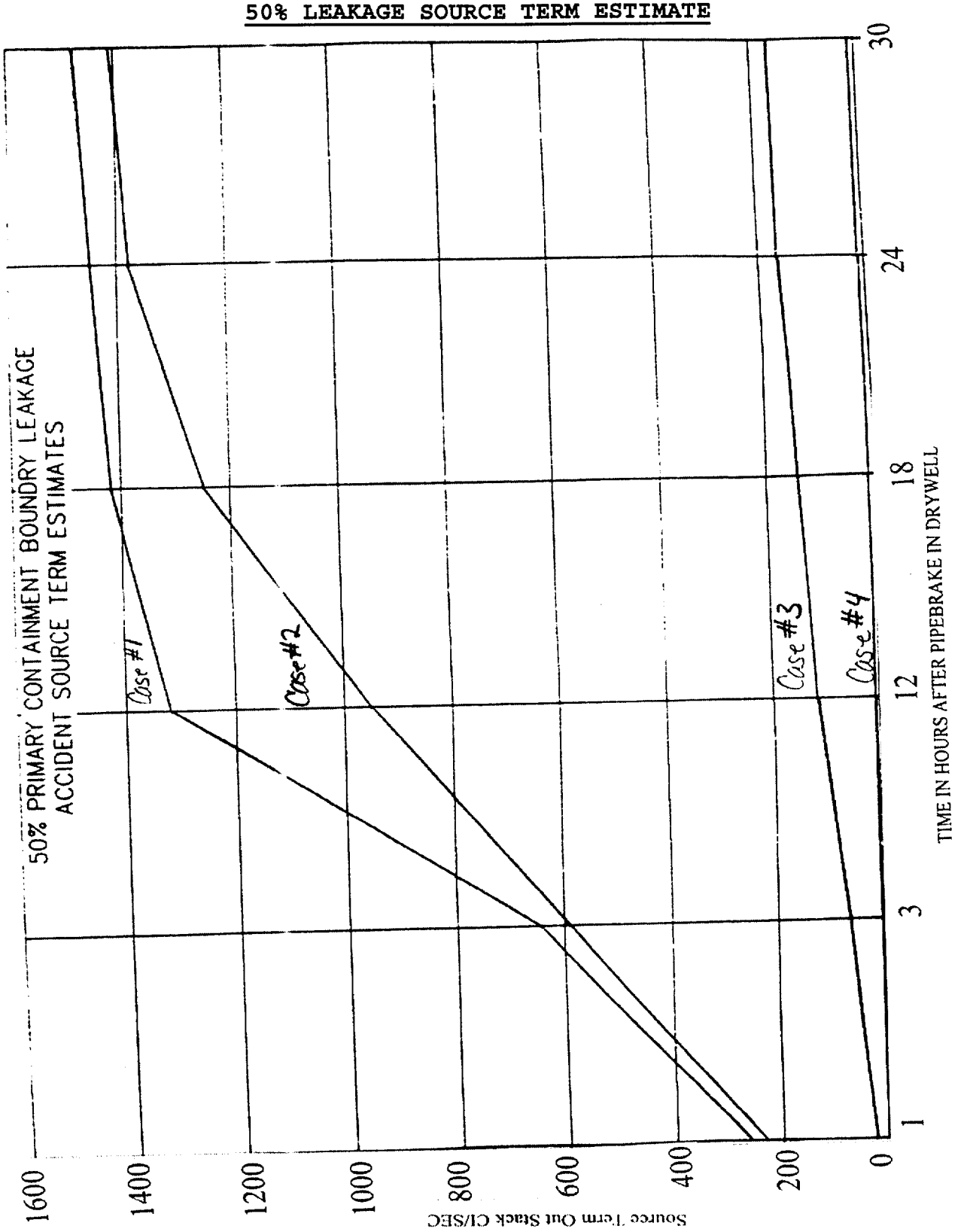
Attachment 7 **Page 1 of 1**

25% LEAKAGE SOURCE TERM ESTIMATE



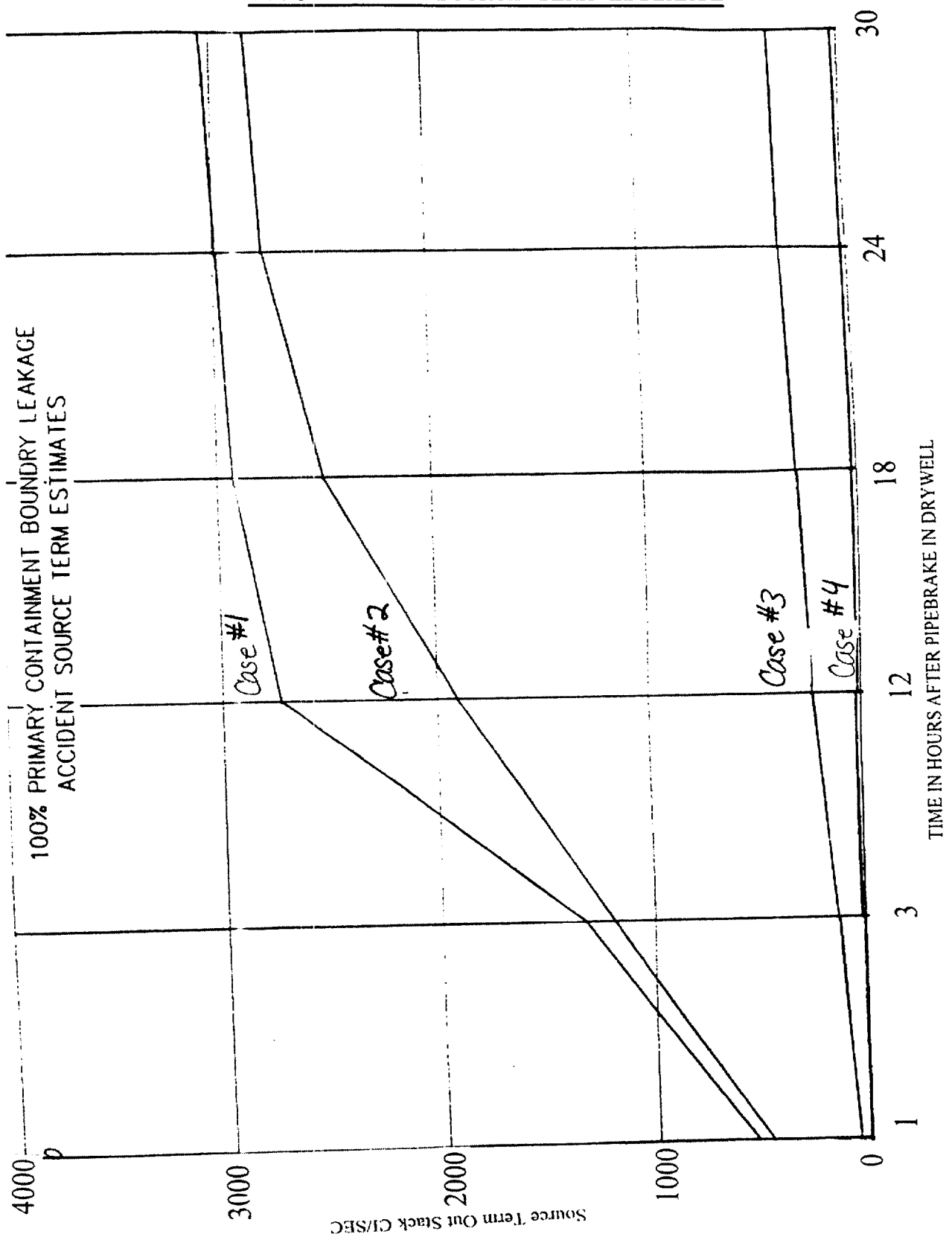
Attachment 8 **Page 1 of 1**

50% LEAKAGE SOURCE TERM ESTIMATE



Attachment 9

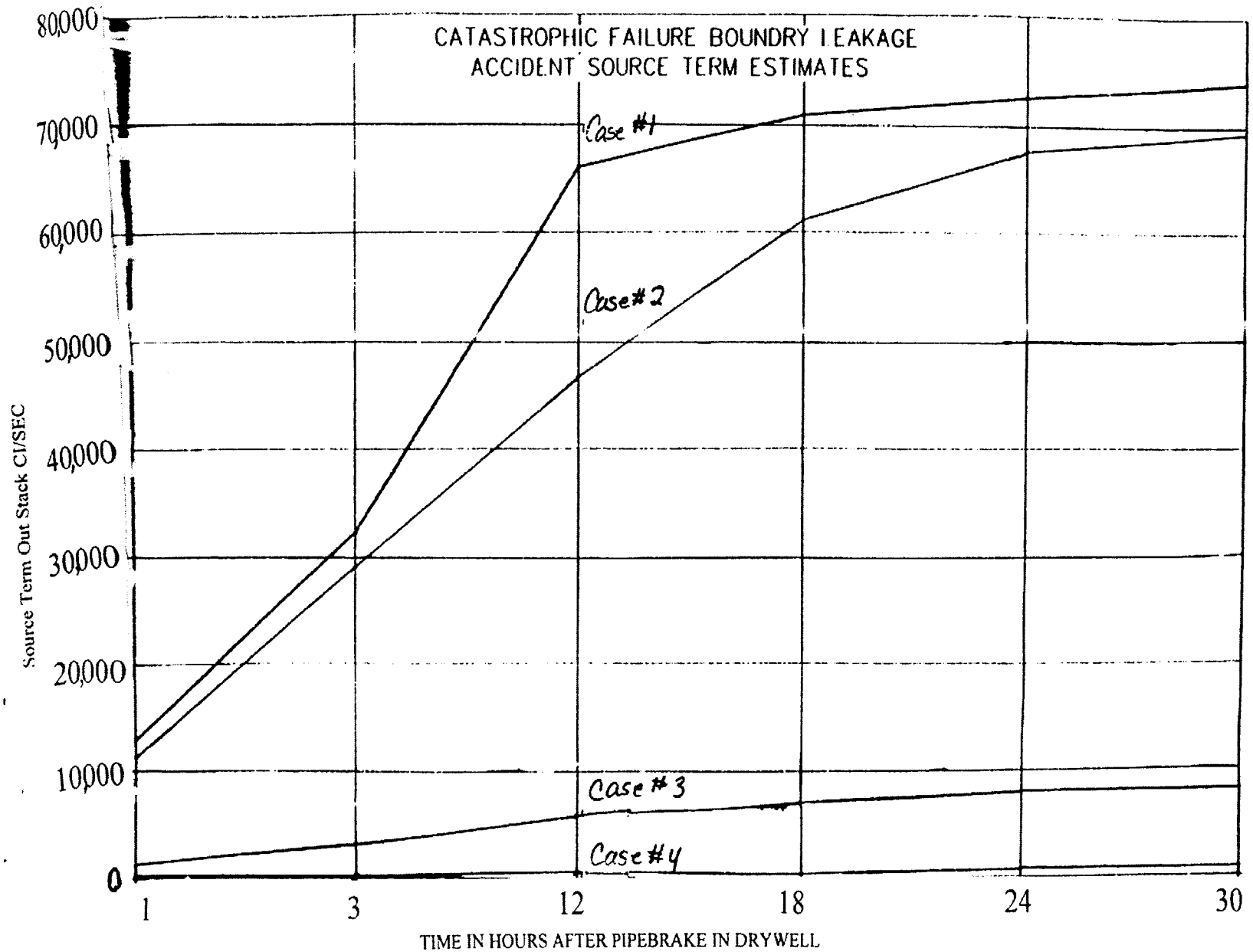
100% LEAKAGE SOURCE TERM ESTIMATE



Attachment 10

Page 1 of 1

CATASTROPHIC LEAKAGE SOURCE TERM ESTIMATE



CALCULATION METHOD FOR DETERMINING PERCENT OF TECHNICAL SPECIFICATION FOR NRC EVENT NOTIFICATION WORKSHEET

1. The formula for calculating the percent of Technical Specification of Airborne releases was derived from the JAF Offsite Dose Calculation Manual, Revision 7.

   The following assumptions apply:

   The release Technical Specification limit of 500 mrem/year ([CTS] Technical Specifications, Appendix B, Section 3.2.a.1 [ITS] 5.5.4) was used as the basis for the noble gas instantaneous release limit.

   The Technical Specification of 1,500 mrem/year to any organ ([CTS] Technical Specifications, Appendix B, Section 3.2.a.2 [ITS]5.5.4) was used as the basis for the radioiodine, tritium and eight day particulate instantaneous release limit.

   The most conservative X/q (4.83E-7 sec/m^3) for ground based receptors at the site boundary was used for all cases and is the FSAR defined accident X/q.

   All assumptions and conservatism of the ODCM were applied.

2. As a result of these assumptions and conservatism, these formulae should be used only to estimate the initial percent of Technical Specifications as required by the NRC Event Notification Worksheet (EAP-1.1, Attachment 6). As more detailed source term and meteorological data become available, a more accurate determination of percent Technical Specification should be performed.

3. Technical Specification release rates for stack and vent noble gas releases are obtained from the setpoint release rates for these points described in the ODCM.

4. Calculation method for determining the initial percent of Technical Specifications for NRC Event Worksheet (use calculation worksheet on next page).

   For Noble Gas Vent Release:
   $\% \text{ T.S.} = RR_{NG} \text{ (Ci/s)} \times 1432$

   For Noble Gas Stack Release:
   $\% \text{ T.S.} = RR_{NG} \text{ (Ci/s)} \times 333$

   Where RR_{NG} = noble gas release rate in curies per second
   1432 = 100% divided by vent setpoint release rate of 0.0698 Ci/sec
   333 = 100% divided by stack setpoint release rate of 0.3 Ci/sec

   These equations assume an instantaneous release rate, ODCM dose conversion factors, and historical meteorological data.

   For Gross Liquid Release excluding Tritium:
   $\% \text{ T.S.} = F_L \text{ (gal/m)} \times C_L \text{ (}\mu\text{Ci/ml)} \times 2120$

   Where F_L = flow rate in gallons per minute
   C_L = concentration of liquid effluent in μCi/ml
   2120 = unit and dose conversion factor

   For iodine, tritium and particulates with half-lives greater than 8 days:

   $\% \text{ T.S.}_{\text{iodine and particulate}} = RR_{\text{iodine}} \text{ (Ci/sec)} \times 40.48$
   $\% \text{ T.S.}_{\text{tritium}} = RR_{\text{tritium}} \text{ (Ci/sec)} \times 0.32$
   Total % T.S. = Σ % T.S. for all release points

ATTACHMENT 11
CALCULATION METHOD FOR DETERMINING PERCENT OF TECHNICAL SPECIFICATION FOR NRC EVENT NOTIFICATION WORKSHEET

Noble Gas Vent Release

% T.S. = RR_{NG} x 1432

% T.S. = [RR_{NG} _____] Ci/s x 1432

% T.S. = _____

NOTE:

100% NG Vent Release= 0.0698 ci/sec

100% NG Stack Release = 0.3 ci/sec

Noble Gas Stack Release

% T.S. = RR_{NG} (Ci/s) x 333

% T.S. = [RR_{NG} _____] Ci/s x 333

% T.S. = _____

NOTE:

If % TS ≥ 100 - Fill out Part II Form.

This is indication of a release in progress.

Gross Liquid Release excluding Tritium

% T.S. = F_L x C_L (µCi/ml) x 2120

% T.S. = [F_L _____] gal/m x [C_L _____] µCi/ml x [2120]

% T.S. = _____

Iodine and Particulate with half lives greater than 8 days

% T.S. $_{i\&p}$ = Σ RR(Ci/s)$_{i\&p}$ (all vents) x 40.48

% T.S. $_{i\&p}$ = [($RR_{i\&p}$ _____) Ci/s + ($RR_{i\&p}$ _____) Ci/s +
stack T.B. vent

$RR_{i\&p}$ _____) Ci/s + ($RR_{i\&p}$ _____) Ci/s +
Rx Bldg vent Refuel Floor

($RR_{i\&p}$ _____) Ci/s] x 40.48
Radwaste Bldg

% T.S. $_{i\&p}$ = ($RR_{i\&p}$ _____) Ci/s x 40.48
total vents

% T.S. $_{i\&p}$ = _____

Tritium

% T.S. $_{Tritium}$ = Σ RR(Ci/s)$_{Tritium}$ (all vents) x 0.32

% T.S. $_{Tritium}$ = [($RR_{Tritium}$ _____) Ci/s + ($RR_{Tritium}$ _____) Ci/s +
stack T.B. vent

($RR_{Tritium}$ _____) Ci/s + ($RR_{Tritium}$ _____) Ci/s +
Rx Bldg vent Refuel Floor

($RR_{Tritium}$ _____) Ci/s] x 0.32
Radwaste Bldg

% T.S. $_{Tritium}$ = ($RR_{Tritium}$ _____) Ci/s x 0.32
total vents

% T.S. $_{Tritium}$ = _____

Where:

RR= release rate (Ci/sec)

F_L = Flow Rate (gal/m)

C_L = Concentration of liquid effluent (µCi/ml)

ATTACHMENT 12

ANALYZED ACCIDENT TYPES

	New Accident Names/Analyzed Accidents per Attachment A of EAP-4	Loss of Coolant Accident	Control Rod Drop	Refueling Accident	Steam Line Break Two Phase	Steam Line Break	LOCA - Engineered Safety Feature Component Leakage
		loca.jaf	crd.jaf	rfa.jaf	slb2.jaf	slb2.jaf	esf.jaf
	OLD EDAMS Accident Name Used	Loss of Coolant Accident	Control Rod Drop	Refueling Accident		Steam Line Break Two Phase	Containment Design Basis Accident
	Analyzed Release Point	Elevated	Ground	Elevated	Ground	Ground	Elevated
	Nuclide	**LOCA**	**CRD**	**RFA**	**SLB1**	**SLB2**	**CDBA**
NOBLE GASES (Ci/sec)	Kr 83M	1.353E+00	1.577E-03	6.117E-03	1.517E-05	1.517E-05	1.154E-02*
	Kr 85M	2.906E+00	3.386E-03	8.839E-02	2.725E-05	2.725E-05	1.508E-04
	Kr 85	1.301E-01	1.156E-04	1.604E-01	8.917E-08	8.917E-08	3.658E-09
	Kr 87	5.572E+00	6.494E-03	1.432E-05	8.917E-05	8.917E-05	0.000E+00
	Kr 88	7.894E+00	9.200E-03	2.777E-02	8.917E-05	8.917E-05	0.000E+00
	Kr 89	9.817E+00	1.144E-02	0.000E+00	5.800E-04	5.800E-04	0.000E+00
	Kr subtotal	*2.767E+01*	*3.221E-02*	*2.827E-01*	*8.008E-04*	*8.008E-04*	*1.508E-04*
	Xe131m	6.825E-02	7.953E-05	8.783E-02	6.692E-08	6.692E-08	7.994E-05*
	Xe133m	9.942E-01	1.159E-03	1.048E+00	1.292E-06	1.292E-06	1.934E-03
	Xe133	2.386E+01	2.781E-02	2.833E+01	3.658E-05	3.658E-05	2.769E-02
	Xe135	3.081E+00	3.589E-03	6.522E+00	9.833E-05	9.833E-05	1.952E-01
	Xe135m	4.494E+00	5.239E-03	3.578E-01	1.158E-04	1.158E-04	5.686E-01
	Xe137	2.094E+01	2.440E-02	0.000E+00	6.692E-04	6.692E-04	0.000E+00
	Xe138	1.988E+01	2.316E-02	0.000E+00	3.975E-04	3.975E-04	0.000E+00
	Xe subtotal	7.332E+01	8.544E-02	3.635E+01	1.319E-03	1.319E-03	7.934E-01
	Noble Gas (NG) subtotal	***1.010E+02***	***1.176E-01***	***3.663E+01***	***2.120E-03***	***2.120E-03***	***7.936E-01***
IODINES (Ci/sec)	I131	3.406E-02	1.323E-04	1.299E-03	9.808E-04	9.808E-04	1.918E-03
	I132	4.975E-02	1.933E-04	1.680E-03	7.628E-03	7.628E-03	2.803E-03
	I133	7.119E-02	2.766E-04	1.346E-03	6.536E-03	6.536E-03	4.011E-03
	I134	7.839E-02	3.044E-04	0.000E+00	1.380E-02	1.380E-02	4.417E-03
	I135	6.725E-02	2.612E-04	2.233E-04	9.075E-03	9.075E-03	3.789E-03
	Iodine subtotal	***3.006E-01***	***1.168E-03***	***4.548E-03***	***3.802E-02***	***3.802E-02***	***1.694E-02***
PARTICULATES (Ci/sec)	CS137	3.583E-03	1.671E-05	1.769E-04	1.198E-05	1.198E-05	2.019E-04
	TE132	8.178E-03	0.000E+00	0.000E+00	6.900E-04	6.900E-04	4.606E-04
	SR 89	2.132E-03	0.000E+00	0.000E+00	1.489E-04	1.489E-04	1.201E-04
	SR 90	2.228E-04	0.000E+00	0.000E+00	1.126E-05	1.126E-05	1.255E-05
	Ba140	4.094E-03	0.000E+00	0.000E+00	4.358E-04	4.358E-04	2.306E-04
	La140	4.336E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.443E-06
	Particulate subtotal	***1.83E-02***	***1.67E-05***	***1.77E-04***	***1.30E-03***	***1.30E-03***	***1.03E-03***
RELEASE RATE TOTALS (Ci/sec)		**1.01E+02**	**1.19E-01**	**3.66E+01**	**4.14E-02**	**4.14E-02**	**8.12E-01**
Accident Duration Used for EDAMS		**8 hours**	**4 hours**	**2 hours**	**2 hours**	**2 hours**	**2 hours**
TOTAL Release Assumed (Ci)		**2.92E+06**	**1.71E+03**	**2.64E+05**	**2.98E+02**	**2.98E+02**	**5.84E+03**
RATIOS	**RATIOS**	**Loss of Coolant Accident**	**Control Rod Drop**	**Refueling Accident**	**Steam Line Break Two Phase**	**Steam Line Break**	**LOCA - Engineered Safety Feature Component Leakage**
	Iodine / Noble Gas Ratio	2.98E-03	9.93E-03	1.24E-04	1.79E+01	1.79E+01	2.13E-02
	Noble gas / Iodine Ratio	3.36E+02	1.01E+02	8.05E+03	5.58E-02	5.58E-02	4.69E+01
	Noble Gas / Particulate Ratio	5.53E+03	7.04E+03	2.07E+05	1.63E+00	1.63E+00	7.72E+02
	Iodine / Particulate Ratio	1.65E+01	6.99E+01	2.57E+01	2.93E+01	2.93E+01	1.65E+01
	NG / Particulate + Iodine Ratio	3.17E+02	9.93E+01	7.75E+03	5.39E-02	5.39E-02	4.42E+01

EMERGENCY PLAN IMPLEMENTING PROCEDURES/VOLUME 3
UPDATE LIST

CONTROLLED COPY # 34

Date of Issue: September 7, 2001

Procedure Number	Procedure Title	Revision Number	Date of Last Review	Use of Procedure
N/A	TABLE OF CONTENTS	REV. 23	12/98	N/A
EAP-26	PLANT DATA ACQUISITION SYSTEM ACCESS	REV. 11	02/98	Informational
EAP-27	ESTIMATION OF POPULATION DOSE WITHIN 10 MILE EMERGENCY PLANNING ZONE	REV. 9	02/98	Informational
EAP-28	EMERGENCY RESPONSE DATA SYSTEM (ERDS) ACTIVATION	REV. 6	07/00	Reference
EAP-29	EOF VENTILATION ISOLATION DURING AN EMERGENCY	REV. 5	02/98	Informational
EAP-30	EMERGENCY TERMINATION AND TRANSITION TO RECOVERY*	REV. 0	12/98	Informational
EAP-31	RECOVERY MANAGER*	REV. 1	07/01	Informational
EAP-32	RECOVERY SUPPORT GROUP*	REV. 7	09/01	Informational
EAP-33	DEVELOPMENT OF A RECOVERY ACTION PLAN*	REV. 0	12/98	Informational
EAP-34	ACCEPTANCE OF ENVIRONMENTAL SAMPLES AT THE EOF/EL DURING AN EMERGENCY	REV. 3	02/98	Informational
EAP-35	EOF TLD ISSUANCE DURING AN EMERGENCY	REV. 6	02/98	Informational
EAP-36	ENVIRONMENTAL LABORATORY USE DURING AN EMERGENCY	REV. 4	02/98	Informational
EAP-37	SECURITY OF THE EOF AND EL DURING DRILLS, EXERCISES AND ACTUAL EVENTS	REV. 6	07/01	Informational
EAP-39	DELETED (02/95)			
EAP-40	DELETED (02/98)			
EAP-41	DELETED (12/85)			
EAP-42	OBTAINING METEOROLOGICAL DATA	REV. 15	01/01	Informational
EAP-43	EMERGENCY FACILITIES LONG TERM STAFFING	REV. 53	08/01	Informational
EAP-44	CORE DAMAGE ESTIMATION	REV. 4	02/98	Informational
EAP-45	EMERGENCY RESPONSE DATA SYSTEM (ERDS CONFIGURATION CONTROL PROGRAM)	REV. 6	07/00	Informational
SAP-1	MAINTAINING EMERGENCY PREPAREDNESS	REV. 15	02/00	Informational
SAP-2	EMERGENCY EQUIPMENT INVENTORY	REV. 32	01/01	Reference
SAP-3	EMERGENCY COMMUNICATIONS TESTING	REV. 69	07/00	Reference

EMERGENCY PLAN IMPLEMENTING PROCEDURES/VOLUME 3
UPDATE LIST

Date of Issue: September 7, 2001

Procedure Number	Procedure Title	Revision Number	Date of Last Review	Use of Procedure
SAP-4	NYS/OSWEGO COUNTY EMERGENCY PREPAREDNESS PHOTO IDENTIFICATION CARDS	REV. 8	03/00	Informational
SAP-5	DELETED (3/98)			
SAP-6	DRILL/EXERCISE CONDUCT	REV. 16	01/01	Informational
SAP-7	MONTHLY SURVEILLANCE PROCEDURE FOR ON-CALL EMPLOYEES	REV. 35	11/00	Informational
SAP-8	PROMPT NOTIFICATION SYSTEM FAILURE/SIREN SYSTEM FALSE ACTIVATION	REV. 11	01/01	Informational
SAP-9	DELETED (02/94)			
SAP-10	METEOROLOGICAL MONITORING SYSTEM SURVEILLANCE	REV. 9	07/00	Informational
SAP-11	EOF DOCUMENT CONTROL	REV. 10	08/00	Informational
SAP-13	EOF SECURITY AND FIRE ALARM SYSTEMS DURING NORMAL OPERATIONS	REV. 3	03/98	Informational
SAP-14	DELETED (02/95)			
SAP-15	DELETED (11/92)			
SAP-16	UTILIZING EPIC IDT TERMINALS FROM DESTINY SYSTEM	REV. 3	02/98	Informational
SAP-17	EMERGENCY RESPONSE DATA SYSTEM (ERDS) QUARTERLY TESTING	REV. 7	07/00	Continuous
SAP-19	SEVERE WEATHER	REV. 4	01/01	Informational
SAP-20	EMERGENCY PLAN ASSIGNMENTS	REV. 19	01/01	Informational
SAP-21	DELETED (04/01)			
SAP-22	EMERGENCY PLANNING PROGRAM SELF ASSESSMENT	REV. 1	10/98	Informational

ENTERGY NUCLEAR NORTHEAST
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
EMERGENCY PLAN IMPLEMENTING PROCEDURE

RECOVERY SUPPORT GROUP MANAGER*
EAP-32
REVISION 7

REVIEWED BY: PLANT OPERATING REVIEW COMMITTEE

MEETING NO. N/A DATE: N/A

APPROVED BY: _____ DATE: 8-21-01
RESPONSIBLE PROCEDURE OWNER

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PERIODIC REVIEW DUE DATE: DECEMBER 2003

REVISION SUMMARY SHEET

REV. NO.	CHANGE AND REASON FOR CHANGE
7	• Updated phone numbers on Attachment 2, Recovery Support Group Corporate Call List.
6	• Updated phone numbers on Attachment 2, Recovery Support Group Corporate Call List.
5	• Updated phone numbers on Attachment 2, Recovery Support Group Corporate Call List. • Changed the cover sheet to reflect the company name change.
4	• Updated phone numbers on Attachment 2, Recovery Support Group Corporate Call List.
3	• Updated phone numbers on Attachment 2, Recovery Support Group Corporate Call List.
2	• Updated phone numbers on Attachment 2, Recovery Support Group Corporate Call List • Removed GMSS approval signature line from cover sheet as per AP-02.04.
1	• Updated phone numbers on Attachment 2, Recovery Support Group Corporate Call List.
0	• New procedure

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1.0 PURPOSE

The purpose of this procedure is to provide instruction to the Recovery Support Group Manager. The Recovery Support Group Manager coordinates requests for personnel, equipment and materials, and support services.

This procedure is implemented initially by the Nuclear Generation Duty Officer (NGDO) in the event of an emergency at the plant which requires notification of the Recovery Manager and the coordination of corporate resources during the EMERGENCY PHASE, and/or activation of the Recovery Organization during the RECOVERY PHASE. The Recovery Manager may designate other personnel to act as Recovery Support Group Manager.

The Recovery Support Group Manager is responsible for:

- Notifying the Recovery Manager of emergencies and keeping him informed of the emergency status.
- Coordinating requests for corporate support.
- Coordinating requests for other personnel, equipment and materials, and support services.
- Notifying and coordinating requests for assistance with offsite support organizations as directed by the Recovery Manager.

2.0 REFERENCES

2.1 Performance References

2.1.1 Appendix F, Typical Support Companies and Organizations*

2.1.2 Section 9, Recovery*

2.1.3 EAP-33, Development of a Recovery Action Plan*

2.2 Developmental References

NONE

3.0 **INITIATING EVENTS**

3.1 Emergency conditions have been declared as per IAP-2, Classification of Emergency Conditions* (FOR STEPS 4.1 AND 4.2).

3.2 Emergency conditions have been controlled and/or corrected and the emergency terminated as per IAP-2, Classification of Emergency Conditions*, and entry into the Recovery phase is required (FOR STEPS 4.3 AND 4.4).

4.0 **PROCEDURE**

4.1 **Notifications**

4.1.1 Receive notification of the emergency from the plant.

4.1.2 Confirm the notification with plant staff and ascertain the situation.

4.1.3 Notify the Recovery Manager or alternate of the emergency.

4.2 **Activation**

4.2.1 Establish and maintain communications with the Recovery Manager during the EMERGENCY PHASE.

4.2.2 Coordinate corporate resources through normal channels to support the plant during the EMERGENCY PHASE as requested by the Recovery Manager.

4.2.3 Notify offsite support organizations to support the plant during the EMERGENCY PHASE as requested by the Recovery Manager. Organizations which may be called upon to provide assistance are listed in JAFNPP Appendix F.

4.2.4 IF RECOVERY OPERATIONS ARE REQUIRED, report to the designated Recovery Center (EOF or other location).

4.3 **Recovery Operations**

4.3.1 Assist the Recovery Manager to determine corporate capabilities required for Recovery Support Group (see JAFNPP Plan section 9).

4.3.2 Coordinate corporate resources to support Recovery operations. A Recovery Support Group Call List is included in this procedure as Attachment 2.

4.3.3 Coordinate requests for other personnel, equipment and materials, and support services through the Recovery Support Group organization.

4.3.4 Coordinate support from offsite support organizations. Organizations which may be called upon to provide assistance are listed in JAFNPP Emergency Plan Appendix F.

4.3.5 Develop a shift-rotation schedule for the Recovery Support Group as needed.

4.3.6 Coordinate the implementation of tasks appropriate to the Recovery Support Group in EAP-33, Development of a Recovery Action Plan*.

4.3.7 Continue to update the Recovery Manager on the status of Recovery Support Group operations.

4.3.8 Monitor progress of Recovery Support Group and Recovery Support Group tasks in the Recovery Action Plan and provide assistance/coordination where appropriate.

4.3.9 Assist the Recovery Manager to determine resource requirements for Recovery functions considering the following:

A. Need for additional personnel required for long-term recovery efforts

B. Need for offsite technical assistance

C. Need for supplies, equipment, parts, and other material.

4.4 Terminate Recovery Operations

4.4.1 Ensure the completion or dispositioning of Recovery Support Group tasks outlined in the Recovery Action Plan.

4.4.2 Ensure that appropriate offsite agencies/organizations have been notified of the termination of Recovery.

4.4.3 Ensure that all Recovery Support Group actions have been documented.

5.0 ATTACHMENTS

1. Recovery Support Group Manager Initial Actions
2. Recovery Support Group Corporate Call List

Attachment 1 Page 1 of 1

RECOVERY SUPPORT GROUP MANAGER INITIAL ACTIONS

When the NGDO is contacted, telephone plant Security to determine the nature of the emergency (Call the Control Room if Security cannot provide the information).

JAF - call 315-349-6414/6422 (Security)
315-349-6664 (Control Room)

1. Your initial contact will be with either site Security or the Control Room. Be prepared to copy down the pertinent information given to you. Use the appropriate PART I form.

2. Contact the Recovery Manager or alternate for further instructions. Refer to the Recovery Support Group Call List for Recovery Manager notification information.

3. If requested by the Recovery Manager, contact corporate departments for support. Refer to the Recovery Support Group Call List for corporate department notification information.

4. If requested by the Recovery Manager, notify offsite support organizations for support. Refer to JAFNPP, EAP-1.1, Offsite Notifications*, for offsite support organization notification information.

5. If requested by the Recovery Manager, report to the designated Recovery Center (EOF or other location) and implement EAP-32, Recovery Support Group Manager*.

ATTACHMENT 2

RECOVERY SUPPORT GROUP CORPORATE CALL LIST

TITLE	NAME	HOME PHONE	WORK PHONE	PAGER #
Recovery Manager	H. Salmon W. Josiger T. Dougherty J. Kelly	(914) 734-7690 (845) 279-9331 (718) 961-1907 (845) 947-2095	(914)272-3220 (914)272-3351 (914)272-3451 (914)272-3370	718-3812* 718-6846* 718-6800* 718-6275*
Radiological Support	G. Re' J. Furfaro	(914) 739-5694 (845) 528-2497	(914)272-3441 (914)272-3426	718-6801* 718-6232*
Engineering Programs Support	R. Penny J. Goldstein	(914) 741-5001 (914) 248-5688	(914)272-3510 (914)272-3512	718-3510* 718-6285*
Licensing Support	C. Faison P. Kokolakis	(914) 793-1262 (212) 724-6141	(914)272-3378 (914)272-3373	718-6306* 718-3373*
Fuel Management Support	G. Rorke (JAF) G. Canavan(IP3)	(516) 767-7587 (212) 989-0449	(914)272-3428 (914)272-3440	718-6839* 718-6845*
Engineering Support	R. Becht	(203) 431-6769	(914)272-3275	718-6962*
Public Relations Support	L. Gottlieb M. McGillicuddy	(914) 747-3836 (914) 381-0601	(914)272-3360 (914)272-3363	877-681-9682 718-3360* 718-6397*
Legal Affairs Support	J. Fulton J. Blount	(781) 893-8569 (601) 368-5689	(914)272-3502 (508)830-8898 (601)368-5680	800-318-6592
Material, Purchasing and Contract Support	R. Robinson J. Morrison	(914) 232-6491 (914) 332-4881	(914)272-3305 (914)272-3306	
Financial Support	J. Reagan S. Warbington	(845) 429-7921 (914) 949-3829	(914)272-3233 (914)272-3234	877-981-3718 PIN: 8779813718
Insurance Mgmt. Support	T. Weir	(203) 730-1739	(914)272-3300	800-844-8084 PIN: 1491369
Offsite Security Support	E. Beckendorf K. Gardner	(914) 528-0109 (203) 778-2012	(914)272-3237 (914)272-3211	800-670-2783 800-844-8084 PIN: 1409539
Quality Assurance Support	R. Patch M. Mui	(914) 328-5362 (845) 365-0547	(914)272-3260 (914)272-3271	718-6497* 800-650-8755

*1-800-436-2732

OTHER NOTIFICATIONS

	Home	Work	Pager
Chief Operating Officer M. R. Kansler	914-934-0395	914-272-3200	800-844-8084 PIN: 6109527 Cell Phone: 601-946-0706