POWER AUTHORITY OF THE STATE OF NEW YORK

INDIAN POINT NO. 3, NUCLEAR POWER PLANT

EMERGENCY PLAN PROCEDURES DOCUMENT

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EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- Book II REV. 11

TITLE" Book II

"

Organization
Initiating Conditions
NUE
Alert
Site Area
General

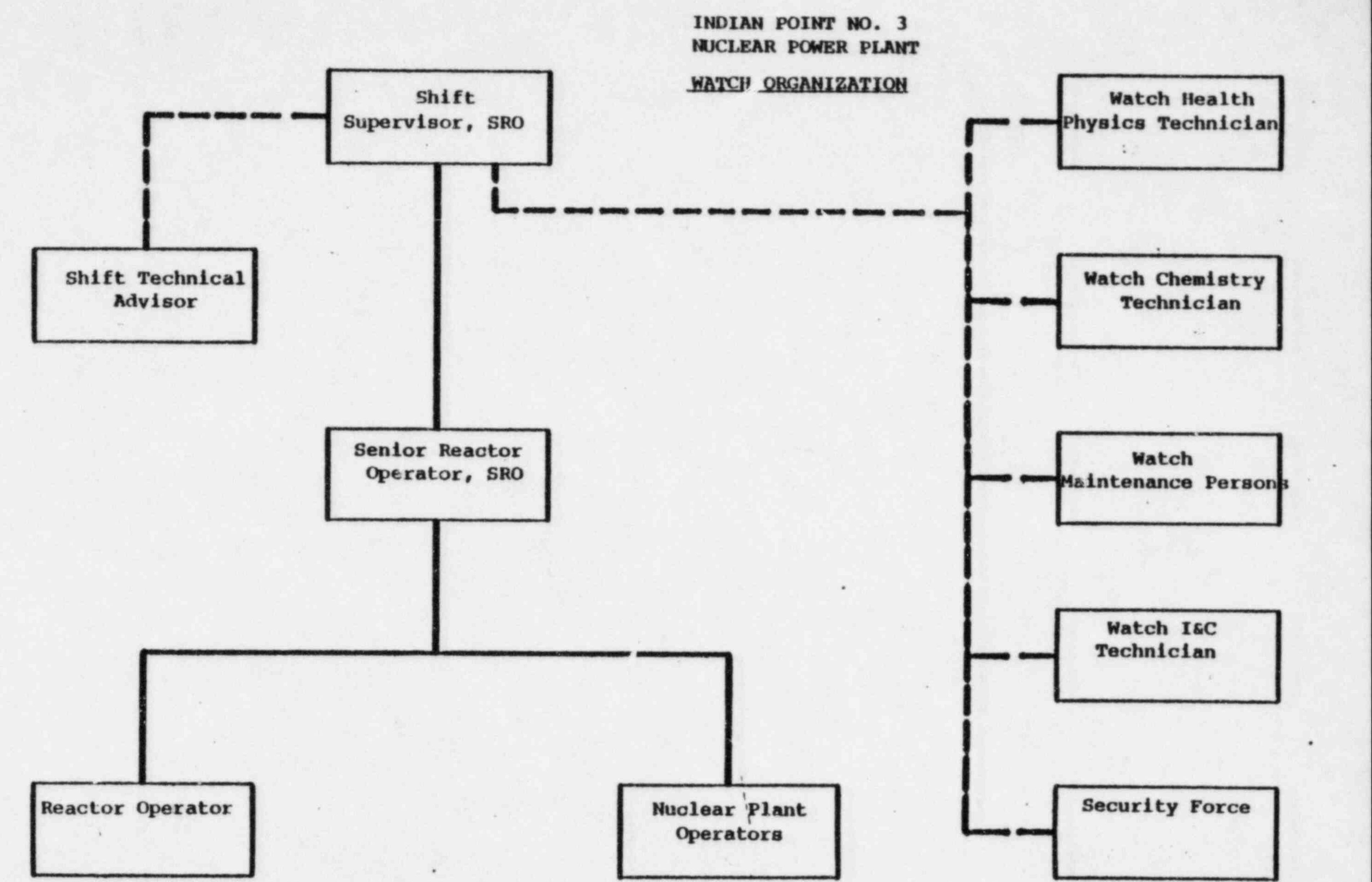
WRITTEN BY: MWahl

REVIEWED BY: Dennis Lewin

PORC REVIEW: [illegible] DATE [illegible]

APPROVED BY: John C. Brons DATE 11/13/8-

EFFECTIVE DATE: 11-14-84


INDIAN POINT NO. 3
NUCLEAR POWER PLANT
WATCH ORGANIZATION
Shift Supervisor, SRO
Shift Technical Advisor
Senior Reactor Operator, SRO
Reactor Operator
Nuclear Plant Operators
Watch Health Physics Technician
Watch Chemistry Technician
Watch Maintenance Persons
Watch I&C Technician
Security Force

IP3 EMERGENCY RESPONSE GANIZATION

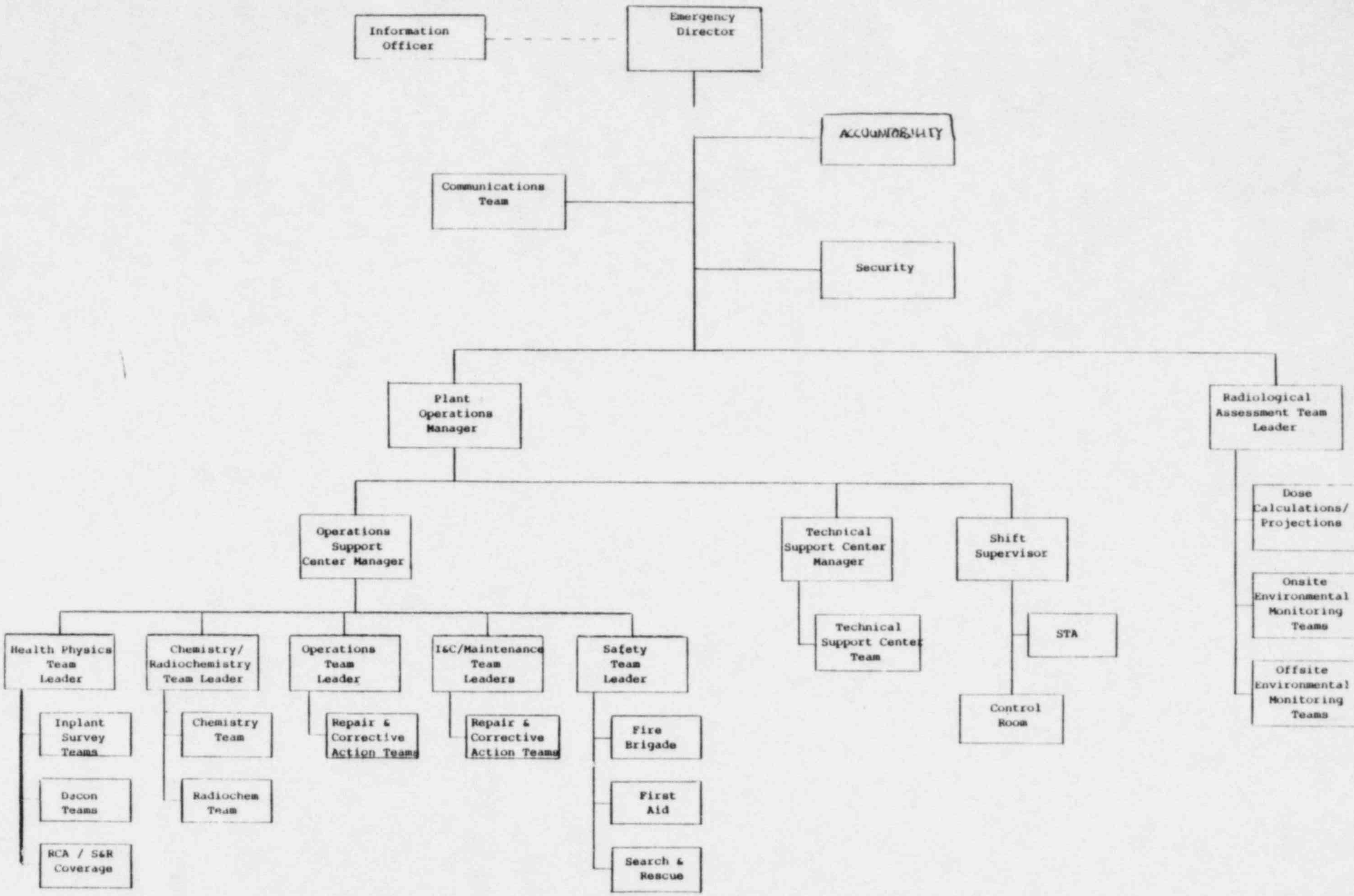


TABLE 5-2

INDIAN POINT EMERGENCY RESPONSE STAFFING

1. Emergency Director

   Resident Manager
   Superintendent of Power
   Technical Services Superintendent
   Radiological & Environmental Services Superintendent
   Assistant to the Resident Manager
   Shift Supervisor

2. Plant Operations Manager

   Superintendent of Power
   Operations Superintendent
   Technical Services Superintendent
   Shift Supervisor

3. Operations Support Center Supervisor

   Maintenance Superintendent
   I & C Superintendent
   Assistant Maintenance Superintendent
   I & C General Supervisor

4. Technical Support Center Manager

   Technical Services Superintendent
   Electrical Engineer
   Mechanical Engineer
   Reactor Engineer
   Performance & Reliability Supervisor
   Shift Technical Advisors

5. Radiological Assessment Team Leader

   Radiological & Environmental Services Superintendent
   Senior Radiological Engineer
   Chemistry General Supervisor
   Radiological Engineer

6. Lead Accountability Officer

   Office Manager
   Personnel Manager
   Security Shift Coordinator (off hours)

7. Security and Safety

   Safety and Fire Protection Superintendent
   Security Supervisor
   Asst. Security and Safety Supervisor
   Security Shift Coordinator

EAL (INITIATING CONDITIONS)

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Table 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	REFERENCE PLANT EMERGENCY PROCEDURES	PROTECTIVE ACTION RECOMMENDATIONS*
I. REACTOR AND REACTOR COOLANT SYSTEM				
A. RCS Leakage and Loss of Coolant Accident (LOCA)				
1. Exceeding primary system leak rate technical specifications.	a. Uncontrolled leakage from unknown source > 1 gpm (excluding RCP seal leakage and leakage to closed systems) b. Uncontrolled leakage from known sources >10 gpm (excluding RCP seal leakage and leakage to closed systems)	Notification of Unusual Event	PEP-ES-1 PEP-ES-1A SOP-RCS-5	
2. Failure of safety or relief valve in a safety related system to close following reduction to applicable pressure.	a. Pressurizer relief valve open, indications: i. Valve position indicator ii. Accoustical Monitor iii. Temperature indicator b. Pressurizer safeties open, Indications: i. Temperature indicator ii. Accoustical Monitor	Notification of Unusual Event	PEP-ES-1 PEP-ES-1 SOP-RCS-5 SOP-RCS-4 ONOP-RCS-2	
3. Rod Ejection	a. Rod position indicators - off normal b. High and increasing V.C. temperature, pressure and humidity. c. High Containment Radiation Alarms.	Alert	ONOP-RC-1B PEP-ES-1 PEP-ES-1A	
4. Primary coolant leak rate greater than 50 gpm.	a. Leakage calculations per SOP-RCS-5 indicate greater than 50 gpm. b. Excessive charging flow. c. Increasing readings on containment radiation monitors (R-11 & R-12). d. Increasing containment humidity.	Alert	PEP-ES-1 PEP-ES-1A SOP-RCS-5	
5. Known loss of coolant accident that exceeds the capacity of the two operable charging pumps.	a. Pressurizer low pressure reactor trip b. Pressurizer low pressure safety injection signal. c. Increasing containment pressure, d. Increasing containment humidity, e. Increasing recirculation and containment sump levels, f. High containment radiation levels	Site Area Emergency	PEP-ES-1 PEP-ES-1A	
6. Any plant conditions following a LOCA that make the release of large amounts of radio-activity in a short period of time possible. Examples:	(Representative conditions found in a-d order is not important)			
a. Loss of two out of three fission product barriers with a potential loss of the third barrier, (e.g., LOCA with substantial clad damage and a potential loss of containment integrity).	a. LOCA identified above, and R-25/R-26 > 1000 R/hr	General Emergency	PEP-ES-1	-Shelter 2 mile radius -Shelter 5 miles Downwind -See Attachment 6.1 of IP-1017.
(Cont'd)	(Cont'd)			

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Table 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	REFERENCE PLANT EMERGENCY PROCEDURES	PROTECTION ACTION RECOMMENDATIONS*
REACTOR AND REACTOR COOLANT SYSTEM (CONT'D)				
A. RCS Leakage and Loss of Coolant Accident (LOCA) (Cont'd)				
b. Known small LOCA and initially successful ECCS. Subsequent failure of containment heat removal systems over several hours could lead to core melt and likely failure of containment	b. Calculation in IP-1001 indicates 1. NG dose rate >1R/hr at Site Boundary 2. I dose rate >5R/hr at Site Boundary	General Emergency (Cont'd)	PEP-ES-1 PEP-ES-1A	-Shelter 2 mile Radius -Shelter 5 miles Downwind
c. Small and large LOCA's with failure of ECCS to perform, leading to severe clad degradation or melt in from minutes to hours. Ultimate failure of containment likely for melt sequences. (Several hours likely to be available to complete protective actions unless containment is not isolated)	c. R-25, R-26 readings > 1000 R/hr		PEP-ES-1 PEP-ES-1A	-See attachment 6.1 of IP-1017.
B. Steam Generator Tube leakage/Rupture				
1. Exceeding primary/secondary leak rate Technical Specification with ECCS initiation	a. >0.3 gpm leakage per steam generator >1 gpm total leakage and ECCS initiation	Notification of Unusual Event	ONOP-SG-1	
2. Rapid gross failure of one steam generator tube with loss of offsite power	a. Increasing readings or alarm on steam generator blowdown radiation monitor (R-19) or, b. Increasing readings or alarm on steam jet air ejector radiation monitor (R-15) <u>and</u>, c. Loss of offsite power.	Alert	PEP-ES-1 PEP-ES-1B PEP-EL-1 ONOP-SG-1	
3. Rapid failure of steam generator tubes of sufficient magnitude to automatically initiate Safety Injection on low pressurizer pressure	a. Low pressurizer pressure safety injection b. Increasing reading or alarm on steam generator blowdown radiation monitor (R-19). c. Increasing readings or alarm on steam jet air injector radiation monitor (R-15)	Alert	PEP-ES-1 PEP-ES-1B	
4. Rapid failure of steam generator tubes as described above, with a loss of offsite power.	a. Same as 5 above, with loss of offsite power	Site Area Emergency	PEP-ES-1 PEP-ES-1B PEP-EL-1	

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Table 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTION RECOMMENDATIONS*
I. REACTOR AND REACTOR COOLANT SYSTEM (CONT'D)				
C. Reactor Core Degradation and Fuel Damage				
1. Fuel damage as indicated by:				
a. High coolant activity sample (e.g., exceeding) coolant technical specifications for iodine spike).	a. Same as initiating conditions b. GFFD alarm and lab analysis which indiates an increase on failed fuel	Notification of Unusual Event	ONOP-RCS-4	
2. Severe loss of fuel cladding: a. Very high coolant activity sample (e.g., in excess of 300 uCi/cc equivalent of I-131).	a. Same as initiating conditions	Alert	ONOP-RCS-4	
3. Fuel damage accident with release of radioactivity to containment and/or fuel storage building	a. Observation of fuel damage b. Plant vent iodine monitor >300 uCi/cc I-131 c. High and increasing V.C. temperature, Pressure and humidity d. High containment or Fuel Handling Building Radiation Alarms.	Alert	PEP-RM-1 PEP-RP-1 PEP-RP-2 ONOP-RCS-4	
4. Main steam line break with greater than 50 gpm primary to secondary leak and indication of fuel damage	a. Main steam line break, and b. Primary to secondary leak >50 gpm c. Fuel damage as indicated in Step C.1	Site Area Emergency	PEP-ES-1 PEP-ES-1B PEP-ES-1C ONOP-ES-1 ONOP-SG-1	-Consider Protection Actions based on actual Magnitude of damage or expected damage -Precautionary Shelter out to 5 miles (Downwind ERPA's)
5. Degraded core with possible loss of coolable geometry.	a. Core exit thermocouples $\geq 600^{\circ}$F, or b. RCS Temperature approaching saturation or saturated and c. Degraded core are indicated in Step C.1 and C.2 above.	Site Area Emergency	PEP-ES-1 PEP-ES-1G	

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TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATIONS	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTIONS RECOMMENDATIONS*
I. REACTOR AND REACTOR COOLANT SYSTEM (CONT'D)				
C. Reactor Core Degradation and Fuel Damage (Cont'd)				
6. Major damage to spent fuel in either the containment or fuel storage building (it will cause the plant vent radiation monitor (R-14) to peg offscale)	a. R-14 offscale b. R-5 (Fuel Storage Building) > 15mR/hr, c. R-2 (Containment) > 75 mR/hr, d. R-7 (Containment) > 75 mR/hr e. R-25, R-26 show increase f. Increasing readings or alarms on Containment radiation monitors (R-11 & R-12)	Site Area Emergency	PEP-RP-1 PEP-RP-2 PEP-RM-1	
7. Loss of Spent Fuel Coolant	a. Spent Fuel Pool Level Alarm with water level anticipated to decrease below top of fuel. b. High Radiation Alarm ARM-R-5	Site Area Emergency	ONOP-SFP-1	- Consider precautionary sheltering out to 2 miles depending on age of fuel and expected time to re-institute cooling.
8. Loss of two out of three fission product barriers with a potential loss of the third barrier, (e.g., LOCA with substantial clad damage and a potential loss of containment integrity.	a. LOCA identified in Section I, step A.4, R-25, R-26 readings > 1000 R/hr.	General Emergency	PEP-ES-1 PEP-ES-1A	- Shelter 2 mile radius - Shelter 5 miles Downwind - See Attachment 6.1 of IP-1017.
D. Reactor Coolant System				
1. RCS temperature and/or pressure exceeding technical specification limits in figure 2.1-1 of the tech specs or RCS pressure 2735 psig.	a. Same as initiating conditions	Notification of Unusual Event	ONOP-RCS-2	
2. Reactor coolant pump locked rotor which causes fuel failure.	a. RCP locked rotor, and b. Fuel failure as defined in Section I, Step C.1,	Alert	ONOP-RCS-1 ONOP-RCS-4	

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INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATIONS	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTION ACTIONS RECOMMENDATIONS*
II. MAIN STEAM SYSTEM				
1. Ra . depressurization of PWR secondary side.	a. Same as initiating condition	Notification of Unusual Event	PEP-ES-1C PEP-ES-1 ONOP-ES-1	
2. Main steam line break of significant proportion coincident with a primary to secondary leak rate that would release radioactive material to the environment in excess of technical specification limits.	a. Major steam break (e.g. piping >6" diameter b. Significant primary to secondary leakage (e.g. 10 gpm).	Alert	PEP-ES-1 PEP-ES-1C PEP-ES-1B ONOP-SG-1 ONOP-ES-1	

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INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATIONS	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTIONS RECOMMENDATIONS*
III. FIRE				
1. Fire within the plant, not affecting safety systems that lasts 10 minutes.	a. Same as initiating conditions	Notification of Unusual Event	SOP-FP-1 SOP-FP-1	
2. Fire potentially affecting safety systems.	a. Same as initiating conditions	Alert	PEP-FP-1 PEP-FP-2	
3. Fire compromising the functions of safery systems.	a. Same as initiating conditions	Site Area Emergency	PEP-FP-1 PEP-FP-2 PEP-RPC-2	
4. Fire which causes plant conditions that make the release of large amounts of radioactivity in a short period of time probable, or the loss of physical control of the plant.	a. Same as initiating conditions	General Emergency	PEP FP-1 PEP-FP-2 PEP-RPC-2	- Evacuate 2 mile radius - Evacuate 5 miles Downwind - See attachment 6.1 of IP-1017.

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INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTIONS RECOMMENDATIONS*
IV. RADIOLOGICAL EFFLUENT MONITORING AND RADIATION MONITORING				
1. Instantaneous radiological effluent technical specification limits exceeded.	a. Exceeds instantaneous setpoint of R-14	Notification of Unusual Event	PEP-RM-1	
2. Accidental release of waste liquid in excess of technical specification limits.	a. See technical specifications, Appendix B Section 2.4.1.	Notification of Unusual Event		
3. Radiation levels of airborne contamination which indicate a severe degradation in the control of radioactive materials (e.g., increase of a factor of 1000 in direct radiation readings within facility)	a. Same as initiating condition	Alert		
4. Radiological effluents greater than 10 times technical specification instantaneous limits (an instantaneous rate which if continued over 2 hours, would result in about 1 mR at the site boundary under average meteorological conditions)	a. Same as initiating condition (e.g., Noble Gas release in excess of .2 Ci/sec, Iodine release of 3.0×10^{-5} Ci/sec, check site boundary dose for actual dose for actual release and meteorological conditions prior to classifying emergency).	Alert		
5. Effluent monitors (~~R-14~~ delete, R-14 and R-24A, R-27) H.P. reading on plant vent detect levels corresponding to greater than 500 mR/hr for ½ hour <u>or</u> greater than 500 mRhr WB for 2 minutes (or five times these levels to the thyroid) at the site boundary for <u>adverse meteorology</u>. no loss cont ... anticipated	a. (Any one or more of the following conditions would be cause for a declaration of a Site Area Emergency) i. ~~R-14 offscale for ½ hour~~ Plant vent reading >40 mR/hr on contact for 2 minutes. R-24 and R-24A onscale R-27 reads ≥ 1.28 E+6 uCi/cc for ½ hr ← F4 R-27 reads ≥ 1.28 E+6 uCi/cc for more than 2 minutes. ii. R-25, R-26 ≥ 7.9×10^4 R/hr for ½ hr or more >1000 R/hr R-25, R-26 ≥ 7.9×10^5 R/hr for 2 min. or more iii. R-10 ≥ 310 mR/hr for ½ hour ~~or more~~ delete R-10 ≥ 3100 mR/hr for 2 minutes or more iv. Site Boundary surveys detect: WB (γ): > 50 mR/hr for ½ hour >500 mR/hr for 2 minutes Iodine: >250 mR/hr breathed for ½ hr (based on dose projection) > 2500 mR/hr breathed for 2 minutes (based on dose projection)	Site Area Emergency		- See attachment 6.3 of IP-1017 (PAG's)

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INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATIONS	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTIONS RECOMMENDATIONS*
V. RADIOLOGICAL EFFLUENT MONITORING AND RADIATION MONITORING (CONT'D)				
6. Effluent monitors, (R-14, R-24 and R-24A, R-27, H.P. reading on plant vent) detect levels corresponding to 1 R/hr WB or 5 R/hr thyroid at the Site Boundary under actual meteorological conditions or R-10, R-25, R-26 indicate levels corresponding to the above conditions and anticipated loss of containment integrity.	i. Indications from effluent monitors or Environmental survey results: Noble Gas Dose rate ≥1 R/hr (limiting case) Iodine dose rate ≥5 R/hr (use chem sample ratio do not use assumed ratio). ii. Readings on R-25, R-26 > 1000 R/hr.	General Emergency	PEP-RM-1	- Evacuate 2 miles Downwind - Shelter 2 miles radius - Shelter 5 miles Downwind - See attachment 6.1 of IP-1017.

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TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATIONS	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTIONS RECOMMENDATIONS*
CONTROL ROOM INACCESSIBILITY				
1. Evacuation of the Control Room is anticipated or required with control of shutdown systems established from local stations.	a. Same as initiating condition	Alert	PEP-RPC-2	
2. Evacuation of Control Room and control of shutdown systems not established from local stations in 15 minutes.	a. Same as initiating condition	Site Area Emergency	PEP-RPC-2	
3. Loss of physical control of the plant	a. Same as initiating condition	General Emergency	PEP-RPC-2	- Evacuate 2 miles radius - Evacuate 5 miles downwind - See attachment 6.1 of IP-1017.

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INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATIONS	REFERENCE PLANT EMERGENCY PROCEDURES	PROTECTIVE ACTION RECOMMENDATIONS*
I. ELECTRICAL DISTRIBUTION SYSTEM				
1. Loss of offsite power or loss of onsite AC power capability.	a. Same as initiating condition	Notification of Unusual Event	PEP-EL-1	
2. Loss of offsite power and a loss of all onsite AC power (see Site Area Emergency for extended loss)	a. Same as initiating condition	Alert	PEP-EL-1	
3. Loss of all onsite DC power (See Site Area Emergency for extended loss)	a. Same as initiating condition	Alert	PEP-EL-1	
4. Loss of offsite power and loss of onsite AC power for more than 15 minutes.	a. Same as initiating condition	Site Area Emergency	PEP-EL-1	
5. Loss of all vital onsite DC power for more than 15 minutes.	a. Same as initiating condition	Site Area Emergency	PEP-EL-1	
6. Any failure of offsite and on-site power, along with a total loss of auxiliary feedwater, for several hours, would lead to eventual core melt and likely failure of containment.	a. Same as initiating condition	General Emergency	PEP-EL-1 PEP-FW-1	- Shelter 2 mile radius - Shelter 5 miles downwind - See attachment 6.1 of IP-1017.

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TABLE 1-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTION RECOMMENDATIONS*
NATURAL PHENOMENA				
1. Natural phenomenon, beyond usual levels, being experienced or projected (e.g. earthquake - detected on station seismic instrumentation, hurricane, tornado or flood)	a. Same as initiating conditions	Notification of Unusual Event	PEP-S-1 ONOP-RW-3	
2. Severe natural phenomena being experienced or projected a. Earthquake, greater than design basis earthquake levels. b. Flood, near design levels c. Any tornado striking facility d. Hurricane winds near design basis level	a. Same as initiating conditions	Alert	PEP-S-1 ONOP-RW-3	
3. Severe natural phenomena being experienced or projected while plant is not in cold shutdown a. Earthquake greater than Design Basis Levels (0.15g horizontal and 0.10g vertical) b. Flood greater than design levels (12.5 feet) causing loss of protection of vital equipment at lower levels. c. Sustained winds in excess of design levels (200 mph), or tornadoes.	a. Same as initiating conditions	Site Area Emergency	PEP-S-1 ONOP-RW-3	
4. Any major natural phenomenon that makes the release of large amounts of radioactivity in a short period of time probable.	a. Same as initiating conditions	General Emergency	PEP-S-1 ONOP-RW-3	- Shelter 2 mile radius - Shelter 5 miles downwind - See attachment 6.1 of IP-1017.

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TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTIONS RECOMMENDATIONS*
MAN-MADE HAZARDS				
1. Significant hazards being experienced or projected onsite or in close proximity to the site.	a. Aircraft crash onsite b. Uncontrolled toxic or flammable gas release near or onsite. c. Explosion near or onsite d. Turbine rotating component failure causing rapid plant shutdown e. Unusual aircraft activity on site or near the facility.	Notification of Unusual Event	PEP-TG-2 PEP-FP-1 PEP-FP-2	
2. Hazards being experienced or projected on the facility.	a. Aircraft crash on facility b. Missile impacts from whatever source on facility. c. Known explosion damage to facility affecting plant operation d. Entry into facility environs of uncontrolled toxic or flammable gases e. Turbine failure causing casing penetration.	Alert	PEP-TG-2 PEP-FP-1 PEP-FP-2	
3. Hazards being experienced or projected with plant not in cold shutdown.	a. Aircraft crash affecting vital structures by impact or fire. b. Severe damage to safe shutdown equipment from missiles or explosions c. Entry of uncontrolled flammable gases into vital areas. Entry of uncontrolled toxic gases into areas where lack of access to the area constitutes a safety problem.	Site Area Emergency	PEP-TG-2 PEP-FP-1 PEP-FP-2	
4. Any major internal or external hazards which could cause massive common damage to plant systems resulting in plant conditions that make the release of large amounts of radioactivity in a short period of time probable.	a. Same as initiating conditions	General Emergency	PEP-TG-2 PEP-FP-1 PEP-FP-2	- Shelter 2 mile radius - Shelter 5 miles downwind - See attachment 6.1 of IP-1017.

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INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATIONS	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTIONS RECOMMENDATIONS*
CONTAMINATION INJURED INDIVIDUAL				
1. Transportation of a radiologically contaminated injured individual from the site to an offsite hospital.	a. Same as initiating condition	Notification of Unusual Event		

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INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTION RECOMMENDATIONS*
X. INDICATION AND ALARMS				
1. Indications or alarms on process or effluent parameters not functional in control room to an extent requiring plant shutdown or other significant loss of assessment or communication capability.	a. Same as initiating condition	Notification of Unusual Event	ONOP-RPC-1 ONOP-EL-3	
2. Most or all alarms (annunciators) lost	a. Same as initiating condition	Alert	ONOP-RPC-1 ONOP-EL-3	
3. Most or all alarms (annunciators) lost and plant transient initiated or in progress.	a. Same as initiating condition	Site Area Emergency	ONOP-EL-3 ONOP-RPC-1	

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INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATIONS	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTIONS RECOMMENDATIONS*
XI. EMERGENCY CORE COOLING SYSTEM (ECCS)				
1. Emergency Core Cooling System (ECCS) initiated and discharged to vessel	a. Safeguards equipment running, and b. Indication that water has been discharged to the reactor vessel/RCS.	Notification of Unusual Event	PEP-ES-1	

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INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS		POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTION ACTIONS RECOMMENDATIONS*
SECURITY					
1. Security threat, attempted entry or attempted sabotage.	a.	Same as initiating conditions	Notification of Unusual Event	PEP-RPC-2	
	b.	Bomb threats specifically threating the physical safety of the Indian Point Station which result in the actual discovery of a bomb or which requires the use of offsite assistance.			
2. Ongoing security compromise	a.	Same as initiating conditions	Alert	PEP-RPC-2	
3. Security threat involving the imminent loss of physical control of the plant.	a.	Same as initiating conditions	Site Area Emergency	PEP-RPC-2	
4. Loss of physical control of the plant.	a.	Same as initiating conditions	General Emergency	PEP-RPC-2	- Evacuate 2 mile radius - Evacuate 5 miles downwind - See attachment 6.1 of IP-1017.

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TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

	INITIATING CONDITIONS		POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTION RECOMMENDATION*
XIII.	PLANT PROTECTION SYSTEMS					
1.	Failure of the reactor protection system to initiate and complete a reactor trip which brings the reactor subcritical.	a.	Same as initiating condition	Alert	PEP-RPC-1	
2.	Transient requiring operation of shutdown systems with failure of the Reactor to trip. (continued power generation but no cl-d damage immediately evident).	a.	Same as initiating condition	Site Area Emergency	PEP-RPC-1	
3.	Transient requiring operation of shutdown systems with failure to trip which results in clad damage or additional failure of core cooling and makeup systems that makes the release of large amounts of radioactivity in a short period of time probable.	a.	R-25/R-26 > 1000 R/hr.	General Emergency	PEP-RPC-1 PEP-ES-1 PEP-ES-1C	- Shelter 2 mile radius - Shelter 5 miles downwind - See attachment 6.1 of IP-1017.

* The recommendations listed here are extremely conservative and are based on worst case plant conditions and meteorology and no prognosis for the termination of the emergency in the short term. Each accident must be reviewed independently and Protective Actions based on that reality.

TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	PROTECTIVE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTION RECOMMENDATION*
XIV. CONTAINMENT				
1. Loss of containment integrity requiring shutdown by technical specifications.	a. Same as initiating condition	Notification of Unusual Event	Tech. Specs Section 3.0	

* The recommendations listed here are extremely conservative and are based on worst case plant conditions and meteorology and no prognosis for the termination of the emergency in the short term. Each accident must be reviewed independently and Protective Actions based on that reality.

TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATIONS	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTION ACTION RECOMMENDATIONS*
XV. ENGINEERED SAFETY FEATURE OR FIRE PROTECTION SYSTEM				
1. Loss of engineered safety feature or fire protection system function requiring shutdown by technical specifications.	a. Same as initiating condition	Notification of Unusual Event	ONOP-CB-1	

* The recommendations listed here are extremely conservative and are based on worst case plant conditions and meteorology and no prognosis for the termination of the emergency in the short term. Each accident must be reviewed independently and Protective Actions based on that reality.

TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATIONS	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTION ACTION RECOMMENDATIONS*
XVI. FEEDWATER AND CONDENSATE SYSTEMS				
1. Any transient initiated by a loss of feedwater and condensate systems followed by failure of auxiliary feedwater system for extended periods that makes the release of large amounts of radioactivity in a short period of time probable.	a. Same as initiating condition	General Emergency	PEP-FW-1 PEP-ES-1	- Shelter 2 mile radius - Shelter 5 miles downwind - See attachment 6.1 of IP-1017.

* The recommendations listed here are extremely conservative and are based on worst case plant conditions and meteorology and no prognosis for the termination of the emergency in the short term. Each accident must be reviewed independently and Protective Actions based on that reality.

TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS OR OPERATORS	EMERGENCY CLASSIFICATIONS	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTION ACTION RECOMMENDATIONS*
XVII. GENERAL PLANT CONDITIONS				
1. Other plant conditions exist that warrant increased awareness on the part of NRC, State and Local Offsite authorities or require plant shutdown under Appendix A technical specification requirements or involve other than controlled shutdown or trip.	a. Same as initiating condition	Notification of Unusual Event		
2. Any abnormal plant conditions, not covered above, which in the opinion of th hift Supervisor warrant precautionary activation of the Technical Support Center (TSC), the Emergency Operations Facility (EOF) and the Operations Support Center (OSC).	a. Same as initiating condition	Alert		-Depending on the Severity of this initiating condition, other initiating conditions should be consulted for protective action recommendations.
3. Any abnormal plant conditions which in the opinion of the Shift Supervisor warrants activation of the emergency facilities and monitoring teams or a precautionary notification to authorities near site.	a. Same as initiating condition	Site Area Emergency		

* The recommendations listed here are extremely conservative and are based on worst case plant conditions and meteorology and no prognosis for the termination of the emergency in the short term. Each accident must be reviewed independently and Protective Actions based on that reality.

TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTION RECOMMENDATION*
VIII. GENERAL EQUIPMENT DAMAGE				
1. Complete loss of any function needed for plant cold shutdown.	a. Same as initiating condition	Alert	POP-RHR-1	
2. Complete loss of any function needed for plant hot shutdown condition.	a. Same as initiating condition	Site Area Emergency	PPOP-FW-1	

* The recommendations listed here are extremely conservative and are based on worst case plant conditions and meteorology and no prognosis for the termination of the emergency in the short term. Each accident must be reviewed independently and Protective Actions based on that reality.

TABLE 4-1

XIX. RECOVERY PHASE

Criteria for entering the long term Recovery Phase are as follows:

1. Radioactive releases to the environment caused by accident conditions have been terminated.

2. Plant is in Cold Shutdown.

3. Plant is in a Stable Condition.

Prior to entering the recovery mode onsite and offsite officials shall be notified and confered with and appropriate lines of communication established for recovery operations.

NOTIFICATION OF UNUSUAL EVENT CLASSIFICATION

Unusual Events are situations in progress or ones which have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occur. In this classification, response may involve support from members of the plant staff and/or local services.

The Shift Supervisor or Senior Reactor Operator will declare an Unusual Event when any of the initiating conditions listed below exist, or at any time in his judgement plant status warrants such a declaration.

Initiating Conditions for Notification of an Unusual Event

1. Emergency Core Cooling System (ECCS) initiated and discharged to vessel, with the respect to the following bonafide emergencies:

   a) Loss of reactor coolant to containment

   b) Exceeding primary/secondary leak rate technical specification

   c) Steam break upstream of the main steam line isolation valves or feedwater break downstream of check valve

   d) Main steam break downstream of the main steam line isolation valves

2. a) Instantaneous radiological effluent technical specification limits exceeded

   b) Accidental release of waste liquid in excess of technical specification limits

3. a) Fuel damage indication from RCS activity samples in excess of technical specifications (e.g. chemist sample or failed fuel monitor reading)

   b) High coolant activity sample (e.g. exceeding coolant technical specifications for iodine spike).

4. RCS temperature and/or pressure exceeding technical specification limits or RCS pressure greater than 2735 psig

5. Exceeding RCS leak rate technical specification limits of 10 gpm from a known source or 1 gpm from an unkown source.

6. Failure of safety or relief valve in a safety related system to close following reduction to applicable pressure.

7. Loss of offsite power or loss of onsite AC power capability

8. Loss of containment integrity requiring shutdown by technical specifications

9. Loss of engineered safety feature or fire protection system function requiring shutdown by technical specifications

10. Fire within the plant not affecting safety systems that lasts greater than 10 minutes

11. Rod ejection

12. Rapid depressurization of PWR secondary side

13. Indications or alarms on process or effluent parameters not functional in control room to an extent requiring plant shutdown or other significant loss of assessment or communication ability

14. Security threat, attempted entry or attempted sabotage. (Bomb threats specifically threatening the physical safety of the Indian Point Station which result in the actual discovery of a bomb or which require use of offsite assistance are included in this classification)

15. Natural phenomenon, beyond usual levels, being experienced or projected (e.g. earthquake detected on station seismic instrumentation, hurricane, tornado, or flood)

16. Significant hazards being experienced or projected onsite or in close proximity to the site (e.g. aircraft crash, derailment of train onsite, near or onsite toxic or flammable gas release, near or onsite explosion, main turbine rotating component failure causing rapid plant shutdown)

17. Other plant conditions exist that warrant increased awareness on the part of NRC, State and Local offsite authorities or require plant shutdown under Appendix A Technical Specification Requirements or involve other than controlled shutdown or trip

18. Transportation of a radiologically contaminated injured individual from the site to an offsite hospital

CONTROL ROOM

For Control Room activities, see IP-1030; the flowcharts and checklists.

ALERT CLASSIFICATION

The Alert class involves specific events that are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

The Shift Supervisor or Senior Reactor Operator will declare an Alert Emergency when any of the initiating conditions listed below exist or at anytime in his judgement plant status warrants such a declaration.

Initiating Conditions for an Alert Emergency :(Non-Radiological)

1. Total loss of offsite power and a total loss of onsite AC power (see Area Emergency for extended loss)
2. Total loss of all onsite DC power (see Site Area Emergency for extended loss)
3. Complete loss of any function needed for plant cold shut down
4. Failure of the reactor protection system to initiate and complete a reactor trip which brings the reactor subcritical
5. Fire potentially affecting safety systems
6. Most or all alarms (annunciators) lost
7. On-going security compromise
8. Severe natural phenomena being experienced or projected:

   a) Earthquake, greater than design basis earthquake levels

   b) Flood, near design levels

   c) Any tornado striking facility

   d) Hurricane winds near design basis level
9. Hazards being experienced or projected on the facility:

   a) Aircraft crash on facility

   b) Missile impacts from what ever source on facility

   c) Known explosion damage to facility affecting plant operation

   d) Entry into facility environs of toxic or flammable gases except normal operations and scheduled deliveries

   e) Turbine failure causing casing penetration
10. Evacuation of the Control Room is anticipated or required with control of shutdown systems established from local stations.

Initiation Conditions for an Alert Emergency (Radiological)

1. Severe loss of fuel cladding:

   a. Very high coolant activity sample (e.g. in excess of 300 uCi/cc equivalent of I-131)

   b. Failed fuel monitor indicates increase greater than 1% fuel failures within 30 minutes or 5% total fuel failures

2. Rapid gross failure of one steam generator tube with loss of offsite power.

3. Rapid failure of steam generator tubes of sufficient magnitude to automatically initiate Safety Injection on low pressurizer pressure.

4. Main steam line break of significant proportion coincident with a primary to secondary leak rate that would release radioactive material to the environment in excess of technical specification limits.

5. Primary coolant leak rate greater than 50 gpm

6. Radiation levels or airborne contamination which indicate a severe degradation in the control of radioactive materials (e.g., increase of a factor of 1000 in direct radiation readings within facility)

7. Reactor coolant pump with locked rotor which causes fuel failure

8. Fuel damage accident with the release of radioactivity to containment and/or fuel handling building

9. Radiological effluents greater than 10 times technical specification instantaneous limits (an instantaneous rate which if continued over 2 hours, would result in about 1 mR at the site boundary under average meteorological conditions)

10. Any abnormal plant conditions, not covered above, which in the opinion of the Shift Supervisor warrant precautionary activation of the Technical Support Center (TSC), the Operations Support Center (OSC) and the Emergency Operations Facility (EOF)

CONTROL ROOM

For Control Room activities, see IP-1030; the flowcharts and checklists.

EMERGENCY DIRECTOR CHECK LIST

ASSIGN: EOF personnel specific functions.

WHEN MANNED, notify CCR (Shift Supv.) and assume command/control
- Get briefing from S.S. or POM as to current status

ANNOUNCE EOF has assumed control and that you are in charge

ASSURE COMMUNICATIONS ARE ACCOMPLISHED:
- Have Onsite Comm. talk to CR Comm. & see whose been called. This must be done immediately after EOF assumes control over emergency
- Assure offsite agencies are updated every 30 mins. re: status using EP Form 30a,b,c (provide completed, initialed form to Offsite Comm.)
- Assure NRC is updated approx. every 30 min. (ENS)
- If Control Room is not making 30 min. PA announcements, have Onsite Comm. update OSC, TSC, CR, LAO, RC, Security of any changes and keep them updated (approx. every 30 mins.)
- Keep Unit #2, Adjacent businesses, Rails updated

PROTECTIVE ACTIONS:
- Get on and offsite dose projections from RATL
- Consider Site Evacuation/recommendations for onsite employees
- Discuss Prot. Action Rec. for offsite population with RATL
  - check evac. plans & time estimates
- Discuss need for KI with RATL
  - in plant survey teams
  - offsite monitoring teams
- Have RATL keep you aware of changes in meteorological conditions

DISCUSSION/DECISIONS:
- Ensure Accountability is complete
- Consider Site Evacuation
- Brief (or have RATL or Tech. Advisor brief) upper gallery personnel approximately every 30 mins.
- Discuss with H.P. Team Leader/OSC Supv. re: overexposure authorizations
- Periodically check plant status against EAL's
- Advise POM what is being done offsite
- Authorize Search & Rescue operations
- Consider contacting INPO, Brookhaven Lab.
- Establish comm. with Recovery Center - advise of plant status, what is being done on and offsite and what we need.

SHIFT STAFFING:

- Give direction to other facilities when & to prepare for split shifts.

- Issue direction on when to diminish initial staffing for split shifts.

YOU SHOULD TALK TO:

- RATL re: Protective Actions
  Meteorology changes
  KI for inplant & offsite teams

- Upstairs re: Brief upper gallery approx. every 30 mins.

- POM, TSM, OSM re: emergency classification status changes. via direct line phone.

- POM re: Plant status updates
  Brief him on offsite status

- H.P. Team Leader & OSC Supv. re: Overexposure authorizations

- Lead Acct. Officer re: Authorize search & rescue operations

- Technical Advisor re: Plant prognosis/forecast

- P.I.O. re: Information for/and press releases

- Interface with NRC representatives.

RECOVERY:

- Turn over to Recovery Manager

- Ongoing discussions with Headquarters regarding Technical Support, and procurement activities.

- Assure Administrative/Logistics is supporting the site for food/lodging scheduling.

- Request long term support from outside agencies if required.

- Ensure Post Accident Environmental Monitoring is ongoing.

TECHNICAL ADVISOR

- Review incoming Technical Data (EP Form #31 a,b,&c)

  Approve, question, change (via onsite communicator if change or question)

  Send up for copy & transparency

  Log important data & status on flip charts

- Fill out Notification Fact Sheet, Part III, Form 30c
- Discuss plant conditions & prognosis with E.D.
- Check EAL table for change in emergency classification
- Brief upper gallery as ED requests

Forms:

- Plant Status Log

Plant Status Log	Part I	31a	From TSC
	Part II	31b	From TSC
	Part III	31c	From CR

- Notification Fact Sheet, Part III, plant parameters, Form 30c

RATL

- Schedule & assign Rad Assessment Team responsibilities
- Assure habitability of Assembly Areas & EOF
  - recommend moving, evacuation or other action to E.D.
- Determine if Con Ed is effected
- Request personnel from OSC for vehicle & equipment contamination check if necessary
- Assess need for KI (continue this thought throughout)
- Make Protective Action Recommendations to:
  Railroads
  Adjacent businesses
  Site personnel
  Counties & State
  after discussion with the E.D. and consideration of the following:
  Sheltering & Evacuation Options
  PAG's
  Evacuation Time Estimates
  Meteorological Conditions
  Plant Conditions and Prognosis
- Review DAHP calculations & discuss with him
- Continue constant discussions with E.D.
- Participate in briefings with upper gallery personnel approximately every ½ hour - 45 mins.
- Fill out Part II of EP Form #30
- Review Parts I & II of EP Form #30
- Observe dose accountability
- Prepare to receive: noteworthy Reuter-Stokes data
  LCRISA
  Calculations & recommendations for Protection Action Rec.
  Info. on teams from Rad. Communicator
- MIDAS will notify you when meteorology & overlays change

[You should make this announcement to Staff, E.D., & Upper Gallery]

- Assure E.D. advises the POM as to what is occurring offsite

Chg 2-6 Emergency Chg

- Contact Security Chief or Security Shift Coordinator periodically and provide information and direction re:
  - Plant conditions
  - Radiological conditions
  - Restricting movement of security personnel throughout site.

DOSE ASSESSMENT H.P.

- Met data & Forecast
- Put overlay on map & mark onsite map
- Determine if: - EOF, Con Ed, adjacent business, Rails, need to be notified or affected by possible release.
  - Also Guard Posts - fixed & mobile
- Request onsite/offsite team be readied (Rad Communicator)
- Determine where to send onsite/offsite teams (Rad Communicator)
- Determine Xu/Q : SB, 2 mi, 5 mi, 10 mi, POI's — HP-85, MIDAS, Incorporate Reuter Stokes Data, Incorporate Field Team Data
- Discuss Protective Action Recommendations with RATL
- If no release yet, calculate 1 Ci/sec release
- To project doses: uCi/cc in VC x 1500 cfm press relief line
  - Fill out offsite protective action recommendation forms
  - Transparencies of dose forms posted
- Fill out form 30, every 30 minutes or when release changes.
- Affected ERPA's
- Discuss with Rad Communicator forecast on plume, expected fields, offsite survy team results.
- When release rate, Emergency Status, or met data changes recalculate, Notify Rad Communicator, EOF Monitor & Form 30.

MIDAS OPERATOR CHECK LIST

- Access Midas and provide meteorology and forecast data immediately.
  - Record meteorology on board
  - Place map overlay on table

  ** Notify RATL when meteorology and/or overlay change

- Provide Reuter Stokes readings as necessary (at least every 15 minutes)
  - Give to: - DAHP (Noteworthy doses RATL should be informed)
    - Rad Communicator

- If main terminal is down, access back-up terminals for meteorology and Reuter Stokes data.

- Run LCRISA, ACRISO, and Class B as requested to compare HP-85 results.
  - Make available to DAHP and Rad Communicator

- Assist Rad Communicator and DAHP as necessary.

EOF RADIOLOGICAL ASSESSMENT MONITOR

- If radiological concerns are present follow below - if not, report to RATL for assignment.
- Responsible for accountability if clerks not present
- Place Halon system on Manual (real emergency)
- Start the 2 minute background on SAM-2 counter [use Con Ed Procedure IP-1020]
- Check radiation survey instruments and take initial survey of the EOF & hallway using EP Form #42
- Establish Control Point in hall.
  - stansions & rope
  - step off pads
  - plastic boots
  - frisker placement
- Lock upper EOF entrance, provide key to guard
- Start Triton Air Sampler [use Con Ed Procedure IP-1041]
- Set up Control Point dosimetry inside main door to EOF
  - dosimetry
  - dosimeter charger
  - sign in & out
  - Post frisking instructions
- Post upstairs & down (tape to wall chest height) for EOF area monitoring.
  Film Badge (or TLD)
  Dosimeter
- Instruct security guard on his duties for issuing & logging dosimeter and personnel using frisker & step off pads.

  NOTE: Guards should be posted outside main EOF door (unless conditions prohibit) and he should wear film badge/TLD & dosimeter at all times. An EOF key should be issued to him to allow EOF door to be locked, yet still have access.
- Start a particulate, iodine air sample (Con Ed Procedure IP-1020)
- Complete set-up of SAM-2 counter (Con Ed Procedure IP-1020)
- Periodic surveys - post results for EOF (Upper & lower)
- Count samples - post results
- Be concerned with guards dose & dose to EOF personnel
- Call OSC Dosimetry for update on Dose Accountability

Forms:
EOF Radiological Survey #42
EOF Dosimetry Record #45

EOF SECURITY GUARD

- Posted outside EOF main door

- Restrict access to EOF lower & upper levels
  - Authorized personnel to have access only
    (EOF communicator can provide input on who's allowed in)
  - Use key provided by EOF monitor to allow access to upper EOF & lower EOF

- If radiological conditions are present:

  - sign out & in, film badge/TLD & dosimeters to personnel exiting controlled area.
    (these are inside EOF main door)

  - issue shoe covers to those exiting controlled area.

  - assure those entering controlled area frisk prior to entering & respect step off pads.

  - check personnel dosimetry periodically

Forms:

EOF Personnel Dosimetry Record #45

EOF CLERKS

- Accountability & EOF Who's Who
  - post transparency
  - call Lead Accountability Officer for accountability

- Receive data from TSC (EP Form 31a,b,)
  from CR (EP Form 31c)
  - send to Tech. Adv. to proofread

  Then: 1) make transparency & post
  2) hard copy to State & County representatives upstairs

- Receive (EP Form 30a,b,c) - Xerox, send original back to communicator

- Telecopy out EP Form 30a,b,c
  - hard copy to State & Counties in upper gallery

- Receive & post flip charts

- EOF & Site dose transparencies

- Offsite data transparencies - hand copy to State & Counties &, when necessary, telecopy to County Dose Assessment personnel.

Form 30a,b,c :

Telecopy to: Orange, Rockland, Putnam, Westchester, NYS, & Recovery Center
Hard Copy to State & County & NRC Representatives in the EOF
Send Original back to Communicator

Form 31a,b,c :

- Receive by Telecopier from TSC (31 a&b), CR (31c)
- Send to Technical Advisor to proof
- Receive back
- Make transparencies & post 31a,b
- Hard Copy a,b,c for EOF Reps.
- Original back to Technical Advisor

SITE AREA EMERGENCY CLASSIFICATION

A Site Area Emergency is a class which involves events that are in process or have occured which involve actual or likely major failures of plant functions needed for protection of the public. Radiological conditions outside of the IP-3 protected area, but within the exclusion area could possibly present a radiological hazard to personnel and in this instance, the IP-3 Emergency Director may assume control of emergency actions on both sites, including shutdown and evacuation as required.

The Shift Supervisor or Senior Reactor Operator will declare a Site Area Emergency when any of the initiating conditions listed below exist, or at any time in his judgement plant status warrants such a declaration.

Initiating Conditions for a Site Area Emergency

1. Loss of coolant accident that exceeds the capacity of the two operable charging pumps

2. Degraded core with possible loss of coolable geometry

3. Rapid failure of steam generator tubes (greater than 200 gpm leakage) with loss of offsite power

4. Main steam line break with greater than 50 gpm primary to secondary leak and indication of fuel damage

5. Loss of offsite power and loss of onsite AC power for more than 15 minutes

6. Loss of all vital onsite DC power for more than 15 minutes

7. Complete loss of any function needed for plant hot shutdown condition

8. Transient requiring operation of shutdown systems with the failure of the Reactor to trip (continued power generation but no core damage immediately evident)

9. a. Major damage to spent fuel in either the containment or fuel storage building (it will cause the plant vent radiation monitor (R-14) to peg offscale)

   b. Loss of spent fuel coolant

10. Fire compromising the functions of safety systems

11. Most or all alarms (annunciators) lost and plant transient initiated or in progress

12. Effluent monitc (R-14, R-24/R-24A, R-27 or H.P. reading on plant vent) der .c levels corresponding to greater than 500 mR/hr for ½ hour or greater than 500 mR/hr WB for 2 minutes (or five times these levels to the thyroid) at the site boundary for adverse meteorology. (Anyone or more of the following conditions would be cause for a declaration of a Site Area Emergency.)

   a. R-14 offscale for ½ hour
      Plant vent reading greater than 40 mR/hr on contact for 2 minutes
      R-24/R-24A onscale
      R-27 reads greater than 1.28 E+5 uCi/sec for ½ hr.
      R-27 reads greater than 1.28 E+6 uCi/sec for more than 2 mins.

   b. R-25, R-26 greater than or equal to 7.9 x 10^4 R/hr for ½ hr. or more
      R-25, R-26 greater than or equal to 7.9 x 10^5 R/hr for 2 minutes or more

   c. R-10 greater than or equal to 310 mR/hr for ½ hour or more
      R-10 greater than or equal to 3100 mR/hr for 2 minutes or more

   d. Site Boundary surveys detect:

      WB (Gamma): Greater than 50 mR/hr for ½ hr
      Greater than 500 mR/hr for 2 minutes
      Iodine : Greater than 250 mR/hr breathed for ½ hr (based on dose projection)
      Greater than 2500 mR/hr breathed for 2 minutes (based on dose projection)

13. Security threat involving the imminent loss of physical control of the plant.

14. Severe natural phenomena being experienced while plant is not in cold shutdown:

   a) Earthquake greater than Design Basis Levels (0.15g horizontal and 0.10g vertical)

   b) Flood greater than design levels (12.5 feet) causing loss of protection of vital equipment at lower levels

   c) Winds in excess of design levels (200 mph)

15. Hazards being experienced or projected with plant not in cold shutdown:

   a) Aircraft crash affecting vital structures by impact or fire

   b) Severe damage to safe shutdown equipment from missiles or explosion

   c) Entry of uncontrolled flammable gases into vital areas.
      Entry of uncontrolled toxic gases into areas where lack of access to the area constitutes a safety problem.

16. Evacuation of Control Room and control of shutdown systems established from local stations in 15 minutes

17. Any abnormal plant conditions which in the opinion of the Shift Supervisor warrants activation of the emergency facilities and monitoring teams or a precautionary notification to authorities near site

CHECK OFF LISTS

See pages A-3 through A-13 for the SITE AREA emergency classification.

GENERAL EMERGENCY

A General Emergency is a class which involves events that are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity.

Thyroid and/or whole body doses outside of the protected area but within the exclusion area may present a radiological hazard to personnel, and in that instance the IP-3 Emergency Director may assume control of emergency actions on both the IP-3 and IP-2 sites, including shut down and/or evacuation as required.

The Shift Supervisor or Senior Reactor Operator will declare a General Emergency when any of the initiating conditions listed below exist, or at any time in his judgement plant status warrants such a declaration.

Initiating Conditions for a General Emergency

1. Effluent monitors, (R-14, R-24/R-24A, R-27, or HP reading on plant vent) detect levels corresponding to 1 R/hr WB or 5 R/hr 9 thyroid at the Site Boundary under actual meteorological conditions OR Accident Monitor (R-10) or High Range Containment Monitors (R-25, R-26) indicate levels corresponding to the above and with an anticipated loss of containment integrity.

    a. Indications from effluent monitors or environmental survey results:

       Noble Gas dose rate greater than or equal to 1 R/hr (limiting case)

       Iodine dose rate greater than or equal to 5 R/hr (use chem sample ratio do not use assumed ratio)

    b. High Range Containment Monitor (R-25, R-26) (R/hr)

where R-25, R-26	Greater than or equal to	$\frac{2.06 \times 10^{3}}{\text{Xu/Q site boundary}}$	= R/hr and anticipated loss of containment integrity

    c.

Where R-10	Greater than or equal to	$\frac{8.06}{\text{Xu/Q site boundary}}$	= mR/hr and anticipated loss of containment integrity

9

NOTE: Do not declare a General Emergency based on R-10 alone. It is necessary to confirm that reading with indications from R-2, R-7, R-25, R-26 or survey meters and anticipated loss of containment integrity.

2. Loss of two out of three fission product barriers with a potential loss of the third barrier, (e.g., LOCA with substantial core damage and a potential loss of containment integrity).

3. Loss of physical control of the plant

4. Other plant conditions exist, from whatever the source, that make the release of large amounts of radioactivity in a short period of time possible (e.g.,

   a) Small and large LOCA's with failure of ECCS to perform, leading to severe core degradation or melt in from minutes to hours. Ultimate failure of containment likely for melt sequences (Several hours likely to be available to complete protective actions unless containment is not isolated.)

   b) Any transient initiated by loss of feedwater and condensate systems followed by failure of auxiliary feedwater system for extended periods that makes the release of large amounts of radioactivity in a short period of time probable.

   c) Transient requiring operation of shutdown systems with failure to trip which results in core damage or additional failure of core cooling and makeup systems (which could lead to core melt)

   d) Any failure of offsite and onsite power along with total loss of auxilary feedwater for several hours. Would lead to eventual core melt and likely failure of containment.

   e) Small LOCA and initially successful ECCS. (Subsequent failure of containment heat removal systems over several hours could lead to core melt and likely failure of containment.)

5. Fire which causes plant conditions that make the release of large amounts of radioactivity in a short period of time probable, or the loss of a physical control of the plant.

6. Any major natural phenomenon that makes the release of large amounts of radioactivity in a short period of time probable.

7. Any major internal or external hazards which could cause massive common damage to plant systems resulting in plant conditions that make the release of large amounts of radioactivity in a short period of time probable.

CHECK OFF LISTS

See pages A-3 through A-13 for the SITE AREA emergency classification.

Procedure #	Procedure Title	Rev. #	Date
Dose Assessment			
IP-1001	Determination of Magnitude of Release	6	3/85
IP-1003	Obtaining Meteorological Data	5	2/84
IP-1004	Midas Computer System-Dose Assessment Models	4	11/84
IP-1005	Planned Disch. of Cont. Atmos. During Accident Conditions	3	2/84
Environmental Monitoring			
IP-1010	In-Plant/Site Perimeter Surveys	6	3/85
IP-1011	Offsite Monitoring	6	3/84
IP-1015	Post Accident Environmental Sampling and Counting	0	7/84
Protective Actions			
IP-1017	Rec. Protective Actions for Offsite Population	4	1/85
IP-1019	Emergency Use of Potassium Iodide	0	6/84
Personnel Injury			
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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1001 REV. 6

TITLE " DETERMINING THE MAGNITUDE OF RELEASE "

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PORC REVIEW: [signature] DATE 3/5/85

APPROVED BY: John C Brons DATE 3/8/85

EFFECTIVE DATE: 03/30/85

DETERMINING THE MAGNITUDE OF RELEASE

1.0 INTENT

The intent of this procedure is to describe the various methods of estimating the whole body and thyroid dose to onsite personnel and the offsite population in the event of an accidental release of radioactivity to the environment.

2.0 DISCUSSION

It is important for the Shift Supervisor/Emergency Director to assess the accident as soon as possible and to determine the potential exposure to the off-site population. The exposure may be to the whole body due to fields created by a noble gas cloud, and may include exposures to the thyroid from radioiodines if they are present.

It is important to make this early assessment of potential exposure and have it available for the State and County Officials. This information will assist them in their decisions regarding protective actions for the public and, in the most extreme case, will provide guidance on the movement of the offsite population from the affected areas. This information will also be used by the onsite Emergency Director for establishing protective actions for onsite personnel.

There are two primary methods of estimating offsite dose. One method is to use plant instrumentation to determine a release rate and, using dispersion factors based on meteorology, project offsite dose. The second method involves taking radiation readings and samples offsite and, using ratios of dispersion factors, estimating the dose at various offsite locations. The offsite readings would be taken by mobile survey teams and by installed offsite instrumentation (Reuter Stokes monitors). Both of these methods should be used to verify accuracy.

The following is an overview of the contents of this procedure:

3.0 "Initial Dose Assessment Actions" briefly outlines early assessment actions to be taken by the Control Room and later, dose assessment personnel in the EOF.

4.0 Listing of possible "Types of Accidents" and the radiation monitors which would be affected.

5.0 Approximate times for when radiation monitor or technician readings would be available in the early stages.

6.0 "Methods of Assessment": describing use of the flowcharts.

7.0 Descriptions of the "10 mile area and sector map".

8.0 How to use the "Overlays" and discussions of parameters used and sampling locations.

9.0 "Dose Assessment Based on Field Survey" data. Gamma, Beta and Iodine.

10.0 "Site Protective Actions" gives ideas on the consideration of evacuation, sheltering and KI for site personnel.

11.0 "Offsite Protective Action Recommendations" directs attention to IP-1017 for possible recommendations to New York State.

12.0 List of "Attachments".

3.0 INITIAL DOSE ASSESSMENT ACTIONS

Dispatch:
- Dispatch chemist to sample RCS, containment, or Plant Vent as appropriate.
- Dispatch site perimeter monitoring teams as appropriate (IP-1010).
- Dispatch offsite monitoring teams as appropriate (IP-1011).
- Dispatch H.P. to Plant Vent if necessary for teletector reading (if R-14, R-27 or R-13 warrant it)

Dose Projections:
- R-14, R-27, R-13 or Plant Vent reading
- Determine meteorological parameters (IP-1003)
- Initiate dose projection calculations
  - HP-85 computer program
  - MIDAS - LCRISA program (Control L), ACRISO | 6
  - EP Flowcharts 1a and b
  - Determine Site Boundary, 2,5, and 10 mile dose rates and doses for whole body and thyroid
- Make initial call to Counties/State with calculations

Site Protective Actions:
- Review assembly and emergency facility area habitability.
- KI for emerg. workers or areas?
- Take action for site personnel consistent with recommendations made for offsite. Consider KI.

Initial Protective Actions:
- Determine affected sectors/ERPAS using MIDAS, overlays and 10 mile map. | 6
- Determine Meteorological Forecast - MIDAS (Control F)
- Determine plume arrival time and evacuation times.
- Recommend protective actions to offsite authorities as appropriate (IP-1017).
- Call with updates to State & Counties.

Verify Projected Doses:
- Verify projected doses with monitoring data.
  - Site perimeter readings
  - Offsite readings
  - Reuter Stokes data- MIDAS (Control P) | 6
- EOF to exchange offsite monitoring data with state and counties

NOTE: Control Room in early stages of the emergency should be considering protective action recommendations for offsite populations. Guidance is given in IP-1017.

4.0 TYPES OF ACCIDENTS

Various types of accidents have been postulated and are provided here as a guide to the various monitor responses that would be expected should that type of accident occur.

Type of Accidents	Monitor Response
4.1 LOCA with no core damage Reactor coolant system (RCS) activity only	-R-2/R-7/R-10/R-25/R-26 spike response with rapid decrease over 15-30 minutes -R-11 increases (probably offscale) with subsequent decrease -R-12 increases then rapidly decreases over 15-30 minutes -R-13/R-14/R-27 show increase only if VC isolation was not held
4.2 Clad failure - up to the entire gap activity could be released to VC (iodines and noble gases)(long lived gases)	-R-10 shows increase 6 -R-2/R-7 read offscale -R-25/R-26 read up to 10^4 R/hr. -VC Iodine Monitor shows increase -R-27 indicates up to 50uCi/cc if releasing -R-14 may be offscale due to shine 6
4.3 Fuel melt in addition to Clad failure (iodines, noble gases, bromines and other moderately volatile nuclides; Sr-89, Ru-106, CS-137, Ce-144, Ba-140, Tellurium-132)	-R-10 increases up to 15 R/hr -R-2/R-7 read offscale -R-25/R-26 read up to $2x10^6$ R/hr. -VC Iodine Monitor offscale -R-14 offscale due to high background through VC wall -R-27 increases if releasing
4.4 Fuel element damage in FSB ("long-lived" isotopes, as in clad failures, but on a smaller scale)	-Magnitude of release and isotopic mix depend on decay time of fuel since its removal from the core. -FSB Iodine Monitor may show increase -FSB APD shows increase -R-27 shows increase if releasing. -R-14 offscale due to high background through FSB wall.
4.5 Gas release from tank rupture in PAB (gas decay tank, VCT, CVCS tanks)	-R-27 indicates up tp 10^7 uCi/sec. -R-14 offscale -PAB APD may show increase
4.6 Fuel melt, containment integrity does not hold	-R-14 offscale -R-10 offscale (greater than 1000 R/hr.) -R-25/R-26 read up to $2x10^6$ R/Hr. -R-27 shows increase -ARMS in RAMS and Admin. Bldg. show increase.

5.0 ASSESSMENT AVAILABILITY

Various monitors and assessment parameters are available within various times to assess the accident conditions.

Approximate Time of Monitor and Assessment Availability	Monitors and Surveys
Immediate	R-10 R-14 (low) less than 5.0×10^{-4} uCi/cc R-27 APD's and Iodine Monitors R-25/R-26
15 minutes	Vent monitor (R-24 and R-24A in PAB) 7.5 to 7.5×10^{4} uCi/cc Reuter Stokes offsite monitors
25 minutes	Plant vent (HP tech reading) 1.0×10^{3} to 3.0×10^{3} uCi/cc
30-45 minutes	Beta, Gamma readings at site boundary
1 - 1½ hrs.	Isotopic analysis (chem. sample of plant vent)
1½ hrs.	Iodine Sample in field

6

6.0 METHOD OF ASSESSMENT

In order to determine what the actual or potential offsite exposure to the population is, it is necessary to evaluate the accident relative to the source term, release rate (actual or potential), meteorological conditions (wind speed, wind direction, and Pasquill Stability Category), concentration (noble gas and radioiodines) at the environmental point of interest (site boundary, etc.) and the relationship of the concentration to whole body and thyroid exposure in mRem/hr.

6.1 Use EP Flowchart #1a (Attachment 12.1), Table I Conversion Factors (Attachment 12.2) and the following steps to determine the release rate.

6.1.1 Primary

6.1.1.1 Determine release rate from reading on R-27 (uCi/sec and uCi/cc)

NOTE: See Attachments 12.10 and 12.11 for proper use of R-27 during emergencies.

6.1.1.2 Send chemist for sample of stack (normal method, radiation levels permitting)

6.1.2 Secondary

6.1.2.1 R-14 on scale

a) Determine release rate from reading on R-14

b) Send chemist for stack sample (normal method, radiation levels permitting) 6

6.1.2.2 R-14 Offscale

a) Send HP Tech to read R-24 and R-24A high range plant vent monitor in PAB and use to determine release rate.

<u>If Offscale low,</u>

Send HP Tech to plant vent to obtain uCi/cc and release rate per HPI-12.4

b) Send chemist for stack sample (emergency method, RECS-042). Count <u>total</u> iodines first, then noble gas and particulates.

6.1.3 Until the chem. sample analyses are available, an assumed 10^{-4} I/NG ratio is used. When chemist has results from the chem. sample, recalculate using the actual I/NG ratio.

$$\frac{(\text{Total I/NG from chem sample} \times \text{est. Iodine Release Rate})}{10^{-4}} = \text{Corrected Iodine Release Rate}$$

6.2 Use EP Flowchart #1b (Attachment 12.3) to determine the following:

6.2.1 Site Boundary Concentration

6.2.2. Site Boundary Dose (Whole Body and Thyroid)

6.2.3 Point of Interest Dose (Whole Body and Thyroid) including 2,5 and 10 mile distance doses (use Tables 2,5 & 6)

6.3 An estimate of the duration of the release should be obtained from the Emergency Director. If unknown, use <u>4 hours</u> as a first estimate.

6.4 If initial dose projections are done using the estimated (Total I/NG) ratio 10^{-4}, one should state to offsite authorities that it is only a <u>rough</u> estimate, and that we will be providing more accurate information by direct sampling as soon as possible. This should be considered when taking or recommending protective actions based on projected thyroid exposure.

6.5 Implementation Procedure IP-1017 offers assistance on the recommendations which can be made to offsite authorities regarding offsite protective actions for the public.

<u>NOTE</u>: The HP-85 computer program or the MIDAS computer program (in the ECF) can be used in conjunction with this manual method of calculation.

7.0 <u>10 MILE AREA AND SECTOR MAP</u>

The 10 mile area sector map is to be used in conjunction with the "Indian Point Station Radioactive Release Overlays". The map's center point is the Indian Point superheater stack, and it extends from there out to 10 miles. The map is radially sectioned off into 16 equal sections, each of 22 ½°. Each of the 16 sectors is further subdivided into 10 more sections by 1 through 10 mile concentric rings with the origin at the superheater stack. This results in a total of 160 "mile zone/sectors". Also included are Emergency Response Planning Areas (ERPAS) which can be used when identifying areas for recommending protective actions. Within each sector are:

Sites with dose integrating devices (TLD's) (located on the map by red dots).

Emergency sampling sites (located on the map by yellow dots). These are predetermined locations at which the offsite monitoring teams are to sample.

Fixed air sampling sites with continuously running samplers (located on the map by green dots). Charcoal and millipore filters are changed weekly.

Reuter Stokes instruments providing gamma exposure, both real time readings and accumulated dose (located on the map by blue dots). A wind-set is also installed at each Reuter Stokes providing wind speed and direction at that point.

8.0 OVERLAY DESCRIPTION AND USE

8.1 The normal method of determining $^{Xu}/Q$ values is by accessing the MIDAS computer model. These values in conjuction with the diffusion overlays are used to determine concentration (X) in uCi/cc. In the event the MIDAS computer is not available, the Xu/Q values for any point of interest can be determined by using the diffusion overlays. These diffusion overlays are in the file "Indian Point Station Radioactive Release Overlays", and were prepared for the Indian Point site using data collected from an NYU study which calculated dispersion patterns for the Indian Point area of the Hudson Valley. Indian Point is situated in an area which is significantly influenced by topographic features which create a channeling effect for the air along the river valley with low wind speeds. This channeling effect is negated by high wind speeds, ie. greater than 4 m/sec. 6

8.2 The overlays have isopleths of normalized concentration Xu/Q, where Xu/Q is a relative measurement of how the plume is spreading in the horizontal and vertical directions with a given atmospheric stability.

X = concentration Ci/m^3 or uCi/cc

u = windspeed m/sec

Q = source strength (release rate) Ci/sec

Normalized concentration means that the effects of windspeed and source strength have been assumed to be 1. To get an <u>actual</u> concentration, you must multiply $\frac{Xu}{Q}$ times $\frac{Q}{u} = X$

8.3 Meteorological data (wind speed and wind direction), and the Pasquill category are obtained from the Control Room meteorological display panel, or via backup methods as outlined in IP-1003. Using this data in conjunction with Figure 1 (Attachment 12.4), Flowchart for Overlay Selection and Placement, the proper diffusion overlay can be found.

Ex. 1. - windspeed 3m/sec, wind direction 110°, Pasquill C:
Overlay is yellow C.

Ex. 2. - windspeed 5m/sec, wind direction 200°, Pasquill B:
Overlay is red B.

8.4 The position of this overlay is described here as well as in Figure 1.

8.4.1 For downvalley (blue) or upvalley flow (yellow), align the E-W, N-S positions parallel to those on the map orientation point.

8.4.1.1 Downvalley (blue) overlays should be placed so that the plume is traveling south.

8.4.1.2 Upvalley (yellow) overlays should be placed so that the plume is traveling north.

8.4.2 For crossvalley flow (red), align the overlay origin so that the plume is traveling in the direction of the wind.

The placement of the overlay on the 10 mile area map: a.) indicates the plume travel direction; b.) normalized concentrations Xu/Q, within the area of the plume.

NOTE: Wind direction is always <u>from</u> (ie. 180° = wind <u>from</u> the south).

8.5 <u>Tables 2,5 & 6</u> (Attachments 12.5,12.8,12.9), have been compiled in a similar way as the diffusion curves (MIDAS). Using site meteorology, the user is able to determine the dispersion factor (Xu/Q) for the site boundary and the 2,5, and 10 mile locations for each stability. This table acts in place of choosing the site boundary location from the 10 mile area sector map and picking the dispersion factor off the overlay. Tables 2,5 & 6 will also give guidance to the Emergency Director or RATL as to where to deploy the onsite monitoring teams. 6

9.0 DOSE ASSESSMENT BASED ON FIELD SURVEYS

9.1 Field survey radiological data is available via:

9.1.1 Site perimeter surveys (See IP-1010)
9.1.2 Offsite surveys (See IP-1011)
9.1.3 Reuter Stokes monitor readings (available from the EOF or MIDAS (Control P)) 6

9.2 <u>Gamma Assessment (Whole Body exposure)</u>

Gamma measurements are indicative of whole body exposures received from a radiological release.

9.2.1 <u>Using gamma survey instruments:</u>

a. <u>Portable gamma instrumentation:</u>

Gamma mR/hr will give the Whole Body exposure rate at the survey location. Multiplying gamma mR/hr by the duration of stay will give the Whole Body exposure in mR.

b. <u>Reuter Stokes</u>

Gamma readout is in mR/hr. Multiplying gamma mR/hr by the duration of stay will give the whole body exposure in mR.

9.2.2 TLD Sites

Within the 10 mile radius surrounding the Indian Point site there are designated TLD Sites which integrate gamma dose. These are changed monthly. In the event of a radiological accident, these must be collected and processed. TLD's may provide estimates of whole body exposure.

9.3 Beta Assessment

Beta surveys are helpful in assessing the location of the plume or plume deposition. If you are in the plume, a beta - gamma survey instrument will indicate a significant beta reading. However, if you were not in the plume or near a contaminated surface, the beta reading will be low or nil. (Beta's are short range emmitting particles traveling only several meters in air).

9.3.1 Beta gamma readings taken in the environment may be affected by various sources. The following table describes the effects on the open window/closed window (OW/CW) ratio when using a beta-gamma survey instrument.

Source of Radiation	OW/CW ratio ($\beta+\gamma/\gamma$)*
a. Contained source of activity (e.g. radioactive gases in V.C.)	1.0 or slightly greater than 1.0
b. Plume (reading taken near plume but not in plume)	1.0 or slightly greater than 1.0
c. Plume (reading taken in plume)	at least 2.0
d. Deposition on ground from particulates in plume	- Near ground, at least 2.0 - Above ground, instrument pointed upward, ratio lower than at ground level.

* The ratios given above are approximate and can be affected by a combination of sources.

9.3.2 Protective actions for beta exposure would be to remove persons from the plume by sheltering or evacuation. Sheltering is effective because beta particles are not penetrating and will not travel through walls.

9.4 Iodine Assessment

Radioiodines released as a result of a radiological emergency are thyroid "seekers". These iodines, whether ingested or breathed, travel to the thyroid gland and remain there as any other iodine would. The radioactive properties of the radioiodines would deliver a radiation dose to the thyroid gland.

As the mass of the thyroid decreases, the doses from radioactive iodine increase. Consequently, for infant or child thyroid, the dose is greater than would be for an adult breathing the same air. It is for this reason that the child becomes the limiting case, and protective actions for the general population are determined from child thyroid doses. Taking breathing rates into consideration, it is estimated that the child thyroid dose from inhalation is greater than the adult dose by a factor of two.

9.4.1 Field Samples:

(CR, TSC, EOF, Site Boundary, Fixed and emergency offsite monitoring locations and/or requested locations both in-plant and offsite)

9.4.1.1 Charcoal and millipore filters or silver zeolite cartridges analyzed by the Single Channel Analyzer to determine I-131 activity (uCi/cc)

I-131(uCi/cc) X 1.6 X10^9 = child thyroid dose rate (mR/hr breathed)

9.4.1.2 Note: During emergency conditions it is probable that high levels of gaseous activity other than radioiodine will be present. There is a potential for the entrapment of theses gases in silver zeolite or charcoal cartridges during sampling. Therefore if this condition exists or is suspected to exist, a nitrogen (or clean air) purge of cartridges should be perfomed prior to counting.

Caution: All samples/sample holders should be surveyed for radiation levels prior to handling. Much higher than normal radiation levels on samples/sample holders may be encountered in accident condition.

1. Take sample to 4th floor Chemistry Counting Lab.
2. Remove particulate filter from holder.
3. Attach filter holder to threaded connector inside fume hood.
4. Set regulator to 10 psi out on bottles.
5. Open both inlet valves and purge for 5-10 seconds.
6. Secure purge, remove filter holder and count particulate and iodine filters as required. (Counting location and instrumentation used dependent on plant condition and radiation levels).

6

9.4.1.3 Concentrations measured in the field using an HP-210 probe or equivalent (counts total Activity)

Concentration x DCF* = Dose rate child thyroid

$$\frac{uCi}{cc} \times \frac{mRem}{hr} / \frac{uCi}{cc} = mRem/hr$$

NOTE: multiplying the child thyroid dose rate by hours breathed will give the Iodine dose received by the child thyoid.

* Dose Conversion Factors (DCF) can be found in Table 3 (Attachment 12.6).

9.4.2 Gamma Dose Rate to Thyroid Dose Conversion

The gamma dose rate (mR/hr) can be used to make an initial estimate of thyroid dose rate due to radioiodines (this method can be used prior to the counting of iodine sampling filters).

9.4.2.1 Assuming a (Total I/NG) ratio of 10^{-4}:

Gamma mR/hr x .15 = Child thyroid dose rate (mR/hr breathed)

9.4.2.2 If the assumed (Total I/NG) ratio of 10^{-4} is used and then the actual (Total I/NG) ratio becomes available, the thyroid dose rate would be calculated using the following equation:

$$\frac{\text{actual (Total I/NG) ratio}}{10^{-4}} \times .15 \times \text{Gamma mR/hr} = \text{mR/hr breathed child thyroid}$$

Multiplying the thyroid dose rate obtained above by the actual hours breathed will give an estimated iodine exposure received by the child thyroid.

9.4.2.3 Table 3 (Attachment 12.6), includes the projected thyroid dose as a function of the individual iodine isotope concentrations in air and the projected exposure time. This can be used to more exactly convert radioiodine concentration field measurement to exposure if the isotopic mix is known.

10.0 SITE PROTECTIVE ACTIONS

For a Site Area or General Emergency, sheltering for site personnel is accomplished by assembly in designated areas.

For releases with iodine doses to the site population, issuance of potassium iodide (KI) may be considered. (Sheltering would also reduce the dose received from radioiodines). For a General Emergency with radiological consequences, issuance of KI to site personnel should be considered.

The decision to evacuate the site should be based on the estimated or actual release time, expected outdoor exposures, the fact that evacuation may cause more harm to personnel being outside, as well as the confusion of an evacuation rather than remaining indoors with proper sheltering.

11.0 OFFSITE PROTECTIVE ACTION RECOMMENDATIONS

The Shift Supervisor in the capacity of Emergency Director or the Emergency Director is charged with making protective action recommendations to New York State personnel for offsite populations.

IP-1017 "Recommmendation of Protective Actions for the Offsite Population" discusses methods and possible recommendations to be made by the Utility to offsite populations (via the State of New York).

12.0 ATTACHMENTS

12.1 EP Flowchart #1a - Flowchart for Determining Release Rate 6

12.2 Table 1 - Conversion Factors

12.3 EP Flowchart #1b - Flowchart for Determining Dose

12.4 Figure 1 - Use of Radioactive Release Overlays

12.5 Table 2 - Site Boundary/P.O.I. $^{XU}/Q$ Values

12.6 Table 3 - Total Inhalation Dose Conversion Factors

12.7 Table 4 - Sampling Point Distances and Locations

12.8 Table 5 - Verification Point $^{Xu}/Q$ Values

12.9 Table 6 - Reuter Stokes $^{Xu}/Q$ Values

12.10 R-27 Calibration Factors

12.11 R-27 Calibration Factor Worksheet 6

EP FLOW CHART 1A DETERMINING RELEASE RATE

DATE:

TIME:

NAME:

DATA:R-14 ________ (CPM) R-27 ________ (uCi/sec) VENT ________ (mr/hr) PVF ________ (CFM) QCC ________

READ R/27 uCi/sec * → R-27 x E-6 = RR(Ng) Ci/Sec
________ x E-6 = ________

READ R/14 CPM → R-14 x QCC x 4.72E-4 x PVF = RR(Ng) Ci/SEC
______ x ______ x 4.72 E-4 x ______ = ______

READ R24/R24A mr/hr → R-24 x CFa x 4.72E-4 x PVF = RR(Ng) Ci/SEC
______ x ______ x 4.72E-4 x ______ = ______

READING AT PLANT VENT → VENT x CF(b or c) x 4.72E-4 x PVF = RR(Ng) Ci/SEC
______ x ______ x 4.72E-4 x ______ = ______

→ CHEM SAMPLE

YES → ACTUAL IODINE RELEASE RATE (RR)
TOTAL I/NG x RR(Ng) = RR(I) Ci/sec
______ x ______ = ______

NO → ESTIMATED IODINE RELEASE (RR)
1 E-4 x RR(Ng) = RR(I) Ci/sec
1 E-4 x ______ = ______

RR(IODINE)
IODINE RELEASE RATE (Ci/sec)
____
[] actual
[] estimated

RR(Ng)
NOBLE GAS RELEASE RATE (Ci/sec)
____

* See Attachments 12.10 and 12.11 to ensure that the proper calibration is entered in R-27.

QCC = R-14 Quarterly Calib Constant (uCi/cc/CPM)	1 Ci=1 E+6 uCi
PVF=PLANT VENT FLOW (CFM)	1 R = 1000 mr
4.72 E-4 = $\frac{(m^3 x min)}{(ft^3 x sec)}$	Iodine= Total Iodine
	CFa,b,c=See table 1

9

Table 1

CONVERSION FACTORS

$\frac{uCi/cc}{mR/hr}$

Time After Reactor Shutdown	Column A R-24,24A High Range Plant Vent Monitor	Column B Contact With Plant Vent	Column C 6 Ft. From Plant Vent
0-2 hr.	0.487	6×10^{-4}	2.5×10^{-3}
2-4 hr.	0.830	1.2×10^{-3}	3.8×10^{-3}
4-6 hr.	1.2	1.6×10^{-3}	5.5×10^{-3}
6-12 hrs.	1.95	2.8×10^{-3}	9.5×10^{-3}
12-24 hrs.	3.5	5.5×10^{-3}	1.6×10^{-2}
24 hrs.-2 wks.	4.7	6.5×10^{-3}	2.0×10^{-2}
more than 2 wks.	5.3	7.3×10^{-3}	2.3×10^{-2}

NOTE: For R-27, the proper calibration factors are entered into the monitors data base. See Attachments 12.10 and 12.11. 6

EP FLOW CHART 1B SITE BOUNDARY/POINT OF INTEREST DOSE CALCULATION

DATA: W/S__________(m/sec) W/D__________(Deg) Pasquill__________ Xu/Q__________ Release Duration__________(hr) RR(Ng)__________ RR(I)__________

SITE BOUNDARY DOSE CALCULATION

__________ x (____/____) x (3 E5) x __________ = __________ mr

Xu/Q (S.B.) x(RR(Ng)/WS) x (3 E5) x Release Time=SB Ng Dose(mr)

__________ x (____/____) x (6.7 E8) x __________ = __________ mr

Xu/Q (S.B.) x(RR(I)/WS) x (6.7 E8) x Release Time=SB I Dose(mr)

NOTES:
1. Use release rates determined from EP flowchart 1A.
2. If isotopic mixture is known go to Table 3.
3. For inside the site boundary, divide the S.B. Iodine dose by 2 to obtain the adult dose.
4. For Site Boundary,2,5,10 Mile,Reuter Stokes and Verification point Xu/Q values use tables 2,5 and 6. For all other P.O.I.s use the overlays.

P.O.I. DOSE CALCULATION

DATA: P.O.I Xu/Q (Tables 2,5,6) ________ ________ ________ ________

2 mi | 5 mi | 10 mi | other

__________ x (__________/__________) = __________ mr

Ng S.B. Dose x (Xu/Q(POI) / Xu/Q(S.B)) = Ng P.O.I. Dose

__________ x (__________/__________) = __________ mr

I S.B. Dose x (Xu/Q(POI) / Xu/Q(S.B)) = I P.O.I. Dose

If Chem Sample just obtained

(Total I/Ng)xE4 ____/____ xE4 X P.O.I. Estimated Iodine Dose __________ = __________ mr

__________ mr
Corrected S.B. Iodine Dose

__________ mr
Corrected P.O.I. Iodine Dose

NOTES: 5. If 1E-4 I/Ng was used, it should be stated to authorities that the thyroid dose value is only a rough estimate, and we will be providing more accurate information by direct sampling shortly. This rough estimate value should be reviewed accordingly when taking or recommending protective actions based on projected thyroid exposure.

FIGURE 1

USE OF RADIOACTIVE RELEASE OVERLAYS

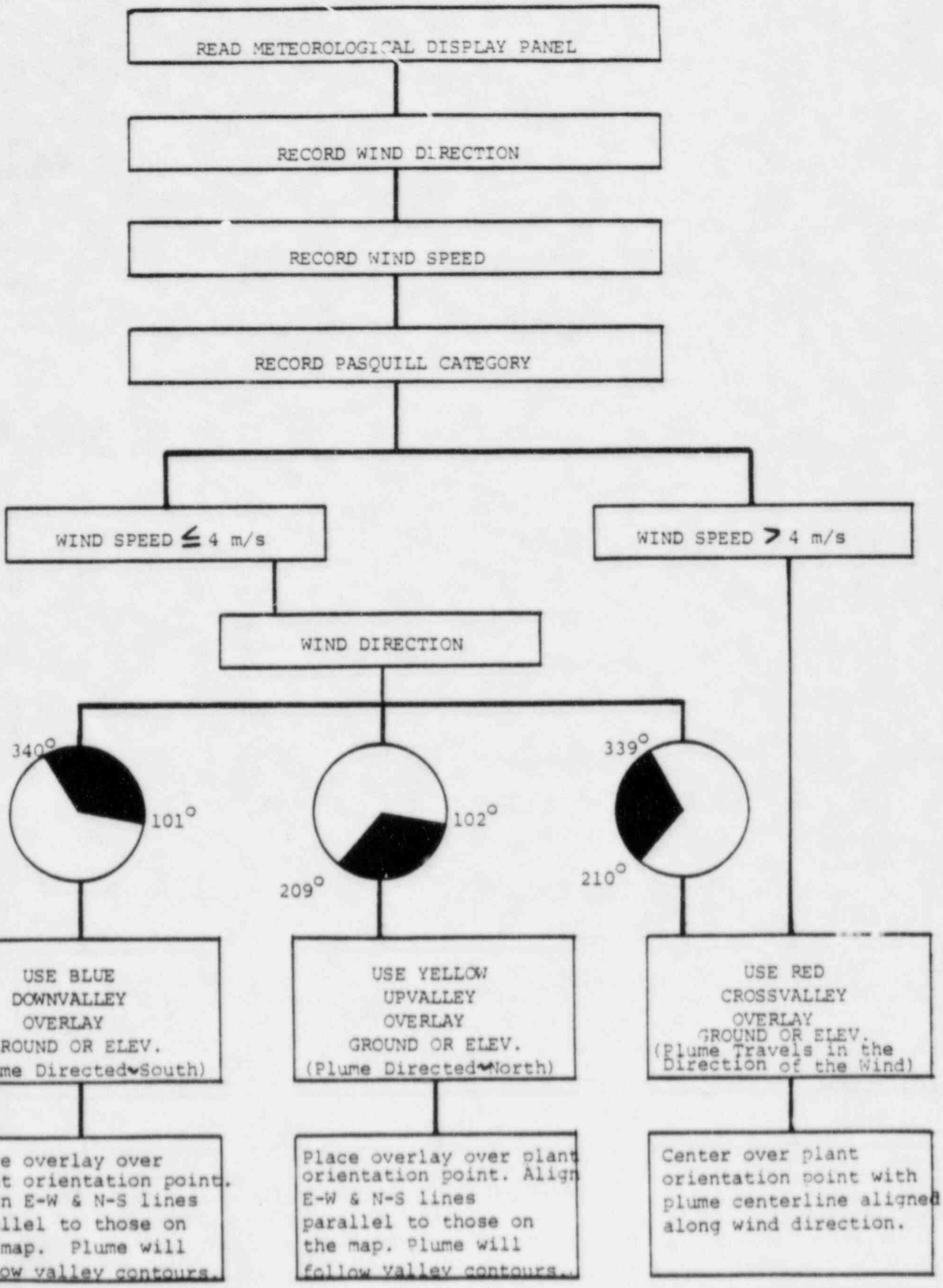

TABLE 2

SITE BOUNDARY $\frac{Xu}{Q}$ VALUES BY PASQUILL STABILITY CATEGORY

Sector	Dist(m)	A	B	C	D	E	F	G
1	183m	4.5E-5	1.2E-4	2.6E-4	6.6E-4	8.7E-4	1.3E-3	1.4E-3
2	396	1.2E-5	4.8E-5	1.1E-4	3.2E-4	4.9E-4	7.9E-4	1.0E-3
3	762	3.2E-6	1.8E-5	4.8E-5	1.4E-4	2.5E-4	4.7E-4	6.8E-4
4	686	3.9E-6	2.1E-5	5.6E-5	1.6E-4	2.8E-4	5.1E-4	7.3E-4
5	724	3.5E-6	1.9E-5	5.2E-5	1.5E-4	2.6E-4	4.9E-4	7.0E-4
6	609	4.9E-6	2.6E-5	6.6E-5	1.9E-4	3.2E-4	5.6E-4	8.0E-4
7	617	4.8E-6	2.5E-5	6.5E-5	1.9E-4	3.1E-4	5.6E-4	7.9E-4
8	716	3.6E-6	2.0E-5	5.3E-5	1.5E-4	2.7E-4	4.9E-4	7.1E-4
9	1112	1.8E-6	8.5E-6	2.8E-5	8.7E-5	1.6E-4	3.2E-4	4.9E-4
10	701	3.7E-6	2.0E-5	5.4E-5	1.6E-4	2.7E-4	5.0E-4	7.2E-4
11	457	8.9E-6	3.9E-5	9.6E-5	2.7E-4	4.3E-4	7.1E-4	9.5E-4
12	251	2.6E-5	8.3E-5	1.8E-4	4.9E-4	6.9E-4	1.0E-3	1.2E-3
13	175	4.8E-5	1.3E-4	2.7E-4	6.9E-4	9.0E-4	1.3E-3	1.4E-3
14	152	6.1E-5	1.5E-4	3.1E-4	8.0E-4	1.0E-3	1.4E-3	1.5E-3
15	137	7.3E-5	1.7E-4	3.5E-4	8.8E-4	1.1E-3	1.5E-3	1.6E-3
16	175	4.8E-5	1.3E-4	2.7E-4	6.9E-4	9.0E-4	1.3E-3	1.4E-3

TABLE 2

POINT OF INTEREST $^{Xu}/Q$ VALUES BY PASQUILL STABILITY CATEGORY

Sector	Dist(m)	A	B	C	D	E	F	G
	2mi	5.2E-7	8.3E-7	5.0E-6	1.9E-5	3.9E-5	9.6E-5	1.8E-4
	5mi	2.4E-7	3.2E-7	1.2E-6	5.1E-6	1.1E-5	3.1E-5	6.7E-5
	10mi	1.4E-7	1.8E-7	4.0E-7	2.1E-6	5.3E-6	1.5E-5	3.4E-5

TABLE 3

TOTAL INHALATION DOSE CONVERSION FACTORS

ISOTOPES	DOSE CONVERSION FACTOR $\frac{mRem}{hr} / \frac{uCi}{cc}$
I-131	1.6×10^9
I-132	7.9×10^7
I-133	5.4×10^8
I-134	4.0×10^7
I-135	1.6×10^8
Iodine Mix (post accident)	6.7×10^8

NOTE: If the Iodine mix is not known and it is within 24 hours of shutdown, use the Post Accident Iodine Mix dose conversion factor (6.7×10^8). After 24 hours, use the I-131 dose conversion factor.

* Concentration x Dose Conversion Factor = Dose Rate

$$(uCi/cc) \times \frac{mRem}{hr} / \frac{uCi}{cc} = mRem/hr$$

* Concentration can be determined by calculation or by field samples.

Field Samples: SAM - use I-131 DCF (1.6×10^9)
HP-210 - use Iodine Mix DCF (6.7×10^8)

TABLE 4

SAMPLING POINT - DISTANCES AND LOCATIONS

Sector	Wind Direction from (DEG)	Site Boundry Distance	Verif. Point Distance	CL°s from True No.	Verif. Point Location	Rueter Stokes Distance	Rueter Stokes Locations
1 N	169-191	183m	3749m	0	RTS.202&6	3226	Bear Mtn Rd. near Old Stone on Hud
2 NNE	191-214	396m	3331m	22½	RTS.202&6	3379	Annsville Circle, Texaco Station
3 NE	214-236	762m	1158m	45	Westchester Co. Power Plant	2574	Hudson Street and Railroad Station
4 ENE	236-259	686m	1094m	67½	Broadway	1448	Lower South St. near West Iron
5 E	259-281	724m	724m	90	Broadway	1287	Lower South St. by Bypass Diner
6 ESE	281-304	609m	609m	110½	Broaday	643	Broadway
7 SE	304-326	617m	617m	135	Broadway	643	Broadway
8 SSE	326-349	716m	716m	157½	Broadway	804	Broadway
9 S	349-11	1112m	949m	180	Service Rd. to Georgia Pacific	1126	Broadway
10 SSW	11-34	701m	1030m	202½	Service Rd. to Georgia Pacific	1287	11th Street and Highland
11 SW	34-56	457m	611m	225	Georgia Pacific Corp. Prop.	1287	Trap Rock at end of 9th Ave.
12 WSW	56-79	251m	2494m	247½	RT. 9W	2494	Gays Hill Rd.
13 W	79-101	175m	1834m	270	Gays Hill Rd.	1870	Gays Hill Rd.
14 WNW	101-124	152m	1786m	292½	RT. 9W	1870	RT. 9W
15 NW	124-146	137m	1529m	315	RT. 9W	1648	9W and 202
16 NNW	146-169	175m	1512m	337½	Ayers Road	1770	Ayers Road

TABLE 5

VERIFICATION POINT $^{Xu}/Q$ VALUES BY PASQUILL STABILITY CATEGORY

SECTOR	DIST(m)	A	B	C	D	E	F	G
1	3749	4.7E-7	7.1E-7	4.0E-6	1.6E-5	3.2E-5	8.2E-5	1.5E-4
2	3331	5.0E-7	8.3E-7	4.9E-6	1.9E-5	3.8E-5	9.3E-5	1.7E-4
3	1158	1.7E-6	7.8E-6	2.7E-5	8.5E-5	1.6E-4	3.2E-4	4.8E-4
4	1094	1.8E-6	8.8E-6	2.9E-5	9.0E-5	1.7E-4	3.3E-4	5.0E-4
5	724	3.5E-6	1.9E-5	5.3E-5	1.5E-4	2.6E-4	4.9E-4	7.2E-4
6	609	5.0E-6	2.6E-5	6.6E-5	2.0E-4	3.2E-4	5.7E-4	8.2E-4
7	617	4.9E-6	2.5E-5	6.5E-5	1.9E-4	3.1E-4	5.6E-4	8.0E-4
8	716	3.5E-6	1.9E-5	5.3E-5	1.5E-4	2.6E-4	5.0E-4	7.3E-4
9	949	2.2E-6	1.2E-5	3.5E-5	1.2E-4	2.0E-4	3.8E-4	5.7E-4
10	1030	1.9E-6	1.0E-5	3.3E-5	1.0E-4	1.8E-4	3.6E-4	5.3E-4
11	611	4.8E-6	2.6E-5	6.6E-5	2.0E-4	3.2E-4	5.7E-4	8.2E-4
12	2494	6.4E-7	1.3E-6	7.5E-6	2.7E-5	5.6E-5	1.2E-4	2.4E-4
13	1834	8.1E-7	3.0E-6	1.1E-5	4.2E-5	8.4E-5	1.8E-4	3.1E-4
14	1786	8.3E-7	3.2E-6	1.3E-5	4.4E-5	8.6E-5	1.9E-4	3.3E-4
15	1529	1.1E-6	4.7E-6	1.7E-5	5.7E-5	1.1E-4	2.3E-4	3.8E-4
16	1512	1.1E-6	4.7E-6	1.7E-5	5.7E-5	1.1E-4	2.3E-4	3.8E-4

TABLE 6

R/S ^{Xu}/Q CENTERLINE VALUES BY PASQUILL STABILITY CATEGORY

MONITOR	DIST(m)	A	B	C	D	E	F	G
1	3226	5.3E-7	8.4E-7	5.1E-6	1.9E-5	4.0E-5	9.8E-5	1.8E-4
2	3379	5.2E-7	8.3E-7	5.0E-6	1.8E-5	3.9E-5	9.7E-5	1.7E-4
3	2574	6.3E-7	1.2E-6	7.3E-6	2.6E-5	5.3E-5	1.2E-4	2.4E-4
4	1448	1.2E-6	4.6E-6	1.8E-5	6.1E-5	1.1E-4	2.4E-4	3.9E-4
5	1287	1.4E-6	6.4E-6	2.3E-5	7.3E-5	1.4E-4	2.8E-4	4.4E-4
6	643	4.3E-6	2.2E-5	6.0E-5	1.8E-4	3.0E-4	5.5E-4	7.7E-4
7	643	4.3E-6	2.2E-5	6.0E-5	1.8E-4	3.0E-4	5.5E-4	7.7E-4
8	804	2.9E-6	1.7E-5	4.5E-5	1.3E-4	2.4E-4	4.5E-4	6.6E-4
9	1126	1.8E-6	8.5E-6	2.6E-5	8.1E-5	1.5E-4	3.2E-4	4.9E-4
10	1287	1.4E-6	6.4E-6	2.3E-5	7.3E-5	1.4E-4	2.8E-4	4.4E-4
11	1287	1.4E-6	6.4E-6	2.3E-5	7.3E-5	1.4E-4	2.8E-4	4.4E-4
12	2494	6.4E-7	1.3E-6	7.5E-6	2.7E-5	5.6E-5	1.2E-4	2.4E-4
13	1870	8.0E-7	2.7E-6	1.2E-5	4.2E-5	8.1E-5	1.8E-4	3.2E-4
14	1870	8.0E-7	2.7E-6	1.2E-5	4.2E-5	8.1E-5	1.8E-4	3.2E-4
15	1648	9.4E-7	3.9E-6	1.5E-5	5.0E-5	9.7E-5	2.1E-4	3.6E-4
16	1770	8.4E-7	3.3E-6	1.3E-5	4.5E-5	8.8E-5	1.9E-4	3.4E-4

R-27 Calibration Factor

- The proper calibration factors-based on the isotopic mix, must be entered into the R-27 data base (Channel item #011) (uCi/cc per cpm).

- If the actual isotopic mix is known, use Attachment 12.11 to develop the proper calibration factors.

- If the actual isotopic mix is unknown, the calibration factors listed below should be used:

Low Range RD-52 $\frac{uCi/cc}{cpm}$	Mid Range RD-72 $\frac{uCi/cc}{cpm}$	High Range RD-72 $\frac{uCi/cc}{cpm}$
use the calibration factor for routine effluents*	0-4 hr. 4.3E-5*	0-4 hr. 8.0E-3*
	4-8 hr. 4.7E-5	4-8 hr. 1.2E-2
	8 hr. 5.0E-5	8 hr. 1.9E-2

* These values should be in the R-27 data base under normal conditions. 6

WORK SHEET FOR DETERMINING R-27 CALIBRATION FACTORS

	RD-52 Low Range Detector			RD-72 Mid-Range Detector			RD-72 High-Range Detector		
Nuclide	Fraction of Activity	cpm uCi/cc	Fraction X cpm/uCi/cc	Fraction of Activity	cpm uCi/cc	Fraction X cpm/uCi/cc	Fraction of Activity	cpm uCi/cc	Fraction X cpm/uCi/cc
Xe-131m	______	4.85E7	______	______	0.86E4	______	______	26.8	______
Xe-133	______	2.95E7	______	______	1.46E4	______	______	49.4	______
Xe-133m	______	6.15E7	______	______	2.29E4	______	______	63.6	______
Xe-135	______	7.6E7	______	______	6.10E4	______	______	171.0	______
Xe-135m	______	1.56E7	______	______	2.39E4	______	______	74.2	______
Xe-138	______	7.89E7	______	______	11.90E4	______	______	352.0	______
Kr-85	______	7.19E7	______	______	5.35E4	______	______	158.0	______
Kr-85m	______	0.53E7	______	______	0.44E4	______	______	12.8	______
Kr-87	______	9.07E7	______	______	17.50E4	______	______	523.0	______
Kr-88	______	6.59E7	______	______	5.03E4	______	______	155.0	______
		SUM =	______		SUM =	______		SUM =	______
		1 / SUM = ☐	uCi/cc / cpm		1 / SUM = ☐	uCi/cc / cpm		1 / SUM = ☐	uCi/cc / cpm

1. Enter Fractional Isotopic Mix
2. Multiply Fraction X cpm per uCi/cc
3. Sum (Fraction X cpm per uCi/cc) for the entire isotopic mix.
4. 1/Sum = Calibration factor - to be entered into R-27 data base, see Procedure 3PT-M59, Table 2, Item #011

Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914 739 8200

New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1003 REV. 5

TITLE" OBTAINING METEOROLOGICAL DATA "

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EFFECTIVE DATE: 2/8/84

OBTAINING METEOROLOGICAL DATA

1.0 INTENT

This procedure describes the available means to obtain meteorological data for IP3.

2.0 DISCUSSION

Meteorological data are necessary in determining the impact of accidental or planned releases to the environment. There are several methods to obtain the required meteorological data at the IP3 site. This procedure states the primary methods and subsequent backup methods to obtain meteorological data.

1) Control Room Digital Display of Meteorological Parameters.

2) Shift Supervisor's Office Digital Display of meteorological parameters.

3) Telephone Data link direct to meteorological towers using the ASCII terminal in the Control Room. (The same information can be obtained by going to the tower locations directly: 122m or 10m primary backup)

4) Telephone Data link to MIDAS using the ASCII terminal in the Control Room.

5) 122m Meteorological Tower, existing instruments.

6) 122m Meteorological Tower, Portable Wind Instruments & Emergency Wind Set.

There are three meteorological towers and systems on the Indian Point site.

The primary tower is a 122 meter tower located on NYPA property south of the NYPA access road. Measurements for windspeed and wind direction are available at 3 levels (10m, 60m, 122m). Pasquill Category is determined from a delta temperature using the ground (10m) as the control level (60m-10m, 122m-10m). See Attachment 1 for stability class conversion. For redundancy in determining the stability class, sigma theta, which is a measurement of atmospheric stability, is measured at the 122m level and converted to a Pasquill Category. (In the event there is a loss of electrical power, a backup diesel generator would supply power for the 122m tower systems.)

The primary backup meteorological tower is located on Con Ed property and records wind speed and wind direction at 10 meters. The Pasquill class is determined from sigma theta or by visual means using Attachment 2. The data is sent to a Climatronics Data Acquisition System IMP/801 which is located in the MIDAS computer room of the EOF and includes a two pen Esterline Angus recorder and a Texas Instrument (TI) Silent 700 Electronic Data Terminal.

A 10m standby tower is located on the roof of the EOF. Readout from this tower can be activated by throwing a switch on the Climatronics panel in the MIDAS computer room.

NOTE: The units for wind speed vary from method to method. 1 m/sec = 2.2 mi/hr. 0.45 m/sec = 1 mi/hr

Therefore: If you have mi/hr multiply by .45 to get m/sec
If you have m/sec multiply by 2.2 to get mi/hr

NOTE: All wind direction is interpreted as the direction from which the wind is blowing.

NOTE: The determination of the magnitude of release calculations require ground level (10m) meteorological data.

NOTE: All time is EST.

3.0 PROCEDURE

3.1 Panels containing a digital display of meteorological parameters are located in the Control Room and Shift Supervisor's Office. These data are transmitted from the 122m tower and have both ground (10m) and elevated (122m) meteorological parameters. 5

3.1.1 Windspeed is in m/sec and is read directly.

3.1.2 Wind direction is read directly.

3.1.3 Pasquill Category can be read directly.

IF THE DIGITAL DISPLAY PANELS ARE NOT FUNCTIONING IN THE CONTROL ROOM AND SHIFT SUPERVISOR'S OFFICE 5

3.2 Use the Dec Writer ASCII computer terminal in the Control Room to telephone the primary or primary backup meteorological towers and obtain the meteorological parameters via a telephone data link.

NOTE: The same data is available by going to the tower locations directly: Both locations read out on TI Silent 700 terminals. (See Attachment 3 for examples of printouts) 5

NOTE: Time is always EST.

a) Turn ASCII "on", 300 baud line.

b) Telephone:

i) (914) 737-6803 (122m tower) If the Control Room displays are not working, chances are this line will not transmit data.

ii) (914)737-6913 (primary backup tower) 5

c) Listen for high pitched tone.

NOTE: If the telephone rings more than 4 times, the data link is not connected. Try the other telephone number.

d) Place telephone hand piece in ASCII cradle with the mouth piece on right.

e) Wait for red light to go on. It is located on the right hand side of the ASCII terminal.

f) Push the "H" button on the terminal keyboard followed by a "RETURN". This will print a previous hours 15 minute average. (Up to six hours of fifteen minute averages can be retrieved by typing an "H" with a number from 1-6 following it (i.e. H5). The average at the end of the hourly summary will be that of the current hour).

<u>NOTE</u>: If you are at the tower locations using the TI Silent 700 terminals: Turn on, and begin with commands in (f).

g) When it finishes printing, the link can be closed by hanging up the phone.

h) Turn off ASCII terminal.

3.2.1 Ground level wind direction is read from the WD1 column.
(Attachment 3) 5

3.2.2 Ground level windspeed is read from the WS1 column.
(Attachment 3) This is in mi/hr. Multiply this number 5
by 0.45 to obtain the m/sec windspeed.

3.2.3 Pasquill stability class:

i) <u>Primary tower (914-737-6803) See example 1, Attachment 3</u>
Use the DT1 column, and use Attachment 1 to
translate this ground level (60m-10m) delta T 5
value to a stability class letter. (Note: the last WD3 column is the 122m level stability as derived from sigma theta, and if used will be <u>very</u> conservative in assessing ground level concentrations.)

ii) <u>Backup tower (914-737-6913) See example 2,</u>
<u>Attachment 3</u> 5
Use the right most WD1 column to read the Pasquill
category letter directly, or use Attachment 2 and 5
determine by visual means. (For this tower, Pasquill is determined from sigma theta)

FINAL METHOD TO OBTAIN METEOROLOGICAL
DATA WHILE LOCATED IN CONTROL ROOM

3.3 Use the Dec Writer ASCII computer terminal in the Control Room to telephone the MIDAS computer system which has up-to-date meteorological information.

a) Turn ASCII "on", 300 baud line

b) Telephone: (914) 739-3301 or (212) 564-9120,9121
(914) 739-3302 (212) 564-9122,9123
[1200 baud (212) 695-5839,6938]

c) Listen for high pitched tone

NOTE: If the telephone rings more than 4 times, the data link is not connected. Try the other telephone numbers.

d) Place telephone hand piece in ASCII cradle with mouthpiece on the right.

e) Wait for red light to go on. It is located on the right hand side of the ASCII terminal.

f) Terminal Prompts / Operator Response

Terminal Prompts	Operator Response	
Please enter your ID	PASNY	RETURN
Please enter your PASSWORD	MONK	RETURN
NUM, UNIT, NAME	3000309,,NRCMET	RETURN
Enter [JU] Julian Date [MO] Month/Day [RETURN] Exit	MO	RETURN
Enter Start and End Dates (99 = Last 6 hours) Or YYMMDDHHMM YYMMDDHHMM	99	RETURN

5

NOTE: Time is EST

NOTE: The option of using calendar, Julian, or past six hours is user selectable. For emergency operation, it is recommended that only "99" be used for expediency.

g) It will begin printing met data in 15 minute intervals (Example 3, Attachment 4). 5

h) NRCMET output headings are as follows:
YYJJJHHMM - Year, Julian Date, hour, minute (EST)
WDU, WDI, WDL - wind direction for upper (122M), intermediate (60M) and lower (10M) sensor heights (degrees).
WSU, WSI, WSL - wind speed (meters/second) for 122, 60 and 10M.
STU, STI, STL - standard deviation of the horizontal wind direction, 122, 60 and 10M.
DTUL, DTUI, DTIL - temperature differential presented in °C/100M for UL (122-10M), UI (122-60M), and IL (60-10M).
TAL - ambient temperature (°C) for 10 meters.
TDL - dew point temperature (°C) for 10 meters.
PCP - precipitation total (mm) at ground level.
S - Pasquill stability indicator (A=1, B=2, C=3 ... G=7).

i) Message of NRCMET DONE - completes the program.

3.4 If the above methods fail, a decision must be made whether to send a member of the watchforce to the primary tower or to the EOF to access the backup tower data.

a) Primary Tower: to read the TI Silent 700 terminal (See Section 3.2 and example 1 or Section 3.5)

b) EOF (MIDAS Room):

i. To read the TI Silent 700 terminal (See Section 3.2 and example 2)

ii. If no data is available, readout from 10m standby tower, located on the roof of the EOF, can be activated by throwing a switch on the Climatronics panel in the MIDAS computer room. The data can then be read from the TI Silent 700 terminal (See Section 3.2 and example 2)

<u>IF THE CONTROL ROOM READOUTS AND THE BACKUP TOWER SYSTEM ARE NOT FUNCTIONING</u>

3.5 The Emergency Director must direct a member of the Watch force to the Meteorological Trailer located at the base of the 122m tower. (The key to this trailer is located in the Control Room key locker.) If there is an electrical outage, (i.e. wind instruments still functioning) he will use the "Emergency Wind Set 10m Speed and Direction Kit". If the power is out <u>and</u> the meteorological instruments are not functioning, he will set up the portable wind system.

<u>NOTE</u>: Attachment 5 is the instrument layout for the 122m tower.

3.5.1 Using the 10m winds and "Emergency Wind Set 10m Speed and Direction" kit.

a) At the rear of the instrument console near the south wall of the trailer is an instrument line plugged into the rear of the panel marked "10 meter emergency winds". This cable is connected directly to the 10m level winds on the tower.

b) Unplug the connector and attach it to the "Emergency Wind Set 10m Speed and Direction Kit" so marked. It is plugged into the connector labled "F460" marked "in trailer".

c) Turn on kit power, select "F460" and check for a proper trace on chart paper. Write on trace paper start date and time. (trace will run at 1 inch/hr)

i) Wind speed is in m/sec.

ii) Wind direction is read directly from strip chart.

iii) Pasquill Category is determined by visual means. (Attachment 2)

3.5.2 If all other methods of obtaining meteorological data fail, the Portable Wind System must be used.

a) Remove portable wind translators and arm from the east end of the trailer and mount it on the tripod in any open available area.

b) Disconnect the battery cable from the "Emergency Wind Set 10m Speed and Direction Kit".

c) Bring kit within reach of the portable instrument, plug the transmitters into the connector marked "WM1".

d) The system must now be oriented. Using the siting compass (located in the trailer on the NE shelf), align the cross arm in an eastwest direction with the direction sensor at the western end. (Site thru the compass mirror and site along the crossarm (EW).

NOTE: Site the (EW) crossarm along 102° or 282° for a true north alignment. (At this latitude we are 12° west of north)

e) Turn on the Emergency Recorder and select "WM1".

f) Check to make sure that when the direction vane is pointed along the axis of the arm towards west, the recorder reads 270°. If not readjust the arm so that when the vane points west, the recorder reads 270°.

3.5.3 Wind speed is in m/sec.

3.5.4 Windspeed is read from the strip chart

3.5.5 Pasquill Category is determined by visual means (Attachment 2) 5

NOTE: This instrument should be left recording until another source of meteorological data is functioning. Lid should be closed for this continued usage.

4.0 OFFSITE METEOROLOGICAL MONITORING

4.1 Meteorological data for the surrounding area can be obtained by telephoning the following air stations. Information includes wind speed, wind direction, cloud cover and precipitation.

National Weather Service Stations:

Site	Telephone No.	
Central Park, Manhattan, NY	(212)399-5561 or 5340	
La Guardia Airport, Queens, NY	(212)639-5690	5
J.F. Kennedy Airport, Queens, NY	(212)995-3386	
Newark Airport, Newark, NJ	(201)624-8118	
Dutchess County Airport, Poughkeepsie, NY	(914)462-3400	
Westchester County Airport, White Plains, NY	(914)997-1090	5
MacArthur Airport, Islip, NY	(516)267-8504	
Stewart Field, Newburgh, NT	(914)564-7200	
Sikorsky Mem. Field, Bridgeport, Conn.	(203)378-2344	
Teterboro Airport, Teterboro, NJ	(201)288-1775 or 3208	
Allentown Airport, Allentown, PA	(215)264-1944	
WilkesBarre-Scranton Airport WilkesBarre, PA	(717)346-4512	
* Albany County Airport, Albany, NY	(518)869-6347	
* Atlantic City Airport, Atlantic City, NJ	(609)645-2421	

*Wind data for upper air are only available from Albany and Atlantic City stations.

4.2 Forecasts can be obtained by calling ACCU-Weather Forecast Service (814)237-0309. Ask for the N.Y.C. Meteorologist. Inform them you work for NYPA (we have a contract with them) and request the forecast for this area. 5

4.3 For remotely accessed tower data at adjacent Bowline Point:

Telephone Number (914) 429-3499
300 Baud Line
Half Duplex
Type in upper case only

a) Dial (914) 429-3499. When a high pitch tone is heard insert phone into ASCII acoustic coupler. A completed link is verified by the indicator light on the terminal.

b) Sign on Procedure:

The system will ask for the password. Type ORU and then depress the space bar. System response will be "ORANGE-ROCKLAND UTILITIES---". When the word "READY" appears, hourly data can be accessed.

For the past hour, type H space EU and press the "RETURN" key. Data will automatically printout. Sensor heights are in meters. B-100=Bowline Tower 100 meter level. A "READY" message appears after the data is printed.

If data from a previous hour, (up to 12 hours), is required type hhEU and the "RETURN" key, where hh is the hour of interest.

After all inquires are complete press down on the "CNTL" key and type Z to disconnect from the system.

ΔT CONVERSION TO STABILITY CLASS

GROUND LEVEL (60m-10m)

Stability Class	ΔT Temperature in °F
A	<-1.74
B	-1.74 to <-1.56
C	-1.56 to <-1.37
D	-1.37 to <-0.46
E	-0.46 to $<+1.37$
F	$+1.37$ to $<+3.66$
G	$\geq+3.66$

Estimation of Pasquill Category

A stability classification (Pasquill) was developed to differentiate the dispersive capacities of the atmosphere. The vertical temperature difference of the atmosphere ranges from very unstable (Category A) to extremely stable (Category G) conditions. Alphabetic characters (A,B,C,D,E,F, or G) are used to define the prevailing thermal structure. A listing of the categories is as follows:

PASQUILL CATEGORY	STATE OF THE ATMOSPHERE
A	Extremely unstable
B	Moderately unstable
C	Slightly unstable
D	Neutral
E	Slightly stable
F	Moderately stable
G	Extremely stable

The appropriate Pasquill category is derived from vertical temperature measurements. However, in the absence of specific onsite temperature measurements, stability categories can be estimated by visual techniques. A methodology for determining the Pasquill category from observations of cloud cover, wind speed and time of day, (solar radiation) is illustrated in the following table.

	DAYTIME			NIGHTTIME	
Surface Windspeed (m/s)	Clear Sky	Partly Cloudy	Over-cast	Partly cloudy to Overcast	Clear sky partly cloudy
0-2	A	A-B	B	E-F	G
2-3	A-B	B	C	E	F
4-5	B	B-C	C	D	E
> 6	C	C-D	D	D	D
> 6	C	D	D	D	D

General Definitions

1. Daytime is considered as one hour after sunrise to one hour before sunset.

2. (a) Clear sky - less than 20 percent of cloud cover
   (b) Partly cloudy - 20 to 80 percent of cloud cover
   (c) Overcast - 80 to 100 percent of cloud cover

NOTE: This procedure should be used only in the event of onsite instrument failure.

NOTE: If there is a doubt concerning which category is applicable, select the alphabetic character furthest from A. This decision will be more conservative is assessing ground level concentrations.

Example (1) 122m tower (3 wind measurement levels) 737-6803

WIND DIRECTION (Ground Level)

WIND SPEED (mi/hr) (Ground Level)

HOURLY SUMMARY 13:28:35 12/18/81 352 CON EDISON/PAIN

CHANNEL NUMBER	00		01	02		03	04		05	06	07
CHANNEL NAME	WD1/	DEV	WS1	WD2/	DEV	WS2	WD3/	DEV	WS3	DT1	DT3
12:15	10/	32	3.9	7/	27	7.8	359/	11	9.6	-.7	-1.2
12:30	27/	17	4.9	22/	14	8.3	12/	9	8.9	-.9	-1.2
12:45	25/	14	6.1	26/	10	10.4	21/	8	11.1	-.7	-1.2
13:00	21/	27	7.4	26/	8	11.9	20/	5	13.6	-.8	-1.1
13:15	15/	15	6.8	19/	9	11.1	17/	7	11.7	-.8	-1.2
AVERAGE	---		---	---		---	---		---	---	---

CHANNEL NUMBER	10	11	12	07-06	
CHANNEL NAME	TMP	DPT	RFL	DT2	WD3
12:15	32.5	27.1	.00	-.3	D
12:30	32.4	26.3	.00	-.4	D
12:45	32.1	27.1	.00	-.4	D
13:00	31.4	25.5	.00	-.3	E
13:15	31.3	25.0	.00	-.5	E
AVERAGE	---	---	---	---	

ΔT (Use Fig. 1 to translate to Pasquill Stability Class)

UPPER LEVEL Pasquill Stability Class

Example (2) 10m backup tower 737-6913

HOURLY SUMMARY 13:30:25 12/18/81 352 CON EDISON/PAIN

CHANNEL NUMBER	00		01	
CHANNEL NAME	WD1/	DEV	WS1	WD1
12:15	349/	13	7.3	C
12:30	9/	24	5.3	A
12:45	1/	13	7.1	C
13:00	0/	13	8.7	C
13:15	356/	12	7.9	C
13:30	360/	11	7.7	D
AVERAGE	358/	12/	7.8	

Pasquill Stability Class

WIND DIRECTION

WIND SPEED (mi/hr)

NOTE: Scan the data to make sure it makes sense. (i.e. Pasquill classes are A-G, wind direction will not exceed 360° on the printouts)

Example (3): MIDAS Meteorological printout.

```
:      CONSOLIDATED EDISON CO OF NY / POWER AUTHORITY OF THE STATE OF NEW YORK

                  INDIAN POINT NUCLEAR GENERATING STATION / ONSITE 122 METER TOWER
   LAT-CON  LON-CON     ELEV-BASE
 41.25999  73.95001        116.
WIND HTS-U,I,L        DT1-U DT1-L     DT2-U DT2-I     DT3-I DT3-L       TMP  DP    PCP
122.0 60.0 10.0       122.0 10.0      122.0 60.0       60.0 10.0       10.0 10.0  1.0
NOTE:LATITUDE AND LONGITUDE FOR INDIAN POINT SITE USED SUPERHEATER STACK AS THE
     REFERENCE POINT FOR CONTAINMENT
   LATEST CALIBRATION 9-20-81
```

YYJJJHHMM	WDU	WDI	WDL	WSU	WSI	WSL	STU	STI	STL	DTUL	DTUI	DTIL	TAL	TDL	PCP	S
813521215	34.	15.	15.	3.5	2.9	1.3	11	10	19	-1.0	-1.1	-.9	-32.8	88.9	0.0	4
813521230	41.	20.	14.	3.7	3.4	1.8	9	8	15	-1.0	-1.1	-.9	-32.9	88.8	0.0	4
813521245	50.	30.	19.	5.1	4.2	2.6	10	9	17	-.9	-1.0	-.9	-31.1	88.6	0.0	4
8135213 0	51.	29.	14.	5.1	4.3	2.5	11	10	14	-1.0	-1.2	-.8	-30.8	88.8	0.0	4
813521315	52.	29.	5.	4.4	4.4	2.5	9	8	14	-1.0	-1.2	-.8	-32.4	88.8	0.0	4

WIND DIRECTION
(Ground Level)

WIND SPEED (m/sec)
(Ground Level)

ΔT
(Use Fig. 1
to transcribe
to Stability
Class)

LOWER LEVEL
STABILITY
CLASS

1. WDL column is wind direction for ground level.

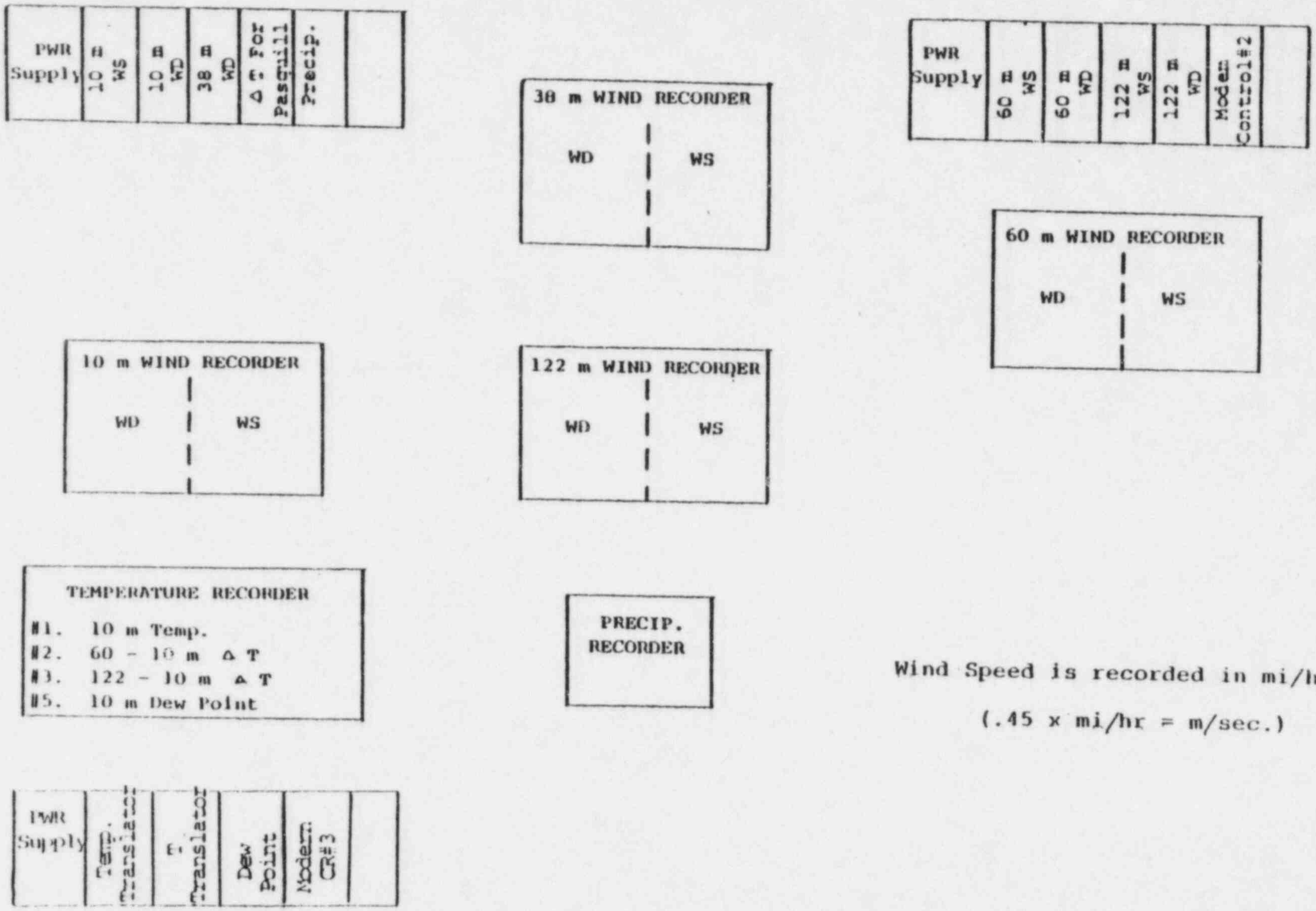
2. WSL is wind speed for ground level in m/sec.

3. The Pasquill stability class is determined by using the column DTIL and Attachment 1 which will translate this ground level (60m-10m) delta T value to ground level stability class. (NOTE: the right most "S" column can be used to determine the stability class by converting the numbers to letters as follows 1 = A, 2 = B, 3 = C, 4 = D, 5 = E, 6 = F, 7 = G).

<u>NOTE</u>: If the primary tower is not transmitting data to MIDAS, the backup tower will be used as a default and its data will print out.

INSTRUMENT LAYOUT

122 m Meteorological Tower



Wind Speed is recorded in mi/hr.

(.45 x mi/hr = m/sec.)

EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1004 REV. 4

TITLE" MIDAS COMPUTER SYSTEM - DOSE ASSESSMENT MODELS "

WRITTEN BY: [illegible]

REVIEWED BY: [illegible]

PORC REVIEW: [illegible] DATE [illegible]

APPROVED BY: [illegible] DATE [illegible]

EFFECTIVE DATE:

MIDAS COMPUTER SYSTEM: DOSE ASSESSMENT MODELS

1.0 DISCUSSION

The MIDAS Computer System has 2 computer models available to assess the real time values of radiological releases. Both are available for use during emergency conditions.

The Class A Model, a Gaussian straight line plume simulator, provides relative concentration output within a few minutes. The Class B Model produces refined estimates of the transport and diffusion of particulates incorporating terrain, time and space variations within 5 minutes.

2.0 PROCEDURE

2.1 These programs can be accessed and run remotely by using an ASCII Terminal, 300 Baud line with an acoustic coupler.

2.1.1 Telephone numbers to remotely access the MIDAS System Are:
(914) 739-3301-02-03
(212) 564-9120,9121,9122,9123

[1200 baud (914) 739-3304]

4

2.1.2 Enter Your ID, type PASNY

2.1.3 Enter Your Password, type MONK

2.2. Class A Model (Gaussian Model)

Prompt from Machine	Operator Response	
NUM, UNIT, Name	3000309 ,, NRCRRC	"RET"
Enter Unit (U2 or U3)	U3	"RET"
Enter JU	JU	"RET"
Enter Start and End Dates (99=Last 6 hours) YYMMDDHHMM YYMMDDHHMM YYJJJHHMM YYJJJHHMM	99,	"RET"

4

The system will now calculate a Class A Gaussian model at downwind distances of 3218, 8047 and 16093 meters (2,5 and 10 miles) for the time requested. All distances are in meters, X/Q has dimensions of sec/m^3.

Message of NRCRRC DONE - completes program.

2.3 Class B Model (Potential Flow)

Prompt from Machine	Operator Response	
NUM, UNIT, NAME	3000309 ,, NRCCLB	"RET"
Enter Unit #2 or #3	U3	"RET"
Enter JU	JU	"RET
Enter Start Date - YYMMDDHHMM	YYMMDDHHMM	"RET"
or (YR=99 is current time)	or 99	"RET"
Enter Type of Release (GRND, ELEV)	GRND or ELEV	"RET"

4

The system will now print out data representing the spatial increments of the plume. At the completion of the first table, the screen message will state - "TYPE C TO CONTINUE TO PRINT". Type C and carriage return ("RET"). The second table will permit a plot of the plume segments (trapezoids) to be made from output using an x-y coordinate system.

Message of NRCCLB DONE completes program.

Indian Point 3
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P.O. Box 215
Buchanan, New York 10511
914 739.8200

New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1005 REV. 3

TITLE" PLANNED DISCHARGE OF CONTAINMENT ATMOSPHERE DURING ACCIDENT CONDITIONS "

W-ITTEN BY: David D. Bell

REVIEWED BY: [signature]

PORC REVIEW: [signature] DATE 2/2/84

APPROVED BY: John C Brons DATE 2/2/84

EFFECTIVE DATE: 2/8/84

PLANNED DISCHARGE OF CONTAINMENT ATMOSPHERE DURING ACCIDENT CONDITIONS

1.0 INTENT:

To describe the method used during accident conditions to estimate the thyroid exposure to an individual offsite from a planned containment release and to determine whether or not the release should take place.

2.0 DISCUSSION:

A Chemistry Tech. will obtain a sample from containment to obtain a (Total Iodine/Noble Gas) ratio. In the event a chemistry sample is unavailable, and until an actual chemistry sample can be drawn from containment, use a (Total Iodine/Noble Gas) ratio of 10^{-4} to calculate the proposed release rate. The proposed dose rate can be calculated from the release rate and meteorological conditions.

The Emergency Director will determine whether or not the release is to take place. Calculations using the dose rate and estimated release time will be used as guidance.

3.0 REFERENCES:

3.1 RE-CS-042 Sampling Various Plant Systems During Accident Conditions.

3.2 IP-1002, Determination of the Magnitude of Release

4.0 PROCEDURE:

4.1 Use EP Flowcharts #1a and b in IP-1002 for guidance on determining site boundary and offsite doses. 3

4.2 Determine the significance of the additional expected exposure to the exposure the population may have already received.

4.3 Obtain the latest weather report relative to the next eight (8) hours by calling:

ACCU Weather, (814) 237-0309. Ask for the N.Y.C. area meteorological and request the forecast information for this area. 3

4.4 The decision on whether the release will take place should be based upon the following:

a) Plant safety related to the need for the release

b) Ability to wait for a more favorable time due to weather conditions.

c) Exposure already received by the population.

d) Expected population exposure from the proposed release

e) Expected exposure rate changes in the next few hours due to plant performance.

f) Discussions with Senior Corporate Officials.

4.5 Should the release take place, instruct the Chem. Tech. to sample the vent to determine the actual Iodine-131 specific activity.

4.6 Flow charts, calculations, and any check off lists or data sheets used in RE-CS-042 should be given to the Chemistry Team Leader of the Emergency Director for retention.

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New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1010 REV. 6

TITLE " IN-PLANT/SITE PERIMETER SURVEYS "

WRITTEN BY: Michael Pell

REVIEWED BY: D. Quinn

PORC REVIEW: [illegible] DATE 3/13/85

APPROVED BY: John C. Brons DATE 3/13/85

EFFECTIVE DATE: 03/20/85

IN-PLANT/SITE PERIMETER SURVEYS

1.0 INTENT

To describe the actions of Control Room and/or OSC Personnel and Health Physics and/or Chemistry Technicians in accomplishing in-plant surveys or analyses and site perimeter radiological surveys.

2.0 DISCUSSION

In-plant surveys and analyses may be performed during any one of the four emergency classes; particularly the Site Area & General emergencies. The Watch H.P. and Chemist should be available for in-plant surveys. Directions for requesting their assistance and instructing them on survey locations as well as overviews of radiological precautions to be observed are found in this procedure. Survey and analysis procedures which would be followed by the H.P. and Chemist can be found in RE-HPI-12.4, RE-CS-040, RE-CS-041 and RE-CS-042 respectively. Health Physics surveying may help to determine release rates from the Plant Vent and determine radiological conditions in specified areas of the plant. Chemistry analysis will help to determine the isotopic mixture of the release and the extent of possible core damage.

Site perimeter surveys may be requested during an Alert (radiological), Site Area or General emergencies. Health Physics personnel or other so designated individuals would be available for site perimeter surveys. Directions for requesting their assistance and instructing them on which site perimeter locations to survey, as well as an overview on radiological precautions to be observed, are found in this procedure. These surveys are performed to verify exposure rates that have been calculated using measured Plant Vent activities. These surveys may indicate the maximum exposure rate at that specific point in time, that members of the offsite population in the vicinity of the site are experiencing.

3.0 PROCEDURE FOR IN-PLANT SURVEYS

3.1 CONTROL ROOM ACTIONS: (If the OSC is staffed they will assume the following responsibilities)

A. No sounding of the Site Assembly Alarm:

1. Telephone or page the Watch H.P. and/or Chemist.

2. Instruct them to report to the Control Room or OSC as appropriate for instructions or give them survey/analysis instructions over the telephone.

B. Sounding of the Site Assembly Alarm:

1. The Watch H.P. & Chemist will report directly to the Control Room.

2. Instruct technicians to do surveys/sampling

C. Ensure radiological precautions are taken.

1. Require use of film badges or TLD's, dosimeters, protective clothing and other REA requirements as necessary.

2. DO NOT send them to areas which may be radiologically hazardous without these precautions.

    a. Check Radiation Monitors
    b. Assess need for KI
    c. Assess need for respirators/SCBA

3. Require use of KI, respirators or SCBA as necessary

4. If it is expected that NRC limits may be exceeded, refer to IP-1027.

D. Prepare to receive survey/analysis results. The Watch HP and Chemist will report their results to the Control Room or OSC as appropriate.

3.2 HEALTH PHYSICS/CHEMISTRY TECHNICIAN ACTIONS:

A. No sounding of the Site Assembly Alarm:

1. If paged or telephoned by the Control Room, report to the Control Room or OSC as instructed and perform surveys/analysis as requested.

B. Sounding of the Site Assembly Alarm:

1. The Watch H.P. and Chemistry technician upon hearing the Site Assembly Alarm should report directly to the Control Room for instructions.

C. Radiological Precautions:

1. Wear film badges or TLD's, dosimeters, protective clothing and other REA requirements as necessary.

2. Assess radiological conditions in any survey/analysis area prior to entering.

3. Take KI as discussed with the Control Room

4. Put on respirators or SCBA as required.

5. If it is expected that NRC limits may be exceeded, refer to IP-1027.

3.3 Surveys & Analysis may include: (if R-14 is offscale and R-27 is not functioning)

A. H.P.: Reading the R-24, R-24A High Range Plant Vent Monitor (near clothing drop point in PAB)

B. H.P.: Taking a teletector reading at the Plant Vent

1. 6' from vent.
   if less than 1000 mR/hr
2. take a reading on contact with plant vent

C. H.P.: H.P. surveys for access.

D. Chemist: Take Gaseous Marinelli

E. Chemist: Plant Vent Charcoal (if expected Iodine problem)

F. Chemist: Post Accident Sampling of RSC/Containment Air/Plant Vent

3.4 Reporting Survey & Analysis Results

Using walkie talkies, sound power phones, or telephones as appropriate, technicians should report results to the Control Room or OSC as appropriate.

4.0 PROCEDURE FOR SITE PERIMETER SURVEYS

4.1 CONTROL ROOM ACTIONS: (If staffed, the OSC will assume the following responsibilities)

A. No sounding of the Site Assembly Alarm:

1. Telephone the H.P. Supervisor and request H.P. techs. to perform site perimeter surveys. Have them report to the Control Room or OSC if staffed for instructions.

B. Sounding of the Site Assembly Alarm:

1. Page H.P. Tech(s) to the Control Room or OSC as appropriate for site perimeter surveys.

C. Review the site perimeter maps (Attachment 5.2 and 5.3):

1. Choose site perimeter sectors which may be affected by the plume using wind direction, Reuter Stokes readings, MIDAS or the overlays. In sectors where access to site perimeter locations is difficult or not consistent with ALARA, readings taken at verification point locations (Attachment 5.3) can be used to determine site perimeter location doses.

$$\left[\frac{\text{Xu/Q Site Boundary}}{\text{Xu/Q Verif. Point}}\right] \text{ Dose Rate at Verif. Point} = \text{Dose Rate @ Site Boundary}$$

See IP-1001 for Site Boundary and Verification Point Xu/Q values.

NOTE: For sectors located on Con-Ed property and for offsite verification point locations, Con-Ed technicians can be requested to perform surveys.

a. Call the Unit 2 Watch Foreman
b. Request H.P.'s to do site perimeter surveys (β & γ)
c. Give sector numbers
d. Inform team that results should be reported to the Unit 3 Control Room or EOF if staffed.

D. Ensure radiological precautions are taken.

1. Instruct H.P.'s to wear film badges or TLD's & dosimeters

2. Assess Radiological Conditions

   a. Assess need for protective clothing
   b. Assess need for KI
   c. Assess need for respirators

3. Require use of protective clothing, KI & respirators as necessary.

E. Direct H.P.'s to affected sectors, giving them site perimeter maps & data sheet, EP-Form #4 (Attachment 5.1).

F. Prepare to receive survey results via the Con Edison radio frequency. (Radiological Assessment Team Leader should also be receiving data.)

4.2 <u>HEALTH PHYSICS TECHNICIANS ACTIONS:</u>

A. <u>No sounding of the Site Assembly Alarm</u>:

1. As indicated by the H.P. Supervisor or Operations Support Center Supervisor, report to the Control Room or OSC <u>with</u> survey instruments (β, γ) for site perimeter surveys.

B. <u>Sounding of the Site Assembly Alarm</u>:

1. Proceed to your assembly area, taking with you survey instruments (β,γ) (available at the Control Point Health Physics locker).

2. If paged to the Control Room to do site perimeter surveys,

   a. assure your assembly area is aware of your whereabouts.
   b. report to the Control Room with survey instruments (available at Control Point Health Physics Locker).

C. Review site perimeter maps with the Control Room or OSC to determine which sectors to survey.

D. Obtain site survey map and data sheet, EP-Form #4, from Control Room or OSC.

E. Radiological Precautions:

1. Wear film badges or TLD's and dosimeters
2. Assess radiological conditions
3. Wear protective clothing as required
4. Take KI as directed by the E.D.
5. Wear respirators as required 6

F. Pick up a Con Edison frequency portable radio upon exiting the protected area (Command Guard House).

G. Proceed to site perimeter sectors (Attachment 5.2 and 5.3), taking beta and gamma readings along the way. 6

1. Report any significant readings to the Control Room and, if manned, the EOF Radiological Communicator (both can be contacted via the portable radio).

2. Record readings for data submittal to the Radiological Assessment Team Leader on EP-Form #4 (Attachment 5.1.).

3. In sectors where access to site perimeter locations is difficult or not consistent with ALARA, surveys may be performed at site perimeter verification points (Attachment 5.2) as directed by the Control Room or EOF.

H. Upon arriving at site perimeter locations on Power Authority property, take gamma field readings at enough locations to identify the approximate width of the plume and its centerline.

<u>NOTE</u>: Con Ed technicians can be requested to perform surveys at site perimeter locations on Con Ed property and at offsite verification point locations.

I. Take a beta field reading at the location of the plume center line.

J. The monitoring team shall interpret rising beta field readings as rising radioactive airborne concentrations.

4.3 Monitoring Guidelines:

A. Gamma and beta field readings will normally be highest at the center of the plume.

B. Beta field readings are determined by taking field measurements with the survey instrument detector window shielded (gamma), and unshielded (gamma & beta). Subtract the shielded reading from the unshielded reading and multiply by two (2) to obtain the beta dose rate.

C. Traversing the plume from one side to the other would result in readings that start at zero, buildup to a maximum and then decrease to zero again. The point where the highest gamma reading is obtained is the plume centerline.

4.4 Reporting Survey Results

A. Use Con Edison frequency portable radio.

B. On the way to site perimeter, report any significant readings to the Control Room and/or EOF Radiological Communicator via the radio.

C. Report site boundary survey results to the Control Room and/or the EOF Radiologicial Communicator.

4.5 Radiological Assessment using Survey Results

A. Refer to IP-1001, Discussion of the Magnitude of the Release.

B. Consult the Radiological Assessment Team.

5.0 ATTACHMENTS

5.1 EP Form #4, Site Perimeter Survey Form

5.2 Site Perimeter Survey Locations

5.3 Site Perimeter Verification Point Locations

EP-Form # 4

SITE PERIMETER SURVEY FORM

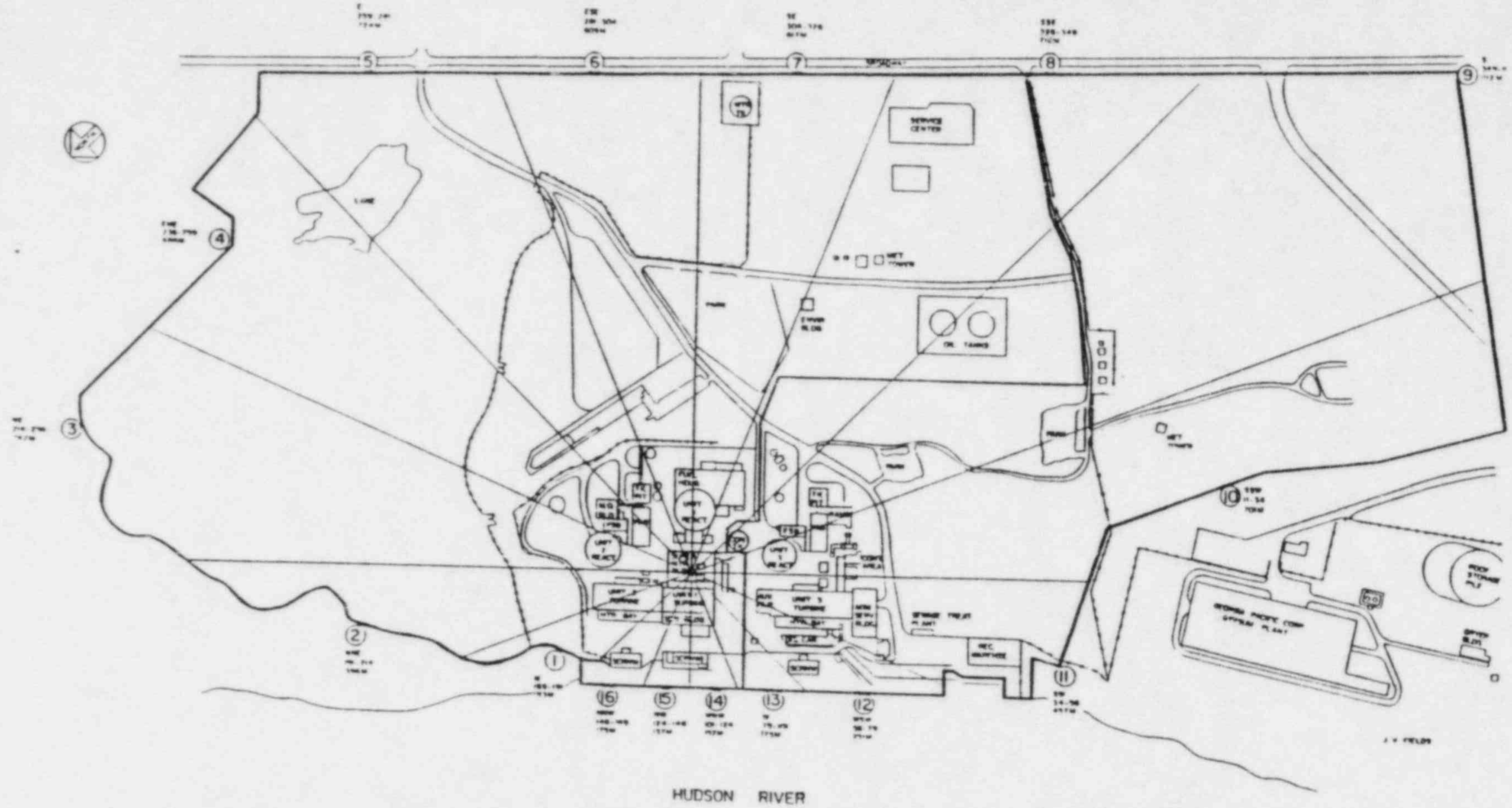
Instrument Model No. ______________ Serial # __________ Cal. Due: __________

Individuals Name(s) ______________________ Date ______________________

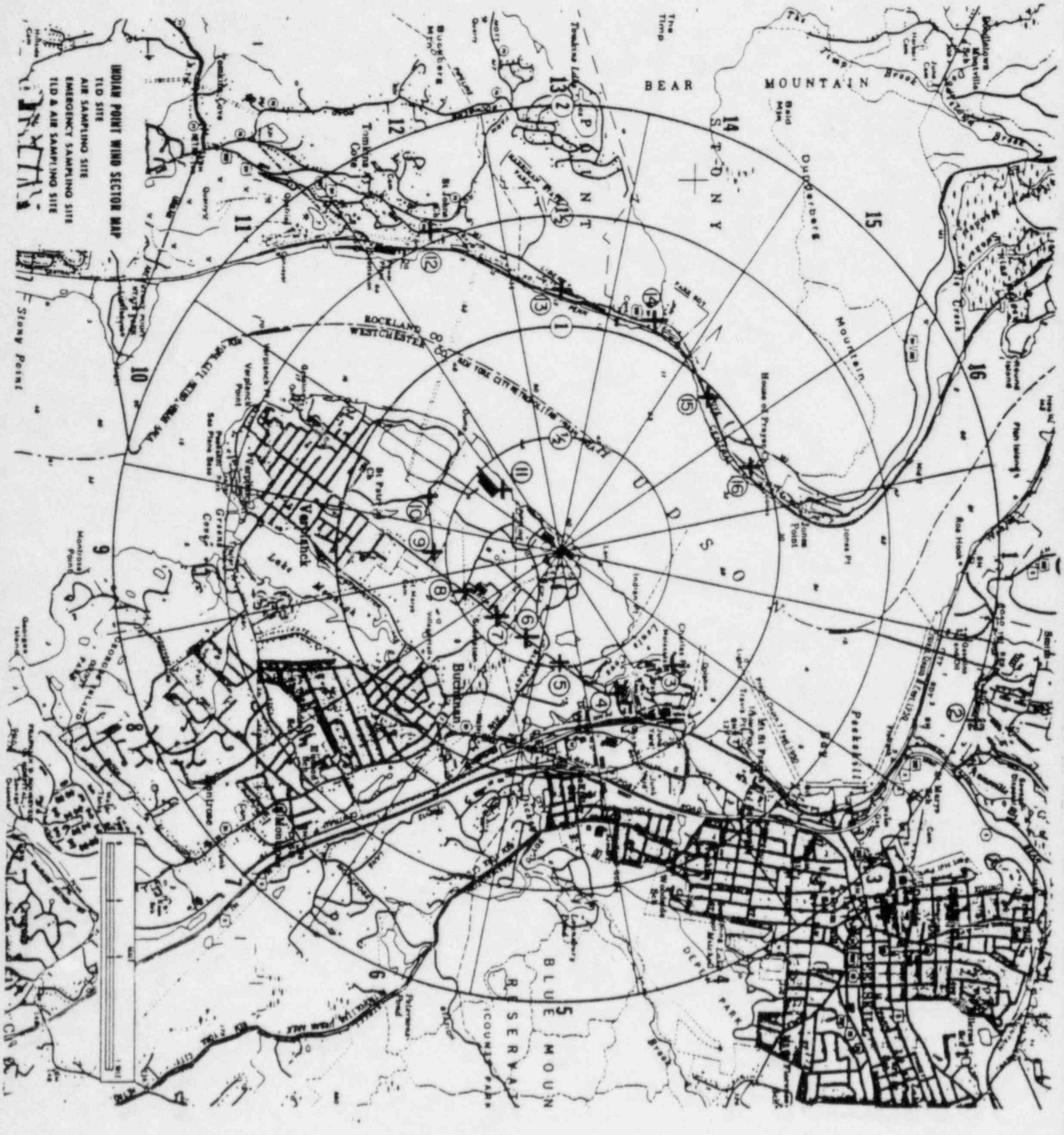
Survey Location or Site Perimeter Sector Number	Time	O.W. $B + \gamma$ mR/hr	C.W. γ mR/hr	Remarks

IP-1010
Attachment 5.2

SITE PERIMETER SURVEY LOCATIONS



SITE PERIMETER VERIFICATION POINT LOCATIONS



Indian Point 3
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New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1011 REV. 6

TITLE" OFFSITE MONITORING "

WRITTEN BY: David D. Bell

REVIEWED BY: [illegible]

PORC REVIEW: [illegible] DATE 2/28/84

APPROVED BY: John C. Brons DATE 2/28/84

EFFECTIVE DATE: 3/5/84

IP-1011

OFFSITE MONITORING

1.0 INTENT

This procedure addresses the various methods of offsite monitoring which are available within the plume exposure pathway.

2.0 DISCUSSION

A combination of these methods of offsite monitoring will provide an estimate of the radiological condition of the environment within a 10 mile radius of Indian Point. 6

The various methods of offsite monitoring are:

2.1 Offsite monitoring teams:

A. Beta and Gamma surveys:

1. Emergency Sampling Locations
2. Surveys enroute to Emergency Sampling Locations 6

B. Air Sampling (Iodine & Particulate):

1. Continuous Air Samplers (CAS)
2. Emergency Air Samplers (EAS) 6

2.2 Reuter Stokes:

A. Gamma monitoring
B. Meteorological monitoring (wind speed & direction)

3.0 PROCEDURE FOR OFFSITE MONITORING TEAMS 6

3.1 Offsite monitoring locations have been predetermined and locations are listed on Attachment 6.1 of this procedure. To determine which locations should be monitored, use the overlays, 10 mile sector map and Attachment 6.1.

3.2 Members of the offsite monitoring teams are Con Edison NEM personnel. 6

3.3 CONTROL ROOM ACTIONS:

A. Control Room personnel should request offsite monitoring team assistance immediately upon declaration of a Site Area or General Emergency, and in certain cases during an Alert (radiological in nature).

B. The IP-3 Control Room personnel should telephone the Unit No. 2 Watch Foreman:

1. Request offsite monitoring team assistance
2. Direct the teams to the Emergency Operation Facility (EOF)

C. Ready yourselves to receive information via the Con Edison frequency radio, using Con Edison Forms #21 and #27 (Attachment 6.2 and 6.3) 6

3.4 OFFSITE MONITORING TEAMS:

A. Are made up from Con Edison NEM personnel

B. Are to follow the Con Edison Procedure IP-1015

3.5 RADIOLOGICAL ASSESSMENT TEAM:

A. Determine which offsite monitoring locations the offsite teams should be sent to.

1. Using overlays
2. Using Table 1 of this procedure

B. Instruct the offsite monitoring team(s) to appropriate sample locations:

1. Predetermined Emergency Sampling Locations
2. Continuous Air Sampling Locations 6

C. Discuss the need for KI with the Emergency Director and Monitoring Teams. Issue if appropriate.

D. Receive information via the radio and record on Con Ed Form #'s 21 and 27 (Attachment 6.2 and 6.3):

1. Sample Point
2. Sampling results 6

a) Beta and gamma field readings obtained while proceeding to the site.

b) Beta-gamma field readings obtained at the sample point.

c) Sample and background CPM, the sample volume in ft^3 and the counter background CPM for the particulate and charcoal/silver zeolite filters. 6

4.0 PROCEDURE FOR REUTER STOKES INTERPRETATION

4.1 Reuter Stokes monitors are located in each of the 16 sectors within a 3 mile radius of Indian Point. Real time whole body dose rates, integrated dose (Gamma), and meteorological (wind speed & direction) information can be remotely interrogated using the Reuter Stokes Sentrii 1011 System and the MIDAS computer.

4.2 RADIOLOGICAL ASSESSMENT TEAM:

A. Using MIDAS, obtain Reuter Stokes data.

5.0 RECORD RENTENTION

5.1 The Radiological Communicator is responsible for retaining all data sheets, forms, and plots pertaining to offsite Radiological Assessment.

6.0 ATTACHMENTS

6.1 Offsite Monitoring Locations

6.2 RM-14/HP-210 Determination of Radioactive Airborne Concentrations (Con Edison Form #21)

6.3 Offsite Survey Team Data (Con Edison Form #27) 6

OFFSITE MONITORING LOCATIONS

LOCATION NAME	SECT	MILE	CAS	EAS	R/S	TLD
Roa Hook Rd. - Sanatation Garage (Cortlandt)	1	2	CAS	EAS		TLD
Bear Mtn. Rd. near Old Stone on Hudson	1	2			R/S	
Rte. 9D Garrison	1	5				TLD
Rte. 9D St. Francis Retreat (Garrison)	1	7		EAS		
St. Basils Academy	1	9				TLD
Rte. 9D Derham Cross Rd. (Cold Spring)	1	10		EAS		
Old Pemart Ave. (Peekskill)	2	2		EAS		TLD
Annsville Circle, Texaco Station	2	2.5			R/S	
Highland Ave. & Sprout Brook Rd.	2	3		EAS		
Gallows Hill Rd.	2	6				TLD
Canopus Hollow Rd. & Old Albany Post Rd	2	6		EAS		
Canopus Hollow Rd. & Bell Hollow Rd.	2	10		EAS		TLD
North East Corner (site)	3	.5				TLD
Louisa St. & R.R. Bridge	3	1		EAS		
Lower South St. & Bay St.	3	1.5				TLD
Peekskill Gas Holder	3	2	CAS			
Hudson St. & RR Street (Peekskill) (Carbones Rest.)	3	2			R/S	
Hamilton St.	3	3				TLD
Hillcrest School (Peekskill)	3	3		EAS		
Oregon Road Substation	3	4	CAS			
Westbrook Dr.	3	6				TLD
Oregon Corners (Putnam Valley)	3	6		EAS		
Peekskill Hollow Rd. & Tinker Hill Rd.	3	10		EAS		TLD
Lents Cove	4	.5				TLD
Standard Brands	4	1	CAS			TLD
Old Dump	4	1				TLD
Lower South St., Merle Corp.(Peekskill)	4	1		EAS		
Lower South St. near West. Iron	4	1			R/S	
Lower South St. & Louisa St.	4	1.5				TLD
Maple Ave. Entrance to Mt. Florence School	4	3		EAS		
Pine Rd.	4	5				TLD
Lexington Ave. & Townsend Rd. (Cortlandt)	4	6		EAS		
Somerston Rd. & Carol Ct. (Yorktown)	4	10		EAS		TLD
Bleakley & Broadway	5	.5	CAS			TLD
Lower S. St. near By Pass Diner	5	1			R/S	
Welcher Ave. & McKinely School Playground	5	1.5				TLD
McKinley St. & Welcher Ave.(Peekskill)	5	2		EAS		
Maple Ave. & Furnace Woods Rd. (Cortlandt)	5	4		EAS		
Croton Ave.	5	6				TLD
Hunterbrook Rd. @ CoAx Sta. #571 (Yorktown)	5	7		EAS		
Moseman Rd. & St. Patricks School (Yorktown)	5	10		EAS		TLD

LOCATION NAME	SECT	MILE	CAS	EAS	R/S	TLD
Simulato: Building	6	.5				TLD
Broadway, between Bleakley & Service Center	6	.5			R/S	
Tensolite Corp. Rt. 9A (Buchanan)	6	1		EAS		
Factory St.	6	1.5				TLD
Watch Hill Rd & Mt. Side Trail (Cortlandt)	6	3		EAS		
Colabaugh Pond Rd.	6	6				TLD
Rte. 129 @ Hunterbrook Bridge(Yorktown)	6	7		EAS		
Rte. 100 & Rte. 134	6	10		EAS		TLD
Water Meter House	7	.5				TLD
Broadway, at Service Center Gate	7	.5			R/S	
Buchanan Village Hall	7	1	CAS			TLD
Westchester Ave. & First St. (Buchanan)	7	1		EAS		
Furnace Dock	7	4	CAS			TLD
Watch Hill Rd. & Westminister Dr. (Cortlandt)	7	4		EAS		
Mt. Airy & Winsor Rd	7	5				TLD
Cleveland Dr. & Hughes St. (Croton)	7	6		EAS		
North State Rd. & Ryder Ave.	7	10		EAS		TLD
Environmental Lab	8	.5	CAS			TLD
Service Building	8	.5	CAS			TLD
Broadway, S.W. of Sub Station	8	.5			R/S	
Westchester Ave. & School Exit (Buchanan)	8	1		EAS		
Tate Ave.	8	1.5				TLD
Crugers R.R. Station (Cortlandt)	8	3		EAS		
Croton Point & Sample Site	8	7	CAS	EAS		TLD
Liberty St. & Hudson St. (Ossining)	8	10		EAS		TLD
South East Corner (site)	9	1				TLD
14th St. Between Broadway & West. Ave.	9	1		EAS		
Broadway at St. Mary's Cemetary	9	1			R/S	
Montrose Marina	9	2				TLD
Montrose Pt. Rd. (Cortlandt)	9	3		EAS		
Warren Ave. Haverstraw	9	5				TLD
Rte. 9W & So.Mt.Rd. (Short Cove) (Clarkstown)	9	7		EAS		
Kings Highway & Old Mill Rd. (Clarkstown)	9	10		EAS		TLD

LOCATION NAME	SECT	MILE	CAS	EAS	R/S	TLD
Onsite Pole	10	.5				TLD
N.Y.U. Tower	10	1	CAS			TLD
11th St. & Highland Ave. (Verplanck)	10	1		EAS		
11th St. & Highland (Con Ed Property)	10	1			R/S	
Verplanck	10	1.5				TLD
Grassy Point	10	4	CAS			TLD
Beach Rd. & Grassy Pt. Rd. (Stony Pt.)	10	4		EAS		
Railroad Ave. & Rte. 9W	10	5				TLD
Little Tor Rd. & South Mt. Rd. (Clarkstown)	10	7		EAS		
West Clarkstown Rd. & Palisades Pkwy. Overpass (Clarkstown)	10	10		EAS		TLD
White Beach Texas Inst. (Verplanck)	11	1		EAS		
Algonquin Gas Line Crossing	11	1	CAS			TLD
Trap Rock at end of 9th Ave. (White Beach)	11	1			R/S	
Gilmore Dr. & Adams Dr. (Stony Pt.)	11	3		EAS		
Willow Grove Rd. & Birch Dr.	11	5				TLD
Willow Grove Rd. & Knapp Rd.(Haverstraw)	11	6		EAS		
Haverstraw Rd. (Rte. 202) & Wilder Rd.	11	10		EAS		TLD
Gays Hill Rd. (south end) & Rte. 9W	12	2		EAS	R/S	TLD
Lovett Plant	12	2	CAS			
Frank Rd. & Bulson Town Rd.(Stony Pt.)	12	4		EAS		
Palisades Pkwy. (sign going So.,NY&NJ)	12	5				TLD
Lake Welch Pkwy. & Sewage Plant (Harrison)	12	7		EAS		
Lake Welch Pkwy. & 7 Lakes Pkwy. (Harrison)	12	10		EAS		TLD
Gays Hill Rd. (north end) & Rte. 9W	13	2		EAS	R/S	TLD
Mott Farm Rd. @ Entrance to Camp Addison Boyce (Tuxedo)	13	3		EAS		
Palisades Pkwy. (So. of Gas Station)	13	5				TLD
Arden Valley & Lake Cohasset	13	9		EAS		TLD
Dock (Onsite)	14	.5				TLD
Rte. 9W at Pirates Cove Rest.(Stony Pt.)	14	2		EAS	R/S	TLD
Anthony Wayne Park	14	5				TLD
Rte. 6, 1 mi. West of Palisades Pkwy.	14	6		EAS		
County Rte. 9 @ Thruway (Woodbury)	14	10		EAS		TLD
Rte. 9W & Anchor Monument (Stony Pt.)	15	1		EAS		
Rte. 9W So. of Ayers Rd.	15	1				TLD
9W & 202 (Pole # NYT #225)	15	1			R/S	
Front Entrance Bear Mt. Inn	15	4		EAS		
Palisades Pkwy. (Lake Welch Exit going South)	15	5				TLD
Mine Rd. & Weynants Rd. (Highland)	15	6		EAS		
Mineral Springs Rd. & County Rte. 34	15	10		EAS		TLD

LOCATION NAME	SECT	MILE	CAS	EAS	R/S	TLD
Ayers Rd., Jones Point (Stony Pt.)	16	1		EAS	R/S	TLD
Bear Mt. Bridge West End	16	4		EAS		
Fort Montgomery	16	5				TLD
0.4 mi West. Junction Rts. 9W & 218	16	6		EAS		
Rte. 9W & Rte. 293 (Highland)	16	9		EAS		TLD

SECT: Sector

CAS: Continuous Air Sampling Site (Green dots)

EAS: Emergency Air Sampling Site (Yellow dots)

R/S: Reuter Stokes (Blue dots)

TLD: TLD (Red dots)

Mile determinations are made in this manner:
Miles are determined by the mile sector which encompasses it.

Example: If site is between sector 1 & 2, it will be referred to as mile 2.

FORM 21

RM-14/HP-210

DETERMINATION OF RADIOACTIVE AIRBORNE CONCENTRATIONS

SAMPLE LOCATION ____________________ TECHNICIAN ________________ DATE __________

Sample Start Time	Sample End Time	Sampler w/Gas Meter			Sampler w/ Flow Rate Indicator				
		Start	End	Sample	Start	End	Avg.	Sample Time Min.'s	Sample
Hours	Hours	Ft^3	Ft^3	Ft^3	CFM	CFM	CFM		Ft^3

Sample Counting RM-14/HP-210 Serial No. ____________________

3600 Test ______________ CPM (AC Only)
Button Source Stated CPM ______________
Button Source Count CPM ______________

Sample	Sample CPM	Bkgd CPM	uCi/cc
Particulate			
Charcoal			
Silver Zeolite			

$$\text{Particulate uCi/cc} = \frac{(\text{Sample CPM-BKGD CPM})\ (6.4 \times 10^{-11})}{Ft^3}$$

$$\begin{array}{l}\text{Charcoal uCi/cc} \\ \text{Silver Zeolite}\end{array} = \frac{(\text{Sample CPM-BKGD CPM})\ (4.6 \times 10^{-9})}{Ft^3}$$

FORM 27

OFFSITE SURVEY TEAM DATA

Team No.	Date / Time	Elasped Sampling Time	Sample Pt.*	Field Survey $\beta+\gamma$ mR/hr**	Field Survey γ mR/hr***	Sample Vol. Ft.^{3}	Counter Bkgd CPM	Part. CPM	Particulate Activity	Char/ Ag Ze CPM	Char/ Ag Ze Activity	Child Equiv. Thyroid Rem

* Sample Point (Sector/Mile) or Perimeter Segment
** Window Open Reading
*** Window Closed Reading

Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914 739 8200

NewYork Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1015 REV. 0

TITLE" POST ACCIDENT ENVIRONMENTAL SAMPLING AND COUNTING "

Note: Only the procedure number was changed. (the old number was Ip-1018)

WRITTEN BY: [signature]

REVIEWED BY: D.M.May

PORC REVIEW: [signature] DATE 6/27/84

APPROVED BY: John C. Burns DATE 6/27/84

EFFECTIVE DATE: 7-1-84

POST ACCIDENT ENVIRONMENTAL SAMPLING AND COUNTING

1.0 INTENT

To describe the environmental sampling and counting which may be requested to be performed when a Site Area or General Emergency has had offsite radiological consequences.

2.0 DISCUSSION

The responsibility for requesting post accident environmental sampling is the Emergency Director's, and it is he who should request assistance from Con Edison.

The nature and frequency of the survey and sampling will depend on:

a) Incident conditions (i.e. whether there has been a radioactive release from the plant, magnitude of the release if any, etc.)
b) Environmental conditions (i.e. seasonal considerations affecting sample availability, weather, etc.)
c) Data collected (i.e. if sampling indicates significantly different values from historical data, etc.).
d) Recommendation from the Radiological Assessment Team Leader.

Members of the Con Edison Nuclear Environmental Monitoring (NEM) organization will perform the requested surveys, sampling and counting. Depending on the number of samples taken, some counting may be performed by Teledyne Isotopes, Westwood New Jersey.

3.0 PRECAUTIONS AND LIMITATIONS

Once the release has been terminated, the following guidelines are given depending on whether the release was to the air or water.

Two periods of time have been chosen for sampling frequency:

T_s = short term 0 to 2 days (1st two days)
T_l = long term 3 days to 3 months

Dependent on the type of sample to be taken, frequencies for sampling within the short and/or long term periods have been established.

Con Edison Emergency Plan Implementation Procedure IP-1004, Post Accident Offsite Environmental Surveys, Sampling and Counting will be adhered to. Duration of sampling is to be as described in section 3.0, Emergency Classification and Monitoring Requirements of mentioned procedure, consistent with the Con Ed Nuclear Environmental Monitoring Procedures.

3.1 WATER RELEASE (To Hudson River)

The following sampling guidance is to be used as a minimum standard if the estimated activity (not including noble gases) is greater than 100 Ci to the River. If the release to the River is less than 100 Ci, the following guidance may be used as the upper limit of sampling.

Sample Type	Source of Sample	Locations	Frequency
Surface Water	Grab Sample	Table 1 sampling points every ½ mi. up river to 3 mi. every ½ mi. down river to 5 mi.	= 2/day = weekly 1 sample from incoming tide 1 sample from outgoing tide
Biota	Fish, crabs, clams	Table 1 sample points where available	= 1/day = 1/week
Shoreline Sediment		Table 1 sample points at all water locations	= 1/day = 1/week

3.2 AIR RELEASE

The following sampling guidance is to be used after the termination of the release.

Sample Type	Source of Sample	Locations	Frequency
Air Particulate		Table 1 locations IP-1011 locations in affected sections	f_s = 1/day f_ℓ = 1/week
Radioiodine			f_s = 1/day f_ℓ = 1/week
Direct Gamma	TLD Reuter Stokes Portable Reuter Stokes	All TLD locations 16 locations Table 1 locations	After release is terminated & as scheduled thereafter, monitor frequently during release <u>after</u> f_s = 1/day (3pts./sec./mi.) f_ℓ = 1/week (1pt./sec./mi. in affected sec.)
Milk		Table 1 locations	Sample daily for 3 weeks in affected sectors, weekly thereafter
Grassy Leafy Greens		Table 1 locations Table 1 locations and random gardens in affected sectors	
Fallout	Precipitation	Table 1 precipitation locations and other designated precipitation locations	Daily for first week if raining, hourly if pouring
Lake Surface Water	Grab	Table 1 locations	f_s = once/day in affected sectors out to 5 mi. f_ℓ = once/2 weeks thereafter out to 5 mi.

3.2 AIR RELEASE (CONT'D)

Sample Type	Source of Sample	Locations	Frequency
Well H_2O	Grab	Table 1 location & other	Once/week
Drinking Water	Grab	Table 1 locations	= 1/day in affected sectors = 1/week in affected sectors (out to 10 mi. or can be extended based on magnitude of accident)
Lake Fish			If estimated 1 or more curies are deposited on lake, sample fish.

4.0 PROCEDURE

4.1 The E.D., along with the RATL, evaluates the need for post accident environmental sampling and counting. The following are to be considered.

a) Isotopes involved in discharge
b) Number of curies involved in discharge
c) Particulate involvement in discharge
d) Half life of isotopes
e) Specific concentrations in the environmental ambient air
f) Length of time of discharge
g) Weather conditions at the time of sampling
h) Seasonal considerations affecting sample availability
i) Areas to be sampled

4.2 Using Table 1 (provided) as guidance, post accident environmental sampling will be requested.

4.3 The ED requests the NEM Supervisor to initiate sampling and counting and to report results as they are obtained.

4.4 Con Ed Emergency Plan Implementation Procedure IP-1004 will be adhered to.

4.5 The ED notifies the N.Y.S. Bur. of Environmental Radiation Protection and the County Offices of Disaster and Emergency Services (Westchester, Orange, Rockland, Putnam) that sampling and counting are to start and that the results of the survey will be forwarded to them.

TABLE 1

SECTOR	MILES	LOCATION	SAMPLE TYPE
1	10.8	Cold Spring	Shoreline Soil
1	12.0	Phillipstown	Leafy Greens
1	20	Roseton	Fallout Air Particulate Radioiodine Gamma Leafy Greens
2	1.5	Peekskill Bay	Hudson River Water Shoreline Soil
2	1.75	Gas Holder Building	Air Particulate Radioiodine
2	2.5	Camp Smith	Well Water Land Vegetation
2	6.0	Mohican	Milk Leafy Greens
2	19.6	Shanandoah Farms	Milk
3	2.0	Amicus Reservoir	Drinking Water

TABLE 1

SECTOR	MILES	LOCATION	SAMPLE TYPE
3	3.2	Pataki's	Leafy Greens
3	3.5	Camp Field Reservoir	Drinking Water
4	0.75	Standard Brands	Air Particulate Radioiodine Gamma
4	5.0	Cortland	Leafy Greens
4	10.0	Stuart's	Leafy Greens
5	onsite	Iroquois Lake	Surface Lake Water
5	8.9	Hilltop Hanover Farms	Milk
6	7.0	New Croton Reservoir	Drinking Water
7	3.5	Furnace Dock	Fallout Air Particulate Radioiodine Gamma
7	4.0	Joe's Fruit Stand (Croton)	Leafy Greens

IP-1015

SECTOR	MILES	LOCATION	SAMPLE TYPE
8	onsite	Environmental Laboratory	Fallout Air Particulate Radioiodine Gamma
8	onsite	Service Building	Air Particulate Radioiodine Gamma
8	onsite	Indian Point	Well Water Leafy Greens Land Vegetation
8	onsite	New York City Aqueduct	Drinking Water
8	0.75	St. Mary's Cemetary	Land Vegetation
8	1.0	Lake Meahagh	Surface Lake Water
8	2.5	George's Island	Land Vegetation
8	7.5	Croton Point	Air Particulate Radioiodine Gamma Fallout Hudson River Water Shoreline Sediment

TABLE 1

SECTOR	MILES	LOCATION	SAMPLE TYPE
8	15.0	Eastview	Fallout Air Particulate Gamma
9	1.5	Montrose Marina	Land Vegetation Gamma
9	6.8	Dr. Davis Farm	Leafy Greens
10	0.25	Algonquin Gas Line	Air Particulate Radioiodine Gamma
10	0.9	White Beach	Shoreline Soil Hudson River Water
10	1.0	NYU Tower	Air Particulate Radioiodine Gamma
10	1	Off Verplanck	Hudson River Water Shoreline Soil
10	1	Dunderberg Well	Well Water

TABLE 1

SECTOR	MILES	LOCATION	SAMPLE TYPE
10	3	Grassy Point	Fallout Air Particulate Radioiodine Gamma
10	4	Haverstraw Beach	Shoreline Soil Hudson River Water
11	0.75	Trap Rock Lake	Surface Lake Water
12	onsite	Discharge Canel	Hudson River Water
12	1.5	Lovett	Air Pariculate Radioiodine Hudson River Water
13	2.5	Tory Lake	Lake Water
14	onsite	Inlet Pipe Into Plants	Hudson River Water
14	1.5	Tompkins Cove	Hudson River Water
16	2.5	Iona Island	Hudson River Water Shoreline Soil

SECTOR	MILES	LOCATION	SAMPLE TYPE
16	4.5	Manitou Inlet	Hudson River Water Shoreline Soil
86 *	86 *	Where Available Nearsite	Fish Clams Crabs
99 **	99 **	Pineland Farms	Leafy Greens
99 **	99 **	Wilkes	Leafy Greens
99 **	99 **	Calabrese	Leafy Greens

86* Samples of Fish, Clams and Crabs should be collect where available near site.

99** Leafy greens should be collect at these Farm locations.

P.O. Box 215
Buchanan, New York 10511
914 739.8200

New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1017 REV. 4

TITLE " RECOMMENDATION OF PROTECTIVE ACTIONS FOR THE OFFSITE POPULATION"

WRITTEN BY: Michael F. Pell

REVIEWED BY: Dennis Quinn

PORC REVIEW: W. Hamlin DATE 12/28/84

APPROVED BY: John C. Brons DATE 12/08/84

EFFECTIVE DATE: 1-2-85

RECOMMENDATION OF PROTECTIVE ACTIONS FOR THE OFFSITE POPULATION

1.0 INTENT

This procedure describes the methods to be used by the Shift Supervisor/ Emergency Director to determine the protective actions to recommend to the offsite authorities (State and County) whenever there is an accident or condition at Indian Point that may have offsite radiological consequences.

2.0 DISCUSSION

2.1 Recommendations for protective actions to offsite agencies are found in the "Initiating Condition and Emergency Action Levels" Table (EAL's).

a) Initiating conditions have been appropriately corresponded to recommended protective actions.
b) Where no protective action recommendations have been made it implies there is no need to take any immediate protective actions. Standing by for any changes may be appropriate.

REMINDER: When protective action recommendations are made for offsite action, appropriate steps should be taken for onsite personnel.

2.2 The decision to make protective action recommendations to the offsite population should be made by the Emergency Director (Shift Supervisor during the initial stages of an emergency).

2.3 During the initial notification process (IP-1030) protective action recommendations should be relayed to offsite agencies using EP Form #30.

2.4 To provide more detailed protective action recommendations refer to:

a) Section 3.0 for Actual Releases
b) Section 4.0, Based on Plant Parameters | 4

2.5 After the EOF is staffed, the decisions to make protective action recommendations to offsite agencies should be made by the Emergency Director, with input from the Radiological Assessment Team Leader.

STATEMENT: The Power Authority shall make recommendations to the State on protective actions based on in-plant assessments and plant parameters. However, the decision to <u>initiate</u> the recommended protective actions is the responsibility of the State and Local authorities.

3.0 ACTUAL RELEASE
PROTECTIVE ACTION RECOMMENDATIONS

3.1 Do dose calculations in IP-1001 within 15 minutes.

NOTE: Dose calculations within the first 15 minutes will be based on:
1) Assumed I/NG ratio
2) Actual meteorology
3) Actual or estimated duration of release

Protective actions may be based on this initial calculation (duration of the release should be actual or realistic). The calculation should be repeated when a chem sample is obtained, or as field data (noble gas readings, iodine and particulate air sample results) becomes available. Protective actions should then be reconsidered on that basis. 4

3.2 *Assess radiological conditions at the site boundary and recommend protective actions based on the following: 4

Site Boundary	Protective Actions **
a) Less than 1 Rem/hr Whole Body Less than 5 Rem/hr thyroid	No immediate action necessary. Continue accident assessment (See attachment 6.3, PAG's)
b) Dose between 1 to 10 Rem Whole Body Dose between 5 to 50 Rem Thyroid	Evacuate 2 miles downwind Shelter 2 mile Radius Shelter 5 miles Downwind
c) Dose greater than 10 Rem Whole Body Dose greater than 50 Rem Thyroid	Consider: Evacuation of 2 mile radius Evacuation of Downwind sectors to the point the dose is less than 1 Rem Whole Body, 5 Rem thyroid (See attachment 6.3, PAG's)

* Type of release should be determined as soon as possible (Noble Gas, Iodine or Particulates)

** Refer to 5.0 Evacuation/Shelter Considerations 4

4.0 RECOMMENDATION OF PROTECTIVE ACTIONS BASED ON PLANT PARAMETERS

4.1 Determine Plant Conditions and make protective action recommendations based on the following:

Emergency Classification	Protective Actions
a) NUE, Alert, Site Area Emergency	As specified in the EAL's Table 4-1 of Book II. In addition each plant condition must be reviewed independently and protective actions based on that reality.
b) General Emergency	Shelter 2 mile radius Shelter 5 miles downwind (See attachment 6.1, General Emergency Flowchart)

5.0 EVACUATION/SHELTERING CONSIDERATIONS

When deciding whether to evacuate or shelter, consider and weigh the following:

a) Duration of release

b) Time it would take to evacuate (see attachment 6.5)

c) Projected exposure received during evacuation

d) Type of release

Example: For a release containing concentrations of iodines or particulates it may be advisable to evacuate ERPA's in the Plume Path rather than sheltering.

e) Sheltering provides a protection factor of about 2 for noble gases. That is, projected dose $\div$ 2 = dose (sheltering considered). This is an approximate value for a typical house, where in fact a range of sheltering factors would be present.

NOTE: For all protective action recommendations, the principle of maintaining radiation exposures as low as reasonably achievable, must be considered.

4

6.0 ATTACHMENTS

6.1 General Emergency Flowchart

6.2 R-25/R-26 Readings vs. Core Damage

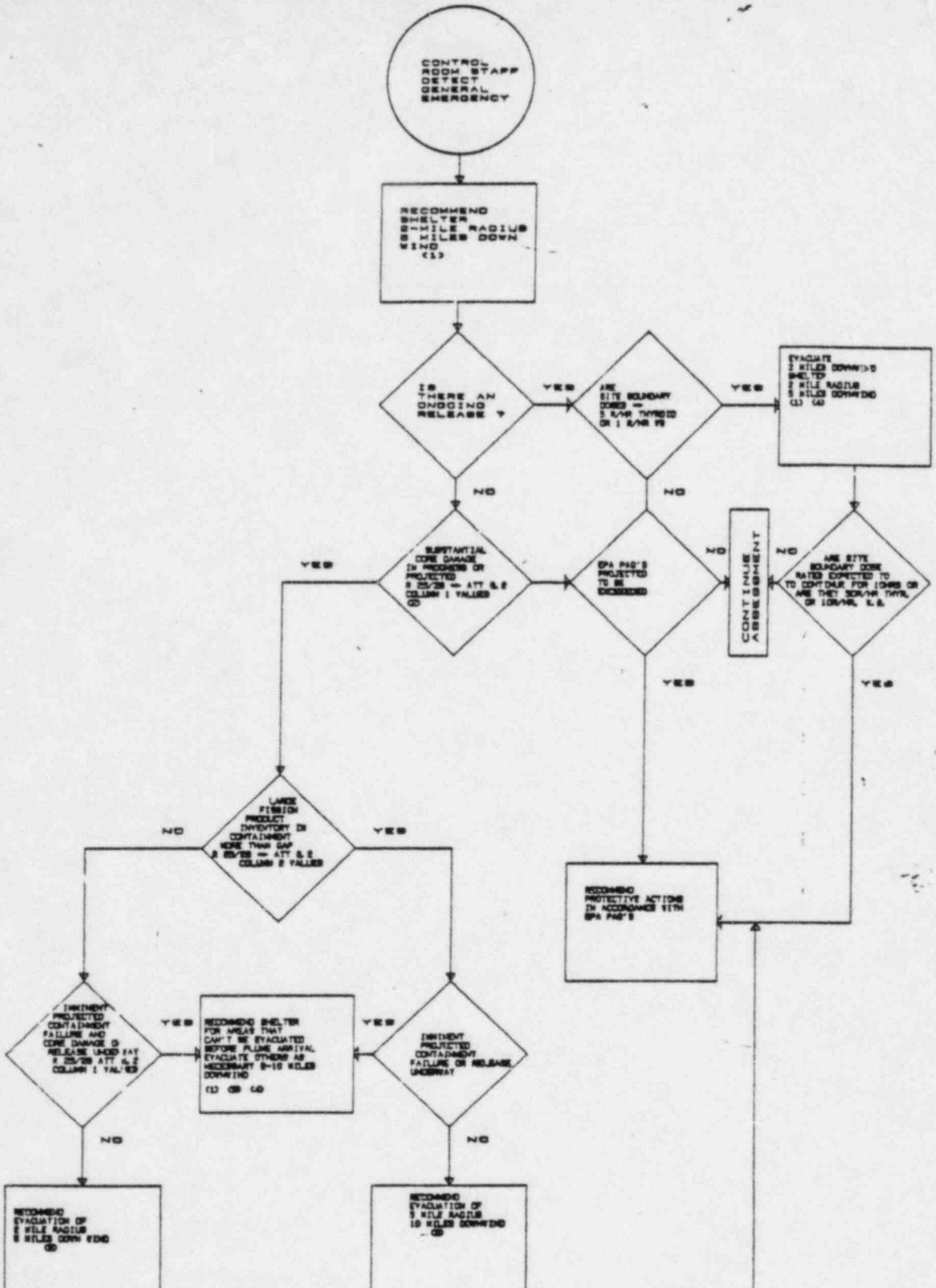
6.3 EPA Protective Action Guide Lines

6.4 Conversion of Sector/Zones to ERPAS

6.5 Evacuation time estimates by ERPA (Figures 1-4) 4

FLOW CHART FOR GENERAL EMERGENCY OFFSITE PROTECTIVE DECISIONS

THE FOLLOWING ACTIONS WILL BE BASED ON PREDETERMINED OBSERVABLE INSTRUMENTATION AND PLANT STATUS INDICATORS (EAL'S) CONTAINED IN THE EMERGENCY PLAN AND THAT HAVE BEEN REVIEWED BY OFFSITE OFFICIALS. HOWEVER RESPONSIBLE OFFSITE OFFICIALS MUST DECIDE ON THE FEASIBILITY OF IMPLEMENTING THE PROTECTIVE ACTIONS AT THE TIME OF THE ACCIDENT



1 - SITUATIONS REQUIRING URGENT ACTION BY OFFSITE OFFICIALS BASED ON CONTROL ROOM INDICATORS. NO DOSE PROJECTION REQUIRED.
2 - ACTUAL OR PROJECTED RELEASE OF GAP FROM CORE OR LOSS OF PHYSICAL CONTROL OF THE PLANT TO INTRUDERS.
3 - FOR ALL EVACUATIONS SHELTER THE REMAINDER OF THE PLUME EPZ AND PROMPTLY RELOCATE THE POPULATION AFFECTED BY ANY GROUND CONTAMINATION FOLLOWING PLUME PASSAGE
4 - CONCENTRATE ON EVACUATION OF AREAS NEAR THE PLANT (EG. MAY BE TIME TO EVACUATE 2 MILE RADIUS AND NOT THE 5 MILE RADIUS

EXPECTED R-25 AND R-26 READINGS VS. CORE DAMAGE

Time After Shutdown	(20% gap)* Column 1 R/hr	(100% gap) ** Column 2 R/hr	100% RG 1.4 Source Term Column 3 R/hr
t = 0	1800	9200	2.7 E6
1 hr	1500	7500	2.0 E6
2 hr	1300	6300	1.5 E6
4 hr	960	4800	9.6 E5
8 hr	680	3400	5.1 E5
12 hr	540	2700	3.3 E5
24 hr	370	1900	1.6 E5
48 hr	270	1300	8.4 E4
4 days	190	960	4.8 E4
7 days	140	680	3.2 E4
14 days	68	340	1.6 E4
30 days	17	83	3.4 E3

* Substantial core damage (20% fuel damage) is interpreted to mean release of 20% of the fission product activity in the fuel gap.

** Large fission product inventory in containment (more than gap) is interpreted to mean release of 100% of the fission product activity in the fuel gap.

EPA PROTI VE ACTION GUIDE LINES

Recommended protective actions to reduce whole body and thyroid dose from exposure to a gaseous plume

Projected Dose (Rem) to the Population		Recommended Actions (a)	Comments
Whole Body	<1	No planned protective actions. (b) State may issue an advisory to seek shelter and await further instructions. Monitor environmental radiation levels.	Previously recommended protective actions may be considered or terminated.
Thyroid	<5		
Whole Body	1 to <5	Seek shelter as a minimum. Consider evacuation. Evacuate unless constraints make it impractical. Monitor environmental radiation levels. Control access.	If constraints exist, special consideration should be given for evacuation of children and pregnant women.
Thyroid	5 to <25		
Whole Body	5 and above	Conduct mandatory evacuation. Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. Control access.	Seeking shelter would be an alternative if evacuation were not immediately possible.
Thyroid	25 and above		
Projected Dose (Rem) to Emergency Team Workers			
Whole Body	25	Control exposure of emergency team members to these levels except for lifesaving missions. (Appropriate controls for emergency workers, include time limitations, respirators, and stable iodine.)	Although respirators and stable iodine should be used where effective to control dose to emergency team workers, thyroid dose may not be a limiting factor for lifesaving missions.
Thyroid	125		
Whole Body	75	Control exposure of emergency team members performing lifesaving missions to this level. (Control of time of exposure will be most effective.)	

(a) These actions are recommended for planning purposes. Protective action decisions at the time of the incident must take existing conditions into consideration.

(b) At the time of the incident, officials may implement low-impact protective actions in keeping with the principle of maintaining radiation exposures as low as reasonably achievable.

TABLE I

CONVERSION OF SECTOR/ZONES TO ERPAS FOR DISTANCES OF 0-2, 2-5 & 5-10 MILES

Sector				
No.	Direction	0-2 Miles	2-5 Miles	5-10 Miles
1	N	2,7,38,44	8,16,45	17,23,24,26,46
2	NNE	1,2,44	7,8,16,18	17,19
3	NE	1,2,44	8,9	10,18,19,20
4	ENE	1,2,3,44	8,9	10,11,12,13,14,20
5	E	1,2,3,4	5,9	11,12,13,14,15
6	ESE	1,3,4	5	12,13,15,21
7	SE	1,4	3,5,6	12,21,22,43
8	SSE	1,4	6,43	22,32,42
9	S	1,4,43,44	30,31	32,33,34,35,42
10	SSW	1,43,44	29,30,31	34,35,36,37
11	SW	1,29,44	30,31	34,36,37,40,41
12	WSW	1,29,44	30,39,40	40,41
13	W	29,39,44	30,40	28
14	WNW	38,39,44	39,40	24,27,28
15	NW	38,39,44	24,26,39,40,45	25,27
16	NNW	38,39,44	7,16,26,39,45	24,25

EMERGENCY RESPONSE PLANNING AREAS

AREA	ERPAS
0-2 mile radius	1,2,3,4,7,29,38,39,43,44
0-5 mile radius	1,2,3,4,5,6,7,8,9,16,18,24, 26,29,30,31,38,39,40,43,44,45

FIGURE 1

GENERAL POPULATION

EVACUATION TIME ESTIMATES IN HOURS BY ERPA

NORMAL WEATHER CONDITIONS

ERPA	SCHOOL IN SESSION	SCHOOL NOT IN SESSION	SUMMER WEEKEND/ HOLIDAY	WINTER WEEKEND/ HOLIDAY	EVENING	NIGHT
1	8	7	4	3	3	3
2	8	8	7	5	6	4
3	8	7	7	3	4	3
4	9	7	4	4	4	3
5	9	7	7	4	4	4
6	8	6	4	3	3	3
7	2	1	1	1	1	1
8	8	8	7	5	6	4
9	8	7	7	4	4	4
10	8	8	5	4	5	4
11	8	8	7	4	5	4
12	9	6	7	3	4	3
13	8	6	6	3	4	3
14	8	8	5	4	5	4
15	8	6	7	3	4	3
16	6	5	2	3	2	2
17	6	5	2	3	2	2
18	8	6	4	4	6	4
19	8	6	5	4	6	4
20	8	1	1	1	1	1
21	8	6	3	3	3	3
22	9	6	3	3	3	3
23	5	5	2	2	2	2
24	4	4	1	1	1	1

FIGURE 2

GENERAL POPULATION

EVACUATION TIME ESTIMATES IN HOURS BY ERPA

NORMAL WEATHER CONDITIONS
(continued)

ERPA	SCHOOL IN SESSION	SCHOOL NOT IN SESSION	SUMMER WEEKEND/ HOLIDAY	WINTER WEEKEND/ HOLIDAY	EVENING	NIGHT
25	6	4	1	1	1	1
26	8	10	8	5	4	3
27	5	4	4	2	2	2
28	5	4	4	2	2	1
29	10	9	5	8	5	4
30	10	9	6	8	5	5
31	10	9	5	8	5	4
32	7	8	5	8	4	4
33	8	8	5	8	4	4
34	8	8	5	5	5	5
35	8	8	5	5	5	5
36	6	4	3	3	3	3
37	7	5	4	4	3	3
38	8	10	9	5	4	4
39	—	—	—	—	—	—
40	—	—	—	—	—	—
41	—	—	—	—	—	—
42	—	—	—	—	—	—
43	—	—	—	—	—	—
44	—	—	—	—	—	—
45	—	—	—	—	—	—
46	—	—	—	—	—	—

FIGURE 3

GENERAL POPULATION

EVACUATION TIME ESTIMATES IN HOURS BY ERPA

ADVERSE WEATHER CONDITIONS

ERPA	SCHOOL IN SESSION	SCHOOL NOT IN SESSION	SUMMER WEEKEND/ HOLIDAY	WINTER WEEKEND/ HOLIDAY	EVENING	NIGHT
1	10	9	5	5	5	4
2	12	11	10	6	9	7
3	9	8	10	5	5	4
4	12	10	5	5	5	5
5	12	10	10	5	5	5
6	9	7	5	4	4	4
7	2	1	1	1	1	1
8	12	11	9	7	9	7
9	11	10	9	5	5	5
10	12	11	6	6	8	6
11	12	11	9	6	8	6
12	12	8	9	5	5	4
13	11	8	9	5	6	4
14	12	11	6	6	8	6
15	11	8	9	5	6	4
16	9	6	3	3	3	3
17	9	6	3	3	3	3
18	11	8	7	6	8	6
19	11	8	7	7	9	7
20	10	1	1	1	1	1
21	9	7	4	4	7	3
22	12	9	4	4	4	4
23	7	6	3	3	3	3
24	5	5	1	1	1	1
25	7	4	1	1	1	1
26	11	15	13	7	5	5

FIGURE 4

GENERAL POPULATION

EVACUATION TIME ESTIMATES IN HOURS BY ERPA

ADVERSE WEATHER CONDITIONS
(continued)

ERPA	SCHOOL IN SESSION	SCHOOL NOT IN SESSION	SUMMER WEEKEND/ HOLIDAY	WINTER WEEKEND/ HOLIDAY	EVENING	NIGHT
27	6	5	5	2	2	1
28	6	5	5	2	2	1
29	14	14	8	12	7	7
30	14	14	8	12	7	7
31	14	14	8	12	7	7
32	11	12	8	12	5	5
33	11	12	8	12	5	5
34	12	12	7	7	7	7
35	12	12	7	7	7	7
36	8	5	4	4	4	4
37	10	8	5	5	5	5
38	12	15	13	7	6	5
39	—	—	—	—	—	—
40	—	—	—	—	—	—
41	—	—	—	—	—	—
42	—	—	—	—	—	—
43	—	—	—	—	—	—
44	—	—	—	—	—	—
45	—	—	—	—	—	—
46	—	—	—	—	—	—

Indian Point 3
Nuclear Power Plant
P.O. Box 215
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914 739 8200

New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1019 REV. 0

TITLE" EMERGENCY USE OF POTASSIUM IODIDE (KI) "

WRITTEN BY: David D. Bell

REVIEWED BY: [signature]

PORC REVIEW: [signature] DATE 6/12/84

APPROVED BY: John C. Brons DATE 6/18/84

EFFECTIVE DATE: 6-25-84

EMERGENCY USE OF POTASSIUM IODIDE (KI)

1.0 PURPOSE

The purpose of this procedure is to provide instructions for the use of Thyroid Blocking Potassium Iodide (KI). (The purpose of using potassium iodide (KI) is to saturate the thyroid gland with stable iodine so the radioactive iodine will be "blocked". Studies indicate that iodine has approximately a six hour half time of uptake, so the stable KI can be given up to several hours after exposure to radioiodine and it will still have some thyroid blocking effect. Preferably, KI should be given prior to exposure to radioiodine. The National Council on Radiation Protection and Measurements (NCRP) in Report No. 55 recommends that "individuals who have had an accidental occupational exposure to radioiodine, regardless of the route of exposure should immediately be given potassium iodide and this administration should be continued for 7 to 14 days.)"

2.0 REFERENCES

2.1 National Council on Radiation Protection and Measurements Report No. 55. PROTECTION OF THE THYROID GLAND IN THE EVENT OF RELEASES OF RADIOIODINE

2.2 NYPA, INTERIM POLICY FOR THE DISTRIBUTION AND USE OF POTASSIUM IODIDE (KI), March 12, 1984

2.3 Manufacturers (Wallace Laboratories) Recommendations on Use of Thyro-Block Tablets.

3.0 PROCEDURE

3.1 The Shift Supervisor/Emergency Director is the only individual authorized to implement this procedure.

3.2 Emergency Director or Designee Shall:

3.2.1 Request the Radiological Assessment Team Leader to determine the potential thyroid total absorbed dose from the radioisotope I^{131} for IP-3 emergency workers both onsite and for offsite monitoring teams.

3.2.2 Should the estimate be in the 1 to 10 rads range, request the Radiological Assessment Team Leader to institute immediate isotopic monitoring. If the real exposure to any personnel is calculated to be in excess of 10 rads, instruct the Radiological Assessment Team Leader to administer potassium iodide.

3.3 Radiological Assessment Team Leader or Designee Shall:

3.3.1 Monitor the radiological conditions in the emergency facilities or any work areas containing personnel, or search, repair or monitoring teams. This shall be done in accordance with the following procedures: IP-1010, IP-1011, IP-1025, IP-1027, IP-1040, IP-1041, IP-1054.

3.3.2 Determine the potential thyroid total absorbed dose from the radioisotope I^{131} for all risk personnel.

3.3.3. Should the estimate be in the 1 to 10 rads range, continue isotopic monitoring. If the real exposure to any personnel is calculated to be in excess of 10 rads, recommend to the Emergency Director the use of potassium iodide (KI) for risk personnel.

3.3.4 If instructed to administer potassium iodide (KI) by the Emergency Director to the risk personnel, potassium iodide shall be administered in a dosage of 130 mg (one tablet) orally, initially, followed by 130 mg once daily for a total dose of a minimum of 1.0g (~ 7 days). Administration of potassium iodide should not be less than 3 days and usually not for more than 10 days. IP-3's Medical Representative may change this total dose requirement based on monitoring measurements exposure potentials, etc. (The Medical Representatives phone number is included in Appendix B).

3.3.4.1 Potassium iodide (KI) should be administered no later than three hours after exposure if at all possible.

3.3.5 Potassium iodide (KI) is located in the Operations and Technical Support Center Emergency Lockers, the Control Room, the Security Command Guard House, and the Emergency Operations Facility. Additional supplies are available from Unit 2 Medical upon request.

3.3.6 Consideration should be given to issuance of potassium iodide (KI) to technicians performing field survey work if potential thyroid total absorbed dose exceeds previously established parameters.

4.0 WARNING AND SIDE EFFECTS

4.1 Warning

Potassium iodide should not be used by people allergic to iodide. Keep out of the reach of children. In case of overdose or allergic reaction, contact a physician or the public health authority.

4.2 Side Effects

a. Usually, side effects of potassium iodide happen when people take higher doses for a long time. You should be careful not to take more than the recommended dose or take it for longer than you are told. Side effects are unlikely because of the low dose and the short time you will be taking the drug.

b. Possible side effects include skin rashes, swelling of the salivary glands, and "iodism" (metallic taste, burning mouth and throat, sore teeth and gums, symptons of a head cold, and sometimes stomach upset and diarrhea).

c. A few people have an allergic reaction with more serious symptoms. These could be fever and joint pains, or swelling of parts of the face and body and at times severe shortness of breath requiring immediate medical attention.

d. Taking iodide may rarely cause overactivity of the thyroid gland, underactivity of the thyroid gland, or enlargement of the thyroid gland (goiter).

5.0 ATTACHMENTS

5.1 NYPA, Interim Policy for the Distribution and Use of Potassium Iodide (KI), March 12, 1984.

5.2 Patient Package Insert for "THYRO-BLOCK" Potassium Iodide.

POWER AUTHORITY
OF THE STATE OF NEW YORK

INTERIM POLICY
FOR THE DISTRIBUTION AND USE OF
POTASSIUM IODIDE (KI)

Page 1 of 4

Revised: February 22, 1984
Effective Date: March 12, 1984

I. GENERAL

With the rapid development of nuclear power reactors, and especially in view of a deepening energy crisis, concern has been raised that potential accidents at nuclear reactors could result in substantial offsite radiation exposures.

It is possible, but highly unlikely, that an accident at a nuclear power reactor could release large quantities of radionuclides, including isotopes of radioiodine, into the atmosphere. When the radioiodines are inhaled or ingested, they rapidly accumulate in the thyroid gland and are metabolized into organic iodine compounds. These compounds could reside in the thyroid gland long enough to cause local radiation damage. The dose to the thyroid can occur from (1) external dose from the passing cloud, (2) external dose from contaminated ground, and (3) internal dose from the inhalation or ingestion of radioiodines. Thyroiditis may occur as an early effect, but because it has been observed only with very large doses of I^{131}, it is unlikely to be a problem during offsite releases. Hypothyroidism and thyroid nodules with either benign or malignant characteristics are usually results of lower doses and do not occur until later. Therefore, it is considered in the best interest of Power Authority Management in support of its emergency workers to be prepared to take effective measures to prevent or mitigate the accumulation of radioiodines by the thyroid gland.

II. INTERIM POLICY FOR USE AND DISTRIBUTION OF POTASSIUM IODIDE (KI)

A major protective action to be considered after a serious accident at a nuclear power facility involving the release of radioiodine is the use of stable iodide as a thyroid blocking agent to prevent thyroid uptake of radioiodines.

Using guidance outlined in the National Council on Radiation Protection and Measurements Report No. 55 and recommendations of the Power Authority's medical consultant, the following interim policy for the use and distribution of Potassium Iodide has been developed;

A. An initial estimate of the potential thyroid total absorbed dose from radioisotope I^{131} from the release should be calculated.

B. Should the estimate be less than 10 rads, no distribution of KI should be instituted. If the exposure is calculated to be in excess of 10 rads, the voluntary use should be as follows:

   1. Potassium Iodide should be administered no later than three hours after exposure, and preferably before.

   2. Potassium Iodide will be administered in a dosage of 130 mgm (one tablet) orally, initially, followed by 130 mgm once daily. This dosage should be administered for not less than 3 days and usually not for more than 10 days. The Authority's designated physician may change this total dose requirement based on monitoring measurements, exposure potentials, etc.

C. Should the initial estimate have been 10-30 rads or more, all plant emergency personnel that are at risk should have potassium iodide (KI) administered as per Item B.1 and B.2 above.

D. The decision to administer potassium iodide (KI) will be made by the plant's Emergency Director in coordination with the plant's Radiological and Environmental Services Superintendent.

E. Potassium Iodide will only be distributed for use to personnel who are New York Power Authority Employees. It will not be given to non-NYPA employees. The distribution and use of KI to non-NYPA employees is under the jurisdiction of the New York State Department of Health and the appropriate County Health Department.

   Non-NYPA employees who are emergency workers can contact the local Office of Disaster and Emergency Services for information on the availability of KI.

III. LOGISTICS

A. Potassium Iodide tablets of strength of 130 mgm will be stockpiled and maintained at the nuclear plant under the direction of the Radiological & Environmental Services Superintendent.

B. Suitable amounts will be available for immediate administration to those at highest risk of exposure.

C. These sites to be determined by the site emergency planning coordinator in coordination with the Radiological Environmental Services Superintendent. Remaining tablets will be stored in areas logistically suitable for immediate administration to the remaining personnel, including Authority emergency personnel arriving at the facility.

Patient Package Insert For

THYRO-BLOCK™

(POTASSIUM IODIDE)
(pronounced poe-TASS-e-um EYE-oh-dyed)
(abbreviated: KI)
TABLETS and SOLUTION U.S.P.

TAKE POTASSIUM IODIDE ONLY WHEN PUBLIC HEALTH OFFICIALS TELL YOU. IN A RADIATION EMERGENCY, RADIOACTIVE IODINE COULD BE RELEASED INTO THE AIR. POTASSIUM IODIDE (A FORM OF IODINE) CAN HELP PROTECT YOU.

IF YOU ARE TOLD TO TAKE THIS MEDICINE, TAKE IT ONE TIME EVERY 24 HOURS. DO NOT TAKE IT MORE OFTEN. MORE WILL NOT HELP YOU AND MAY INCREASE THE RISK OF SIDE EFFECTS. *DO NOT TAKE THIS DRUG IF YOU KNOW YOU ARE ALLERGIC TO IODIDE.* (SEE SIDE EFFECTS BELOW.)

INDICATIONS

THYROID BLOCKING IN A RADIATION EMERGENCY ONLY.

DIRECTIONS FOR USE

Use only as directed by State or local public health authorities in the event of a radiation emergency.

DOSE

ADULT

DOSAGE: ONE (1) TABLETS
DAILY FOR SEVEN (7) TO
FOURTEEN (14) DAYS

WARNING

Potassium iodide should not be used by people allergic to iodide. Keep out of the reach of children. In case of overdose or allergic reaction, contact a physician or the public health authority.

DESCRIPTION

Each THYRO-BLOCK™ TABLET contains 130 mg of potassium iodide.

Each drop of THYRO-BLOCK™ SOLUTION contains 21 mg of potassium iodide.

HOW POTASSIUM IODIDE WORKS

Certain forms of iodine help your thyroid gland work right. Most people get the iodine they need from foods, like iodized salt or fish. The thyroid can "store" or hold only a certain amount of iodine.

In a radiation emergency, radioactive iodine may be released in the air. This material may be breathed or swallowed. It may enter the thyroid gland and damage it. The damage would probably not show itself for years. Children are most likely to have thyroid damage.

If you take potassium iodide, it will fill-up your thyroid gland. This reduces the chance that harmful radioactive iodine will enter the thyroid gland.

WHO SHOULD NOT TAKE POTASSIUM IODIDE

The only people who should not take potassium iodide are people who know they are allergic to iodide. You may take potassium iodide even if you are taking medicines for a thyroid problem (for example, a thyroid hormone or antithyroid drug). Pregnant and nursing women and babies and children may also take this drug.

HOW AND WHEN TO TAKE POTASSIUM IODIDE

Potassium Iodide should be taken as soon as possible after public health officials tell you. You should take one dose every 24 hours. More will not help you because the thyroid can "hold" only limited amounts of iodine. Larger doses will increase the risk of side effects. You will probably be told not to take the drug for more than 10 days.

SIDE EFFECTS

Usually, side effects of potassium iodide happen when people take higher doses for a long time. You should be careful not to take more than the recommended dose or take it for longer than you are told. Side effects are unlikely because of the low dose and the short time you will be taking the drug.

Possible side effects include skin rashes, swelling of the salivary glands, and "iodism" (metallic taste, burning mouth and throat, sore teeth and gums, symptoms of a head cold, and sometimes stomach upset and diarrhea).

A few people have an allergic reaction with more serious symptoms. These could be fever and joint pains, or swelling of parts of the face and body and at times severe shortness of breath requiring immediate medical attention.

Taking iodide may rarely cause overactivity of the thyroid gland, underactivity of the thyroid gland, or enlargement of the thyroid gland (goiter).

WHAT TO DO IF SIDE EFFECTS OCCUR

If the side effects are severe or if you have an allergic reaction, stop taking potassium iodide. Then, if possible, call a doctor or public health authority for instructions.

HOW SUPPLIED

THYRO-BLOCK™ TABLETS (Potassium Iodide, U.S.P.) bottles of 14 tablets (NDC 0037-0472-20.) Each white, round, scored tablet contains 130 mg potassium iodide.

THYRO-BLOCK™ SOLUTION (Potassium Iodide Solution, U.S.P.) 30 ml (1 fl. oz.) light-resistant, measured-drop dispensing units (NDC 0037-4287-25). Each drop contains 21 mg potassium iodide.

WALLACE LABORATORIES
Division of
CARTER-WALLACE, INC.
Cranbury, New Jersey 08512

CW—107915—10/79 Issue 10/79

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New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1021 REV. 10

TITLE " RADIOLOGICAL MEDICAL EMERGENCY "

WRITTEN BY: [signature]

REVIEWED BY: [signature]

PORC REVIEW: [signature] DATE 3/8/85

APPROVED BY: John C Burns DATE 3/8/85

EFFECTIVE DATE: 03/20/85

RADIOLOGICAL MEDICAL EMERGENCY

1.0 INTENT

To describe the procedure to be followed when an individual is injured and contaminated.

2.0 DISCUSSION

This procedure is to be used as guidance when an individual is injured and contaminated at IP-3. In all such instances, it should be the governing rule that required medical attention must take precedence over decontamination whenever the injured's life is considered to be endangered. In such instances, the prompt treatment of the injury must take first consideration. However, when contamination does occur, radiological hazards cannot be ignored and should be dealt with as feasible while the medical condition is being treated.

Rescue personnel should make every attempt to stabilize the patient. If the patient is stabilized and there is no threat to life, the patient should be decontaminated (to the level normally allowed for release, ie. with a maximum of 100 cpm above background) prior to transporting to a hospital. If the patient is not stabilized or his medical condition warrants immediate transportation to the hospital, initial attempts must be made at decon, or at a minimum to remove the contaminated protective clothing and/or wrap him in a blanket to minimize the spread of contamination. 1/10

NOTE: The transportation of a contaminated injured individual to the hospital requires notification as per the Emergency Plan classification, Notification of Unusual Event. Reportable as per IP-1030, i.e. within 15 minutes after the departure of the patient from the site to the offsite hospital.

NOTE: Applicable telephone numbers are found on Attachment 5.1 of this procedure.

Locations of first-aid supplies are found on Attachment 5.2 of this procedures.

3.0 PROCEDURE

3.1 AN EMPLOYEE ARRIVING AT THE SCENE OF THE ACCIDENT WILL:

a) Immediately render lifesaving aid to the best of his ability to the injured individual.

b) Notify (or cause to be notified) the Control Room.

c) The patient should not be moved until the Nurse/EMT/First aider arrives, unless conditions in the area jeopardize the patient's life.

d) The time the patient is left alone should be minimized until medical help arrives.

3.2 THE CONTROL ROOM OPERATOR WILL:

a) Page that there has been a medical emergency and request that the following individuals report to the accident scene:

1. Nurse (Normal Work Hours)
2. EMT/First Aider
3. H.P. Technician
4. Shift Supervisor
5. NPO Rover

b) Ensure notification of the above by making follow-up phone calls to their work areas on a line other than the page line.

The follow-up call to the HP should be made to the HP Control Point.

c) Call IP-3 Security:

i) Give the location of the accident.

ii) Request that they stand-by to escort ambulance to closest access point to patient and be on stand-by to bring protective clothing packages, dosimetry, and yellow herculite for ambulance to ambulance workers (found in the Security Emergency Locker).

d) Call the Radiological & Environmental Services Superintendent to advise of the situation.

3.3 AT THE ACCIDENT SCENE:

a) The Nurse/EMT/First Aider will render life saving aid, making every effort to stabilize the patient.

b) Move victim if radiological conditions warrant <u>and</u> injuries allow such movement.

c) The Health Physics Technician will immediately establish the safety of the area, set up a buffer zone with step-off pad as appropriate, and assist the Nurse/EMT/First Aider.

d) All nonessential personnel in the immediate area should be instructed to leave.

e) The Shift Supervisor should be in frequent contact with the Control Room, and coordinate the Medical Emergency Response from the accident scene.

3.4 THE PATIENT'S CONDITION WILL DETERMINE ONE OF THE FOLLOWING:

a) The need to transport directly to the hospital with initial attempts at decon.

b) The need to decontaminate at the Unit 3 decon suite (See IP-1023).

3.5 IF AND WHEN TRANSPORTATION TO THE HOSPITAL IS REQUIRED. The Control Room shall:

a) Call the Verplanck Ambulance

b) Call Peekskill Hospital to alert them of the ambulance arrival of a contaminated or possibly contaminated individual.

c) Call Security:

i) Notify IP-3 Security of the ambulance's need for access.

ii) Instruct Security to meet the ambulance at the fork in the road (near the middle parking lot) and to direct it to the vehicle access point closest to the injured individual.

iii) Instruct Security to bring protective clothing packages, dosimetry, and yellow herculite for ambulance attendents use (found in Security Emergency Locker).

d) A Medical Respresentative should be notified as to the patients condition and need to transport to the hospital. (If the patients life is at risk transport 1st and make notification to the Medical Representative 2nd)

e) After being advised by Security that the patient has left for the hospital, again call the Peekskill Hospital to advise them of the patients condition upon departure from the site.

f) Make the required notification under the Emergency Action Level Notification of Unusual Event, within 15 minutes after the Ambulance leaves the site.

3.6 In addition, in any case where transportation to the hospital is required for an injured-contaminated individual:

a) The IP-3 staff shall bring the patient to the ambulance.

b) Ambulance attendents should be provided with protective clothing & dosimetry.

c) Ambulance driver should not touch patient and should be given dosimetry. Protective clothing is not required.

d) An H.P. Technician will accompany the injured to the hospital with a dosimeter charger and dosimeters for Ambulance and hospital personnel. He will remain with the patient surveying and monitoring as required. He will monitor the Hospital Room before and after the patient's arrival, and advise hospital personnel of the necessary H.P precautions.

3.7 The Control Room is to be notified by Security as soon as the patient has left for the hospital.

3.8 If the decision is made to transport the patient to a facility other than the Peekskill Community Hospital, the Medical Support Staff and Radiological and Environmental Services Superintendent will decide the mode of transportation to be used, and will make the necessary arrangements.

3.9 The Power Authority is a member of the Emergency Medical Assistance Program (EMAP) provided by Radiation Management Corp. of Phila., PA. EMAP provides the following services.

a. Consultation and laboratory services
b. Dispatch of personnel to site if needed.
c. Assistance to responsible physicians.
d. Patient evaluation and care at a definitive care center.

EMAP should only be contacted by, or after consultation with, the Radiological and Environmental Services Supt. The 24 hour emergency number for EMAP is (215) 243-2990.

4.0 CHECKLISTS

The checklists on pages 5-10 provide general information for the following personnel.

4.1 Control Room
4.2 Shift Supervisor
4.3 EMT/First Aider
4.4 Health Physics
4.5 Nurse
4.6 Security

5.0 ATTACHMENTS

5.1 Medical Assistance Telephone Numbers
5.2 First Aid Supplies

RESPONSIBILITY OF CONTROL ROOM

GENERAL INSTRUCTIONS

1. Page that there has been a medical emergency and request that the Nurse, EMT/First Aider, H.P., N.P.O. Rover & S.S. to report to the accident scene. (Follow-up with call to individuals' work areas to ensure notification).

2. Call H.P. Control Point and have the Watch H.P. report to accident scene.

3. Call RESS to advise of situation.

4. Call Ambulance and Hospital advising them of patient's possible contaminated condition. (Call hospital again upon departure of ambulance to advise of patient's updated condition).

5. Utilize the Security Officer in the Control Room. Keep them advised of status and have them make calls to the Security Building re: ambulance arrival, etc. They can also be used to provide a direct radio communications link to the accident scene (and therefore the Shift Supervisor) if a Security Officer is at the scene.

6. Call Security and advise them of the ambulance's arrival. Have Security meet the ambulance at the fork in the road near the middle parking lot and direct the ambulance to the closest vehicle access to the patient. Have Security bring protective clothing packages and dosimetry for the ambulance attendents.

7. Call Medical Representative for IP-3 to notify of the transport of a contaminated individual offsite.

8. Make required Emergency Plan Notifications under Notification of Unusual Event.

   NOTE: If necessary in the case of multiple contaminated patients, arrange for the Unit 3 - Unit 1 transportation routes to be opened (IP-1022).

RESPONSIBILITY OF THE SHIFT SUPERVISOR

GENERAL INSTRUCTIONS

1. Respond to page from Control Room and report to the accident scene.

2. Take charge at the accident scene coordinating all activities.

3. Keep the Control Room well informed and up-to-date as to the patient's condition and status at the accident scene.

4. Assist in rendering first aid if qualified.

5. Advise Control Room to call ambulance if needed and specify ambulance access point.

6. Meet arriving ambulance crew:

   Introduce self
   Advise crew of patient's status when possible
   Determine ambulance personnel qualifications (ie. EMT)
   Advise them that an HP will, and site medical personnel may, accompany the patient in the ambulance. If a site EMT has initiated treatment of the patient, he must continue to accompany the patient to the hospital unless 1) the ambulance crew includes a EMT to whom he can turnover the patient or 2) the EMT is required for licensee coverage.

7. Coordinate transfer of patient from site to ambulance.

8. Advise Control Room when ambulance leaves the site.

RESPONSIBILITY OF THE EMT/FIRST AIDER

GENERAL INSTRUCTIONS

1. Respond to page from Control Room and report to designated location with a first aid kit (and stretcher).
2. Obtain emergency equipment and Anti-C clothing from the emergency cabinet in the Control Room or from the normal supply at the Control Point. Don coveralls before entering the Controlled Area.
3. Render immediate care in coordination with Health Physics activities. (Move victim from highly contaminated area or away from source only when it is definite that this will not create any further injury).
4. If necessary, move the victim to the Unit 3 Decon Suite (and the Unit 1 Decontamination Room in the event of multiple victims).
5. Assist in decontamination of the victim, ie. removal of contaminated clothing.
6. Decontaminate self, if necessary.
7. Assist with the delivery of victim to ambulance.
8. Assist transfer of victim from ambulance to hospital.
9. Assist Hospital Radiation Casualty team as needed.

RESPONSIBILITY OF HEALTH PHYSICS PERSONNEL

GENERAL INSTRUCTIONS

1. Specify Anti-C Clothing and monitoring equipment for team members. As a minimum, all personnel responding to a Medical Emergency call in the Controlled Area shall don coveralls before entering.

2. Respond to scene with proper survey instruments.

3. Direct all non-injured to safe area.

4. Measure and evaluate fields.

5. Identify contaminated areas on victim and mark them.

6. Direct initial decontaminated procedures.

7. Restrict access to area as necessary.

8. Discuss with the RESS, or Shift Supervisor or Medical Representative the route to Decontamination Area, either on or offsite. (If necessary in the event of multiple victims, use IP-1022 for specific requirements to transport to IP-1 Decon Suite).

9. Accompany the injured to Decontamination Suite and remain with him including his transportation and decontamination at the hospital or until relieved by another H.P.

10. Follow procedures as outlined for EMT/First Aider.

11. The H.P. will be responsible to advise Medical personnel as long as any radiation hazard exists to rescue personnel. The H.P. will monitor and advise of allowable working time, exposure limits and shielding.

12. Accompany the patient to hospital providing dosimetry for the drivers (the ambulance driver should remain behind the wheel and not come in contact with the patient. (Dosimeter charger should be brought). Provide dosimetry for hospital personnel (located at hospital).

13. Survey hospital room before and after victim is treated. Assure all unnecessary major hospital equipment is out of room. (The Power Authority is responsible for all contaminated equipment replacement).

14. Inventory and bag all hospital equipment for future pick up and disposal.

RESPONSIBILITY OF NURSE

GENERAL INSTRUCTIONS

1. Respond to the Control Room's call to report to the accident scene or decontamination room.

2. Put on protective clothing and dosimetry which are necessary for Controlled Area entry.

3. In the event of mass casualties, initiate Triage procedure.

4. Evaluate the patient's condition and

    a) Render emergency care as necessary.

    b) Request emergency transport if needed.

5. Provide gross decontamination at accident scene to the extent possible

6. Re-evaluate the patients condition:

    a) If the patients condition does not permit further decon, transport directly to the hospital.

    b) If the patient is stable and medical conditions permit, move the patient to the Unit 3 Decon Suite.

        i. Continue to evaluate and treat the patient's medical condition.
        ii. Confer with medical representative as necessary.
        iii. Initiate medical decon procedures utilizing H.P. for continuous monitoring of contaminated areas.
        iv. If considered necessary; collect all urine, stool, vomitus, etc. and label.
        v. If necessary; draw 1 tube blood for CBC (lavender top) mixing well, 1 full clot tube (red top) for chemistries, being careful to obtain from noncontaminated area. Specimens should be drawn prior to starting any I.V. fluids.
        vi. When the patient is decontaminated as much as possible, decontaminate self and prepare to go with the patient to the hospital, maintaining life support as required.

7. Provide medical report form re: radiation casuality and accompany patient to the hospital, retain duplicate copies.

SECURITY RESPONSIBILITY

GENERAL INSTRUCTIONS:

1. Meet ambulance at fork in road near middle parking lot.
2. Escort the ambulance to the vehicle access point closest to the injured person.
3. Bring protective clothing package, dosimetry, and yellow herculite for ambulance attendent's use.
4. Establish communications between Security Officers in Control Room and at accident scene.
5. Notify the Control Room when the ambulance leaves the site.

FIRST AID SUPPLIES

Locations of First Aid lockers and/or supplies:

a) 33' elevation First Aid Room
b) Security Building & Vehicles
c) S.S. Office
d) H.P. Control Point
e) Outside Nuclear NPO Office
f) Decon Room
g) Medical Fac. at Training Trailers

Locations of Stretchers:

a) Outside H.P. Control Point
b) Decon Room
c) 33' Elevation First Aid Room
d) Outside Nuclear NPO Office
e) Medical Fac. at Training Trailers
f) S.S. Office
g) PAB-Hallway to 80' Airlock

Locations of Resuscitator/Inhalators:

a) S.S. Office
b) Security Building
c) Decon Room
d) H.P. Control Point
e) Outside Nuclear NPO Office
f) Medical Fac. at Training Trailers
g) 33' Elevation First Aid Room

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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- IP-1023 REV. 1

TITLE " USE AND SET-UP OF UNIT 3 PERSONNEL DECON SUITE"

"

WRITTEN BY:

REVIEWED BY:

PORC REVIEW: DATE 1/31/85

APPROVED BY: John C Brons DATE 2/1/85

EFFECTIVE DATE: 2/4/85

USE AND SET-UP OF UNIT 3 PERSONNEL DECON SUITE

1.0 INTENT

To describe the procedure to be followed when activation of the IP-3 Personnel Decon Suite is required.

2.0 DISCUSSION

The IP-3 Personnel Decon Suite is located on the 4^{th} floor of the Administration Building adjacent to the NYPA Control Point. It is designed to accommodate both ambulatory and non-ambulatory contaminated and injured contaminated personnel. The suite is stocked with first aid and decontamination supplies, and replacement clothing. It is equipped with decon sinks, showers, and table. Liquid wastes from the suite are routed to the Waste Hold-Up Tank for processing and disposal. In addition, a mobile accident carrier/decontamination unit with air supply and liquid waste collection unit is available.

NOTE: In the event of multiple casualties requiring decontamination/medical treatment of more individuals than can be accommodated at the IP-3 Decon Suite, assistance will be provided by Con Edison. Refer to IP-1022, Transport of Conmtaminated Injured Personnel Between Unit 3 and 1 if such assistance is needed.

3.0 REFERENCES

3.1 IP-1021, Radiological Medical Emergency
3.2 IP-1022, Transport of Contaminated Injured Personnel Between Unit 3 and 1
3.3 RE-HPI-6.41, Personnel Decontamination

4.0 PROCEDURE

4.1 CRITERIA FOR USE OF DECON SUITE:

The decon suite will be utilized for the decontamination of plant personnel in the following instances:

4.1.1 Any non-injured contaminated person requiring only decon.

4.1.2 Any injured contaminated person requiring only decon and simple first aid treatment available at the site.

4.1.3 Any injured contaminated person requiring decon prior to transport to the hospital for medical treatment of injuries.

4.2 PERSONNEL PROTECTION AND MONITORING:

All personnel involved in treating or monitoring a patient in the decon suite shall wear protective clothing and dosimetry.

4.3 ACCESS TO AND FLOW THROUGH THE DECON SUITE

4.3.1 Keys providing access to the decon suite are held by the Nurse, Control Room, RESS, ARESS and Watch H.P.

4.3.2 Ambulatory Patients:

All ambulatory contaminated patients, whether injured or not, will enter the decon suite at point (A)(See map on page 3).

Upon entering, the patient will be monitored and contaminated clothing will be removed (if not already removed prior to arrival). Contaminated clothing will be bagged and labeled for further monitoring and disposal. Depending on the patient's condition, decon can be accomplished via the decon sinks and/or showers and/or facilities in the medical decon room. Decon instructions found in RE-HPI-6.41 shall be used. Simple first aid treatment can be provided if necessary. Following successful decon and first aid treatment, replacement clothing will be provided and the patient released at point (B) (See map on page 3).

4.3.3 Non-Ambulatory Patients:

Non-ambulatory patients will arrive at the decon suite on a stretcher (or in the accident carrier if highly contaminated.) Access for these patients will be up the ramp into the medical decon room at point (C) (See map on page 3).

NOTE: Prior to the patient's arrival, a buffer zone should be established outside the medical decon room using the yellow herculite, step-off pads, rope, tape, etc. found in the room.

a) If the patient's condition is stable, complete decontamination shall be attempted prior to transporting the patient to the hospital.

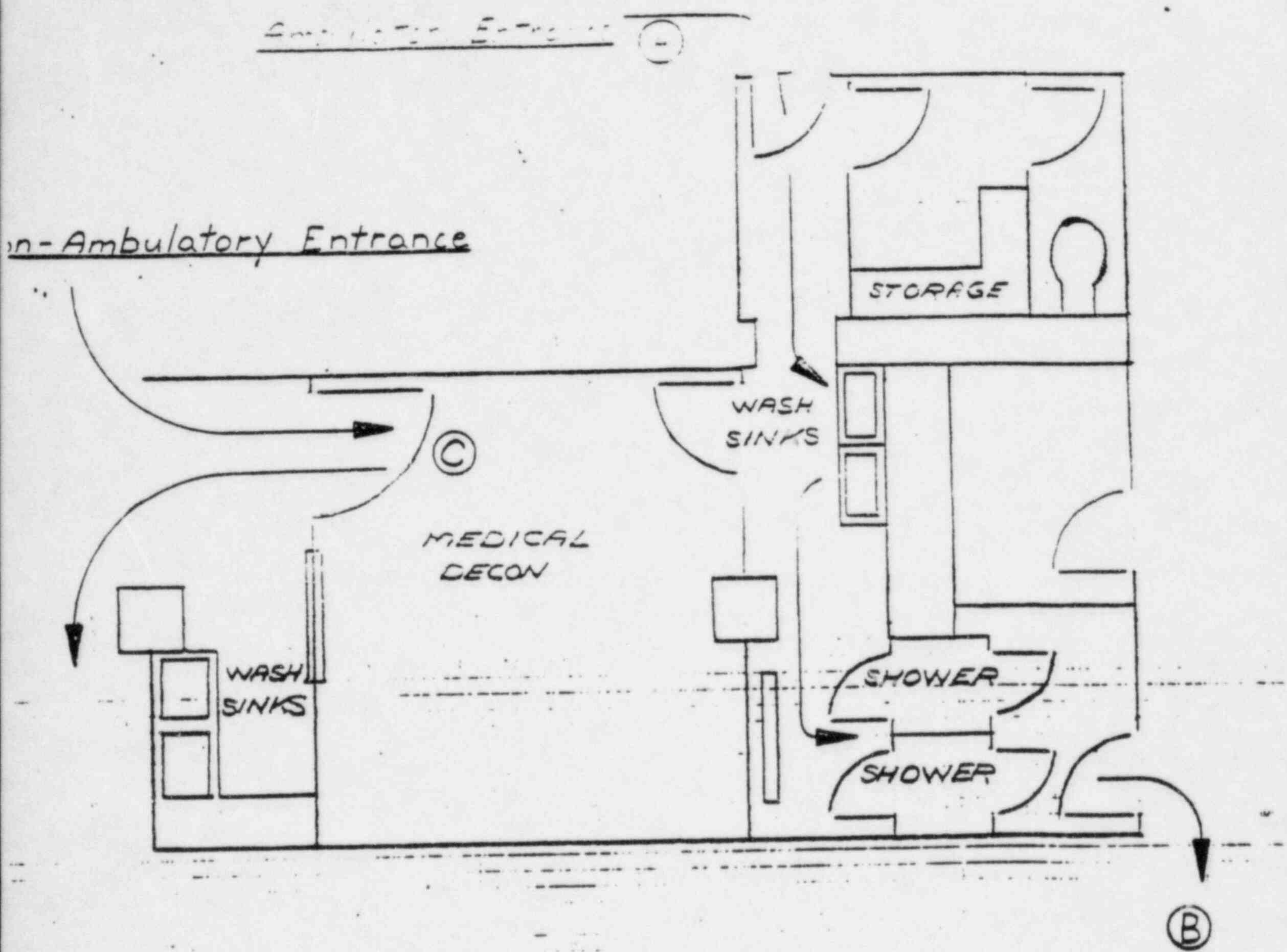
b) In more serious cases, partial decon may only be possible prior to transport to the hospital.

In either case, all contaminated materials must be bagged and labeled for further monitoring and disposal. In addition, personnel decon instructions found in RE-HPI-6.41 must be followed. Following either partial or complete decon, the patient will leave the decon suite at point (C) for transport to the hospital.

5.0 ATTACHMENTS

5.1 Decontamination Suite

DECONTAMINATION SUITE



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EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1025 REV. 3

TITLE" REPAIR AND CORRECTIVE ACTION TEAMS "

WRITTEN BY: David D. Bell

REVIEWED BY: [signature]

PORC REVIEW: JASchmin DATE 7/26/83

APPROVED BY: John C Burns DATE 7/28/83

EFFECTIVE DATE: 8/1/83

REPAIR & CORRECTIVE ACTION TEAMS

1.0 INTENT

To outline the procedure that a Repair and Corrective Action Team shall use to provide themselves with task briefings and with radiological protection while repairing or performing corrective action on plant equipment during an emergency. This procedure should be used as guidance and the applicable REA followed.

2.0 REFERENCES

2.1 RE-HPP-2.1, Radiation Exposure Authorizations

2.2 RE-HPP-3.4 Emergency HP Monitoring and Sampling

2.3 AP-4, Procedure Adherence and Use

2.4 IP-1047 Operations Support Center

3.0 PERSONNEL

3.1 Repair and Corrective Action Teams should consist of the minimum number of individuals required for the job but never less than two (2) one of which is a Health Physics Technician.

4.0 BRIEFINGS

4.1 Task & mission briefings should be accomplished in the OSC or other appropriate area prior to entering a hazardous area. These briefings should include but not be limited to:

- a. most direct route
- b. proper tools
- c. task understanding
- d. visual aids as available (maps)
- e. simulations
- f. expected radiation fields

3

4.2 Briefings should be led by the OSC Supervisor or appropriate team leader.

4.3 The OSC Supervisor, Plant Operations Manager and Emergency Director should be cognizant of all Repair and Corrective Action Team efforts.

4.4 Obtain Shift Supervisor approval before directing the performance of any work on safety related items.

4.5 Obtain TSC guidance for engineering repair work.

4.6 Perform tasks in accordance with established procedures or follow requirements as defined in AP-4: "In the event of an Emergency not covered by an approved procedure, personnel shall take action so as to minimize personnel injury and damage to the facility and to protect health and safety".

5.0 RADIOLOGICAL PRECAUTIONS:

5.1 Require use of film badges or TLD's, dosimeters, protective clothing and other REA requirements as necessary. | 3

5.2 Assess need for KI.

5.3 Assess need for respirators/SCBA.

5.4 Require use of KI, respirators or SCBA as necessary.

5.5 If NRC limits for exposure are expected to be exceeded refer to IP-1027.

5.6 ALARA concepts will be adhered to

5.7 Health Physics procedures RE-HPP-3.4 & RE-HPP-2.1 with respect to Emergency HP Monitoring and Sampling, and REA's will be adhered to. Standard Radiological Survey Log sheets should be used.

6.0 REPORTING REQUIREMENTS/RECORD RETENTION

6.1 Teams should maintain contact with the Operations Support Center. Sound power phones, walkie-talkies or telephones are available for this communication.

6.2 HP Survey Sheets pertaining to accident conditions should be directed to the HP Team Leader in the OSC.

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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1027 REV. 3

TITLE " EMERGENCY PERSONNEL EXPOSURE "

WRITTEN BY: M. Pole
REVIEWED BY: [illegible]
PORC REVIEW: [illegible] DATE 3/8/85
APPROVED BY: John C Brons DATE 3/8/85
EFFECTIVE DATE: 03/20/85

EMERGENCY PERSONNEL EXPOSURE

1.0 INTENT

This procedure describes the guidelines for emergency personnel exposure limits and authorization for exceeding the 10CFR20 criteria during emergencies.

2.0 DISCUSSION

During emergency situations, it becomes necessary to have guidelines for exposure control for emergency workers as well as the line of authority for authorizing those exposures exceeding established limits. (During such emergency the administrative guidelines will be replaced by 10CFR20 NRC limits (RE-4.1) with no authorization necessary).

The exposure levels promulgated in 10CFR20 will be adhered to under most circumstances. However, under extreme conditions, authorization can be given to approve exposures to volunteers within the EPA & NCRP guidelines. 3
In certain cases, it is recognized that extreme measures may have to be taken to protect the health and safety of the public or to save a life. The maximum levels of exposure that may be authorized are as follows:

Protect Public Health & Safety:	Whole Body	25 Rem
	Thyroid *	125 Rem
Life Saving:	Whole Body	75 Rem
	Thyroid *	No Limit

3

2.1 In instances where prior planning time is available, the Emergency Director should sign the Authorization to Receive Emergency Personnel Exposures.

2.2 In cases such as an immediate need for life saving or circumventing substantial immediate exposures to population groups, the Emergency Director should be notified and his approval for the life saving mission be granted and documented.

2.3 In extreme life saving circumstances, the rescuer should be notified of the fields in the area prior to his entry. (Health Physics shall determine the projected personnel dose). Authorization to enter the area may be granted by the Emergency Director, Plant Operations Manager or the most Senior H.P. available. The Emergency Director should be notified as soon as possible.

* KI, when administered prior to exposure and during subsequent days, would preclude the individual from receiving this exposure.

3

3.0 PROCEDURE

3.1 Emergency actions which would result in a persons receiving exposures in excess of NRC limits should be brought to the attention of the Emergency Director for his prior authorization. (NOTE: See 4.6)

a)

	NRC
Whole Body	3.0 Rem/Qtr. with Form 4 1.25 Rem/Qtr. No Form 4
Extremities	18.75 Rem/Qtr.
Skin of Whole Body	7.5 Rem/Qtr.

b) Under extreme circumstances the following limits will apply:

Protect Public Health & Safety:	Whole Body	25 Rem
	Thyroid *	125 Rem
Life Saving:	Whole Body	75 Rem
	Thyroid *	No Limit

3

3.2 Mission routes and allowable exposures shall be planned in advance.

3.3 Protective equipment such as repiratory protection and protective clothing will be used as needed and appropriate to the mission.

3.4 Potassium Iodide may be determined necessary.

3.5 The Emergency Director will evaluate or reject the request using NRC and NCRP guidelines and the given mission.

3.6 Authorization form "Authorization to Receive Emergency Personnel Exposures", EP-Form #7, should be completed and signed by the emergency worker and the Emergency Director. (Except for immediate necessary responses when the Plant Operations Manager or Sr. H.P. available may give verbal authorization as directed by the E. D.) 3

3.7 The Radiological and Environmental Services Superintendent shall be made aware of this authorization in a timely manner.

3.8 The Emergency Director will document his decision in his log.

3.9 The authorization form shall be sent to, and filed by, H.P. Records.

4.0 ATTACHMENTS

4.1 Authorization to Receive Emergency Personnel Exposures (EP-Form #7).

EP FORM #7

AUTHORIZATION TO RECEIVE EMERGENCY PERSONNEL EXPOSURES

____________________, SOCIAL SECURITY # __________

IS AUTHORIZED TO RECEIVE AN EMERGENCY EXPOSURE OF __________ Rem

FOR THE PERIOD __________.

Age __________

PERMISSIBLE DOSE: WHOLE BODY

(A) PERMISSIBLE ACCUMULATED DOSE=5(N-18) = __________ REM

(B) LIFETIME EXPOSURE TO DATE = __________ REM

(C) UNUSED PART OF PERMISSIBLE ACCUMULATED DOSE (A-B) = __________ REM

NOTE: The unused part of Permissible Accumulated Dose (C), is listed for information purposes, but it is not necessary to stay within this limit for the emergency exposure.

REASON FOR EXPOSURE IN EXCESS OF GUIDE LIMITS. __________

____

I have volunteered to perform the task(s) during which I will receive the emergency exposure and I have been briefed on the potential consequences of the proposed emergency exposure.

Individual to Receive Exposure: __________ (Signature) Date: __________

Approval: __________ Emergency Director Date: __________

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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1028 REV. 2

TITLE " CORE DAMAGE ASSESSMENT "

WRITTEN BY: Dennis Quinn

REVIEWED BY: Floyd W Gumble

PORC REVIEW: John J. Anderson DATE 12/13/84

APPROVED BY: John C Burns DATE 12/13/84

EFFECTIVE DATE: 1-2-85

CORE DAMAGE ASSESSMENT

1.0 PURPOSE

To provide a methodology to determine the extent of core damage following an accident. The assessment is based on radionuclide concentrations and other parameters.

2.0 DISCUSSION

2.1 The core damage procedure is based on quantitative and qualitative assessments of various plant parameters, some of which are interrelated.

2.1.1 Radiation monitors in the VC: This is a gross but immediately available measurement of noble gases released.

2.1.2 Radioactivity released from the core:

- o Measured in RCS, VC atmosphere, VC sump.
- o Correct by power history, decay, etc.
- o Evaluate versus expected radioactivity released for clad damage, fuel overheat, fuel melt.

2.1.3 Hydrogen in containment: A measure of the amount of the zirconium water reaction from the fuel cladding.

2.1.4 Core Exit Thermocouples and Reactor Vessel Level Instrumentation: When available, used to determine whether the core has been uncovered and what type of fuel damage may have occurred.

2.2 Qualitative Assessment of Core Damage

Attachment 1, Qualitative Assessment of Core Damage, should be used in conjunction with the quantitative assessment of core damage which follows in section 3.

2.3 Limitations of This Procedure

- o This procedure is an approximate method and may give some conflicting results. Engineering judgement must be used throughout.
- o Some areas for potential errors are:
  - plateout of samples in containment or in sample lines
  - gamma spectroscopy of highly radioactive samples
  - estimates of ECCS water volumes or sump volumes
  - calculations of core inventories
  - effect of multiple precursors in the parent-daughter decay chains and unequal release fractions.

- The uncertainties are such that core damage estimates using this methodology are sufficient only to establish major categories of fuel damage. This categorization, with confirmation will require extensive additional analysis for some several days past the accident date.

3.0 PROCEDURE: QUANTITATIVE CALCULATIONS OF CORE DAMAGE - can be performed by following the attachments as worksheets.

3.1 Data Collection

- Using Attachment 2, record all appropriate data concerning RCS, VC sump, and VC atmosphere sampling.

- Power History

  - Record EFPD and calendar days of operation on Attachment 4, part 1.
  - If reactor has been at steady state power (± 10% of average power level) for 4 days or more, record power level on Attachment 4, part 2.
  - If reactor has not been at steady state power for at least 30 days, use Attachment 4A to record Power History over the last 30 days.

- Record sample results from RCS, VC Sump, VC atmosphere on Attachments 5 and 6.

3.2 Power History Correction Factor (PCF)

The inventories of fission products shown in Attachment 3 are for end of core life 100% power steady state operating conditions. This must be corrected for actual power history.

3.2.1 Steady state power (± 10%) prior to shutdown:

- Long-lived nuclide correction is calculated in Attachment 4, Part 3.
- Short-lived and medium-lived nuclide corrections are calculated in Attachment 4, Part 4.

3.2.2 Transient power history:

- Long-lived nuclides: transient power history not applicable, use Attachment 4 to calculate power correction factor.
- Short and medium lived nuclides - correct each nuclide separately using Attachment 4A as a calculation sheet. Computer - calculated power correction factors are also available. They may be accessed by using Attachment 4B. 2

3.3 Chemistry Sample Corrections

Samples of RCS, VC Sump, and VC atmosphere must be corrected using Attachment 5 (Water Samples) and Attachment 6 (VC Atmosphere).

3.3.1 Back-Decay Correction CF(bd)

- This factor is used to correct the sample result back to the time of reactor shutdown.

- Nuclides that are daughters in a chain must be accounted for by following the calculations in Attachment 5A.

- The Chemistry computer has the capability to back-decay nuclides. Ensure that this correction is not applied twice. The daughters as discussed above should not be back-decayed by the Chemistry computer.

3.3.2 Temperature-Pressure Correction CF(tp)

- This factor is used to account for the differences in temperature and pressure between the sample and the sampled system (e.g., RCS, VC air).

- Water samples are corrected for temperature only.

- Air samples are corrected for both temperature and pressure.

3.4 Calculation of Percent Core Damage

The calculation of percent core damage involves 3 basic steps:

- Determination of activity released from the core
- Determination of the power corrected activity inventory
- Comparison of the actual activity released to the expected inventory.

This calculation is performed for clad damage, fuel overheat and fuel melt using Attachments 7, 7A, 7B, 7C, and 7D.

3.4.1 Calculate total activity released by radionuclide

- Using Attachment 7 as a calculation sheet, add the activity from RCS, Containment Sump, and Containment atmosphere to determine total activity released from the core.

- Values for activity concentrations are obtained from Attachments 5 and 6, and should have been previously corrected for decay, dilution, temperature, pressure, etc. in accordance with Attachment 5 and 6.

3.4.2 Calculate activity normally present in the RCS during operations

- Using Attachment 7A as a calculation sheet, determine the amount of each nuclide present during normal operations.

- This activity is subtracted from the total amount released from the core.

- This calculation is only used in assessing clad damage. For other types of fuel damage, it is an insignificant fraction of the activity.

3.4.3 Calculate Percent Fuel Damage

- o Use Attachments 7B (Clad Damage), 7C (Fuel Overheat), and 7D (Fuel Melt) as calculation sheets.
- o Correct the nuclide inventories from Attachment 3 using the previously developed Power Correction Factors.
- o Compare the activity released (Attachments 7, 7A) to the corrected inventories to obtain percent fuel damage.

3.5 Assessment of Core Damage using Activity Released

Assessment of core damage involves determining:

- o The type of core damage - clad damage
  - fuel overheat
  - fuel melt
- o The amount of core damage - 0 to 100% in each of the above categories.

3.5.1 Comparison with expected inventories released:

Attachment 3 lists the nuclides associated with the 3 types of fuel damage and the amount of activity expected to be released for 100% clad damage, 100% fuel overheat, and 100% fuel melt.

3.5.2 The nuclides released are characteristic of the type of damage, as are the ratios of nuclides.

3.5.3 Clad Damage

- o Nuclides associated with cladding damage are primarily the medium-lived and long-lived noble gases and iodines.
- o Attachment 7B contains the calculated percent clad damage.
- o The ratios of the noble gases to Xe-133 (and Iodines to I-131) in the gap differ from the ratios in the fuel itself. The ratios are shown in Attachment 3 and can help to ascertain whether the release was from the fuel (fuel overheat or melt) or from the gap (clad damage).
- o RCS pressure, temperature, and power transients may result in Idoine spiking, where the Iodine concentrations in the RCS increase sharply. This is not indicative of cladding failure, but should be considered so that it is not confused with clad damage. Attachment 8 provides an estimate of the total I-131 release that might be expected during an iodine spike.

- o Clad rupture is dependent on fuel temperature and RCS pressure where higher RCS pressures will delay clad rupture.

3.5.4 Fuel Overheat

- o Moderately volatile fission products are released during fuel overheat conditions, including cesium, ruthenium, and tellurium in addition to the more volatile noble gases and iodines. Lesser amounts of barium and strontium are also released.
- o Attachment 7C provides the calculated percent fuel overheat.
- o The use of the isotopic ratios listed in Attachment 3 can be used to determine the source of the noble gases and iodines.

3.5.6 Fuel Melt

- o Fuel pellet melting leads to rapid release of noble gases, iodines, bromines, and cesiums remaining after fuel overheat.
- o Significant release of the Strontium, barium-lanthanum chemical groups is the most distinguishing feature of fuel melt conditions.
- o Attachment 7D provides the calculated percent fuel melt.
- o The use of isotopic ratios listed in Attachment 3 can be used to determine the source of the noble gases and iodines.

3.5.7 Non-Uniform Core Damage

- o The above evaluations address an assumed uniform distribution of core damage. The degree of damage may vary within the core, and this should be considered in explaining any conflicting data.

4.0 AUXILIARY INDICATORS

There are plant indicators monitored during an accident which can provide verification of the initial estimate of core damage based on the radionuclide analysis. The plant indicators include containment hydrogen concentration, core exit thermocouple temperatures, reactor vessel water level, and containment radiation level.

4.1 Containment Hydrogen Concentration

- o An accident in which the core is uncovered and the fuel rods are exposed to steam may result in the reaction of the zirconium of the cladding with the steam which produces hydrogen. It is assumed that all of the hydrogen that is produced is released to the containment atmosphere.

- The hydrogen dissolved in the primary system during normal operation contributes an insignificant amount of the total hydrogen released to the containment. The hydrogen recombiners will not have a significant effect on a zirconium - steam reaction in the case of severe core degradation.

- The percentage of zirconium water reaction does not equal the percentage of clad damaged but it does provide a qualitative verification of the extent of clad damage estimated from the radionuclide analysis.

- Attachment 9 shows the relationship between the hydrogen concentration and the percentage of zirconium water reaction.

4.2 Core Exit Temperatures and Reactor Vessel Water Levels

Core exit thermocouples (CETC) and the Reactor Vessel Level Indication System (when available) (RVLIS) readings can be used for verification of core damage estimates in the following ways.

- Due to the heat transfer mechanisms between the fuel rods, steam, and thermocouples, the highest clad temperature will be higher than the CETC readings. Therefore, if thermocouples read greater than 1300°F, clad failure may have occurred. 1300°F is the lower limit for cladding failures.

- If any RCPs are running, the CETCs will be good indicators of clad temperatures and no core damage should occur since the forced flow of the steam-water mixture will adequately cool the core.

- No generalized core damage can occur if the core has not uncovered. So if RVLIS full range indicates that the collapsed liquid level has never been below the top of the core and no CETC has indicated temperatures corresponding to superheated steam at the corresponding RCS pressure, then no generalized core damage has occurred.

- Attachment 10 provides information on types of damage to fuel at increasing temperatures.

4.3 Containment Radiation Levels

- R-25 and R-26 are located just above the 95' VC and can be used as a gross indication of activity (primarily noble gases) in the containment atmosphere.

- R-25 and R-26 would be expected to read approximately the same value if there were noble gases dispersed in containment.

- Attachment 11 provides data on expected radiation levels for clad damage, fuel overheat and fuel melt conditions.

5.0 REFERENCES

References are listed in Attachment 12.

LIST OF ATTACHMENTS

2

QUALITATIVE ASSESSMENT OF CORE DAMAGE

	No Damage	Clad Damage	Fuel Overheat	Fuel Melt
Radiation Levels in VC* (R-25 and R-26)	1 R/hr (Minimum Reading)	Up to 9200 R/hr	Up to 1.4E6 R/hr	up to 2.7E6 R/hr
% Hydrogen in VC**	0%	← Up to 12.6% →		
Core Exit Thermocouples	~ 600°F	>1300°F, and check temp vs. press. for superheated steam		
RVLIS (if available)***	Full	Used in conjunction with CETC's to determine core uncovery		
Expected Nuclides	Kr, Xe, I	Kr, Xe, I	Cs, Te	Sr, Ba, La, Pr

* time dependent R-25/R-26 readings can be found in Attachment 11.

** presence of Hydrogen is indicative of reaction of the cladding, but does not indicate whether fuel overheat or melt has occurred.

*** no generalized core damage can occur if the core remains covered.

SAMPLING DATA FOR CORE DAMAGE CALCULATIONS

Calculation No. ________

Current Date ________ Reactor Shutdown: Date ________

Current Time ________ Time ________

Sample and Media Data

	RCS	VC Atmosphere	VC Sump	Other
Sample No.	________	________	________	________
Date Of Sample	________	________	________	________
Time of Sample	________	________	________	________
Sample Temp (^{o}F)	________ ^{o}F	________ ^{o}F	________ ^{o}F	________
Sample Press (psia)	________ psia	________ psia	________ psia	________
System Temp (^{o}F)	________ ^{o}F	________ ^{o}F	________ ^{o}F	________
System Press (psia) or level (ft)	________ psia	________ psia	________ ft	________

Volume of ECCS dilution water ________ gallons

CORE RELEASE INVENTORIES OF CHARACTERISTIC FISSION PRODUCTS

Nuclide	Half-Life	Decay Constant (day^{-1})	Gap Release (Ci)	Fuel Overheat Release (Ci)	Fuel Melt Release (Ci)	Fuel Pellet** Activity Ratio	Gap** Activity Ratio
Clad Failure Nuclides							
Kr-85*	10.72yr	1.77E-4	1.6E4	9.0E5	1.5E6	.01	.11
Kr-87	76.3m	1.31E+1	3.1E3	1.8E7	3.0E7	.22	.022
Kr-88	2.84h	5.86E0	6.7E3	2.5E7	4.2E7	.29	.045
Xe-131m	11.84d	5.85E-2	7.5E2	2.8E5	4.7E5	.004	.004
Xe-133	5.245d	1.32E-1	1.5E5	8.8E7	1.5E8	1.0	1.0
I-131	8.04d	8.62E-2	2.4E5	4.3E7	7.2E7	1.0	1.0
I-133	20.8h	8.00E-1	1.6E5	8.8E7	1.5E8	2.1	.71
I-135	6.61h	2.52E0	8.3E4	7.9E7	1.3E8	1.9	.39
Fuel Overheat Nuclides							
Cs-137*	30.17y	6.3E-5	N/A	4.9E6	8.1E6	-	-
Te-129	69.6m	1.4E+1	N/A	1.5E7	2.4E7	-	-
Te-132	78.2h	2.1E-1	N/A	6.2E7	1.0E8	-	-
Fuel Melt Nuclides							
Ba-140	12.79d	5.4E-2	N/A	2.2E5	3.5E7	-	-
La-140	40.22h	4.1E-1	N/A	2.5E5	3.7E7	-	-
La-142	95.4m	1.1E+1	N/A	1.9E5	3.1E7	-	-
Pr-144	17.28m	5.8E+1	N/A	1.5E5	1.4E6	-	-

* Long-Lived Nuclides

** Ratio for Noble Gases is to Xe-133 = NG Isotope/Xe-133
Ratio for Iodines is to I-131 = I Isotope/I-131

POWER HISTORY CORRECTION FOR STEADY STATE POWER HISTORY

1. Data For Long-Lived Nuclides Power Correction Factor

	EFPD	Calendar Days	
Current Cycle	______	Start Date of the Oldest Fuel Cycle	______ (A)
Previous Cycle	______	Current Date	______ (B)
2 Cycles Previous	______	Days Between (A) & (B)	______
$\sum =$	______		

2. Data if Plant Has Been At Steady-State Power (Within + 10% of Average Power Level)

Steady State Power Level (last 4 days) = ______ %

Steady State Power Level (last 30 days) = ______ %

3. Calculation of Long-Lived Power Correction Factor

	Nuclide	Half-Life	EFPD/Calendar Days
Long-Lived Nuclides	Kr-85	10.72y	
	Cs-137	30.17y	______

4. Calculation of Short and Medium-Lived Power Correction Factor - (Steady State Operation)

	Nuclide	Half-Life	Steady State Power Level (%) (Last 4 days): P(4)	P(4)/100%
Short Lived Nuclides	Kr-87	76.3m		
	Kr-88	2.84h		
	I-133	20.8h		
	I-135	6.61h		
	Te-129	69.6m	______	______
	La-142	95.4m		
	Pr-144	17.28m		

	Nuclide	Half-Life	Steady State Power Level (%) (last 30 days: P(30)	P(30)/100%
Medium-Lived Nuclides	Xe-131m	11.84d		
	Xe-133	5.245d		
	I-131	8.04d	______	______
	Te-132	78.2h		
	Ba-140	12.79d		
	La-140	40.22h		

Note: Short Lived Power Correction Factor (PCF) = P(4)/100%
Medium Lived Power Correction Factor (PCF) = P(30)/100%
Long Lived Power Correction Factor (PCF) = EFPD/Calendar days

POWER HISTORY CORRECTION FOR NUCLIDE i
(Transient Power History)

Nuclide: ____________

Half Life: ____________

λ = ____________ day^{-1} (from Attachment 3)

Period	P_j Power Level (%)	T_j Duration (days)	t_j (Days) Decay Time	$(1-e^{-\lambda_i T_j})$	$(e^{-\lambda t_j})$	$P_j(1-e^{-\lambda_i T_j})(e^{-\lambda t_j})$
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

$\Sigma P_j(1-e^{-\lambda_i T_j})(e^{-\lambda_i t_j})$ = ____________

P_j = steady reactor power level (percent)
λ_i = decay constant for isotope i (day^{-1})
T_j = time at power level P_j (days)
tj = time since end of T_j to reactor shutdown (days)

$$PCF_i = \frac{\Sigma P_j(1-e^{-\lambda_i T_j})(e^{-\lambda t_j})}{100\%} = \rule{3cm}{0.4pt}$$

NOTE: Power history should cover the last 30 days or more

POWER HISTORY CORRECTION FOR NUCLIDE:
Computer Calculation

1. Use a half-duplex, 300 or 1200 baud terminal. Parity setting is irrelevant. Dial one of the following numbers: 800-821-3654 or 328-7844.

1A. If 800-821-3654 is used:

1.A.1 Place phone into acoustic coupler, or turn on modem (as appropriate) when tone is heard.

1.A.2 The computer will send some characters to the terminal. Hit the return key.

1.A.3 When the terminal requests "SERVICE", type 65 and hit the return key.

1.A.4 When the terminal requests "USER NUMBER," type P489PFM, (password)* and hit the return key.

1B. If 328-7844 is used:

1.B.1 Place phone into acoustic coupler, or turn on modem (as appropriate) when tone is heard.

1.B.2 When terminal sends "CONNECT" message type return key, . (period), return key. 2

1.B.3 When terminal requests "SERVICE", type "APEX", and hit the return key.

1.B.4 When terminal requests "USER NUMBER", type P489PFM, (password)* and hit the return key.

2. Type -PCF and hit the return key. (Allow about 2 minutes for the program to run). A complete Power Correction Factor report will be sent to the screen. Date and time given should be the time of trip or commencement of reactor shutdown. If this is not the case, inform the Site Reactor Engineer or the Performance and Reliability Supervisor to update the shutdown file.

3. Type BYE and hit the return key.

4. Hang up the phone and disconnect the equipment.

* Password available from site reactor engineer, performance and reliability supervisor, or control room.

WATER SAMPLE DATA AND CALCULATIONS

Water Sample Type ☐ RCS ☐ VC Sump ☐ Other ____________ Sample No. ____________

(A) Nuclide	(B) Half-Life	(C) Decay Constant $\lambda (hr^{-1})$	(D) Reported uCi/cc	(E) Back-Decay Corr. Factor	(F) Temp Corr. Factor	(G) Corrected uCi/gram
Kr-85	10.72y	7.38 E-6				
Kr-87	76.3m	5.45 E-1				
Kr-88	2.84h	2.44 E-1				
*Xe-131m	11.84d	2.44 E-3				
*Xe-133	5.245d	5.51 E-3				
I-131	8.40d	3.59 E-3				
I-133	20.8h	3.33 E-2				
I-135	6.61h	1.05 E-1				
Cs-137	30.17y	2.62 E-6				
*Te-129	69.6m	5.98 E-1				
Te-132	78.2h	8.86 E-3				
Ba-140	12.79d	2.26 E-3				
*La-140	40.22h	1.72 E-2				
*La-142	95.4m	4.36 E-1				
*Pr-144	17.28m	2.41 E0				

Column E: Back-Decay Correction Factor = CF(bd) $= \frac{1}{e^{-\lambda t}} = e^{\lambda t}$

* Note: Nuclides marked with * are daughters in a decay chain. This must be taken into account in order to back-decay correct. Attachment 5A should be followed for those nuclides.

Column F: Temperature Correction Factor CF(t)

This factor converts uCi/cc to uCi/g
If temperature of the water is $< 200^{\circ}F$, CF(t) = 1, and uCi/cc = uCi/g
If temperature of the water is $\geq 200^{\circ}F$, use the Table below to determine CF(t).

Column G: Corrected uCi/g = reported uCi/cc x CF(bd) x CF(t)

G = D x E x F

RCS Water Temperature	Temp. Con. Factor CF(t)
$\leq 150^{\circ}F$	1.0
$200^{\circ}F$	.97
$300^{\circ}F$	.92
$400^{\circ}F$	.86
$500^{\circ}F$	.79
$600^{\circ}F$	.68
$700^{\circ}F$	.44

PARENT-DAUGHTER DECAY CORRECTION

The Table on page 2 of this attachment lists the significant parent-daughter relationships. The decay scheme of the parent-daughter is described as follows:

$$Q_B(t) = K \frac{\lambda_B}{\lambda_B - \lambda_A} \quad Q_A^o \; (e^{-\lambda_A t} - e^{-\lambda_B t}) + Q_B^o \, e^{-\lambda_B t}$$

where:

Q_A^o = 100% fuel melt inventory (Ci) of parent*

Q_B^o = 100% fuel melt inventory (Ci) of daughter*

$Q_B(t)$ = hypothetical daughter activity (Ci) at sample time

K = branching factor*

λ_A = parent decay constant, (hr^{-1})*

λ_B = daughter decay constant (hr^{-1})*

t = time period from shutdown to time of sample (hr)

1. Calculate the hypothetical daughter concentration, $Q_B(t)$ at the time of sampling assuming 100% fuel melt release of both parent and daughter activity.

2. Determine the fraction (Fr) of the decay of the initial inventory of the daughter to the hypothetical daughter activity at sample time.

$$Fr = \frac{Q_B^o \left(e^{-\lambda_B t}\right)}{Q_B(t)}$$

3. Calculate the amount of the measured sample specific activity associated with the decay of the daughter that was released.

M_B = Fr x measure specific activity (uCi/gm or uCi/cc)

where M_B = Measured activity of B

4. Use this value of M_B as the reported uCi/cc in column D of attachment 5 or 6 and continue with further corrections as necessary on Attachment 5 or 6.

* See page 2 of this attachment for data on affected nuclides.

Parent Nuclide	$\lambda_A (hr^{-1})$	Q_A^o	K	Daughter Nuclide	$\lambda_B (hr^{-1})$	Q_B^o	QB(t)	Fr	M_B*
I-131	3.59E-3	7.2E7	.008	Xe-131m	2.44E-3	4.7E5			
I-133	3.33E-2	1.5E8	.976	Xe-133	5.51E-3	1.5E8			
Xe-133m	1.28E-2	2.1E7	1.0	Xe-133	5.51E-3	1.5E8			
Sb-129	.161	2.3E7	.827	Te-129	.598	2.4E7			
Te-129m	8.47E-4	5.8E6	.68	Te-129	.598	2.4E7			
Ba-140	2.26E-3	3.5E7	1.0	La-140	1.72E-2	3.7E7			
Ba-142	3.78	3.3E7	1.0	La-142	.436	3.1E7			
Ce-144	1.02E-4	1.3E6	1.0	Pr-144	2.41	1.4E6			

* M_B should be transferred to Attachment 5 or 6 into Column D, reported uCi/cc

VC ATMOSPHERE SAMPLE DATA AND CALCULATIONS

Sample No. ______________

A Nuclide	B Half-Life	C Decay Constant: $\lambda(hr^{-1})$	D Reported uCi/cc	E Back-Decay Corr. Factor	F Temp/Press Corr. Factor	G Corrected uCi/cc
Kr-85	10.72 yr.	7.38 E-6				
Kr-87	76.3m	5.45 E-1				
Kr-88	2.84h	2.44 E-1				
*Xe-131m	11.84d	2.44 E-3				
*Xe-133	5.245d	5.51 E-3				
I-131	8.04d	3.59 E-3				
I-133	20.8h	3.33 E-2				
I-135	6.61h	1.05 E-1				
Cs-137	30.17y	2.62 E-6				
*Te-129	69.6m	5.98 E-1				
Te-132	78.2h	8.86 E-3				
Ba-140	12.79d	2.26 E-3				
*La-140	40.22h	1.72 E-2				
*La-142	95.4m	4.36 E-1				
*Pr-144	17.28m	2.41 E0				

Column E: Back-Decay Correction Factor = $CF(bd) = \frac{1}{e^{-\lambda t}} = e^{\lambda t}$

* NOTE: Nuclides marked with * are daughters in a decay chain. This must be taken into account in order to back-decay correct. Attachment 5A should be followed for those nuclides.

Column F: Temperature/Pressure Correction Factor = $CF(tp) = \frac{P(a)}{P(s)} \times \frac{(T(s) + 460)}{(T(a) + 460)}$

T(a), P(a) = VC atmosphere temperature °F and pressure (psia)
T(s), P(s) = VC sample temperature °F and pressure (psia)

Column G: Corrected uCi/cc = reported uCi/cc x CF(bd) x CF(tp)

G = D x E x F

CALCULATION OF ACTIV RELEASED FROM CORE

Nuclide	RCS Corrected (uCi/gram) x	RCS (grams*) x10^6 =	RCS (Ci)	Sump Corrected (uCi/gram) x	Sump (Grams)** x10^6 =	Sump (Ci)	VC Atmos. Corrected (uCi/cc) x 7.39E4*** =	VC atmos. (Ci)	Total Activity Σ RCS & Sump & VC atmos. (Ci)
Kr-85									
Kr-87									
Kr-88									
Xe-131m									
Xe-133									
I-131									
I-133									
I-135									
Cs-137									
Te-129									
Te-132									
Ba-140									
La-140									
La-142									
Pr-144									

* Normally 91,600 gal x 3785 cc/gal. x 1 gram/cc = 3.47 E8 grams

** Sump gallons (from sump level) x 3785 cc/gal. x 1 gram/cc = sump grams
This value should be approximately equal to ECCS volume added,

*** uCi/cc x 2.61 E6 cu. ft. x 2.83 E4 cc/cu ft. x 10^{-6} Ci/uCi = 7.39 E4

CALCULATION OF ACTIVITY PRESENT DURING NORMAL OPERATIONS

(A) Nuclide	(B) Normal Ops RCS Conc (uCi/cc)* x 320**	(C) RCS (Ci) Normal Ops	(D) Normal Ops VC Conc (uCi/cc)*x7.4E4***	(E) VC (Ci) Norm Ops	(F) Act. Released from Core (Att. 7)	(G)= F-C-E Corrected Ci Released from Core
Kr-85						
Kr-87						
Kr-88						
Xe-131m						
Xe-133						
I-131						
I-133						
I-135						

* Obtain from recent pre-shutdown RCS Sample
- available from chemistry or site reactor engineer
- if unavailable, use the following approximate values as a sum of the operation activity:

	Ci
Kr-85	12
Kr-87	12
Kr-88	20
Xe-131m	40
Xe-133	200
I-131	8
I-133	10
I-135	10

** 320 = 3.2 E8 cc RCS x 1E-6 Ci/uCi

*** 7.4E4 = 7.4 E10 cc in VC x 1E-6 Ci/uCi

The results in column G to be used in Attachment 7B

NOTE: Account for iodine spiking in accordance with Section 3.5.3 and Attachment 8, if necessary.

CALCULATION OF PERCENT CLAD DAMAGE

(A) Nuclide	(B) Uncorrected Clad Damage Inventory	(C) Power Correction Factor (Att. 4 or 4A)	(D)=(B)x(C) PCF Corrected Clad Damage Inv.	(E) Activity Released from Core (Ci)*	(F) (E/D) x 100% Perc. Clad Damage	(G) NG or Iodine Ratios**
Kr-85	1.6E4					
Kr-87	3.1E3					
Kr-88	6.7E3					
Xe-131m	7.5E2					
Xe-133	1.5E5					
I-131	2.4E5					
I-133	1.6E5					
I-135	8.3E4					

* From Attachment 7A

** $\frac{\text{Noble Gas Isotope}}{\text{Xe-133}}$ or $\frac{\text{Iodine Isotope}}{\text{I-131}}$ (Compare to Ratios in Attachment 3)

NOTE: The percent fuel damage values can only be considered as approximations. If the actual age of the fuel assembly(s) damaged and the power region in the core is different from the core average, (core average was used to develop the inventories in Column B) then the actual inventories in the fuel damaged could differ by a factor of 2-3. The calculated percent damage must be considered along with the isotopic ratios (Column G), presence of other nuclides, and other parameters as discussed elsewhere in this procedure.

CALCULATION OF PERCENT FUEL OVERHEAT

(A) Nuclide	(B) Uncorrected Fuel Overheat Release Inv. (Ci)	(C) Power Correction Factor (Att. 4 or 4A)	(D)=(B)x(C) PCF Corrected Fuel Overheat Inventory (Ci)	(E) Activity Released from Core (Ci)*	(F) (E/D x 100%) Percent Fuel Overheat	(G) NG or I ratios**
Kr-85	9.0E5					
Kr-87	1.8E7					
Kr-88	2.5E7					
Xe-131m	2.8E5					
Xe-133	8.8E7					
I-131	4.3E7					
I-133	8.8E7					
I-135	7.9E7					
Cs-137	4.9E6					N/A
Te-129	1.5E7					N/A
Te-132	6.2E7					N/A
Ba-140	2.2E5					N/A
La-140	2.5E5					N/A
La-142	1.9E5					N/A
Pr-144	1.5E5					N/A

* From Attachment 7

** $\frac{\text{Noble Gas Isotope}}{\text{Xe-133}}$ or $\frac{\text{Iodine Isotope}}{\text{I-131}}$ (Compare to ratio in Attachment 3)

NOTE: The percent fuel damage values can only be considered as approximations. If the actual age of the fuel assembly(s) damaged and the power region in the core is different from the core average (core average was used to develop the inventories in Column B) then the actual inventories in the fuel damaged could differ by 20 - 30%. The calculated percent damage must be considered along with the isotopic ratios (Column G), presence of other nuclides, and other parameters as discussed elsewhere in this procedure.

CALCULATION OF PERCENT FUEL MELT

(A) Nuclide	(B) Uncorrected Fuel Melt Release Inv. (Ci)	(C) Power Correction Factor (Att. 4 or 4A)	(D)=(B)x(C) PCF Corrected Fuel Melt Inventory (Ci)	(E) Activity Released from Core (Ci)*	(F) (E/D x 100%) Percent Fuel Melt	(G) NG or I ratios**
Kr-85	1.5E6					
Kr-87	3.0E7					
Kr-88	4.2E7					
Xe-131m	4.7E5					
Xe-133	1.5E8					
I-131	7.2E7					
I-133	1.5E8					
I-135	1.3E8					
Cs-137	8.1E6					N/A
Te-129	2.4E7					N/A
Te-132	1.0E8					N/A
Ba-140	3.5E7					N/A
La-140	3.7E7					N/A
La-142	3.1E7					N/A
Pr-144	1.4E6					N/A

* From Attachment 7

** $\frac{\text{Noble Gas Isotope}}{\text{Xe-133}}$ or $\frac{\text{Iodine Isotope}}{\text{I-131}}$ (compare to ratios in Attachment 3)

NOTE: The percent fuel damage values can only be considered as approximations. If the actual age of the fuel assembly(s) damaged and the power region in the core is different from the core average (core average was used to develop the inventories in column B) then the actual inventories in the fuel damaged could differ by 30-40%. The calculated percent damage must be considered along with the isotopic ratios (column G), presence of other nuclides, and other parameters as discussed elsewhere in this procedure.

EXPECTED IODINE SPIKE VS. NORMAL IODINE ACTIVITY

I-131 uCi/gram*	Average I-131 Release (Curies)	Maximum I-131 Release (Curies)
0.5 - 1.0	3400	6500
0.1 - 0.5	380	950
.01 - 0.1	200	650
.001 - .01	100	300
<.001	2	10

* Normal operating I-131 specific activity in RCS

VC HYDROGEN CONCENTRATION VS. ZIRCONIUM-WATER REACTION

Percent Zirconium Water Reaction	Hydrogen Concentration in VC (volume %)
10	1.3%
20	2.5%
30	3.8%
40	5.0%
50	6.3%
60	7.5%
70	8.8%
80	10.0%
90	11.3%
100	12.6%

2

EXPECTED FUEL DAMAGE CORRELATION WITH CORE EXIT THERMOCOUPLE READINGS

Fuel Damage	Temperature °F*
No Damage	<1300
Clad Damage	1300 - 2000
Ballooning of zircaloy cladding	>1300
Burst of zircaloy cladding	1300 - 2000
Oxidation of cladding and hydrogen generation	>1600
Fuel Overtemperature	2000 - 3450**
Fission product fuel lattice mobility	2000 - 2550
Grain boundary diffusion release of fission products	2450 - 3450**
Fuel Melt	>3450**
Dissolution and liquefaction of UO_2 in the Zircaloy - ZrO_2 eutectic	>3450**
Melting of remaining UO_2	5100**

* These temperatures are material property characteristics and are non-specific with respect to locations within the fuel and/or fuel cladding.

** Core Exit Thermocouple are not valid over 3000°F

NOTE: When narrow range thermocouple readings go off-scale (as indicated by an asterisk on the thermocouple map), use the wide range readings.

EXPECTED CONTAINMENT RADIATION LEVELS POST-ACCIDENT (R-25/R-26)

Time After Shutdown	R/hr For 100% Clad Damage	R/hr For 100% Fuel Overheat	R/hr for 100% Fuel Melt
0	9200	1.4 E6	2.7 E6
1 hr.	7500	1.0 E6	2.0 E6
2 hr.	6300	7.5 E5	1.5 E6
4 hr.	4800	4.8 E5	9.6 E5
8 hr.	3400	2.6 E5	5.1 E5
12 hr.	2700	1.7 E5	3.3 E5
24 hr.	1900	8.0 E4	1.6 E5
48 hr.	1400	4.2 E4	8.3 E4
4 days	960	2.4 E4	4.8 E4
7 days	680	1.6 E4	3.2 E4
14 days	340	8.0 E3	1.6 E4
30 days	83	1.7 E3	3.4 E3

REFERENCES

1. "Clarification of TMI Action Plan Requirements," NUREG-0737, USNRC, November 1980.

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Buchanan, New York 10511
914 739 8200

New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1030 REV. 11

TITLE" EMERGENCY NOTIFICATION, COMMUNICATION & STAFFING "

WRITTEN BY: [signature]

REVIEWED BY: [signature]

PORC REVIEW: [signature] DATE 10/18/84

APPROVED BY: John C Brons DATE 10/18/84

EFFECTIVE DATE: 10-23-84

IP-1030
Procedure for Control Room:
EMERGENCY NOTIFICATION, COMMUNICATION AND STAFFING

1.0 INTENT

To describe the process for the notification and associated communications required when any of the four Emergency classes is declared, as well as the methods which will mobilize the IP-3 Emergency Response Organization.

2.0 DISCUSSION

After the declaration of an Emergency (Unusual Event, Alert, Site Area or General), the Shift Supervisor (Emergency Director) will initiate and insure this procedure is implemented until he is relieved from the responsibility of Emergency Director. NYPA and NRC notifications should be made simultaneously followed by notification of offsite agencies within 15 minutes of the declaration of an emergency classification.

Persons who must (may) be notified of an Emergency Condition include:

NYPA (Roster I)	NRC	OFFSITE
Resident Manager	Resident Inspector	Con Edison
Supt. of Power	Headquarters	Westchester County
Operations Supt.		City of Peekskill
Information Officer		Rockland County
Nuclear Generation Duty Officer		Orange County
		Putnam County
		NYS Dept. of Health
		*Con Rail Corporation
		**ANI & INPO
		**INPO

*Only notified under the appropriate circumstances as per procedure.

**American Nuclear Insurers (ANI) and Institute of Nuclear Power Operations (INPO) must be notified at the Alert classification and above. Upon activation, th Recovery Center (RC) will assume the responsibility for updating ANI and INPO.

NYPA maintains staffing levels consistent with NRC requirements, i.e.:

Onshift Staffing - supplied by the Watch Organization with additional personnel available through the Con Ed Sr. Watch Supervisor.
Minimum Staffing - designated individuals who are available within 60 minutes from time of notification (Roster II, Apppendix A).
Additional Staffing - available as needed, requested by Shift Supervisor or Emergency Director (Roster III, Appendix A).

3.0 POM RESPONSIBILITIES

- ASSIGN
  - Shift Supervisor
  - TSC Manager
  - OSC Manager
  - CR Communicator:

    1 direct line (TSC-OSC-EOF-CR) Direct as to their
    1 other as needed responsibilities

    CR Communicator may be the second RO if circumstances permit.

- MAKE RECOMMENDATIONS:
  - Technical/Engineering
  - Repair
  - Corrective Action
  - Recovery Center (RC) to Investigate
  - Procurement-guidance for RC through E.D.

- Assure you are appraised of repair team status and team de-brief information (this should come from the OSC via direct line communicator, if not request it).

- Consider KI needs for emergency workers

- Check plant status against EAL's, ED should notify you directly when emergency classification changes.

- Assure CR Communicator gives Plant updates every 30 mins. on PA System.

- Has EOF taken over 30 minute calls to NRC? If not, assure CR Comm. calls.

- Insure plant status log, (equipment) #31c is filled out and telecopied to EOF & TSC approximately every 30 minutes or as status changes.

- Do you know what offsite agencies are doing? Ask E.D.

4.0 SHIFT SUPERVISOR/SRO RESPONSIBILITIES

?

CLASSIFY: - Determine Emergency Classification
- if NUE, fill out form 30a then go directly to Emerg. Plan Notifications (section 4.0)

ASSIGN: - Designate a Control Room Communicator (initially 2nd RO in CR as circumstances permit)

STAFF: - Determine which onsite support centers should be activated:

AT THE ALERT CLASSIFICATION:

a. Normal hours - ensure PA announcements are made:
"All Technical Support Center personnel report to the TSC"
"All Operations Support Center personnel report to the OSC"
"Shift Technical Advisor report to the Control Room"
"All other personnel remain at your work locations and await further instructions"

Consider site assembly to facilitate accountability?

b. Off hours - instruct Security to call in Roster II individuals.

AT THE SAE OR GE CLASSIFICATION:

a. - Notify Con Ed Unit #2 before sounding alarm.
- Sound the Site Assembly Alarm to initiate Site Accountability and activate all onsite Emergency Facilities.

b. Normal hours - ensure PA announcement is made:
"A (state Emerg. Classification) Emergency has been declared. All non-watch personnel report to your Assembly Area. Contingency workers and spare operations personnel report to the Control Room."

c. Off hours - Instruct Security to call in Roster II individuals.

DATA: - Assist Control Room Communicator in completing NYS Radiological Emergency Data Form (Form 30a)
- Initiate dose projection calculations as necessary (IP-1002)

FORMS: - Complete and telecopy EP Form 31c (Plant Status Log - Equipment) to the EOF and TSC (when activated) approximately every 30 minutes or as status changes.

ACCOUNTABILITY: - Assure accountability list is made

DISPATCH: - Dispatch on and offsite monitoring teams as necessary
(IP-1010, onsite teams, direct H.P.'s to appropriate Site Boundary sectors)
(IP-1011, offsite teams, call Con Ed CR to activate teams)
- Dispatch Repair and Corrective Action teams (IP-1025) or Search and Rescue teams as necessary (IP-1054)
(if S&R team, update LAO on status)

TURN OVER TO EOF: - When EOF is staffed:
a. Turn over ED responsibilities to EOF
b. Assume ED responsibilities if EOF is moved to AEOF.

CONTINUING THROUGHOUT: - Assure PA announcements are made every ½ hour to keep site personnel advised of emergency status.
- Plant Status Log 31c sent to EOF & TSC

5.0 CONTROL ROOM COMMUNICATOR RESPONSIBILITIES

FORMS:

- *Complete NYS Radiological Emergency Data Form (Form30a) with Shift Supervisor.

NOTIFICATIONS:

- *Provide information from Data Form to Roster I individuals:
  a. Normal hours via Resident Manager's Secretary
  b. Off hours via Security
- *Notify the following individuals and organizations:
  a. Con Ed Unit #2 - request additional personnel as needed (including offsite monitoring teams).
  b. New York State, Counties, Peekskill
  c. NRC Resident Inspector
  d. NRC Headquarters
  e. American Nuclear Insurers (ANI) and INPO at Alert and above.
  f. Con Rail Corporation if affected.
- Update all groups listed above every 30 minutes or sooner if there are significant changes or any change in emergency classification.
- Instruct IP-3 Security to restrict access to the site at SAE and GE.

STAFFING VIA SECURITY:

- Have Security use Roster II to call in needed personnel during off hours.

TURN OVER TO EOF:

- When EOF is staffed:
  a. Transfer offsite communication to EOF Communicator.
     - indicate last message # used on Data Form (30a)
  b. Transfer direction of site perimeter and offsite monitoring teams to Radiological Communicator in EOF.
  c. Remain on direct line (CR, TSC, OSC, EOF) and maintain flow of information between facilities.
  d. Assume communications responsibilities if EOF is moved to AEOF.

CONTINUING THROUGHOUT:

- Make PA announcements every ½ hr. to keep site personnel advised,
- Remain on direct line phone in constant contact with TSC, EOF, OSC (Con Ed Radio frequency 1 as phone backup)

* This indicates the only emergency planning actions for the NUE classification.

6.0 SECURITY RESPONSIBILITIES

FORMS:
- Have Available:
  - Form 30a (NYS Radiological Emergency Data Form)
  - Roster I (fill in with info. from 30a)
  - Roster II

RECIEVE:
- Instructions from Shift Supervisor or Control Room Communicator
- Information on Form 30a

NOTIFICATIONS:
- Notify all individuals on Roster I of emergency conditions.
- Notify CR when Roster I Notifications are complete & who was or was not contacted.

CALL-IN:
When instructed by Shift Supervisor or Control Room Communicator:
- Call in all individuals on Roster II for Alert, Site & General Emergency. (Notify Control Room when Roster II notifications are complete)

SECURITY:
- Restrict access to and egress from the Site.
- Escort emergency vehicles to needed location.
- Provide guards to maintain security and access control at the EOF and Joint News Center.

DOSIMETRY:
- Distribute dosimetry to security personnel

ACCOUNTABILITY:
- Normal hours:
  - Account for Security personnel
  - Call in to LAO names of site visitors
- Off hours:
  - Call 15' elevation Machine Shop for personnel list
  - Call CR
  - Call Control Point for personnel who may have not signed out.

7.0 ATTACHMENTS

7.1 New York State Radiological Emergency Data Form EP Form #30a,b,c.
7.2 Roster I
7.3 EP Flowchart #2, Unusual Event, Alert Emergency (CR use)
7.4 EP Flowchart #3, Site Area, General Emergency (CR use)
7.5 Offsite Notification and Communication Procedure Telephone Numbers

EP-Form #30a

THIS REFERENCE IS FOR EP-1 USE ONLY

PART I - GENERAL INFORMATION

Attachment 7.1a

___West.	___NY State
___Rock.	___Peekskill
___Putnam	___Con Ed
___Orange	___Con Rail
___NRC	___ANI
	___INPO
___Nuc Gen Duty Ofcr.	

1.(a) Notification #_______A

. Message transmitted:

__________/____________________

Date Time(24 hr. clock)

2. Facility providing information:

[A] Indian Point No. 2

[B] Indian Point No.3

3. Reported By:

Name ____________________________

Title ____________________________

4. This...

[A] is an exercise

[B] is NOT an exercise

5. Emergency Classification

[A] Unusual Event

[B] Alert

[C] Site Area Emergency

[D] General Emergency

[E] Transportation Incident

[F] Other

6. This classification declared at:

Date___________Time_____________

7. Brief Event Description/Initiating Condition:

____

____

____

____

____

____

8. As of ______hours there has:

[A] NOT been a release of radioactivity

[B] been a release of radio-activity to the ATMOSPHERE

[C] been a release of radio-activity to a BODY OF WATER

[D] been a GROUND SPILL release of radioactivity

9. The release is:

[A] continuing.

[B] terminated.

[C] intermittent.

[D] NOT applicable.

10. Protective Actions:

[A] There is NO need for Protective Actions outside the site boundary.

[B] Protective Actions are under consideration.

[C] Recommended Protective Action

ERPA for SHELTERING 1 2 3 4
5 6 7 8 9 10 11 12 13 14 15
16 17 18 19 20 21 22 23 24
25 26 27 28 29 30 31 32 33
34 35 36 37 38 39 40 41 42
43 44 45 46

ERPA for EVACUATION 1 2 3 4
5 6 7 8 9 10 11 12 13 14 15
16 17 18 19 20 21 22 23 24
25 26 27 28 29 30 31 32 33
34 35 36 37 38 39 40 41 42
43 44 45 46

11. Weather

[A] Wind speed____miles per hour or______meters per second.

[B] Direction(from)____degrees.

[C] Stability class____________ (A-G/or stable, unstable, neutral)

[D] General Weather Condition (if applicable)

____

OCT 2 3 1984

EP-Form#30b

EMERGENCY NOTIFICATION FACT SHEET
PART II - RADIOLOGICAL ASSESSMENT DATA

Date: ______
Time: ______

12. Prognosis for Worsening or Termination of the Emergency: ______

______

______

13. In Plant Emergency Response Actions Underway: ______

______

______

14. Utility Off-Site Emergency Response Action Underway: ______

______

______

15. Release Information

	Actual		Projected	
A ATMOSPHERIC RELEASE				
Date and Time Release Started	______		______	
Duration of Release	______	hrs	______	hrs
Noble Gas Release Rate	______	Ci/sec	______	Ci/sec
Radioiodine Release Rate	______	Ci/sec	______	Ci/sec
Elevated or Ground Release	______		______	
Inplant Monitors	______		______	
B WATERBORNE RELEASE				
Date and Time Release Started	______		______	
Duration of Release	______	hrs	______	hrs
Volume of Release	______	gal	______	gal
Radioactivity Concentration (gross)	______	uCi/ml	______	uCi/ml
Total Radioactivity Released	______	Ci	______	Ci
Radionuclides in Release	______	uCi/ml	______	uCi/ml
	______	uCi/ml	______	uCi/ml

Basis for release data e.g. effluent monitors, grab sample, composite sample and sample location: ______

16. Dose and Measurements and Projections

	Actual		Projected	
A SITE BOUNDARY				
Whole Body Dose Rate	______	mR/hr	______	mR/hr
Whole Body Commitment (for duration above)			______	Rem
Thyroid Dose Commitment (1 hour exposure)	______	mRem	______	mRem
Thyroid Dose (total commitment)			______	Rem

B PROJECTED OFFSITE	2 Miles	5 Miles	10 Miles
Whole Body Dose Rate (mR/hr)	______	______	______
Whole Body Dose (Rem)	______	______	______
Thyroid Dose Commitment (I hr exposure - mRem)	______	______	______
Thyroid Dose (Total Commitment-Rem)	______	______	______

17. Protective Action Recommendations and the Basis for the Recommendations: ______

______

______

______

______

OCT 2 3

 Date:__________

Time:__________

MAJOR PARAMETERS

. RCS temperature __________ (°F)

19. RCS press. __________ (psig)

20. # RCP's in Service __________ (0-4)

21. Pressurizer Level __________ (%)

22. S/G Levels #31_____% #32_____%

#33_____% #34_____%

23. Containment Press.__________ (psig)

24. CST Level __________ (Ft.)

25. Containment Temp. __________ (°F)

26. V.C. Sump Level __________ (Ft.)

27. RWST Level __________ (Ft.)

28. Reactor Shutdown__________ (Y/N)

29. Natural/Forced Circulation__________

30. RCS Subcooled/Saturated__________

psig Subcooled__________

RADIOLOGICAL MONITORS

Area Monitors:

3 R-2 Containment__________mR/hr

32. R-7 Containment__________mR/hr

33. R-10 Accident Monitor__________R/hr

Plant Vent:

34. R-13 (particulate) __________CPM

35. R-14 (gaseous) __________CPM

36. R-27 (gaseous) __________uCi/Sec

37. Containment High Range Monitor

(R-25/R-26) __________R/hr

38. PLANT VENT FLOW RATE: __________CFM

39. Offsite/Onsite Power Available

____

40. Emergency Diesel Generators

Check Status	31	32	33
Load/Running	__	__	__
Unloaded/Standby	__	__	__
Out of Service	__	__	__

MODES OF SAFETY INJECTION

(circle modes in use)

41. Passive Injection - Accumulators

42. High Head Injection

43. Low Head Injection

MODES OF CIRCULATION

(circle modes in use)

44. Low Head Recirculation - Recirc Pump
- RHR Pumps

45. High Head Recirculation -
- Recirc Pumps to S.I. Pumps
- RHR Pumps to S.I. Pumps

46. Hot Leg Recirculation - Recirc Pumps
- RHR Pumps

STATUS OF ENGINEERED SAFEGUARDS EQUIPMENT

(circle those in use)

47. Aux. Feed Pumps 31 32 33

48. Containment Fan Cooler Units

31 32 33 34 35

49. VC Phase A Isolation Complete

YES / NO

50. VC Phase B Isolation Complete

YES / NO

51. CR Isolation Complete

YES / NO

52. Containment Spray

VC Spray Pumps

Recirculation Mode

ADDITIONAL MONITORS OF IMPORTANCE

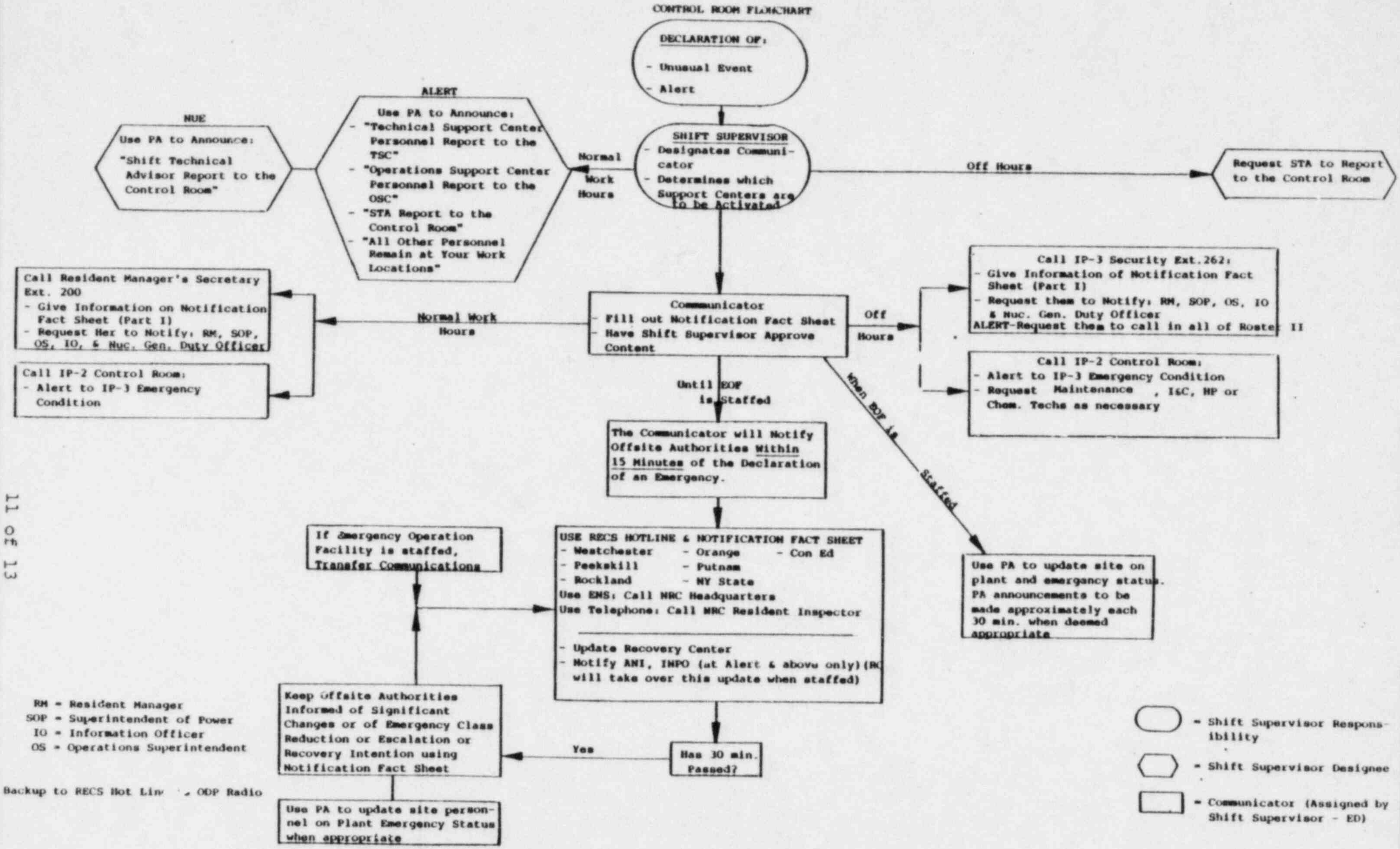
____

____

____

 OCT 23 1984

UNUSUAL EVENT, ALERT EMERGENCY



NOTIFICATION - COMMUNICATION - STAFFING

SITE AREA, GENERAL EMERGENCY

CONTROL ROOM FLOWCHART

DECLARATION OF:
- Site Area Emergency
- General Emergency

SHIFT SUPERVISOR (ED)
- Designates Communicator
- Initiates Support Center Staffing
- Initiates Dose Proj. Calcs.
- Dispatches on & offsite Monitoring Teams

Dose Projection Calculations IP-1002

Call Con Ed to Notify of our Intention to Sound Site Assembly Alarm

SOUND SITE ASSEMBLY ALARM:

Use PA:

"A _______ Emergency has been declared. All non-watch personnel report to your Assembly Area. Contingency workers, and spare Operations personnel report to the Control Room."

Will Result in:
- Emergency Director & Rad Assessment Team to EOF
- TSC Personnel to TSC
- STA to Control Room
- Watch HP & Chemist to Control Room
- OSC Personnel to OSC

COMMUNICATOR
- Fill out Notification Fact Sheet
- Have Shift Supervisor Approve Content

Normal Work Hours:

Call IP-3 Security Ext. 262:
- Alert to Emergency Conditions
- Direct them to Restrict Access to Site

Call Resident Manager's Secretary:
- Give Info. on Notification Fact Sheet (Part I)
- Request her to Notify: RM, SOP, OS, IO & Nuc. Gen. Duty Officer

Call IP-2 Control Room:
- Alert them to IP-3 Emergency Conditions.
- Request Offsite Monitoring Teams to report to the EOF

Off Hours:

Call IP-3 Security Ext. 262:
- Alert to Emergency Condition
- Give Info. on Notification Fact Sheet
- Request them to Notify: RM, SOP, OS, IO & Nuc. Gen. Duty Officer
- Direct them to Restrict Access to Site
- Request them to call in all Personnel on Roster II

Call IP-2 Control Room:
- Alert them to IP-3 Emergency Condition
- Request Maintenance , I&C, HP or Chem. Techs as required
- Request Offsite Monitoring Teams to report to the EOF.

Until EOF is Staffed:

The Communicator will Notify Offsite Authorities Within 15 Minutes of the Declaration of an Emergency

USE RECS HOTLINE AND NOTIFICATION FACT SHEET
- Westchester
- Peekskill
- Rockland
- Orange
- Putnam
- NY State
- Con Ed

Use ENS: Call NRC Headquarters

Use Telephone: Call NRC Resident Inspector

Keep Informed as Appropriate:
- RC
- ANI
- Metro North
- Con Rail
- INPO

When EOF is Staffed:

Use PA to keep site Personnel informed of Plant and Emergency Status approximately each 30 min. or as appropriate at least until site is evacuated.

If Emergency Operation Facility is staffed, Transfer Communications.

Has 30 min. Passed?

Yes:

Keep Offsite Authorities Informed of Significant Changes or of Emergency Class Reduction or Escalation using Notification Fact Sheet

Use PA to update site Personnel on Plant & Emergency Status.

Backup to RECS Hotline is ODP Radio

RM = Resident Manger

SOP = Superintendent of Power

IO = Information Officer

OS = Operations Superintendent

(oval) = Shift Supervisor Responsibility

(parallelogram) = Shift Supervisor Designee (Dose Assessment)

(hexagon) = Shift Supervisor Designee (Staffing)

(rectangle) = Communicator (Assigned by

OFFSITE NOTIFICATION & COMMUNICATION PROCEDURE TELEPHONE NUMBERS

	Work Ext.	Home Phone
USNRC Inspector, P. Koltay	499	(914) 245-1007
Alternate: L. Rossbach	499	(914) 736-0505
American Nuclear Insurers (ANI)		(203) 677-7305
Institute of Nuclear Power Operations (INPO)		(404) 953-0904 (404) 953-0922
Westside of River:		
Consolidated Rail Corp.: (Chief Train Dispatcher)		(201) 558-2385 (201) 558-2386
Eastside of River:		
Metro North Commuter Railroad: (Chief Train Dispatcher)		(212) 340-2049 through 2053
US Coast Guard (Operations Duty Officer)		(212) 668-7936

IF THE RECS LINE, RADIO AND NAWAS ARE NOT WORKING, CALL-

Westchester County Warning Point	(914) 769-3100 (Ask for Watch Officers Desk)
Putnam County Warning Point	(914) 225-4300
Rockland County Warning Point	(914) 354-8300
Orange County Warning Point	(914) 294-6860
City of Peekskill Police Commissioner	(914) 737-8000 X 224
N.Y. State Warning Point	(518) 457-2200 457-6811

If all communication lines are down, radio the State Police by means of the Security Plectron device. Request the State Police to contact the State Police in Albany and make contact with Westchester, Rockland, Orange & Putnam Counties & the City of Peekskill.

IF THE NRC DIRECT LINE IS NOT OPERATIONAL, CALL-

1. NRC Operations Center (via Bethesda Centra; Office) (301) 951-0550 (Primary)
2. NRC Operations Center (via Silver Spring Central Office) (301) 427-4056, 4259
3. NRC Operations Center (via Bethesda Central Office) (301) 492-8893
4. Health Physics Network Line (to NRC Operations Center) 22

OCT 23 1984

Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914 739.8200

New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1031 REV. 3

TITLE " PROCEDURE FOR EOF EMERGENCY NOTIFICATIONS AND COMMUNICATION "

WRITTEN BY: [signature]

REVIEWED BY: D. Bell

PORC REVIEW: [signature] DATE 3/8/85

APPROVED BY: John C Brons DATE 3/8/85

EFFECTIVE DATE: 03/20/85

PROCEDURE FOR EOF EMERGENCY NOTIFICATIONS AND COMMUNICATION

1.0 INTENT

To outline the necessary communications from the EOF during the course of emergency conditions which require staffing of the EOF.

2.0 DISCUSSION

Initial notification and communication to on and offsite authorities will be directed and accomplished by the Control Room. Notification and communication turn over to the EOF will be accomplished when the EOF is staffed and ready to assume control of the emergency. At that time, the EOF communicator should receive a briefing from the CR communicator on the status of emergency notifications and communications.

If the decision is made to relocate to the Alternate Emergency Operation Facility (AEOF), the Emergency Director will notify the Control Room and request that the Plant Operations Manager assume Emergency Director control and communication activities. The Plant Operation Manager, after assuming the role of the ED, should then assure the following positions are assigned: (1) Communicator and (2) Radiological Assessment Team Leader. The checklists for communicators found in IP-1031 should be followed during this transition period. When the AEOF has been established and can resume these responsibilities, the Emergency Director at the AEOF will notify the Control Room (POM) and will again assume ED control and communication activities following briefing turnover.

3.0 FOUR COMMUNICATORS MAY BE AVAILABLE AT THE EOF

a. Onsite (including Recovery Center and Con Edison on plant & team status)

b. Offsite

c. Radiological (onsite)

d. Radiological (offsite)

The following checklists represent the communication responsibilities of these individuals:

COMMUNICATORS CHECKLIST OFFSITE

TURNOVER FROM CR:
- Receive briefing from CR communicator on notification and communication status
- Record last notification # used on Form 30a

FORMS EACH 30 MIN.:
- NYS Radiological Emergency Form (30a,b,c)
- Pass out Forms 30 a,b,c
  a. You fill out 30a, have ED initial it
  b. 30b to Rad Ass't team
  c. 30c to Technical Advisor
- Go out over Hot Line with 30a
- Collect 30b,c
- Via clerks telecopy 30a,b,c to State & Counties

COMMUNICATION EACH 30 MIN.:
- Over Hot Line with 30a (State, Counties, Recovery Center, Con Edison)
- NRC, ENS updates

LOCAL NOTIFICATIONS:
- Con Rail if affected
- Adjacent businesses as appropriate

SIGNIFICANT CHANGES IN PLANT STATUS:
- Significant status change = reduction or escalation in emerg. class or <u>closeout</u>
- If a change in emergency status occurs, go out with change over <u>Hot Line</u>, and to <u>NRC</u> immediately. Advise them you will follow up with Data sheet shortly.
- Notify:
  - Offsite; State, Counties, Recovery Center & Con Edison
  - NRC
  - Con Rail & adjacent business (if previously contacted)
  - any other parties so involved

ANI, INPO TURNOVER TO RECOVERY CENTER: As soon as Recovery Center is staffed, turnover notification responsibilities for INPO, & ANI

SUPPORT OR ASSISTANCE:
- INPO (thru Recovery Center if staffed)
- Brookhaven

RECOVERY INTENTION: Prior to declaring or entering the Recovery phase, offsite officials should be notified and conferred with to assure all parties agree on the appropriateness of entering the long term recovery phase.

NOTE: Use ODP (County) radio if the RECS Hotline is not working. You must call NYS separately with the microwave link when using the ODP radio.

COMMUNICATORS CHECKLIST ONSITE

- Receive incoming calls

  Screen as necessary to E.D./RATL etc.

- Receive all (in-house) direct line phones including Recovery Center Communications.

- Approximately every 30 minutes:

  Brief OSC/TSC, CR, LAO, Security, Con Ed & RC re: plant status

- Go out with change in emergency status immediately to above

- Talk with TSC, OSC, CR, RC, Accountability, Security as directed

- Use Con Ed radio (frequency #1) if communication goes out -

location of f-1
- TSC/OSC
- CR
- Off & Onsite Monitoring Teams will be on f-1 also.

RADIOLOGICAL COMMUNICATOR (OFFSITE)

Arrival Checklist

TURNOVER FROM CONTROL ROOM:
- Call CR to see if on and/or offsite teams were called in and/or dispatched.
- Get team status.

ASSUME CONTROL OF TEAMS:
- Assume control of teams via radio
- Assume control of teams via CR

or

REQUEST TEAMS:
- Offsite - from CR II
- Site Perimeter - from OSC

TEAM COMMUNCIATION:
- Establish radio contact

EQUIPMENT CHECK:
- Tell teams to perform equipment checks
- Should have KI tablets (discuss their taking of KI with RATL).
- Respirator with charcoal cartridges especially Site Perimeter Teams.
- Dosimetry

FORMS:
- MET Information Form
- RADCOM Worksheet
- Monitoring Team Field Survey Form #4
- Offsite Survey Team Data Form #27
- Determination of Radioactive Airborne Concentrations Form #21

INSTRUCTIONS REGARDING TEAMS:
- IP-1011
- Locate plumes & define edges (traverse plume, but not unnecessarily)
- Perform "contact" and 1 meter above ground β & γ surveys at each site (check for deposition)
- If $\gamma >$ 1 mR/hr move to lower background to count
- If $\beta >$ 50 mRad/hr or I $> 10^{-8}$ uCi/cc use silver zeolite
- Ensure air samples are labeled
- Ensure filters are replaced at CAS sampling sites
- Direct teams to take noble gas and iodine air samples as soon as possible to determine plume content

RADIOLOGICAL COMMUNICATOR (OFFSITE)

3

TEAM UPDATES:
- Keep in constant contact
- Advise to check dosimetry
- Keep teams informed of plant status, emergency classification, plume direction and location by meteorology & calculation.
- Know where they are & don't forget them

3

DATA DISTRIBUTION/ EOF DISTRIBUTION:
- Keep map of team location & plume definition
- Place site boundary survey results on site boundary map in EOF 3
- Locate offsite teams on map in EOF with markers
- Transparency of on & offsite data for EOF
- Hardcopy to county liaison, DAHP & RATL
- Telecopy offsite data to County EOC's & RC
- Contact EOC's for <u>their</u> data

OTHER INPUTS:
- Receive Reuter Stokes data from MIDAS
- Receive prints from MIDAS re/plume location
- Input on Dose Assessment projections, evac & sheltering from DAHP

SAMPLING RESULTS:
- β, γ EP Form #2
- Environmental TLD & AIR, EP Form #2a 3
- Con Ed Form #21 - Det. of Airborne concentration

RADIOLOGICAL COMMUNICATOR (ONSITE)

- Establish communications with OSC.
    - HP Team Leader, Chemistry Team Leader, Security Team Leader
- Access MIDAS on Silent 700 terminal.
    - Start and run broadcast, distribute reports to Radiological Team members.
- Coordinate with offsite Rad Communicator.
    - Keep Security Team Leader and HP Team Leader informed of plume location, dose rates.
    - Assess need for K.I. with RATL (for security guards).
- Coordinate Site Evacuation, Search and Rescue Teams.
    - with Security & HP Team Leaders.
    - as directed by RATL and ED.
- Receive incoming calls; screen information to RATL.
- Assist offsite Rad Communicator in data distribution.
- Brief State and County Representatives of radiological assessment team actions approximately every 30 minutes.

EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1038 REV. 6

TITLE" USE OF THE EMERGENCY COMMUNICATIONS SYSTEMS

"

WRITTEN BY:

REVIEWED BY: M. Pal

PORC REVIEW: DATE

APPROVED BY: DATE

EFFECTIVE DATE:

USE OF THE EMERGENCY COMMUNICATIONS SYSTEMS (EMERGENCY NOTIFICATION FACT SHEET & COUNTY HOT LINE, RADIO & NAWAS)

1.0 INTENT

This procedure is intended to describe the use of, operation procedures for, and the testing of the Radiological Emergency Communications System ("County Hot Line"), the State and County radio system (Office of Disaster Preparedness (ODP) Radio) and the National Warning System (NAWAS).

2.0 DISCUSSION

The "County Hot Line" is the primary means of notification & communication to Westchester, Rockland, Orange and Putnam Counties, the City of Peekskill and New York State Department of Health in the event an Unusual Event, Alert, Site Area or General Emergency is in process at IP-3. The State and County radio (ODP) system is the backup to the County Hot Line. NAWAS and regular dial telephones are also back up communication systems for offsite notifications.

New York State Radiological Emergency Data Forms are described in Section 3.0 and are used to communicate pertinent information offsite during emergencies. The Data Form method of communicating data is the same whether the Hot Line, (ODP) Radio, NAWAS or regular dial telephones are used.

3.0 PROCEDURE FOR USE OF THE NEW YORK STATE RADIOLOGICAL EMERGENCY DATA FORM

3.1 The NYS Radiological Emergency Data Form is to be used when reporting any Emergency Plan emergency. It can be found in IP-1030 or in the Book of Forms.

3.2 The NYS Radiological Emergency Data Form (EP Form #30) consists of three (3) parts (30a,b,c):

Part I (30a):	General Information
Part II (30b):	Radiological Assessment Data
Part III(30c):	IP-3 Plant Parameter Data

3.3 Instructions to use NYS Radiological Emergency Data Form over County Hot Line or ODP Radio: 6

Part I (30a), General Information: should be relayed initially to the warning points, and thereafter to the EOC's.

Part II (30b), Radiological Assessment Data: should only be relayed to the EOC's; warning points do not have this Part II.

Part III(30c), IP-3 Plant Parameter Data: should only be relayed to the EOC's; warning points do not have this Part III.

3.4 The Control Room has the responsibility to initially fill out Part I of this form, and communicate this to persons in Section 3.5 below.

3.5 Persons who ultimately should have the information on the NYS Radiological Emergency Data Form are:

OFFSITE (Use County Hot Line Phone or ODP Radio)
Westchester County
Rockland County
Orange County
Putnam County
City of Peekskill
New York State Department of Health

3.6 This information should also be given to the following individuals but the use of the data form is not required. Abbreviated synopsis of the emergency is to be given.

NYPA

Resident Manager
Superintendent of Power
Information Officer
Nuclear Operations Duty Officer

NRC
(ENS)
Resident Inspector

3.7 When using the NYS Radiological Emergency Data Form, information transfer should be accomplished in the following manner.

a) State your intention of using the NYS Radiological Emergency Data Form (Part ___).
b) Begin giving information - examples follow:

State: "1. Date and time of message transmittal:
Date _______, Time__________"
24 hr. clock

"2B, This is Indian Point No. 3"

"3A, This is _______________, B______________________"
(your name) (your title)

"4A, This is an exercise"
or
"4B, This is not an exercise" etc...

If certain statements are not applicable, tell the receivers to skip appropriate number(s).
Example: State: Skip 9
Skip 10

4.0 PROCEDURE FOR USE OF THE HOT LINE

4.1 The County Hot Line is labeled as such, is red, has a "red eye" (lit when in use), and has a ring button.

4.2 Designated communicator will depress ring button and release. After ring stops, operator will pick up handset and announce: "THIS IS TO REPORT AN INCIDENT AT INDIAN POINT NO. 3. STAND BY FOR ROLL CALL." (Conduct roll call to include the following stations:)

_____ "Westchester County Warning Point"
_____ "Peekskill City Warning Point"
_____ "Rockland County Warning Point"
_____ "Orange County Warning Point"
_____ "Putnam County Warning Point"
_____ "NYS Warning Point" (ODP during duty hours, State Police during non-duty hours)

4.3 Upon completion of roll call, operator will direct all parties to the NYS Radiological Emergency Data Form, Part I General Information and transmit the applicable information. | 6

4.4 Operator will again call roll by saying, "(NAME OF STATION) did you copy?"

4.5 Operator will sign off by saying, "INDIAN POINT NO. 3 out at (TIME) and (DATE)."

4.6 Operator will record dissemination of information on log.

4.7 IN THE EVENT A COUNTY WARNING POINT STATION DOES NOT ANSWER ROLL CALL, LICENSEE OPERATOR WILL PROCEED WITH INFORMATION. ODP SOUTHERN DISTRICT (DURING DUTY HOURS) OR STATE WARNING POINT (DURING NON-DUTY HOURS) WILL BE RESPONSIBLE TO NOTIFY NON-ANSWERING STATION AND GIVE REQUIRED INFORMATION.

4.8 After EOC's are staffed, Part II and III will be provided via telecopier. Part I will still air over the Hot Line and be sent in parallel via telecopier, as well as the Hot Lines to the EOC's.

Note #1: During duty hours, the following stations may be active to receive information:

NYS Health Department (Radiological Health)
NYS ODP Radiological (State EOC)
NYS ODP Southern District
Westchester County Disaster and Emergency Services
Rockland County EOC
Orange County EOC
Putnam County EOC

These stations do not have to be present on telephone before licensee operator begins message information. If these stations want repeat of information, State Warning Point will comply.

Note #2: During non-duty hours, the State Police will notify and give information to personnel listed on notification lists maintained by the State Health Department and State ODP via commercial phone. State ODP will notify and give information to ODP Southern District in accordance with its notification procedures via commercial phone.

5.0 PROCEDURE FOR THE USE OF THE ODP RADIO

5.1 Designated communicator will pick up handset and announce:

" THIS IS TO REPORT AN INCIDENT AT INDIAN POINT NO. 3. STAND BY FOR ROLL CALL."
(Conduct roll call to include the following stations:)

____________________"Westchester County Warning Point"
____________________"Peekskill City Warning Point"
____________________"Rockland County Warning Point"
____________________"Orange County Warning Point"
____________________"Putnam County Warning Point"

a) Direct them to the Emergency Notification Fact Sheet, Part I, General Information, and transmit applicable information.

b) Operator will again call roll by saying, "(NAME OF STATION) did you copy?"

c) Operator will sign off by saying, "INDIAN POINT NO. 3 OUT AT (TIME) and (DATE)."

d) Operator will record dissemination of information on log.

5.2 New York State must be notified separately. To accomplish this, use the microwave line ((212) 564-3345)

a) to call the N.Y.S. Warning Point. Identify it as an emergency call and report information on NYS Radiological Emergency Data Form.

5.3 All EOC's have ODP radios including NYS, after activation this radio can be used without the microwave call to NYS.

6.0 PROCEDURE FOR USE OF NAWAS FOR INITIAL NOTIFICATION OF AN EMERGENCY

6.1 Designated Communicator will:

a) Listen to determine that the Westchester County Warning Point is not participating in any transmission.

b) Depress the handset switch and announce "This is Indian Point No. 3 calling: Westchester, Putnam, and City of Peekskill Warning." You will be answered by receiving "Westchester, Putnam and City of Peekskill Warning."

c) Direct them to the NYS Radiological Emergency Data Form, Part I, General Information, and transmit applicable information. 6

d) Warning points will acknowledge message and will conclude by saying "____________________ Warning Point."

e) Terminate transmission by saying "Indian Point off at _______ hours."

f) Operator will record dissemination of information on log.

6.2 Westchester County Warning Point will transmit message and information on NYS Radiological Emergency Data Form to New York State Warning Point. Orange and Rockland Counties will hear this transmission. New York State Warning Point and Orange County will acknowledge receipt of message to Westchester County Warning Point.

6.3 Orange County will call Rockland County by telephone to assure Rockland has received the message (Rockland County is not on the transmission loop therefore they can not be heard, however they can receive messages.)

6.4 New York State Warning Point will assure that the New York State Department of Radiological Health is notified.

6.5 New York State will telephone IP-3 for verification on (914) 737-8929.

7.0 PROCEDURE FOR INITIAL NOTIFICATION WHEN COUNTY HOT LINE, COUNTY RADIO, AND NAWAS ARE NOT WORKING

7.1 Using regular telephones call: Westchester, Putnam, Rockland, Orange, City of Peekskill and New York State Warning Points. Telephone numbers are found in Appendix B listed as "Offsite Notification & Communication Telephone Numbers.

8.0 TESTING FOR THE COUNTY HOT LINE (RADIOLOGICAL EMERGENCY COMMUNICATIONS SYSTEM, RECS)

8.1 New York State Warning Point (NYSWP) will initiate test.

8.2 Test Schedule - Tests will be conducted bi-weekly on Tuesdays preceding the bi-weekly NAWAS tests according to the following:

A) Indian Point at approximately 9:45 a.m.
B) Test schedules will be issued by NYSWP.
C) Unannounced tests will be conducted as necessary. 6

8.3 New York State Warning Point will announce: "THIS IS A TEST. REPEAT. THIS IS A TEST. This is NYS WARNING POINT calling all stations. Stand by for roll call."

8.4 SEQUENCE OF ROLL CALL:

Indian Point Unit #2 Control Room
Indian Point Unit #3 Control Room
Indian Point Emergency Operations Facility
Westchester County Warning Point
Westchester County Disaster and Emergency Services
Westchester County EOC
Peekskill City Warning Point
Rockland County Warning Point
Rockland County EOC
Orange County Warning Point
Orange County EOC
Putnam County Warning Point
Putnam County EOC
NYS ODP Southern District
NYS Department of Health (Radiological Health)
NYS Division of State Police (Alternate State Warning Point)
NYS ODP Radiological (State EOC)

8.5 All stations will lift up handset and answer roll call after hearing ring and its station name over loudspeaker by saying, "(NAME OF STATION) TEST." (DO NOT LIFT UP HANDSET UNTIL YOUR STATION IS CALLED.)

8.6 After completing roll call, NYSWP will recall all stations not answering, saying, "NYS WARNING POINT recalling (NAME OF STATION NOT ANSWERING)." (NAME OF STATION RECALLED) will answer using terminology in 8.5 above.

8.7 NYSWP will sign off by saying, "END OF TEST. NYS WARNING POINT out at (TIME) LOCAL and (DATE)."

8.8 All stations will log results.

8.9 All stations not answering initial test will be called on commercial telephone by NYSWP for reasons. The location having problems should report problems immediately to the

trouble number: 1-890-7711 ask for special services
report: circuit 88PLNT5848 failed, and location of problem (eg. Indian Point No.3 Control Room).

8.10 If circuit failures occur, the station that has failure will call by commercial telephone, NYSWP and appropriate County Warning Point(s) and report outage and time when back in service. (See Appendix B for numbers).

9.0 TESTING FOR NAWAS

9.1 A bi-weekly test conducted on Tuesdays at approximately 10:00 a.m.

9.2 The Southern District Office of Disaster Preparedness will conduct test.

9.3 Messages are to be logged.

9.4 Test is acknowledged by saying "Indian Point No. 3."

9.5 If equipment failure occurs, station with problem should report malfunction to Telephone Company at (914) 328-2993. Circuit number for IP-3 Control Room is: GP-02287-607.

9.6 If failure occurs, station that has failure will call by commercial telephone, Westchester County Warning Point and report outage.

9.7 When malfunction is corrected, report to Westchester County Warning Point via the NAWAS phone.

10.0 TESTING FOR ODP RADIO

10.1 A bi-weekly test is conducted on Tuesdays at approximately 9:30 a.m.

10.2 Southern District will announce "This is WZM-947, Net Control, New York State Emergency Management Office, Southern District, Poughkeepsie, stand-by for Bi-weekly District Command Radio Test. Roll call, Southern to (Counties), OVER"

10.3 IP-3 will be requested to participate in a separate Roll call "Southern to Indian Point 3, over", IP-3 should respond "KNFM-394 Indian Point 3, Over".

Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914 739.8200

New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1040 REV. 6

TITLE " HABITABILITY OF THE EMERGENCY FACILITIES "

WRITTEN BY: Michael Pell

REVIEWED BY: Dennis Quinn

PORC REVIEW: W Hamlin DATE 12/28/84

APPROVED BY: John C Brons DATE 12/28/84

EFFECTIVE DATE: 1-2-85

HABITABILITY OF THE EMERGENCY FACILITIES

1.0 INTENT

To describe the necessary checks to determine if the radiological conditions of the Emergency Operations Facility (EOF), the Technical Support Center (TSC) and Operations Support Center (OSC) are such that a move to their alternates is required.

2.0 PROCEDURE FOR THE EOF:

2.1 The Emergency Director, or the Radiological Assistant Team Leader upon arrival at the EOF, will immediately call the Unit No. 3 Control Room to confer with the Shift Supervisor on whether or not the EOF has been involved in the plume since the start of the emergency, and if so, for how long.

2.2 Interrogate the Meteorological system at the EOF to determine if the meteorological conditions have prevailed for the past hour.

2.3 Follow guidance in section 3.0.

2.4 The EOF will be considered tenable after careful consideration of the following:

2.4.1 Radiation fields inside and outside the EOF.

2.4.2 Meteorological Conditions at the time

a) Plume direction

b) Atmospheric Stability

c) Weather forecast obtained from the National Weather Service at 914-936-1212.

2.4.3 Plant Conditions

a) Is a radiological release in progress or terminated

b) Is the plant in a stable or unstable condition

c) Is further degradation of plant conditions probable 6

2.5 If the decision is made to relocate to the Alternate Emergency Operation Facility (AEOF), the Emergency Director will notify the Control Room and and request that the Plant Operations Manager assume Emergency Director control and communication activities. The POM, after assuming the role of the ED, should then assure the following positions are assigned: Communicator and Radiological Assessment Team Leader. The Flowchart for the EOF communications (IP-1030) should be used by the POM (ED) and his staff during this transition period.

When the AEOF has been established and can resume those responsibilities, the Emergency Director at the AEOF will notify the Control Room (POM) and will again assume ED control and communication activites.

3.0 PROCEDURE FOR THE EOF, TSC, AND OSC

3.1 The Emergency Locker should be unlocked.

3.2 If the emergency is one where radiological conditions are expected, the radiation monitoring equipment should be put in use immediately.

3.3 An initial survey should be be made for beta and gamma fields, and results recorded in the log book.

3.4 If at the EOF perform beta and gamma surveys outside the building. Record readings in the log book.

3.5 After the initial survey, an H.P. technician may be contacted (through the OSC) to discuss and/or set up further monitoring equipment.

3.6 The results of the radiation surveys are to be analyzed, and an evaluation of potential radiation hazard is to be made by Radiological Assessment personnel, Health Physics personnel or the Facility supervisor.

3.7 Check Radiological conditions frequently and record all readings in log book.

3.8 Monitoring for personnel should be in accordance with IP-1041.

4.0 HABITABILITY GUIDANCE

Various factors and conditions must be considered when deciding on the Habitability of the Operation Facilities and Centers. Whole body, beta and iodine doses must be measured and evaluated along with the accident conditions and circumstances.

The basic factor to consider is whether or not the accident is under control: is the radiological release terminated? or will stop it shortly? or, is the release expected to continue for hours or days? The duration of expected release, along with advantages and disadvantages of moving, must be considered. The following is offered as general guidance:

4.1 Whole Body and Beta Doses

		Maximum acceptable total dose for a 10 hr. release	
Fields	Considerations	WB	β *
10 mR/hr	move if feasible	100 mR	300 mR
100 mR/hr	move if at all possible	1000mR	3000mR
500 mR/hr	move	5000 mR	15000 mR

*β = 3 x WB rather than 6 x WB because the lens of the eye has been factored into the calculation.

4.2 Iodine Doses

From the Iodine sample taken the concentration of I-131 can be determined and from this the dose of I-131 is determined.

Dose = Concentration x 1.5×10^6 x hr breathed = Rem thyroid

If the dose is 1 R or greater, distribution of KI should be considered. If the dose is > 10R, KI should be given. 6

If doses are greater than 25R, give KI and re-evaluate the dose to the thyroid on that basis. Then make the determination of whether or not to evacuate the facility or center and relocate.

NOTE: The Emergency Director must approve the use of KI for NYPA personnel in accordance with IP-1019. 6

4.3 The Radiological Assessment Team should be consulted for recommendations and dose projections prior to any relocation of the Operation Facilities.

Indian Point 3
Nuclear Power Plant
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914 739.8200

New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- IP-1041 REV. 5

TITLE "PERSONNEL MONITORING FOR EOF, TSC, AND OSC PERSONNEL"

WRITTEN BY: M Ryld

REVIEWED BY: L Lemon

PORC REVIEW: W Hamlin DATE 1/31/85

APPROVED BY: John C Brons DATE 2/1/85

EFFECTIVE DATE: 2/4/85

IP-1041

PERSONNEL MONITORING FOR EOF, TSC, AND OSC PERSONNEL

1.0 INTENT

To describe the procedure to be used for personnel monitoring of the support forces located in the Emergency Operations Facility of AEOF, Technical Support Center and the Operations Support Center.

2.0 DISCUSSION

In the event of a radiological release at Indian Point it becomes necessary to staff the Emergency Operation Facility, Technical Support Center and the Operations Support Center.

Technical Support Center, Operations Support Center and Emergency Operation Facility personnel shall be monitored as follows:

3.0 PROCEDURE

3.1 Periodic gamma and beta field measurements shall be made (RO-2, E-530 or equivalent). These measurements are to be logged in the Emergency Log Book (See IP-1040, "Habitability of the Emergency Facilities" for habitability criteria).

3.2 Background radiation levels will be monitored at the Emergency Operations Facility, the Technical Support Center, and the Operation Support Center by means of a dosimeter and film badge at each location.

The dosimeters and film badges should be taped to an inside wall at each facility at average eye level.

At the Emergency Operations Facility, two sets of dosimeters and film badges will be used; one set on the main floor and one set in the balcony area.

3.3 A control point and frisker station should be set up in order to control contamination.

3.4 An exposure record system shall be set up in a Personnel Log Book. This book shall also be used as a "sign in" and "sign out" record of Technical Support Center, Operations Support Center and Emergency Operations Facility personnel.

3.5 Personnel who leave the protected ares of the Technical Support Center, Operations Support Center and Emergency Operations Facility shall be issued dosimetry from the Emergency Locker stock and shall "log out" and "log in" on the Personnel Log Book.

3.6 Environmental Monitoring Teams shall obtain their own dosimeter and film badge from the stock in the emergency vehicles.

3.7 All dosimetry records will be appropriately logged in the NYPA exposure record system. | 5

Indian Point 3
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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1045 REV. 8

TITLE " TECHNICAL SUPPORT CENTER (TSC) "

WRITTEN BY: M. Pah

REVIEWED BY: D. Bell

PORC REVIEW: D. Hamilton DATE 3/8/85

APPROVED BY: John C. Brons DATE 3/8/85

EFFECTIVE DATE: 03/20/85

IP-1045

TECHNICAL SUPPORT CENTER (TSC)

1.0 INTENT

The intent is to establish a procedure for the activation and operation of the Technical Support Center (TSC). The TSC will be activated at the Alert, Site Area or General Emergency level.

2.0 DISCUSSION

The TSC is the central facility where technical, engineering and operations personnel evaluate plant operating and accident conditions. The location of the TSC is on the west side of the second floor of the Administration Building across from the lunchroom and adjacent to the Turbine Building. The TSC is provided with a dedicated ventilation system which filters outside intake air and recirculates facility air through a prefilter and a series of HEPA filters. It is also equipped with T.V. monitors to view the Control Room and has access to the P-250 Plant Computer.

3.0 REFERENCES

3.1 Operator's Console Reference Manual for Nuclear Power Plant Supervision (Westinghouse TP044-P)

3.2 IP-1040 - Habitability of the Emergency Facilities

3.3 IP-1041 - Personnel Monitoring of EOF, TSC and OSC Personnel

3.4 IP-1070 - Periodic Check of Emergency Preparedness Equipment

4.0 ACTIVATION

4.1 The TSC is activated and staffed as follows:

4.1.1 At the Unusual Event or Alert level, required personnel will be called or paged to report to and staff the TSC.

4.1.2 At the Site Area or General Emergency level, the Site Assembly Alarm will be sounded. Technical Services personnel will report to the TSC if they are inside the plant. Otherwise, they will report to the nearest assembly area as an "other". They should then inform the area accountability officer that he/she must report to the TSC as soon as a safe route to get there is established.
(During off hours those Tech. Services personnel on Roster II will be called in)

4.1.3 If additional personnel are needed, they can be requested from the Assembly Areas and Department Supervisors.

4.2 The TSC will remain operational until instructed by the Emergency Director to deactivate.

5.0 EQUIPMENT

5.1 Emergency equipment lockers are located in the TSC/OSC. Equipment available is listed in IP-1070 and is checked monthly in accordance with 3PT-M40.

5.2 The following communications equipment is present in the TSC:

Outside line dial telephones
Direct line telephones
NYPA extensions
Handy talkie radio, Con Ed Freq. #1
Plant paging system
NRC ENS Telephone
Intercoms
Switchboard

6.0 STAFFING AND RESPONSIBILITIES

6.1 Technical Support Manager (TSM)

6.1.1 Determined by following hierarchy:

- Technical Services Superintendent
- Electrical Tech. Services Engineer
- Mechanical Tech. Services Engineer
- Performance & Reliability Supervisor
- Reactor Engineer
- Shift Technical Advisor

6.1.2 The TSM reports to the Plant Operations Manager

6.1.3 See following checklist for TSM responsibilities

6.2 See the following checklists for TSC Communicator(s), computer/video operator, accountability, and runners/clerks/switchboard responsibilities.

TSC MANAGER

ASSIGN:

- Assign personnel & pass out appropriate responsibility books:
  - Communicator(s)
    a) Engineer or STA for direct line
    b) If personnel available, dedicate communicator for TSC outside lines/internal communication/vendors & Recovery Center.
  - Video/computer operator(s)
  - Accountability officer (have him fill out personnel status boards as assignments are made)
  - Runners & clerks (assign them)
  - Switchboard operator/xerox/telecopier
  - Documents personnel available

STAFFING/SCHEDULING:

- Notify POM, CR, EOF, OSC when TSC is manned and ready (Thru direct line communicator)
- Schedule TSC personnel for 12 hr. shifts upon direction by ED. Contact personnel at home as necessary (utilize accountability officer)
- Reduce staffing for shift scheduling upon direction of Emergency Director only.

PLANT STATUS:

- Insure plant status logs are filled out & sent to EOF & Recovery Center and provided simultaneously to the TSC & OSC approximately every 15 minutes.
- Approve forms prior to issue to EOF & RC.
- Determine from forms which data is required for this particular accident and which data is required less frequently.
- If 15 minute data transmission is difficult, notify EOF, OSC & RC of delays and establish a frequency which is acceptable, or send partial transmissions on a 15 minute frequency.
- Insure brief plant status messages are placed on white board for TSC reference, and the TSC log is kept by clerks of relevant data.

COMMUNICATIONS:

- Conference calls with POM, ED, OSM as necessary (on direct line) - especially when emergency classification status changes.
- Update TSC staff as conditions and parameters change; make regular announcements. Insure documents, computer & video room personnel and engineers working on problems in different rooms are aware of plant status as well.
- Keep NRC official in TSC advised of plant emergency status.
- Through Communicator:
  a) Keep aware of OSC Team dispatch, activities and fixes, particularly those recommended by TSC (feedback) - inform TSC staff of these fixes.
  b) Assure TSC activities are reported to other emergency facilities on a regular basis.

c) Monitor and be advised of actions in plant and at the EOF. Reports on offsite activities may be warranted.
d) Establish communication with Recovery Center for engineering support functions.

ENGINEERING:

- Anticipate what the plant needs from the TSC.
- Procure drawings and information needed for solving plant problems.
- Anticipate engineering problems and solutions.
- Concern with OSC repair teams and engineering implications of.
- Discuss engineering solutions and plant forecasts with POM & OSC Manager.
- Coordinate the development of adhoc procedures for repair & corrective action teams with OSM & POM.
- Coordinate with Recovery Center on engineering solutions and procurement of equipment.
- Notify UE&C and/or Westinghouse through communicator as required.

RECOVERY:

- Establish Plant Status and re-entry calculations.
- Determine engineering necessary, mods, procurement of equipment and time lines to begin the plant towards recovery.
- Coordinate with Recovery Center on what is required from them and you.
- Establish vendor contacts directly or through WPO.
- Anticipate problems and prepare for engineering solutions.

TSC COMMUNICATOR (s)

SET-UP:

- Plug in all phones & headsets.
- Set out communication forms.
- Place phone directories in area.
- Test CR, EOF, OSC, TSC, AEOF direct line.
- Test Con Ed radio, frequency 1 (back-up communicator for direct line)
- Test telephones, plant paging & intercoms.

DIRECT LINE COMMUNICATOR:

- Monitor all communications on direct line.
- Update others on line, report TSC activities, and question as necessary (ie. engineering happenings, recommendations, forecasts; ask for feedback on engineering recommendations when repair teams return).
- Log & distribute appropriate information.
- Screen information to TSC Manager & TSC. 8

NON DIRECT LINE COMMUNICATOR:

- Notify UE&C and Westinghouse of emergency conditions as requested by TSM.
- Maintain communication as necessary with Recovery Center Technical groups.

COMPUTER/VIDEO OPERATOR(S)

SET UP:

- Obtain plant status log forms from TSC & bring to computer/video room for filling out.
- Test cameras
- Test P-250
- Assure you check-in with accountability officer.

VIDEO OPERATOR:

- Monitor Control Room by camera as requested.
- Provide displays from camera & P-250 as requested.

PLANT STATUS LOG FORMS:

- Complete Plant Status Log forms (31a,b) approximately every 15 minutes or at frequency established by TSM.
- If established frequency is not possible, discuss with TSM. 8
- Establish with TSM, using forms, which parameters are or are not mandatory for this particular accident.
- Have TSM approve forms prior to issue to EOF & RC (use runners for approval) 8
- Receive Form 31c from Control Room

DISTRIBUTION OF FORMS: (31a, b, c,)

- Have 4 xerox copies made of each.
- Send by Runner: 2 to TSC Manager
  2 to OSC (Manager & Accountability)
- Give original to Telecopier of 31a & b: <u>send</u> to EOF & RC 8
- 31c will go directly from the Control Room to the EOF

ACCOUNTABILITY

ACCOUNTABILITY:

- TSC attendance.
- Fill out TSC assignment board.
- Assure you have accounted for documents personnel, runners, clerks, switchboard personnel.
- Complete accountability in less than 30 minutes.

STAFFING:

- Assist TSM in 12 hr. staffing lists.

PLANT STATUS:

- Assist clerk in white board & log status where necessary.

RUNNERS/CLERKS/SWITCHBOARD

SWITCHBOARD:

- Report to Accountability Officer.
- Obtain switchboard receiver from TSC
- Report to communications room
- Establish switchboard.
- Turn on telecopier & xerox

XEROX/TELECOPIER:

AS REQUIRED, particularly

- Forms #31a & b, xerox to TSC & OSC & telecopy to EOF & RC approximately every 15 minutes.
- Receive Form 31c from Control Room.
- Send xeroxes of 31a,b & c to TSC and OSC approximately every 15 minutes or when received from Control Room.

CLERKS:

- Receive status updates from TSM to post on white board.
- Keep TSC log as directed by TSM
- Insure plant status logs & communication forms are distributed to appropriate personnel.

RUNNERS:

- TRAVEL BETWEEN TSC - COMMUNICATION ROOM - OSC as required.
- Bring plant status forms to TSM for approval, return to xerox & telecopy.
- Deliver forms 31a,b & c (plant status logs) approximately every 15 minutes (receive from communications room, distribute to TSC & OSC).

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Nuclear Power Plant
P.O. Box 215
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New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1047 REV. 10

TITLE " OPERATIONS SUPPORT CENTER (OSC) "

WRITTEN BY: M Ruf

REVIEWED BY: [illegible]

PORC REVIEW: [illegible] DATE 3/8/85

APPROVED BY: John C Brons DATE 3/8/85

EFFECTIVE DATE: 03/20/85

IP-1047

OPERATIONS SUPPORT CENTER (OSC)

1.0 INTENT

The intent is to establish a procedure for the activation and operation of the Operations Support Center (OSC). The OSC will be activated at the Alert, Site Area or General Emergency level.

2.0 DISCUSSION

The OSC is the central area from which personnel are assigned, scheduled and dispatched to perform a variety of emergency tasks. The location of the OSC is on the west side of the second floor of the Administration Building across from the lunchroom and adjacent to the Turbine Building. The OSC is provided with a dedicated ventilation system which filters outside intake air and recirculates facility air through a prefilter and a series of HEPA filters.

3.0 REFERENCES

3.1 IP-1040, Habitability of the Emergency Facilities

3.2 IP-1041, Personnel Monitoring for EOF, TSC and OSC Personnel

3.3 IP-1025, Repair and Corrective Action Teams

3.4 IP-1027, Emergency Personnel Exposure

3.5 IP-1070, Periodic Check of Emergency Preparedness Equipment

4.0 ACTIVATION

4.1 The OSC is activated and staffed as follows:

4.1.1 At the Unusual Event or Alert level, required personnel will be called or paged to report to and staff the OSC.

4.1.2 At the Site Area or General Emergency level, the Site Assembly Alarm will be sounded. Personnel whose primary assembly area is the OSC will report to the OSC if they are inside the plant. Otherwise, they will report to the nearest assembly area as an "other". They should then inform the area accountability officer that he/she must report to the OSC as soon as a safe route to get there is established.
(During off hours, OSC personnel will be called in from Roster II)

4.1.3 If additional personnel are needed, they can be requested from the Assembly Areas and Department Supervisors.

4.2 The OSC will remain operational until instructed by the Emergency Director to deactivate.

5.0 EQUIPMENT

5.1 Emergency equipment lockers are located in the TSC/OSC. Equipment available is listed in IP-1070 and is checked monthly in accordance with 3PT-M40.

5.2 The following communications equipment is present in the OSC:

Outside line dial telephones
Direct line telephones
NYPA extensions
Handy talkie radios (NYPA Emerg. Plan Freq. #2 and Con Ed Freq. #1)
Portable base station radio (NYPA Freq. #1 and #2)
Controlled Area Communication System
Plant paging system
Intercoms

6.0 STAFFING AND RESPONSIBILITIES

6.1 Operations Support Manager (OSM)

6.1.1 Determined by following hierarchy:

- Maintenance Superintendent
- I&C Superintendent
- General Maintenance Supervisor
- I&C General Supervisor
- As assigned by Plant Operations Manager or Emergency Director

6.1.2 The OSM reports to the Plant Operations Manager

6.1.3 Responsibilities are found on the following checklists.

6.2 Operations Support Center Team Leaders

6.2.1 Senior members of the HP, Chemistry, Maintenance, Security Force, I&C, and Operations Groups shall be designated by the OSM as Team Leaders. The Team Leaders report to the OSM.

6.2.2 Team Leader responsibilities are found on the following checklists.

6.3 <u>OSC Staff</u>

6.3.1 Normal work hours:

a. All personnel on Roster II who are marked for OSC reporting.
b. Personnel listed in 6.1.1.
c. All H.P. and Chemistry Technicians & Supervisors.
d. Management members of the Safety Department.
e. NOTE: Spare Operations personnel, watch and contingency workers, shall report to the Control Room, then be relocated to the OSC after accountability.

6.3.2 Off hours:

a. All watch & contingency personnel will first report to the CR and following activation they will then be transferred to the OSC.
b. Roster II personnel listed as OSC will be called in at Alert, Site Area and/or General Emergency classification.

6.3.3 If additional personnel are needed, they can be requested from the assembly areas and Department Supervisors.

6.4 <u>OSC Set-up</u>

6.4.1 Checklist for OSC set-up is found in the following checklists.

6.4.2 Checklists for OSC accountability officer and communicators are in the following section.

OSC SET-UP

1. OPEN EMERGENCY CABINET

   - Get Emergency Plan & Procedures out.
   - Get "Book of Forms" out.
   - Place communication forms near radios, near communicator in OSM office and near Team Leader phones.
   - Phones & headsets out & plugged in.
   - Distribute individual responsibility books.
   - REA forms to H.P. Team Leader.
   - Controlled area radios out and into OSC Team Leader area. Prepare for issue.

2. STATUS BOARDS

   - White board hung up.
   - Personnel status board hung.
   - Team status board hung.

3. Dosimetry set-up.

4. Control point set-up.

5. Establish air lock door mechanisms operable.

6. Post signs for entry & exit including step-off pads and friskers.

OSC MANAGER

SET UP:
- Assure OSC set-up is initiated and completed

STAFF:
- Call CR and have them send spare operations and contingency personnel from CR and Assembly Areas to the OSC.
- Assure a supplement of Repair & Corrective Action Team workers is available

ASSIGN:
- Communicator (direct line)
- Communicator for in-plant team radios (Controlled Area)
- Communicator - telephones & radios (Non-Controlled Area)
- Runner to assure information transfer between OSC manager and Communicator for in-plant team radios
- Team Leaders (HP, Chem., I&C, Maintenance, Operations, Security) | IC
- Accountability Officer
- Clerk(s)

- Supply people to other areas as needed

- Fill out personnel status board with accountability officer

- Announce yourself as OSC Manager and Team Leaders as team leaders | IC

ACCOUNTABILITY:
- Assure accountability is being accomplished
- Accountability must be complete in less than 30 minutes. | IC
- If assembly areas have high rad readings, dispatch HP to survey and evacuate as required.

SHIFT SCHEDULING:
- Prepare for shift scheduling upon direction of Emergency Director (Accountability Officer to assist)
- Reduce staffing for shift scheduling upon direction of Emergency Director only. | IC

COMMUNICATIONS:
- Let POM, EOF, TSC, CR, know when OSC is operational
- Constant interaction with OSC Team Leaders
- Assure OSC activities are reported to the appropriate individuals (through OSC direct line communicator)
- Assure POM, TSC, CR, and EOF are aware of current repair status (through communicator)
- Update OSC personnel often |
- Know status of all plant teams, assure this information is passed on to other managers & directors.

- Receive information on other facilities thru direct line communicator
- Be ready to have direct line communication with ED, POM, TSM, especially when emergency classification changes.
- Team dispatch from OSC and debriefing information should be reported to you in a timely manner.

TEAMS:
- Notify HP Team Leader of team(s) to be dispatched
- Gather Team Leaders to request their choosing of teams and to brief Team Leader on job.
- Assure OSC Emergency Briefing Form is completed for each team dispatch (See EP Form #18) (H.P. Team Leader)
- Prioritize team dispatch, discuss with POM if conflicts arise.
- Assure team dispatch is reported in a timely manner to POM, TSM, & ED through direct line communicator.
- Dispatch teams under guidance of IP-1025 (Repair & Corrective Action Teams)
- Coordinate development of adhoc repair and corrective actions with TSC Manager & POM.

OSC COMMUNICATOR
(direct line)

- Test CR, TSC, EOF, OSC Direct Line
- Test Con Ed radio frequency #1 (backup to direct line)
- Remain on direct line. Monitor all communication updates and report on line as warranted re: team dispatch, repair status, team return.
- Screen information on direct line and report to OSC as applicable.
- Log all appropriate communications
- Use communications routing sheets where necessary

OSC COMMUNICATOR
(Non-controlled area teams)

- Test: telephones
  intercoms
  PA
  base station & radios (NYPA frequency 2)

- Issue radios to non-controlled area teams

- Monitor: telephones
  intercoms
  base station & associated radios & non-controlled area teams.

- Page personnel as requested

- Log communication, using communication routing forms where necessary.

- Provide updates to OSM on non-controlled area teams & repair status.

- Screen information to OSC & OSM as applicable.

OSC Controlled Area Communication System Communicator
(should be member of the H.P. Department)

- Test controlled area communication system.
- Issue radios to teams.
- Monitor radio communication with repair teams.
- Pay particular attention to the HP team members regarding radiological concerns.
    - Advise HP Team Leader of radiological concerns
- Screen information and frequently report to OSM and Team Leaders on team & repair status (this is done via runner).
- Log team activities, using communication routing forms where necessary.
- Screen information to OSC as applicable.

TEAM LEADERS

- Keep in constant contact with OSM
- Call-in personnel from accountability areas as necessary
- Select individuals for mission teams
- Assure pre-mission briefings consist of:
    - Compliance with IP-1025
    - ALARA
    - Projected Radiological Conditions
    - Best route
    - Tools
    - Mock-ups, simulations
    - Diagrams, visual aids
    - Radio
    - Task understanding
- Keep in communication with dispatched teams through communicator
- Report results of teams to OSM

H.P. TEAM LEADER

- **Assign:** TSC/OSC Monitor
  Control Point Monitor
  Dosimetry Officer
  Control Room Monitor

- Assure the following items are brought to the OSC from the 4th floor Control Point:

  Badge racks
  TLD reader
  Emergency Plan H.P. procedures
  Tally book
  Margin check
  Supply of Anti-C's, survey equipment, and respirators

- Check on site perimeter teams - discuss dispatch with CR or EOF if not sent out yet. (EP Form #4 IP-1010)

- Prepare & complete OSC Emergency Briefing Form for each team dispatched. (See EP Form #18). OSC Manager will give final direction on teams to be sent out, and priority.

- Assign HP members for Repair teams

- Discuss Radiological conditions with HP members of Repair & Corrective Action Teams and assure they brief other members of team.

- Obtain overexposure power of signature from ED (EP Form #7) (go thru direct line communicator)

- Consider possibility of: Assembly Area Monitoring

  Evacuation Support
  Equip Decon & Contamination Support (EP Form #16&17)
  Fire Support (EP Form #13)
  Personnel & Skin Decon (EP Form #14& 15)

- Check on dose accountability with Dosimetry Officer & Control Point

Forms

Monitoring Team Survey #4
Emergency Exposure Authorizations #7
Firefighter Exposure Record #13
Personnel Contamination Check #14
Skin Decon/Anatomical Man #15
Vehicle Contamination Check #16
Equipment Contamination Check #17
OSC Emergency Briefing Form #18

OSC ACCOUNTABILITY OFFICER

- Conduct accountability in less than 30 minutes. 1C

- Call Security and request EMT to report to OSC.

- Fill out OSC personnel status board with OSM

- Remind and assist team leaders to pull personnel from assembly areas. Call & request.

- Assist OSM in scheduling 12 hr. shifts. (w/team leaders)

- Be cognizant of who's where and what tasks are going on.

- Receive OSC Emergency Briefing Form

    - Post
    - Record on team status board & keep updated.
    - Log time out by conferring with Control Point HP for time left the OSC.
    - Notify OSM as soon as team has left OSC.

- Will receive plant status sheets from TSC runners periodically. (Should be 2 copies) of all sheets

    a) One copy to OSC Manager
    b) Post other's on door

- Assure emergency classification is accurate on white board.

- Place brief description of plant status on white board periodically (confer with OSM)

SECURITY TEAM LEADER

- Communication with Command Post and EOF (onsite Rad Communicator)
- Coordinate Security Response to Emergency
    - Site Access Control
    - Site Evacuation
    - Site Search and Rescue
    - EMT medical response
- Keep Security Force informed of plume location and onsite dose readings, emergency classification, plant status
- Interface with onsite/offsite law enforcement agencies
- Coordinate evacuation of Security personnel/Command Posts as directed by ED.

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New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1050 REV. 9

TITLE " ACCOUNTABILITY "

WRITTEN BY: [signature]

REVIEWED BY: [signature]

PORC REVIEW: [signature] DATE 3/19/85

APPROVED BY: [signature] DATE 3/19/85

EFFECTIVE DATE: 03/20/85

ACCOUNTABILITY

1.0 INTENT

This procedure is used during an emergency to assure IP-3 personnel are accounted for.

2.0 DISCUSSION

When the Site Assembly Alarm sounds, all non-watch personnel will report to their assigned assembly areas. A list of all persons missing, and/or at an assembly area other than their assigned one, will be given to the Lead Accountability Officer. These lists will be cross checked to determine who is actually missing. First cut accountability must be completed in about 30 minutes. The Emergency Director and Lead Accountability Officer will discuss Search and Rescue Team mobilization if necessary. 9

NOTE: When the Site Assembly Alarm is sounded, the Lead Accountability Officer must call the Training and Construction Trailers to advise them since they cannot hear the site assembly alarm.

In addition, the Lead Accountability Officer must call the Training and Construction Trailer Assembly Areas approximately every ½ hour to update personnel as to current plant status.

3.0 WATCH & NON-WATCH PERSONNEL PROCEDURE

3.1 All non-watch personnel will report to their assembly areas or to the nearest assembly area when the Site Assembly Alarm sounds. Assembly Area locations are denoted by large orange signs with blue letters reading "ASSEMBLY AREA". The larger assembly areas have been further subdivided into department sections and personnel shall report to their respective sub areas.

3.2 Security must call the Lead Accountability Officer with a list of visitors onsite and who they are visiting.

3.3 The NYPA assembly areas and who reports to them are as follows:

(See Attachment 8.1 for the site map with NYPA assembly area locations) 9

(L) Training (Office Area): Training personnel, personnel who are in training classes, or persons in the immediate vicinity.

(K) Admin. Service Bldg. (2nd Floor Lunch Room): Admin. Building Personnel, floors 2, 3 & 4, (except H.P., Chem. and other designated personnel who will report to the OSC or TSC)

(C) Machine Shop (15' Elevation): All non-watch, maintenance and construction personnel within the security fence. First floor (maintenance) personnel should use this as their assembly area.

(G) Construction Conference Trailer: NYPA Construction personnel, contractor personnel and all other personnel in the immediate area and outside the security fence.

(J) Warehouse: (Office Area) Warehouse personnel and personnel in immediate vicinity.

(H) Con Edison Service Center, West Storeroom Area: Personnel may eventually assemble here if evacuation of the site is necessary.

(TSC) Technical Support Center personnel should report to the TSC as their assembly area. If a TSC person is at another Assembly Area, they should report in, and then go directly to the TSC.

(OSC) Designated Operations Support Center personnel shall report to the Operations Support Center as their assembly area. If an OSC designated individual is at another assembly area, they should report to that area and then go directly to the OSC.

- All watch, off watch operations personnel, contingency and "spares" will report to the Control Room until requested to report to the OSC.

(EOF) Designated Emergency Operations Facility personnel shall report to the EOF as their assembly area.

3.4. Each unit Watch or Shift Supervisor shall account for their personnel.

3.5 Security shall account for their own personnel.

3.6 OFF HOURS

3.6.1 Upon hearing the Site Assembly Alarm:

- All non-watch personnel should assemble at the Machine Shop 15' elevation.
- TSC, OSC personnel should report accordingly
- All watch, contingency and "spares" should report to the Control Room.

4.0 AREA ACCOUNTABILITY OFFICERS.

- Take charge of assembly area, identify Assembly Area Officer and alternate to all personnel.

- Set up assembly area
  - Check for habitability by reading Ludlum 300 monitor and/or E-530 G-M Meter.
  - If 10 mR/hr, immediately contact Lead Accountability Officer (LAO) for possible evacuation.
  - Isolate area for single access, have sign out & sign in sheets available.
  - If release is in progress or as directed, ensure all personnel frisk prior to entry.

- Perform accountability:
  - Accountability must be completed in about 30 minutes. 9
  - The Area Accountability Officer has a master list of personnel by department who should be reporting to each designated assembly area.
  - Utilize first line supervisors to account for their personnel.
  - Report unaccounted for and "others" to Lead Accountability Officer.

  NOTE: A person should only be accounted for if he/she:

  1. is visibly present
  2. is on vacation
  3. is on travel or not onsite that day
  4. is on another shift

  If the person is "thought" to be out to lunch, it should be so noted.

- Control area access by sign-in/sign-out sheets at single access point.

- Update assembly area personnel as to general plant condition and developments

- Continuously monitor Ludlum 300/E-530 for changing radiological conditions. Report changes to LAO.

- Account for "late reporters" as necessary to LAO.

- Contact LAO as necessary to resolve problems requiring immediate attention.

- OFF HOURS:

  - Responsibility for Assembly Area habitability surveys shall be assumed by the Shift Supervisor and the Watch Health Physics technician or other individuals designated by the Shift Supervisor.

5.0 LEAD ACCOUNTABILITY OFFICER

- Take charge of accountability

- Accountability must be completed in about 30 minutes. 9

- Check area habitability

  - If 10 mR/hr contact OSC for direction

- Perform accountability using master list of personnel

  - determine missing and others
  - cross-check missing and others
  - obtain visitors list from security
  - develop missing persons list
  - inform Emergency Director of accountability
  - inform Emergency Director & Area Accountability officers when accountability is complete.

- If persons on the missing list are considered to be missing within the plant, a page of those persons shall be requested. If there is no response to the page, those names should be given to security to have a badge check run on them to determine if they are indeed in the plant.

- Discuss Search and Rescue with Emergency Director.

- Discuss Evacuation Routes with Emergency Director and transmit that information to Area Accountability Officers.

- If evacuation is to the Con Ed Service Center Building, an HP will be dispatched to escort them and re-accounting of personnel should be performed upon arrival.

- Keep assembly areas informed of Plant Conditions.

- OFF HOURS:

  - The Security Shift Coordinator is the Lead Accountability Officer during off-hours.
  - The Lead Accountability Officer should call the 15' Machine Shop Assembly Area and the Control Room, TSC, OSC and Security personnel to gather a list of persons onsite.
  - If persons are thought to be missing, a page of these persons should be made and a Security Badge check should be run if necessary to determine if they are indeed in the plant.

6.0 SEARCH & RESCUE

6.1 A Search and Rescue effort must be discussed with the Emergency Director (the Shift Supervisor is the Emergency Director during the initial stages of an emergency). It is only the Emergency Director who can authorize a Search and Rescue effort.

7.0 PERSONNEL CONTAMINATION CHECK (IP-1060)

7.1 If personnel are relocated from an assembly area to the Con Ed Service Center due to radiation levels, they should be checked for contamination.

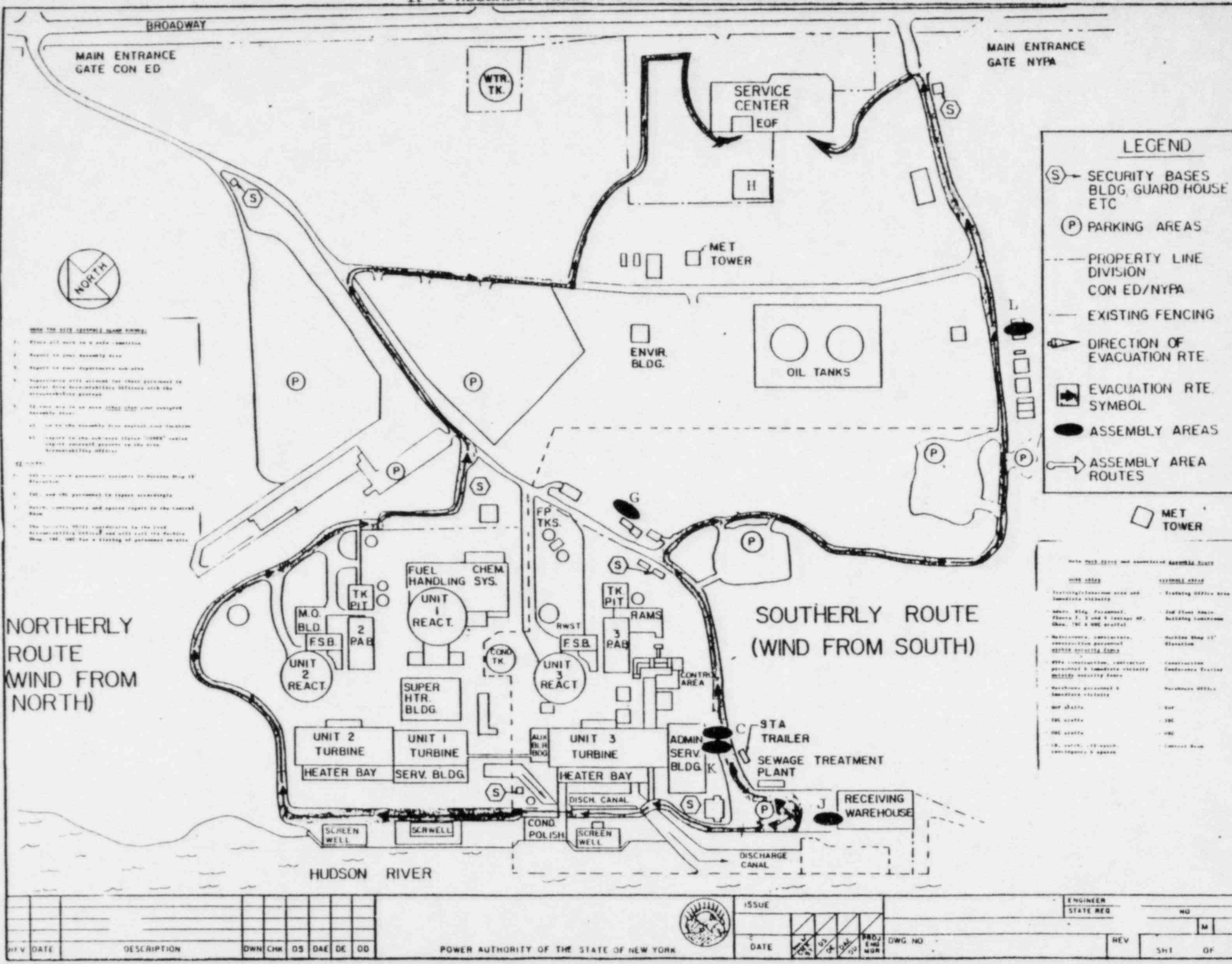
7.2 Prior to leaving the Con Ed Service Center, personnel and vehicles should be re-checked for contamination.

8.0 ATTACHMENTS

8.1 Assembly Area & Evacuation Route Map

8.2 Accountability Telephone Listing

IP-3 ASSEMBLY AREA & EVACUATION ROUTES



IP-1050 Attachment 8.1

ACCOUNTABILITY

ACCOUNTABILITY AREA	DELEGATE	OFFICE EXTENSION	ASSEMBLY AREA EXTENSION
I Training	Marianna Sherman	221	221,237
	Andree Hall	237	
J Warehouse	David DiCioccio	251,252	253,316
	Lou Tiberi	253	
K Admin. Bldg.	Sue Ferguson (Also Lead)	319	423
	Nancy Eng	230	
	Jill Choma	234	
	Jim Reagan	227	
C Machine Shop	Jim Butler	345	345
	Fran Colwell	278	
	Mike Devlin	437	
	Bruce Witherall	437	
G Construction Conf. Trailer	Steve Guarnaccia	739-9048	739-2031
	Ronald Mackowiak		
Control Room		277,282	
TSC	Josephine Roy	235	217
	Ed Noel	250	
OSC	Anthony Vitale	336	456
	Cliff Marks	438	
EOF	Diane Barton	258	313/ 526-5339
	Laura Eagens	375	
H Con Ed Service Center (West Storeroom Area)		526-5270	

ACCOUNTABILITY

TELEPHONE EXTENSIONS

Unit 3 Control Room and Page	277,282
Shift Supervisor's Office	281
Ops. Supt. Office	275
Security Shift Coordinator	260,420
Security Bldg. Extensions	261, 262, 263
Con Ed LAO Hans Doher	526-5228, 526-5341
NVC	361, 411
Westinghouse (Ray Heisey)	508
OSC	456
TSC	422
EOF (Emergency Director)	313/450, 526-5339

Lead Accountability Officers (Normal Working Hours)

Ruthanne Bowman	208, 739-8654
Sal Golemi	319
C. Metzger	226
S. Wyskida	238

Lead Accountability Officers (Off hours)

Security	261, 262, 263

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New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1053 REV. 2

TITLE" EVACUATION OF SITE "

This procedure has been extensively revised.

WRITTEN BY: David D. Bell

REVIEWED BY: [illegible]

PORC REVIEW: [illegible] DATE 9/1/83

APPROVED BY: John C Brons DATE 9/1/83

EFFECTIVE DATE: 10/28/83

IP-1053

EVACUATION OF SITE

1.0 INTENT

To provide criteria for determining if site evacuation is necessary and to describe the actions to be followed when a site evacuation has been announced.

2.0 DISCUSSION

In the event of an emergency, the Emergency Director (ED) and/or the Radiological Assessment Team Leader (RATL) shall determine if evacuation of the site is required using the criteria below as guidance.

- Alert Emergency with potential for radioactive airborne releases
- Site Area Emergency
- General Emergency
- Any other condition which in the opinion of the ED or RATL warrants an evacuation

If any of these criteria are met, evacuation of all non-essential site personnel should be conducted as soon as possible following completion of the accountability process. This assumes that evacuation is the protective action which will result in the lowest personnel exposure, and should be done prior to, or following a release if possible.

3.0 PROCEDURE

Once the site accountability process has been completed and an evacuation has been deemed necessary, the following steps will be taken to assure a safe and orderly evacuation of site personnel.

3.1 The ED will determine if evacuees can be dismissed directly to their homes or if they must reassemble at the Con Edison Service Center (west store room area) for contamination checks and decontamination. (See Attachment 1 for Service Center layout). He must also determine what mode of transportation can be used to leave the site. The following options should be considered in making these decisions. (Other options could also be available depending on the situation).

3.1.1 If there has been no release, evacuees should be dismissed directly to their homes using private vehicles.

3.1.2 If there has been a release with onsite contamination only, private vehicles and the route onsite should be monitored. (See 3.3 below)

3.1.2.1 If vehicles and route are not contaminated, evacuees should be dismissed directly to their homes using private vehicles.

3.1.2.2 If vehicles, and/or the onsite route, are contaminated, evacuees should drive their private vehicles to the Service Center for decontamination before leaving the site. If decon is not feasible or unsucessful, outside transportation assistance can be obtained by contacting the Con Ed Westchester Emergency Supervisor No. 9 (914-997-6205 or 6221).

3.1.3 If there has been a release with offsite as well as onsite contamination, private vehicles can be released offsite without going to the Service Center for decon first. Outside transportation assistance could also be requested if needed.

3.2 The onsite evacuation route will be determined by the ED using wind direction as the deciding factor. (See Attachment 2 for map of routes).

3.2.1 Wind from the South (upvalley flow) - use the southerly route and enter the Service Center area by way of the Con Ed maintained gate if instructed to report to the Service Center.

3.2.2 Wind from the North (downvalley flow) - use the northerly route passing through the Con Ed river front Security gate and up to the Service Center if instructed to report there.

3.2.3 For a cross valley wind, the ED must decide which route (north or south) to take or to have personnel remain at their assembly areas.

NOTE: Onsite Evacuation Route Maps are posted throughout the site. Evacuation Routes are indicated along the site roadways by orange signs with a blue arrow indicating the direction to take.

3.3 If an airborne radioactive release has occurred, is occurring, or is imminent, the RATL must contact the OSC to have an H.P. team dispatched to the assembly areas as they are released. The H.P. team will check for contamination of personnel and vehicles and advise the RATL of any contamination found. If evacuees are to reassemble at the Service Center, the H.P. monitors will accompany them and notify the ED upon their arrival.

3.4 The ED should have the Communicator contact the Westchester County EOC to discuss the proposed evacuation route offsite with the Director of the Office of Disaster and Emergency Services in order to assure that movement from the site is coordinated with the County plans and actions.

3.5 The Communicator must call the Unit 2 Control Room to advise them of the impending evacuation, and to have them open any gates necessary for evacuation.

3.6 The ED will call the Lead Accountability Officer (LAO) and advise him/her that evacuation is to take place and what instructions are to be provided to personnel in the assembly areas.

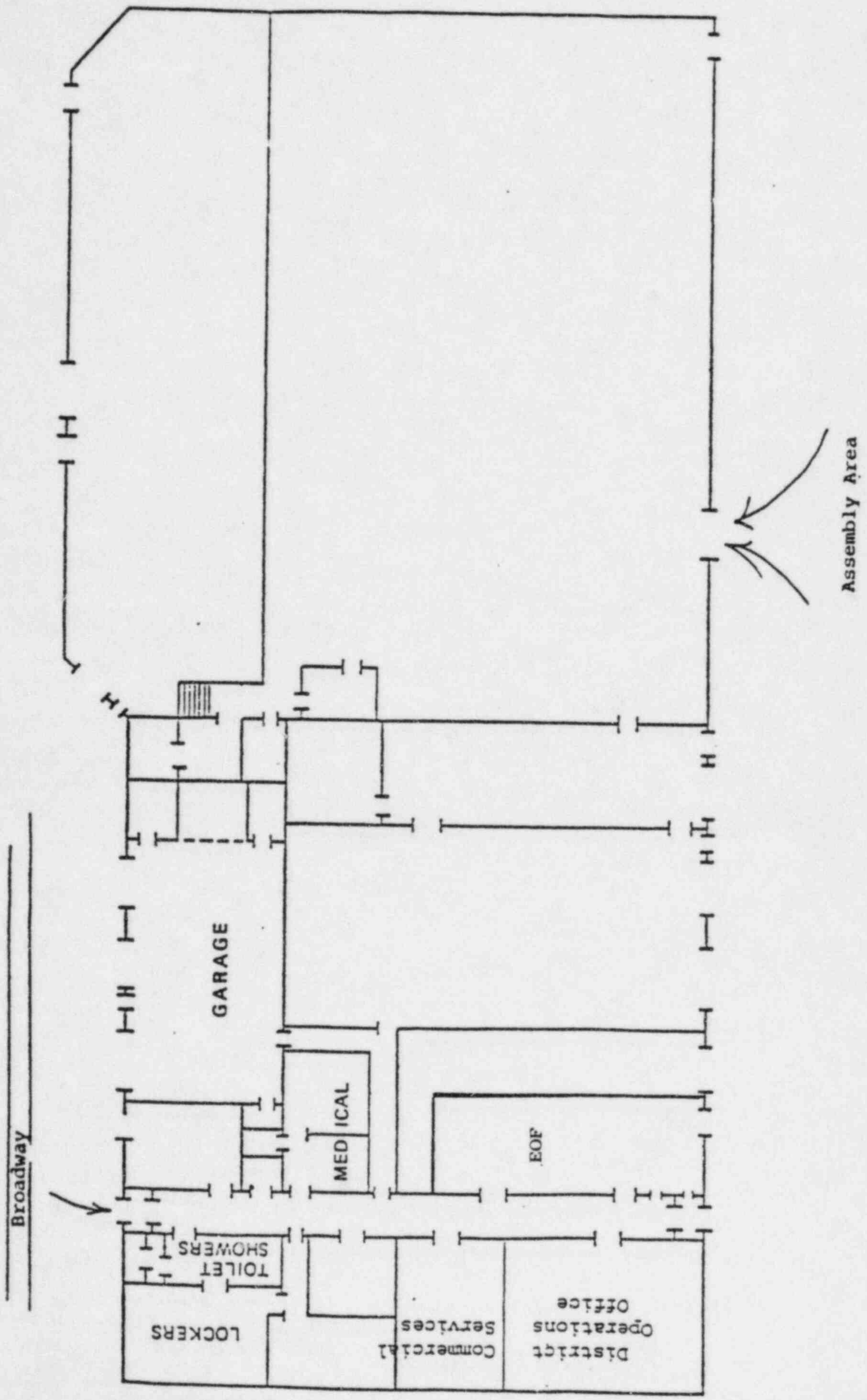
3.7 The LAO will:

- Call Security to advise them that evacuation of the assembly areas is to begin.

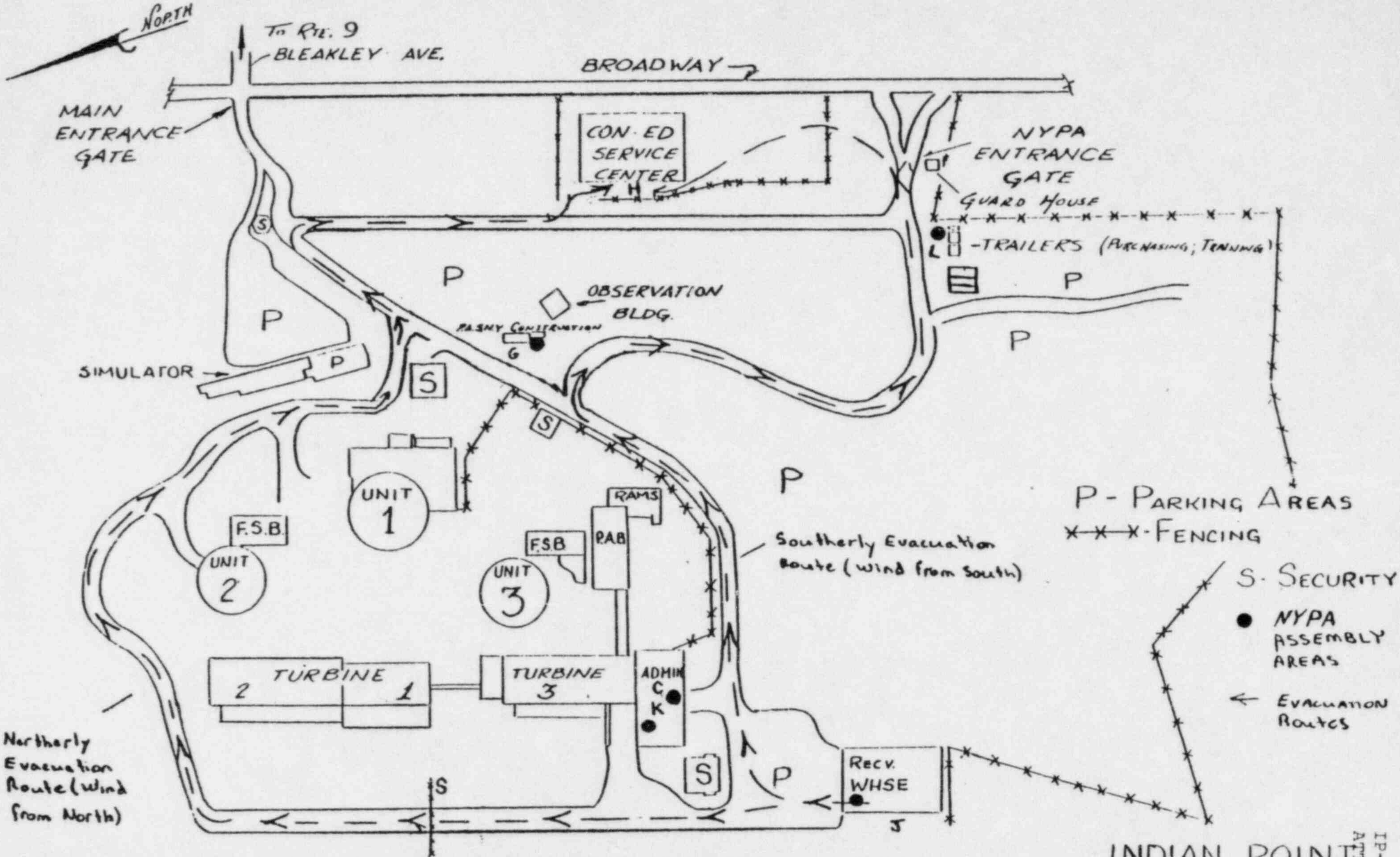
- Call the Accountability Officers at the Assembly Areas and advise them of the route to take, mode to use and whether evacuees can go home or should reassemble at the Con Ed Service Center for contamination checks, decon, and/or outside transportation offsite. These calls should be staggered so as to maintain an even flow of personnel from the site.

- Call the ED when evacuation of the site is complete.

INDIAN POINT SITE SERVICE CENTER BUILDING



IP-3 ASSEMBLY AREA . EVACUATION ROUTES



HUDSON RIVER

INDIAN POINT SITE PLAN

C Machine Shop, 15' elev.
J Warehouse Office
K 2nd Floor Cafeteria
L Training Trailer
G Construction Conference Trailer
H Con Edison Service Center Building

IP-1053
ATTACHMENT 2

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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1054 REV. 3

TITLE "SEARCH AND RESCUE TEAMS"

WRITTEN BY: [signature]

REVIEWED BY: D. Quinn

PORC REVIEW: W. Hamlin DATE 3/14/85

APPROVED BY: John C Brons DATE 3/16/85

EFFECTIVE DATE: 03/20/85

IP-1054

SEARCH AND RESCUE TEAMS

1.0 INTENT

To outline the procedure that Search and Rescue Teams shall use for radiological protection when dispatched for immediate access into controlled areas to search for individuals who have not been accounted for in the early stages of an emergency.

2.0 DISCUSSION

Search and Rescue Teams would be dispatched under the direction of the Emergency Director.

It is assumed Search and Rescue Teams would be needed in the early stages of an emergency, perhaps to enter radiologically controlled and hazardous portions of the plant. Radiological precautions at all times should be observed. If radiological conditions are unknown, assume and provide for the worst. This procedure gives basic guidance as to radiological precautions which Search and Rescue Teams should follow.

3.0 REFERENCES

3.1 IP-1050, Accountabilit··

3.2 IP-1027, Emergency Personnel Exposure

3.3 RE-HPP-2.1, Radiation Exposure Authorization

4.0 PROCEDURE

4.1 The Emergency Director would authorize a Search and Rescue Team effort after:

A. Confering with the Lead Accountability Officer
1. cross check of areas
2. security badge check
3. last time & place individual was seen

B. Reviewing overexposure potential for Search and Rescue Team members.

4.2 If NRC overexposure limits for lifesaving (75 R Whole Body, no limit for Iodine) are expected to be required, refer to IP-1027. 3

4.3 Each Search and Rescue Team shall be made up of at least two individuals, one of whom is an HP or an individual trained in the use of radiation survey instruments.

4.4 RADIOLOGICAL PRECAUTIONS

4.4.1 If radiological conditions are known, dress in accordance with the existing REA.

4.4.2 If radiological conditions are unknown, consider the worst and wear as a minimum:

2 pairs coveralls, plastic outside
double shoe covers
2 pairs gloves, plastic outside
full hood
SCBA

4.4.3 Dosimetry:

0-5 R
0-1 R
film badge/TLD

4.4.4 Survey instruments:

high range ion chamber
measure for beta and gamma

4.4.5 Consider the need for:

KI
extremity dosimetry
additional whole body dosimetry
additional eye protection for high energy betas

4.5 The Search and Rescue Team should maintain contact with the Emergency Director using sound power phones, radio or telephone.

4.6 The HP should be the first one through to survey the area.

4.7 Notify the Emergency Director when the person is located.

4.8 If the person is injured, do not move him unless fire or other conditions jeopardize his safety. However, if he could receive a whole body dose of 200 Rem or greater, this is potentially life threatening, and the victim should be moved to a lower radiation area.

Indian Point 3
Nuclear Power Plant
P.O. Box 215
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914 739.8200

New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1055 REV. 3

TITLE " FIRE EMERGENCY "

WRITTEN BY: Michael F Pahl

REVIEWED BY: [illegible]

PORC REVIEW: [illegible] DATE 3/8/85

APPROVED BY: John C Brons DATE 3/8/85

EFFECTIVE DATE: 03/20/85

IP-1055

FIRE EMERGENCY

1.0 DISCUSSION

The following are fire hazards which may occur which would require activation of the Emergency Plan and subsequent notifications.

Notification of Unusual Event

An uncontrolled fire in the protected area not affecting safety systems.

Alert

Fire of a magnitude that may significantly affect safety systems.

Site

Fire of a magnitude that causes safety systems to become inoperable, such that the ability to reach a safe condition could not be guaranteed.

2.0 REFERENCES

2.1 AP-27.3 IP-3 Site Fire Protection Procedures

.2 FP-7 Fire Notification Guidelines

2.3 IP-1056 Directing Fire Fighting Personnel in Controlled Area

3.0 PROCEDURE

3.1 Person(s) should call the Control Room (Extension 277, 282, or page party phone) immediately to report a fire. The location, size, and type of the fire, and callers' name should be given. 3

3.2 Control Room shall sound the fire siren.

3.3 Control Room shall announce over the P.A. System for the fire brigade to respond. Message shall be repeated twice and the siren resounded.

3.4 All unnecessary personnel shall be evacuated from fire area. 3

3.5 When requested by the Fire Brigade Leader, the SRO, under the direction of the Shift Supervisor, shall call Verplanck Fire Dept. for assistance. 3

3.6 See IP-1056, Directing Fire Fighting Personnel in Controlled Area" if applicable.

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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1056 REV. 3

TITLE " DIRECTING FIRE FIGHTING PERSONNEL IN CONTROLLED AREA "

WRITTEN BY: [signature]

REVIEWED BY: [signature]

PORC REVIEW: [signature] DATE 3/8/85

APPROVED BY: John C Brons DATE 3/8/85

EFFECTIVE DATE: 03/20/85

DIRECTING FIRE FIGHTING PERSONNEL IN CONTROLLED AREA

1.0 INTENT

To provide a procedure that describes the duties of the H.P. Technicians and the Security Force for handling Plant Fire Brigade and Fire Department 3 personnel who respond to a fire in the Controlled Area.

2.0 PRECAUTIONS AND LIMITATIONS

2.1 Plant Fire Brigade and outside Fire Department personnel are not required to wear our Anti-C clothing when they fight a fire in the Controlled Area, provided they wear full turnout gear.

2.2 Plant Fire Brigade members must pick up a dosimeter & TLD badge when entering the Controlled Area. 3

2.3 All Fire Department personnel who enter the Controlled Area will be provided with a dosimeter and TLD badge by a member of the Security Force or the H.P. Department. Dosimeters and badges may be obtained from the supply kept at the Security Command Post. KI may be issued 3 if directed by the ED.

2.4 All Fire Department personnel entering the Controlled Area are required to have their person, clothing and equipment checked for contamination before they leave the Controlled Area for the last time. Repeated exits from the Controlled Area without frisking are permitted in order to prevent interference with fire fighting efforts. If possible, the outside area surrounding fire fighting equipment should be roped off for contamination control.

2.5 All clothing and equipment not permitted to be removed from the Controlled Area, due to contamination, is to be inventoried for compensation.

2.6 Every effort will be made to keep exposures to Fire Department personnel As Low As Reasonably Achievable.

2.7 If it becomes necessary for the personnel fighting the fire to exceed the Power Authority radiation exposure limits, (300 mrem per quarter for whole body exposure or the 40 hour M.P.C. amount) the H.P. Tech. shall notify the Radiological & Environmental Services Superintendent (RESS).

2.8 Do not enter heavy smoke areas without a self contained breathing apparatus (SCBA).

3.0 PROCEDURE

3.1 Security Force

a. Direct firefighters and apparatus through the nearest gate to the fire area.

b. Bring dosimeters and TLD badges from the supply at the Security Command Post, to the entrance point where the firefighters are being admitted to the Controlled Area.

c. Issue a dosimeter and TLD badge to each fireman with instructions to wear them underneath his turnout coat to protect them from water damage.

NOTE: The name of the individual and his TLD badge number shall be recorded by the H.P. after the fire has been extinguished on EP-Form #13 (Attachment 5.1). In addition, a Film Badge Request Form must be completed at this time. Upon completion, these forms are to be returned to the Dosimetry Records Office through the Watch HP or HP Team Leader in the OSC.

d. It is allowable for the firefighter to enter the Controlled Area without wearing anti-C clothing provided he/she is in full turnout gear.

3.2 H.P. Technician

a. Respond to all Controlled Area fires with the Plant Fire Brigade. He shall notify the Fire Brigade Leader that he is present. All H.P. concerns shall be addressed directly to the Fire Brigade Leader.

b. Check all Brigade members for dosimetry. Issue dosimetry if security has not already done so.

c. Make field measurements at the fire scene and notify the Fire Brigade Leader of any restrictions you are imposing on the Brigade.

d. Set up an air sampler (particulate and iodine) as close as practical to the fire scene. If a CAM is available or may be obtained without detracting from your duties at the fire scene, set it up.

e. Evaluate the potential for the spread of high levels of radioactive contamination from the use of water during the firefighting operations.

f. Evaluate airborne activity through the use of the air sampler and CAM. Should the air sampler read greater than 9E-9 uCi/cc, request isotopic analysis from the Chem. Tech. on the particulate and iodine filters:

1. Notify the Fire Brigade Leader of any restrictions you are imposing on the Brigade due to the airborne activity. | 3

2. Instruct all personnel to wear respiratory protective devices (i.e.: Self Contained Breathing Apparatus (SCBA), depending on their proximity to the fire and their duties. SCBA, would be used for all O2 deficient and smoke charged atmospheres. | 3

g. Issue KI as directed by the Emergency Director. | 3

h. When personnel have been involved in an airborne atmosphere, where they reached or exceeded the 40 hour M.P.C. amount as determined from counting the air sampler filters, and disregarding any protective device they have worn:

1. Check the areas of the eyes, ears, nose and mouth with an RM14/HP-210 or equivalent G.M. survey instrument. This check should be performed in a background of 300 cpm or less.

2. Any reading 200 cpm or (in 1 above) greater above background should be further investigated by means of smears.

3. These individuals should then be referred for whole body counting.

4. The RESS shall be notified, and take the necessary action.

i. Check all Fire Brigade and Fire Dept. personnel, their clothing, and their equipment for contamination before they leave the Controlled Area. | 3

j. Record individual's name, TLD badge number, and exposure upon exiting the fire scene using EP-Form #13. In addition, have individual complete a Film Badge Request Form . Upon completion these forms are to be returned to the Dosimetry Records Office through the Watch HP or HP Team Leader in the OSC. | 3

k. Check the fire apparatus, equipment and outside areas for contamination. | 3

l. Assist and supervise the decontamination of any firefighter and/or personnel that becomes necessary. Refer to HPI-6.41 for decontamination instructions. | 3

m. Supervise the decontamination of any equipment or protective gear. Make a list of all items you are not allowing to leave the Controlled Area as well as the items you have checked okay.

n. If a CAM was used, remove the chart and incorporate with the job REA data. Indicate instrument range, if appropriate, on the chart.

4.0 REPORTS

4.1 Health Physics shall log the events of the fire from a radiological standpoint. 3

4.2 Record exposures on EP-Form #13.

4.3 Record firefighters personal data on Film Badge Request Form.

4.4 List all confiscated materials and radiation levels.

5.0 ATTACHMENTS

5.1 EP-Form #13 Firefighter Exposure Record 3

EP-Form #13

FIREFIGHTER EXPOSURE RECORD 3

DATE ______________________ H.P. TECH. ______________________

INDIV. NAME	SOC. SEC. NO.	TLD BADGE NUMBER	DOS READ MREM	REMARKS

Indian Point 3
Nuclear Power Plant
P.O. Box 215
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New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1057 REV. 1

TITLE" Tornado Emergency "

WRITTEN BY: [illegible]

REVIEWED BY: [illegible]

PORC REVIEW: J A Schwarz DATE 10/4/83

APPROVED BY: John C Brons DATE 10/11/83

EFFECTIVE DATE: 10/25/83

IP-1057

TORNADO EMERGENCY

(HURRICANE EMERGENCY)

1.0 DISCUSSION

The Tornado Emergency Plan describes the procedures which will be followed in the event of a tornado watch or tornado warning at the Indian Point Site. Meteorological conditions that could result in a tornado would be determined by the National Weather Service. Notification of a tornado watch would come from NAWAS, Marcy Operations, or the Unit 2 Control room. For further information, the National Weather Service can be called directly - (914) 976-1212 (See IP-1003 for additional numbers).

(1) Tornado watch: meteorological conditions are favorable for the formation of a tornado.

(2) Tornado warning: a tornado had been sighted in the area of the plant.

2.0 RESPONSIVE ACTIONS

2.1 The immediate protective actions taken by the watch force are as follows:

Control Room Operators

1. Notify the Shift Supervisor

2. Contact Con Edison U2, to ensure gas turbines are in service.

Shift Supervisor

1. Assign station personnel to look and listen for a tornado.

2. If a tornado warning has been received, order all fuel handling operations in the fuel handling building halted. If a fuel handling cask is suspended from the crane at this time, order that it be set down. Order all other nonessential plant operations halted.

3. Following the notification of a tornado or hurricane warning, evaluations will be made as to operating conditions for the plant.

4. Make appropriate notifications as per Emergency Plan Classifications.

Operating Personnel

1. Maintain a watch to listen for and look for a tornado.
2. If a tornado is sighted, notify Control Room Operators immediately.

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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP - 1058 REV. 5

TITLE: " EARTHQUAKE EMERGENCY "

WRITTEN BY: [signature]
REVIEWED BY: David D. Bell
PORC REVIEW JAS Lin DATE 5/27/83
APPROVED BY: John C Brons DATE 5/27/83
EFFECTIVE DATE: 5-27-83

IP-1058

EARTHQUAKE EMERGENCY

1.0 INTENT & DISCUSSION

This procedure highlights the actions which should be followed in the event of an earthquake near or at the Indian Point site.

1. If the earthquake is felt at the site or recorded by station seismic equipment it shall be reported as a Notification of Unusual Event.

2. If the earthquake's epicenter is in the 10 mile radius and
records greater than 3.0 on the Coda scale of the microseismic 5
monitoring network or reported to us by the public sector, a
courtesy notification should be made to offsite authorities.

3. Plant personnel actions are only taken when an actual seismic event is experienced at the site.

Emergency Procedure PEP-S-1, Seismic Monitoring Equipment Actuation specifies minimum assessment and responsive action requirements in the event of a seismic monitoring equipment actuation.

It is not the intent of this procedure to substitute for the Radiological Emergency Procedures if the consequences of an earthquake create a radiological hazard. Applicable procedures for that type of radiological emergency should be followed in addition to those contained in this procedure.

2.0 ASSESSMENT EQUIPMENT

a. Unit 3 is equipped with a seismic monitoring system that records vibrations caused by strong local earthquakes or similar events. Use of the data received from the system enables operating personnel to determine what course of action to take following an alarm or earthquake.

   Briefly, the system consists of two SMA-2 Strong Motion Accelerographs located on the 46 foot and 100 foot elevations in the Vapor Containment, three Peak Shock Recorders located on the 46 foot elevation and Peak Recording Accelerographs installed on #31 RCP, #31 SG and the Pressurizer.

   The Unit 3 Control Room is equipped with the appropriate alarm panel and recording devices.

b. In addition to the installed monitoring system, the National Warning System (NAWAS) telephone installation in the Unit 3 Control Room can also provide earthquake warning information and verifications.

c. If the earthquake is not strong enough to record on site monitoring equipment, the Control Room should be notified by Unit 2 Control Room, NAWAS, Woodward Clyde or another source as to the magnitude and location of the event.

3.0 PROCEDURE

3.1 If the earthquake is strong enough to be recorded on seismic monitoring equipment:

a. See PEP-S-1, Seismic Monitoring Equipment Actuation

b. Make appropriate Emergency plan notifications as per IP-1030

c. Assure Con Edison Unit 2 is notified of the magnitude as recorded on IP-3 equipment.

3.2 If the earthquake is experienced in the general area, but not strong enough to record on site monitoring equipment:

a. The Control Room would be notified via the Seismic Consultant (Woodward Clyde), Unit 2 Control Room, NAWAS or some other source.

b. Confirm the notification of an earthquake event by calling Woodward Clyde or the Unit 2 Control Room if the message came from a source other than them.

c. Criteria for making courtesy notifications:

1. Epicenter of event occuring within 10 miles of Indian Point

and

2. Code reading greater than 3.0.

d. If confirmed, make courtesy notifications to offsite authorities. (NOTE: This is a courtesy notification for information only, it is not a Notification of an Unusual Event. Authorities contacted would be the same individuals as an NUE would be reported to, however, DO NOT USE THE HOT LINE for county & state communication, use regular dial telephones and call the warning points directly.

4.0 DISCUSSION OF THE MICROSEISMIC MONITORING NETWORK

Indian Point seismic consultants Woodward Clyde, have established within a 15 mile radius surrounding Indian Point a microseismic monitoring network. This networks consist of approximately 15 stations with seismic monitoring instrumentation which transmit data to a central location at their offices. Daily interrogation of this data is accomplished.

The scale used for the Indian Point microseismic network is the Coda scale. It is seismic scale specific to the Northeastern United States. The Coda range is from 1.5 to 4.5 where 4.5 on the Coda scale is approximately equal to 4.5 on the Richter Scale. A 4.5 reading would be able to be felt by most people but is non-destructive.

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EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1059 REV. 1

TITLE" Air Raid Alert "

WRITTEN BY: David O. Bell

REVIEWED BY: [illegible]

PORC REVIEW: J.A. Schiro DATE 10/4/83

APPROVED BY: John C. Brons DATE 10/11/83

EFFECTIVE DATE: 10/25/83

IP-1059

AIR RAID ALERT

1.0 INTENT

To outline a procedure to be used when an Air Raid Alert is received by the Control Room Operator.

2.0 DISCUSSION

An Air Raid Alert may be received from Con Edison Unit 2 Control Room, NYPA System Operator at Marcy or from the New York State Office of Disaster Preparedness via the NAWAS system.

3.0 RESPONSIVE ACTIONS

3.1 Control Room Operators don hard hats and

a) Upon receipt of an AIR RAID ALERT, sound the steady tone for 10 second's duration and announce the alert three (3) times over the public address system.

3.2 Watch Personnel don hard hats and

a) Remain at their assigned posts or work areas.

b) The SS will direct Watch personnel to close all outside doors.

3.3 All Other Employees, Contractors and Visitors don hard hats and

3.3.1 Proceed to designated shelter areas as follows:

- Employees, contractors and visitors working in the conventional areas shall go to the conventional building basement.
- Personnel in Administration Service Building shall go to ground floor elevation.
- Personnel working in the Controlled Area who are not assigned to an operating post shall go to the bottom elevation of their respective building location.
- All employees and contractors on site, outside the buildings, shall go to the Admin. Service Building, 1st floor.

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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1060 REV. 4

TITLE " PERSONNEL RADIOLOGICAL CHECK AND DECONTAMINATION "

WRITTEN BY: M Rale

REVIEWED BY: D. Bell

PORC REVIEW: W. J. Hamley DATE 3/14/85

APPROVED BY: John C Brons DATE 3/16/85

EFFECTIVE DATE: 03/20/85

PERSONNEL RADIOLOGICAL CHECK AND DECONTAMINATION

1.0 INTENT

To describe the emergency condition methods of checking personnel for contamination and their subsequent decontamination when required.

2.0 DISCUSSION

Determination of personnel contamination levels, supervision of personnel decontamination and subsequent checkout will be performed by members the Health Physics staff. Resolution of problem cases will be handled by the Radiological Assessment Team Leader (RATL).

3.0 DECONTAMINATION FACILITIES

3.1 Decontamination facilities available include:

1. Health Physics Control Point
2. Decon facility on the 4th floor of the Admin. Building
3. Con Edison Service Center Building

3.2 Decontamination supplies are available to each location.

4.0 PRECAUTIONS

4.1 Decontamination will be performed in accordance with RE-HPI-6.41

4.2 Chemical decontamination should only be performed with medical supervision or under direction of a knowledgeable individual.

4.3 Clean is considered less than 100cpm above background. 4

5.0 PROCEDURE

5.1 Personnel will be monitored for contamination:

a. when leaving restricted areas
b. when leaving areas in the plant suspected to be contaminated
c. assembly areas if suspected to be contaminated.
d. re-assembly areas

5.2 Records of personnel monitoring will be maintained on the Personnel Contamination Check form, EP-Form #14 (Attachment 6.1).

5.3 Records of personnel decontamination will be maintained on the Skin Decontamination Record form, EP-Form #15 (Attachment 6.2).

NOTE: EP-Forms #14 and #15 are to be returned to the Watch HP or HP Team Leader in the OSC as applicable.

5.4 Documentation of all monitoring and decontamination activities will be directed to the Health Physics Team Leader in the OSC for evaluation and retention.

5.5 H.P. Control Point decontamination and Decon Facility decontamination will be performed in accordance with RE-HPI-6.41.

5.6 Decontamination at the Con Edison Service Center:

5.6.1 Determine the contamination level category by using a frisker with an HP-210 G.M. tube to check the individual. The categories are as follows:

a. Clean - less than 100 cpm above background

b. Low level - less than 10,000 cpm above background

c. High level - 10,000 cpm above background or greater

5.6.2 For individuals contaminated in the Low Level category use the Service Center locker room shower. This amount will not exceed the limits specified in 10CFR 20.303 for discharge into a sanitary sewage system.

a. Shower using non-alkaline soap, such as phisoderm, if available and lukewarm water. Keep contamination away from non-contaminated parts of the body. If practical, wash off higher levels of contamination first.

b. Recheck individual after shower. Levels less than 100 cpm above background are considered uncontaminated.

c. If the levels are still greater than 100 cpm above background have the individual re-shower and then re-check.

d. If the individual remains contaminated after (3) showers (over 100 cpm above background) consult the Radiological Assessment Team Leader.

5.6.3 For individuals contaminated in the High Level category use the portable Radioisotope Decontamination Kits located in the Medical Bureau Office at the Service Center. Included with the list are the instructions for its use. The key is located with the Service Center Guard.

5.6.4 When an individual is decontaminated to a level less than 10,000 cpm above background using a "frisker" with an HP-210 G.M. tube or equivalent he may be referred to the shower room where further decontamination may be continued.

6.0 ATTACHMENTS

6.1 Personnel Contamination Check Form (EP-Form #14).

6.2 Skin Decontamination Record Form (EP-Form #15).

EP-Form #14

PERSONNEL CONTAMINATION CHECK

DATE ____________________ INSTR. MODEL ____________________

H.P. ____________________ INSTR. SER. NO. ____________________

INDIV. NAME	MAXIMUM FRISKER CPM	DESCRIPTION OF AREA WITH READING > 100 CPM	DISPOSITION OF INDIV.

NOTE: All personnel leaving restricted areas or other areas suspected to be contaminated should be surveyed. Record on this form whether contaminated or not.

Return this form to the Watch HP or HP Team Leader in the OSC as applicable

EP-Form #15

SKIN DECONTAMINATION RECORD

Name: ______ (Last) (First) (Initial) ______ (Social Security Number)

______ (Date) ______ (Time of Contamination) ______ H.P. Tech.

How & where it occurred ______

Max. Initial Contam. Levels - With Anti-C ______ Without Anti-C ______

Body Orifices - Swabs or Smears - Counting Instr. Used/SN ______

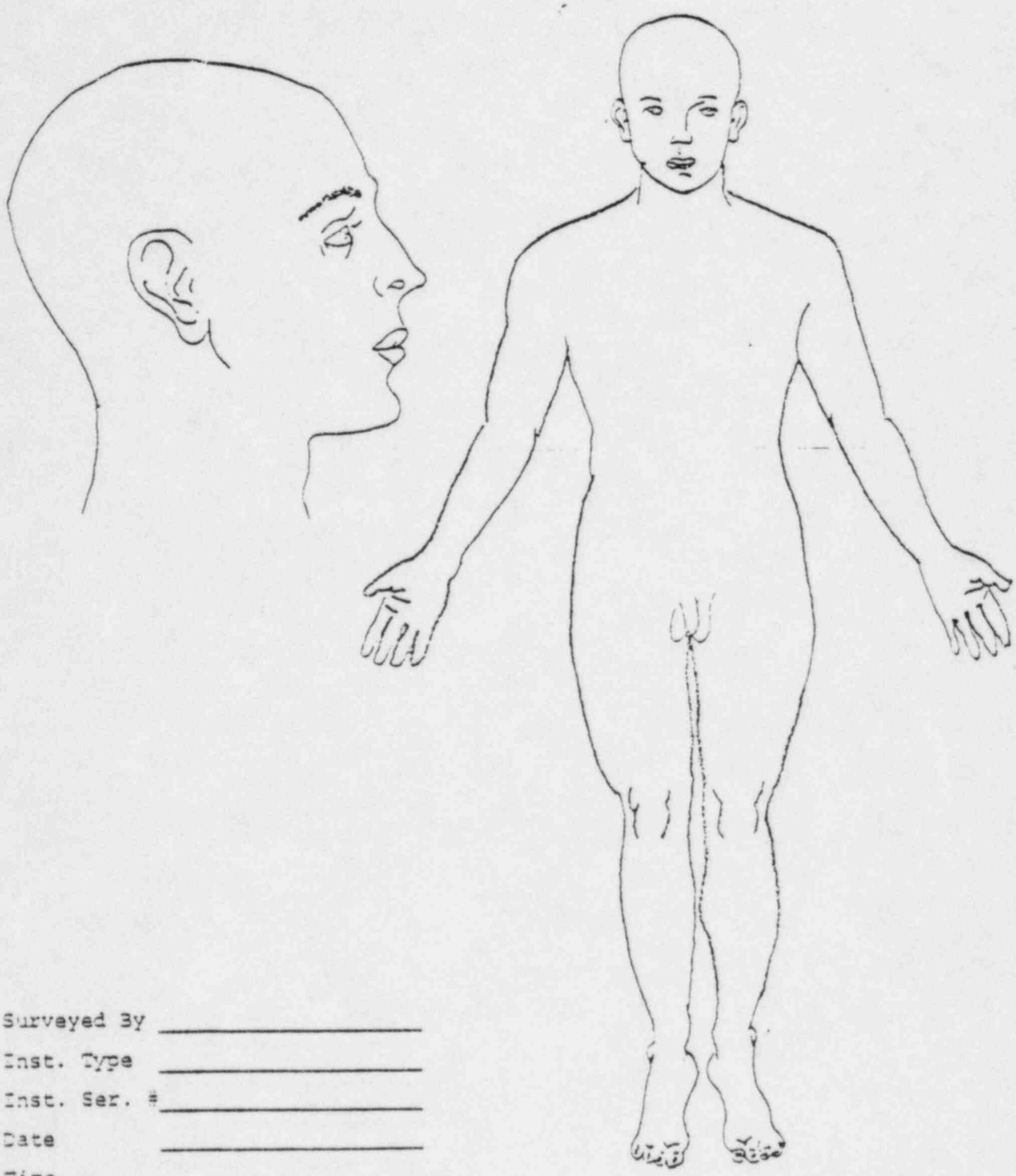
	1		2		3		4		5	
	Time	CPM	Time	CPM	Time	CPM	Time	CPM	Time	CPM
Eye										
Ear										
Nose										
Mouth										
Other										

Time Decontamination Step Begins	Skin Area Concerned	Decontamination Agents Used	Contamination Level After Decontamination	Skin Condition

Time Decontamination Completed:	Decontamination Done by:

Return this form to the Watch HP or HP Team Leader in the OSC as applicable

PERSONNEL DECONTAMINATION ANATOMICAL RECORD



Surveyed By ____________________

Inst. Type ____________________

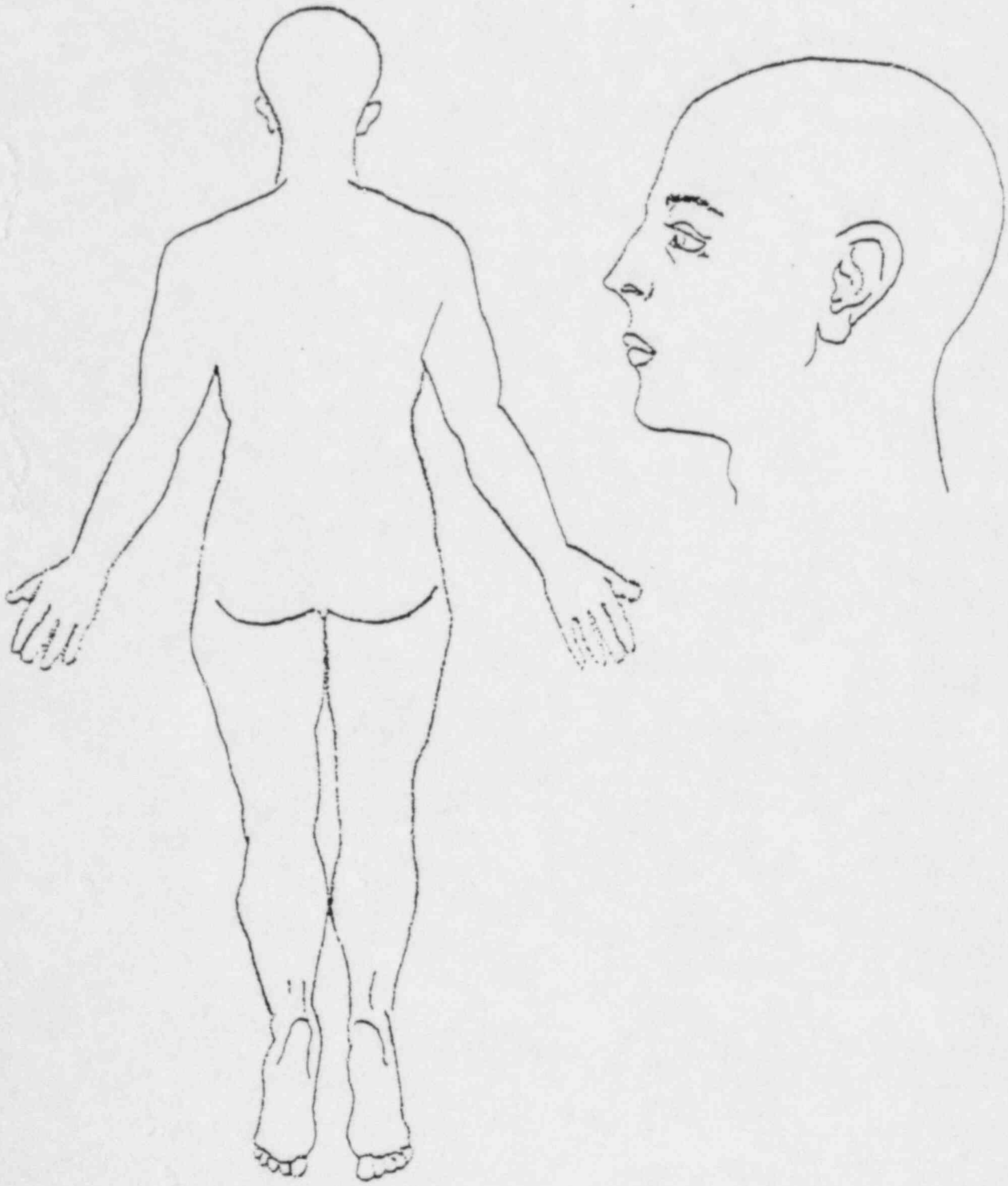
Inst. Ser. # ____________________

Date ____________________

Time ____________________

Return this form to the Watch HP or HP Team Leader in the OSC as applicable.

PERSONNEL DECONTAMINATION ANATOMICAL RECORD



Surveyed By ____________________

Inst. Type ____________________

Inst. Ser. # ____________________

Date ____________________

Return this form to the Watch HP or HP Team Leader in the OSC as applicable.

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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1063 REV. 4

TITLE " VEHICLE/EQUIPMENT RADIOLOGICAL CHECK AND DECONTAMINATION "

WRITTEN BY: [signature]

REVIEWED BY: [signature]

PORC REVIEW: [signature] DATE 3/14/85

APPROVED BY: John C Brons DATE 3/16/85

EFFECTIVE DATE: 03/20/85

VEHICLE/EQUIPMENT RADIOLOGICAL CHECK AND DECONTAMINATION

1.0 INTENT

To describe the methods of checking vehicles and equipment for contamination and their subsequent decontamination at the Con Edison Service Center when required.

2.0 DISCUSSION

During a Site Area or General Emergency, vehicle access to, or departure from, the Indian Point Site is stopped with the exception of emergency vehicles. Permission for vehicles or equipment to leave the Site is obtained from the Emergency Director after evaluation of contamination (potential or actual). The criteria presented in this procedure shall be used to determine the status of site personnel private vehicles in the event of a site evacuation that requires contamination checks (see IP-1053) The responsibility for performing contamination checks and supervision of any decontamination is the Onsite Monitoring Team which is made up of Health Physics personnel.

Vehicle and equipment decontamination will be performed at the Service Center parking area (or other designated area) which will be accessed through the south gate located near the gasoline pumps. This gate will be opened by a member of the Security Force. No vehicles will be allowed to leave the Broadway entrance unless authorized by the Emergency Director.

3.0 PROCEDURE

3.1 Check for removable (loose) contamination by making smear checks (gauze pads or paper disks).

- A gauze pad smear is made up of the major surface area of the outside of the car and tires. The pad is then placed against an RM-14/HP-210 probe. No rise above background is considered uncontaminated. Any indication above background will require paper disk smears to quantify activity.

- A paper disk smear is made of a number of representative areas, (100 cm^2 in size), and counted with a G.M. or proportional counter or the RM-14/HP-210 or equivalent. To be considered uncontaminated, the removable contamination must be less than 1000 dpm/100 cm^2 or less than 100 cpm above background using the RM-14/HP-210 or equivalent utilizing a 0.1 efficiency.

3.2 Check for fixed contamination by slowly passing the E-530/166 probe or equivalent as close as possible to the surface. To be considered uncontaminated the fixed contamination, as seen by the instrument, must be less than 0.1 mR/Hr above background.

3.3 If the vehicle or equipment is contaminated, have it moved to the decontamination location in the Northeast corner of the Service Center North Parking Lot.

3.4 Position the vehicle or large equipment close to the corner water run off opening. This will allow contamination to run off into a small depression where it will be contained and concentrated by the land contour. Isolate and post the run off area, as necessary.

3.5 Using hoses, hooked up to the nearest fire hydrant or utilizing a Fire Deparment pumper, wash the vehicle or equipment with the detergent and water.

3.6 If the vehicle or equipment is still contaminated, rewash and recheck until it checks out uncontaminated.

3.7 Record all contamination checks and washes along with the vehicle license plate number on EP-Form #16 and equipment information on EP-Form #17 (Attachments 4.1 and 4.2). Return these forms to the Watch HP or HP Team Leader in the OSC as applicable.

3.8 Vehicles (not including environmental monitoring vehicles) that are contaminated will not be permitted to leave the site.

NOTE: Release of vehicles and equipment at contamination levels greater than the 1000 dpm limit may be required under certain conditions (high offsite contamination levels, emergency medical treatment). Permission to release vehicles and equipment in such circumstances must be obtained from the Emergency Director. 4

4.0 ATTACHMENTS

4.1 Vehicle Contamination Check (EP-Form #16).

4.2 Equipment Contamination Check (EP-Form #17).

EP-Form #16

VEHICLE CONTAMINATION CHECK

DATE ______________________

H.P. ______________________

COUNTER SER. NO. ______________________
CALIBRATION DUE DATE ______________________
FRISKER SER. NO. ______________________

CALIBRATION DUE DATE ______________________

VEH. LIC. NO.	LOOSE CONTAM. DPM/100CM^2 OR CPM > BKGD	FIXED CONTAM. CPM > BKGD	DESCRIP. OF AREA CONTAMINATED	DISPOSITION OF VEHICLE

Return this form to the Watch HP or HP Team Leader in OSC as applicable.

EP-Form #17

EQUIPMENT CONTAMINATION CHECK

DATE______________________ COUNTER SER. NO.______________________

CALIBRATION DUE DATE______________________

H.P.______________________ FRISKER SER. NO.______________________

CALIBRATION DUE DATE______________________

EQUIPMENT DESCRIPTION	LOOSE CONTAM. DPM/100CM^2 OR CPM > BKGD	FIXED CONTAM. CPM > BKGD	LOCATION OF CONTAMINATION	DISPOSITION OF EQUIPMENT

Return this form to the Watch HP or HP Team Leader in OSC as applicable.

P.O. Box 215
Buchanan, New York 10511
914 739.8200

New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP- 1070 REV. 11

TITLE " PERIODIC CHECK OF EMERGENCY PREPAREDNESS EQUIPMENT "

"

WRITTEN BY: Michael P. Poll

REVIEWED BY: Paul Snyder

PORC REVIEW: W. Hamlin DATE 12/20/84

APPROVED BY: John C. Brons DATE 12/20/84

EFFECTIVE DATE: 1-2-85

PERIODIC CHECK OF EMERGENCY PREPAREDNESS EQUIPMENT

1.0 INTENT

To describe the method for periodic checking of emergency equipment stored in Emergency Operation Facilities and Centers, Emergency Vehicles, Unit 3 Control Room and Command Guard House, and Peekskill Community Hospital.

2.0 LOCATIONS OF STORED EQUIPMENT

- Emergency Operation Facility (EOF)
- Alternate Emergency Operation Facility (AEOF)
- Emergency Vehicle (EV)
- Alternate Emergency Vehicle (AEV)
- NYPA Command Guard House (CGH)
- Unit 3 Control Room (CR)
- Unit 3 Technical Support Center (TSC)
- Unit 3 Operation Support Center (OSC)
- Peekskill Community Hospital

quarterly (change)

3.0 DISCUSSION

3.1 Con Edison shall check the emergency equipment located in the lockers in the EOF, AEOF, EV and AEV on a monthly basis and after each drill. Con Edison Environmental Health and Safety Department Procedure 99.301, Periodic Check of Stored Emergency Equipments and Supplies will be used.

3.2 Con Edison personnel will perform the following communication checks in accordance with Con Edison Environmental Health and Safety Department Procedure 99.303 Periodic Check of Emergency Radios, Telephones, and Outdoor Assembly Alarm).

- Con Ed frequency radios (EOF, AEOF, CR-2, CR-3, CE-CGH, 2 emergency vehicles).
- Con Ed walkie-talkie radios
- Con Ed Emergency Site Assembly Alarm
- County Hot Line (RECS) Telephones (EOF, CR-2, CR-3)
- Direct line telephones (EOF, CR-2, CR-3, AEOF)
- Con Ed TSC/EOF/CR automatic ring telephones
- NYPA push button phones in EOF
- NRC (ENS) phones in EOF and AEOF

3.3 Following completion of the above checks, Con Edison shall forward copies of the completed checklists of equipment and supplies to the IP-3 RES Department for review and filing.

3.4 The IP-3 Safety Supervisor shall assure emergency first aid equipment is checked in conformance with surveillance test 3PT-M48. It is also the responsibility of the Safety Department to check, and replace as necessary, all of the air supplied and/or oxygen generating respiratory equipment.

3.5 IP-3 Health Physics personnel shall check the emergency equipment lockers in the IP-3 CR, OSC, TSC, CGH and Peekskill Community Hospital Decon Room on a monthly basis and after each drill. Health Physics is also responsible for changing film badges and/or TLD's at these locations on a monthly basis. In addition, Health Physics will conduct the monthly communication checks as specified on the check-off lists included in this procedure (Attachment 1).

4.0 PROCEDURE

4.1 The IP-3 Performance and Reliability Group shall issue notice on a monthly basis to the Asst. to the Radiological and Environmental Services Superintendent (ARESS) stating when the periodic check of equipment is due.

4.2 The ARESS shall attach a copy of this procedure (IP-1070) to the notice and forward it to the Health Physics Supervisor who, in turn, will assign the inventory check to an HP(s).

4.3 Using the check off lists (Attachment 1 of this procedure), the HP(s) performing the checks shall:

4.3.1 Obtain permission from the Shift Supervisor (SS) or Senior Reactor Operator (SRO) to conduct this procedure. The SS or SRO shall sign page 1 of Attachment 1 indicating his permission to conduct the test.

4.3.2 Obtain permission from the Emergency Room Representative at the Peekskill Community Hospital to conduct the inventory at that facility. The Emergency Room Representative shall sign page 1 of Attachment 1 indicating his permission to conduct the test.

4.3.3. Indicate that each piece of equipment is present by placing a check (✓) next to the item on the check off list.

4.3.4 Perform a functional inspection and/or battery test on equipment as indicated.

4.3.5 Indicate any appropriate comments next to each item found defective.

4.3.6 Note the calibration due date in the appropriate column for instruments and counters.

4.3.7 Replace defective and/or missing equipment and report it to the ARESS.

4.3.8 Replace any equipment if its' calibration will expire before the next scheduled check.

4.3.9. Submit completed test to the SS for review and signature.

4.4 The SS shall:

4.4.1 Review the test results

4.4.2 Sign page 1 of Attachment 1 indicating review

4.4.3 Log as appropriate

4.4.4 Return to the ARESS

4.5 The ARESS shall:

4.5.1 Review the test results

4.5.2 Ensure all required equipment/supplies are available and operational.

4.5.3 Sign page 1 of Attachment 1 indicating review

4.5.4 Forward to the Performance and Reliability Group for filing.

4.6 The Performance and Reliability Group shall file and maintain all test results as required by IP-3 Tech. Specs.

5.0 Attachments

5.1 Emergency Locker Inventory Checklist

EMERGENCY LOCKER AND EQUIPMENT INVENTORY REVIEW AND SIGNATURE

1. Permission to initiate test: ______________________________ ________
Shift Supervisor/Senior Reactor Operator Date

2. Permission to inspect inventory at Peekskill Community Hospital:

______________________________ ________
Emergency Room Representative Date

3. Review of test results: ______________________________ ________
Shift Supervisor/Senior Reactor Operator Date

______________________________ ________
ARESS Date

EQUIPMENT LOCATED IN THE CONTROL ROOM

CHECK OFF LIST

CONTROL ROOM LOCKER #1 - (This locker is in the Turbine Hall)

The key (#75) to this locker is stored in the Control Room key locker.

No.	Equipment	Present	Operational Check	Calibration Due	Comments
Respiratory Protection					
24	Combination Cartridges		NA	NA	
4	SCBA, (401 pressure demand)		NA	NA	

CONTROL ROOM LOCKER #2 - (This locker is inside the Control Room)

The key (#76) to this locker is stored in the Control Room key locker.

No.	Equipment	Present	Operational Check	Calibration Due	Comments
AIR SAMPLING & COUNTING					
1	HD-28B sampler/totalizer		*		
1	SPA-3/MS-2 iodine counter w/shield*		*		
1	Frisker (RM-14)w/HP-210 or 260 probe		*		
1	Box air filters for HD-28B		NA	NA	
1	Box charcoal cartridges		NA	NA	
12	Silver zeolite cartridges		NA	NA	
1	Check source SPA-3 (Ba-133)		NA	NA	
5	packs smears		NA	NA	
5	packs gauze wipes		NA	NA	
1	pair tweezers		NA	NA	
-	Planchetts		NA	NA	
-	Smear Envelopes		NA	NA	
4	Air sample heads for HD-28B		NA	NA	

* Operational check required
* Shield for SPA-3 is stored by the Control Panels
** Respirator inspection (as per RE-HPI-11.16)

Date Test Performed: ____________________

Signature of Checker: ____________________

EQUIPMENT LOCATED IN THE CONTROL ROOM

CHECK OFF LIST

CONTROL ROOM LOCKER #2 - (continued)

No.	Equipment	Present	Operational Check	Calibration Due	Comments
	DOSIMETRY				
20	Film badges and/or TLD's		NA	replace	
20	0-200 mR dosimeters		* zero		
20	0-500 mR dosimeters		* zero		
20	0-5 R dosimeters		* zero		
2	Dosimeter charges		*		
1	Set AA spare batteries		*	NA	
	PORTABLE SURVEY INSTRUMENTS				
1	RO-2 or equivalent ion. chamber		*		
1	RO-2A or equivalent ion. chamber		*		
1	E-530 GM survey instrument or equiv.		*		
	RESPIRATOR PROTECTION				
2	Bottles CR breathing air**		NA	NA	
10	Air masks with pressure demand regulators		NA	NA	
6	Lengths of 50' hose		NA	NA	
100	Bottles KI (14 doses/bottle)		NA	NA	
	MISCELLANEOUS				
2	Log Books		NA	NA	
3	Voice Amplifiers		Battery test		
2	Step-off pads		NA	NA	
2	Telephone headsets		*	NA	
1	Calculator		*	NA	
1	HP85 Dose Assessment Tape		NA	NA	
-	Emerg. Title Badges & Badge Holder		NA	NA	
3	POM, SS/SRO, Communicator Responsibility Books		NA	NA	

* Operational check required

** Stored in the Control Room

Date Test Performed: ____________

Signature of Checker: ____________

EQUIPMENT LOCATED IN THE CONTROL ROOM

CHECK OFF LIST

CONTROL ROOM LOCKER #4 - (This locker is in the Turbine Hall)

The key (#78) for this locker is stored in the Control Room Key Locker.

No.	Equipment	Present	Operational Check	Calibration Due	Comments
ANTI "C"					
12	Sets Anti-"C" clothing		NA	NA	
-	Extra shoe covers (high & low)		NA	NA	
-	Extra surgeons gloves		NA	NA	
RESPIRATOR PROTECTION					
3	Manifolds		NA	NA	
3	Regulators for lg. bottle manifolds		NA	NA	
RESPIRATORY PROTECTIONS					
12	Full & half-face respirators		**	NA	
6	Spare bottles for SCBA		NA	NA	
MISCELLANEOUS					
-	Radioactive Caution Signs		NA	NA	
1	Battery Tester		*	NA	
-	Burn Kit		NA	NA	
-	First Aid Book		NA	NA	
-	Alarm		*	NA	
2	Loud Mouths		*	NA	

* Operational Check Required

** Respirator inspection (as per RE-HP-11.16)

Date Test Performed: ____________________

Signature of Checker: ____________________

EQUIPMENT LOCATED IN THE CONTROL ROOM

CHECK OFF LIST

CONTROL ROOM

This equipment is stored inside the control room, but not in any of the lockers.

No.	Equipment	Present	Operational Check	Calibration Due	Comments
	RADIOS				
-	Con Edison Radio		NA	NA	
-	County Radio		NA	NA	
-	Office of Disaster Preparedness Radio (ODP)		NA	NA	
	TELEPHONES				
-	Control Room Emerg. Notification		*	NA	
	System (ENS) telephone (to NRC)		*	NA	
-	Shift Supervisor's Office ENS (to NRC)		*	NA	
-	County Hot Line telephone		**	NA	
-	Assorted Direct Lines		*	NA	
-	NAWAS Telephone		**	NA	
	MISCELLANEOUS				
1	NYPA Emergency Plan Book		NA	NA	
1	NYPA Emerg. Plan Procedure Book		NA	NA	
1	Book of Forms		NA	NA	
1	Site Map		NA	NA	
1	10 Mile Map		NA	NA	
1	Overlays for 10 Mile Map		NA	NA	
1	Book - "Decon Treatment at Peekskill Hospital"		NA	NA	

* Operational check required
** NYS will test

Date Test Performed: ____________

Signature of Checker: ____________

EQUIPMENT LOCATED IN THE TECHNICAL AND OPERATIONS SUPPORT CENTER

CHECK OFF LIST

OSC/TSC CHEMISTRY LOCKER

The key to this locker is stored:
- In the TSC key (#59) locker. The STA on duty will have a key to the TSC key locker.
- In the OSC (hall) key (#4) locker. The key for the OSC key locker is found in the H.P. watch office key (#30) locker.

No.	Equipment	Present	Operational Check	Calibration Due	Comments
	Miscellaneous				
-	Chemistry Procedures Book		NA	NA	
-	Chemistry Team Leader		NA	NA	
2	Log Books		NA	NA	
-	Clerical Supplies		NA	NA	

TSC COMMUNICATIONS ROOM

The key to this room is stored:
- In the TSC key (#20) locker. The STA on duty has a key to the TSC key locker.
- In the OSC (hall key) (#8) locker. The key for the OSC key locker is found in the H.P. watch office key (#30) locker.

No.	Equipment	Present	Operational Check	Calibration Due	Comments
2	Telecopiers		*	NA	
1	Xerox Machine		*	NA	
2	Prodac 250 consoles w/kybrds & modems		NA	NA	
-	Switchboard		NA	NA	
-	Outside Lines		*	NA	
-	NYPA extensions		*	NA	

* Operational check required

Date Test Performed: ______________

Signature of Checker: ______________

EQUIPMENT LOCATED IN THE TECHNICAL AND OPERATIONS SUPPORT CENTER

CHECK OFF LIST

OSC CONTROL POINT DESK

The keys to this desk are stored:

- In the TSC key (#36) locker. The STA on duty will have a key to the TSC key locker.
- In the OSC (hall) key (#1) locker. The key for the OSC key locker is found in the H.P. watch office key (#30) locker.

No.	Equipment	Present	Operational Check	Calibration Due	Comments
Dosimetry					
20	Film badges and/or TLD's		NA	replace	
25	0-200 mR dosimeters		* zero		
25	0-500 mR dosimeters		* zero		
25	0-5 R dosimeters		* zero		
34	0-50 R dosimeters		* zero		
15	0-100 R dosimeters		* zero		
33	0-200 R dosimeters		* zero		
9	0-1000 R dosimeters		* zero		
15	sets ring badges		NA	replace	
2	dosimetry chargers		*		
2	sets AA spare batteries		*	NA	
Telephones					
NYPA extension 498			*	NA	
Miscellaneous					
1	Racal-Vadic Acoustic Coupler Modem		NA	NA	
-	Emerg. Plan HP computer disc/tape		NA	NA	
-	Dose Report		NA	NA	
-	Green and Yellow Stickers		NA	NA	
-	Chart Paper		NA	NA	
-	Clerical Supplies		NA	NA	
1	Extremity Dose Record Book		NA	NA	
1	Dosimetry Responsibility Book		NA	NA	

* Operational check required

Date Test Performed: ____________________   Signature of Checker: ____________________

EQUIPMENT LOCATED IN THE TECHNICAL AND OPERATIONS SUPPORT CENTER

CHECK OFF LIST

OSC/TSC EMERGENCY LOCKER #1

The key to this locker is stored:

- In the TSC key (#60) locker, the STA on duty will have a key to the TSC key locker.
- In the OSC (hall) key (#3) locker. The key for the OSC key locker is found in the H.P. watch office key (#30) locker.

No.	Equipment	Present	Operational Check	Calibration Due	Comments
	Anti-C				
24	sets Anti-"C" clothing		NA	NA	
-	extra surgeons gloves		NA	NA	
-	extra shoe covers (high & low)		NA	NA	
	Respiratory Protection				
25	full face respirators		**	NA	
50	combination cartridges		NA	NA	
*4	SCBA*		NA	NA	
	Miscellaneous				
2	flashlights with spare batteries		*	NA	
1	HP Controlled Procedures Book		NA	NA	
-	Radioactive Caution Signs		NA	NA	
2	Step off pads		NA	NA	
1	Calculator		*	NA	
2	Stopwatches		*	NA	
-	Shaving Cream		*	NA	
-	Razors		NA	NA	

* Operational check required

* The SCBA's are stored on top of both lockers and there are 4 spare air bottles in the Fire Brigade Room

** Respirator inspection (as per RE-HPI-11.16)

Date Test Performed: ______________

Signature of Checker: ______________

EQUIPMENT LOCATED IN THE TECHNICAL AND OPERATIONS SUPPORT CENTER

CHECK OFF LIST

OSC/TSC EMERGENCY LOCKER #2

The key to this locker is stored:

- In the TSC key (#60) locker, the STA on duty has a key to the TSC key locker.
- In the OSC (hall) key (#3) locker. The key for the OSC key locker is found in the H.P. watch office key (#30) locker.

No.	Equipment	Present	Operational Check	Calibration Due	Comments
	Air Sampling & Counting Equipment				
1	HD-28B sampler/totalizer		*		
1	SPA-3/MS-2 iodine counter w/shield*		*		
1	AMS-2 continuous air monitor		*		
1	Triton		*		
3	Frskrs (RM-14)w/HP-210 or 260 probe		*		
1	box air filters AMS-2		NA	NA	
1	box air filters HD-28B		NA	NA	
20	Charcoal cartridges		NA	NA	
25	Silver zeolite cartridges		NA	NA	
2	extra rolls of chart paper (AMS-2)		NA	NA	
2	pair tweezers		NA	NA	
1	check source SPA-3 (Ba-133)		NA	NA	
30	packs smears		NA	NA	
5	packs gauze wipes		NA	NA	
-	Planchetts		NA	NA	
-	Smear envelopes		NA	NA	
4	Air sample heads for HD-28B		NA	NA	
1	BC-4 Beta Counter		NA	NA	
	Portable Survey Instruments				
1	RO-2 or equivalent ion. chamber		*		
1	E-530 GM survey instr. or equiv.		*		
2	RO-2A or equivalent ion. chamber		*		
2	Teletectors		*		
	Miscellaneous				
-	Fuses		NA	NA	
-	Extra Batteries - AA, 9 volt, D		*	NA	

* The shielding for the SPA-31 is to the right of the chemistry locker.

Date Test Performed: ____________ Signature of Checker: ____________

EQUIPMENT LOCATED IN THE TECHNICAL AND OPERATIONS SUPPORT CENTER

CHECK OFF LIST

OPERATIONS SUPPORT CENTER

The keys to the OSC are stored:
- In the TSC key (#11,#35,#40) locker. The STA on duty has a key to the TSC key locker.
- In the OSC (hall) key (#6) locker. The key for the OSC key locker is found in the H.P. watch office key (#30) locker.

The key to the locker in the Manager's office is stored:
- In the TSC key (#38) locker. The STA on duty has a key to the TSC key locker.
- In the OSC (hall) key (#7) locker. The key for the OSC key locker is found in the H.P. watch office key (#30) locker.

No.	Equipment	Present	Operational Check	Calibration Due	Comments
	Radios				
8	HT-220 Handy Talkies 153.635 MH_Z (Emerg. Plan Freq.)		*	NA	
1	Con Ed Handy Talkie		*	NA	
1	Base Station (153.635 MH_Z)		*	NA	
4	Model HT RR-2 duplex headsets with throat mike		*	NA	
4	Respirator microphone radios		*	NA	
	Respiratory Protection				
200	Bottles KI (14 doses each bottle)		NA	NA	
	Telephones				
1	Telephone headset		*	NA	
2	OSC/TSC/EOF/CR/AEOF dir-line phones		*	NA	
-	Assorted telephones		*	NA	
	Miscellaneous				
1	Emergency Plan Book		NA	NA	
1	Emergency Plan Implem. Procedures		NA	NA	
1	Emergency Plan Forms Book		NA	NA	
-	Communications Forms		NA	NA	
1	Chemistry OSC Book		NA	NA	
-	Misc. OSC Responsibility Books		NA	NA	
-	OSC Briefing Forms		NA	NA	
-	Clerical Supplies		NA	NA	
-	Set PAB Maps (4)		NA	NA	
-	Misc. boards for updates		NA	NA	

* Operational check required

Date Test Performed: ____________________

Signature of Checker: ____________________

EQUIPMENT LOCATED IN THE TECHNICAL AND OPERATIONS SUPPORT CENTER

CHECK OFF LIST

TSC

To enter the TSC proper - the key is stored in the OSC (hall) key (#5) locker. The key for the OSC key locker is found in the H.P. watch office key (#30) locker.

The key to this desk is stored:

- In the TSC key (#45) locker, the STA on duty has a key to the TSC key locker.
- In the OSC (hall) key (#2) locker. The key for the OSC key locker is found in the H.P. watch office key (#30) locker.

No.	Equipment	Present	Operational Check	Calibration Due	Comments
Radios					
1	Con Ed Handy Talkie		*	NA	
Telephones					
1	Telephone headset		*	NA	
1	NYPA extension 442		*	NA	
1	Outside Line - (914) 739-7334		*	NA	
1	Emergency Notification System (ENS)		*	NA	
1	Direct line to WPO		*	NA	
1	Direct line to CR/EOF/OSC/TSC/AEOF		*	NA	
1	Direct line to EOF		*	NA	
-	Switchboard Receiver		*	NA	
Miscellaneous					
1	Emergency Plan Book		NA	NA	
1	Emergency Plan Implem. Procedures		NA	NA	
1	Book of Forms		NA	NA	
-	Set of PAB Maps (4)		NA	NA	
-	Folder of Site and Area Maps		NA	NA	
1	Headquarters Emergency Plan		NA	NA	
-	Westinghouse Emerg. Response Plan		NA	NA	
-	TSC Operating Manual		NA	NA	
-	Emergency Telephone Directory		NA	NA	
-	Region I Incident Response Supplement to NUREG-0845		NA	NA	
-	Headquarters Emergency Response/ Recovery Implementing Procedures)		NA	NA	
-	Operators Console Manual		NA	NA	
-	Multiplier rechargeable battery		*	NA	
-	Log Book (TSC)		NA	NA	
-	Communications Forms		NA	NA	
-	Computer Info.		NA	NA	
-	Misc. TSC Responsibility Books		NA	NA	
-	Plant Status Logs - EP Form 31a,b,c		NA	NA	
-	Clerical Supplies		NA	NA	

* Operational check required

Date Test Performed: ____________

Signature of Checker: ____________

EQUIPMENT IN COMMAND GUARD HOUSE (UNIT 3)

CHECK OFF LIST

No. Equipment	Present	Operational Check	Calibration Due	Comments
40 - Film Badges and/or TLD's		N/A	replace	
50 - 500 mR dosimeters		*		
10 - 5 R dosimeters		*		
1 - Dosimeter Charger		*	N/A	
10 - H/Face respirator with Iodine Filters		**	N/A	
1 - 100 bottles KI Tablets		N/A	N/A	
8 - Anti-C clothing kits		N/A	N/A	
2 - Emergency Notification & Call-in Books		N/A	N/A	
1 - Box Surgical Gloves		N/A	N/A	
- Yellow herculite for ambulance floor		N/A	N/A	
1 - E-530 GM Survey Meter or equivalent		*		
1 - RM-14 Frisker with HP-210 or 260 probe		*		

NOTE: Test the Con Ed Security frequency walkie-talkie (Frequency 2) by individually contacting the Unit 3 Control Room. Notify Unit 3 Control Room by phone prior to the test

Test:	Unit 201 to KGS757	*	N/A	
	Unit 203 to KGS757	*	N/A	

* = Operational check required
** = Respirator Inspection (As per RE-HPI-11.16)

Signature of Checker

Date

EQUIPMENT LOCATED AT PEEKSKILL COMMUNITY HOSPITAL DECON ROOM

CHECK OFF LIST

NO.	EQUIPMENT	PRESENT	COMMENTS
1	Mobile Storage Cart		
1	Stainless Steel Cart		
1	4 Outlet Power Box		
1	Lead Pig		
-	Precut Yellow Herculite for Decon Room		
1	Roll Yellow Herculite for Hallway Floor		
-	Green Herculite for Outside Decon Room		
200	Yellow Plastic Booties		
200	Disposable Hoods		
40	Disposable Gowns		
1	Step-off Pad		
2	30 Gal. White Poly Waste Collection Containers		
2	25 Ft. Extension Cords		
9	"Caution - Contam. Area" signs		
1	Roll Large Clear Poly Bags		
10	Large Yellow Poly "Rad. Material" Bags		
10	Small Yellow Poly "Rad. Material" Bags		
1	Razor Knife		
5	Rolls Yellow Tape		
5	Rolls Masking Tape		
1	Washdown Stretcher		
1	Flexible Drain Hose for Washdown Stretcher		
1	Green Garden Hose with Washdown Fitting		
1	Decon Supplies (2 Boxes)		
1	Sampling Kit (2 Boxes)		
3	Boxes Surgical Gloves		
3	5 Gal. Yellow Poly Waste Water Collection Jugs		
1	Wall Clock		
1	Roll Saran Wrap		
80	Disposable Towels		
50Ft.	½" Tygon Tubing		
1	Bung Wrench		
2	Filter Rigs		
8	Lengths Rad. Rope with Clips		
1	E-530		
2	Friskers (RM-14 with HP-210 Probe)		
12	0-500 mR Dosimeters		
12	0-200 mR Dosimeters		
1	Dosimeter Charger		
10	TLD Badges		
20	TLD Rings		
1	Roll White Herculite		
12	Protective Clothing Packages		
4	Metal Stanchions for roping off ambulance		
1	Roll Rad. Rope for roping off ambulance		

Signature of Checker ____________________ Date ____________

Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914 739.8200

New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1070 REV. 10

TITLE" PERIODIC CHECK OF EMERGENCY PREPAREDNESS EQUIPMENT "

This procedure has been extensively revised

WRITTEN BY: David D. Bell

REVIEWED BY: [signature]

PORC REVIEW: W Hamlin DATE 2/28/84

APPROVED BY: John C Brons DATE 2/28/84

EFFECTIVE DATE: 3/5/84

PERIODIC CHECK OF EMERGENCY PREPAREDNESS EQUIPMENT

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2.0 LOCATIONS OF STORED EQUIPMENT

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- Alternate Emergency Vehicle (AEV)
- NYPA Command Guard House (CGH)
- Unit 3 Control Room (CR)
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- Peekskill Community Hospital

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3.1 Con Edison shall check the emergency equipment located in the lockers in the EOF, AEOF, EV and AEV on a monthly basis and after each drill. Con Edison Environmental Health and Safety Department Procedure 99.301, Periodic Check of Stored Emergency Equipments and Supplies will be used.

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3.3 Following completion of the above checks, Con Edison shall forward copies of the completed checklists of equipment and supplies to the IP-3 RES Department for review and filing.

3.4 The IP-3 Safety Supervisor shall assure emergency first aid equipment is checked in conformance with surveillance test 3PT-M48. It is also the responsibility of the Safety Department to check, and replace as necessary, all of the air supplied and/or oxygen generating respiratory equipment.

3.5 IP-3 Health Physics personnel shall check the emergency equipment lockers in the IP-3 CR, OSC, TSC, CGH and Peekskill Community Hospital Decon Room on a monthly basis and after each drill. Health Physics is also responsible for changing film badges and/or TLD's at these locations on a monthly basis. In addition, Health Physics will conduct the monthly communication checks as specified on the check-off lists included in this procedure (Attachment 1).

4.0 PROCEDURE

4.1 The IP-3 Performance and Reliability Group shall issue notice on a monthly basis to the Asst. to the Radiological and Environmental Services Superintendent (ARESS) stating when the periodic check of equipment is due.

4.2 The ARESS shall attach a copy of this procedure (IP-1070) to the notice and forward it to the Health Physics Supervisor who, in turn, will assign the inventory check to an HP(s).

4.3 Using the check off lists (Attachment 1 of this procedure), the HP(s) performing the checks shall:

4.3.1 Obtain permission from the Shift Supervisor (SS) or Senior Reactor Operator (SRO) to conduct this procedure. The SS or SRO shall sign page 1 of Attachment 1 indicating his permission to conduct the test.

4.3.2 Obtain permission from the Emergency Room Representative at the Peekskill Community Hospital to conduct the inventory at that facility. The Emergency Room Representative shall sign page 1 of Attachment 1 indicating his permission to conduct the test.

4.3.3. Indicate that each piece of equipment is present by placing a check (✓) next to the item on the check off list.

4.3.4 Perform a functional inspection and/or battery test on equipment as indicated.

4.3.5 Indicate any appropriate comments next to each item found defective.

4.3.6 Note the calibration due date in the appropriate column for instruments and counters.

4.3.7 Replace defective and/or missing equipment and report it to the ARESS.

4.3.8 Replace any equipment if its' calibration will expire before the next scheduled check.

4.3.9. Submit completed test to the SS for review and signature.

4.4 The SS shall:

4.4.1 Review the test results

4.4.2 Sign page 1 of Attachment 1 indicating review

4.4.3 Log as appropriate

4.4.4 Return to the ARESS

4.5 The ARESS shall:

4.5.1 Review the test results

4.5.2 Ensure all required equipment/supplies are available and operational.

4.5.3 Sign page 1 of Attachment 1 indicating review

4.5.4 Forward to the Performance and Reliability Group for filing.

4.6 The Performance and Reliability Group shall file and maintain all test results as required by IP-3 Tech. Specs.

EMERGENCY LOCKER AND EQUIPMENT INVENTORY REVIEW AND SIGNATURE

1. Permission to initiate test: ______________________________ ________
Shift Supervisor/Senior Reactor Operator Date

2. Permission to inspect inventory at Peekskill Community Hospital:

______________________________ ________
Emergency Room Representative Date

3. Review of test results: ______________________________ ________
Shift Supervisor/Senior Reactor Operator Date

______________________________ ________
ARESS Date

EQUIPMENT LOCATED INSIDE UNIT 3 CONTROL ROOM

CHECK OFF LIST

No.	Equipment	Present	Operational Check	Calibration Due	Comments
AIR SAMPLING & COUNTING					
1	HD-28B sampler/totalizer		*		
1	SPA-3/MS-2 iodine counter w/shield		*		
1	frisker(RM-14) with HP-210 or 260 probe		*		
1	box air filters for HD-28B		N/A	N/A	
1	box charcoal cartridges		N/A	N/A	
12	silver zeolite cartrides		N/A	N/A	
1	check source SPA-3 (Ba-133)		*	N/A	
5	packs smears		N/A	N/A	
5	packs gauze wipes		N/A	N/A	
1	pair tweezers		N/A	N/A	
	Planchetts		N/A	N/A	
	Smear Envelopes		N/A	N/A	
4	Air sample heads for HD-28B		N/A	N/A	
PORTABLE SURVEY INSTRUMENTS					
1	RO-2 or equivalent ionization chamber		*		
1	RO-2A or equivalent ionization chamber		*		
1	E-530 GM survey instrument or equivalent		*		
DOSIMETRY					
20	film badges and/or TLD's		N/A		
20	0-200 mR dosimeters		* zero		
20	0-500 mR dosimeters		* zero		
20	0-5 R dosimeters		* zero		
2	dosimeter chargers		*	N/A	
1	set AA spare batteries		*	N/A	
RESPIRATOR PROTECTION					
2	bottles Control Room breathing air		N/A	N/A	
10	air masks with pressure demand regulators		N/A	N/A	
3	manifolds		N/A	N/A	
3	regulators for large bottle manifolds		N/A	N/A	
6	lengths of 50' hose		N/A	N/A	
100	bottles KI (14 doses/bottle)		N/A	N/A	

EQUIPMENT LOCATED INSIDE UNIT 3 CONTROL ROOM

CHECK OFF LIST (CON'T)

No.	Equipment	Present	Operational Check	Calibration Due	Comments
TELEPHONES					
-	Control Room Emergency Notification System (ENS) telephone (to NRC)		*	N/A	
-	Shift Supervisor's Office ENS (to NRC)		*	N/A	
-	County Hot Line telephone		NYS will Test	N/A	
-	Assorted Direct Lines		*	N/A	
-	NAWAS Telephone		NYS will Test	N/A	
RADIOS					
-	Con Edison Radio		None Required	N/A	
-	County Radio		None Required	N/A	
-	NYPA Security Radio w/Plectron		None Required	N/A	
MISCELLANEOUS					
1	NYPA Emergency Plan Book		N/A	N/A	
1	NYPA Emerg. Plan Procedure Book		N/A	N/A	
1	Book of Forms		N/A	N/A	
1	Site Map		N/A	N/A	
1	10 Mile Map		N/A	N/A	
1	Overlays for 10 Mile Map		N/A	N/A	
2	Log Books		N/A	N/A	
-	Radioactive Caution Signs		N/A	N/A	
3	Voice Amplifiers		Check by Battery Test	N/A	
1	Battery Tester		N/A	N/A	
2	Step-off pads		N/A	N/A	
2	Telephone Headsets		*	N/A	
1	Calculator		*	N/A	
1	HP85 Dose Assessment Tape				
1	Book-"Decon & Treatment at Peekskill Hospital"				

* = Operation Check is Required
** = Respirator Inspection (As per RE-HPI-11.16)

Dates Test Performed ____________________

Signature of Checker: ______________________________

EQUIPMENT LOCATED OUTSIDE UNIT 3 CONTROL ROOM

CHECK OFF LIST

No.	Equipment	Present	Operational Check	Calibration Due	Comments
RESPIRATORY PROTECTION					
12	Full & half-face respirators		**	N/A	
24	Combination cartridges		N/A	N/A	
4	SCBA, (401 pressure demand)		N/A	N/A	
6	Spare air bottles for SCBA		N/A	N/A	
ANTI "C"					
12	Sets Anti-"C" clothing		N/A	N/A	
-	extra shoe covers (high & low)		N/A	N/A	
-	extra surgeons gloves		N/A	N/A	

Date Test Performed: ____________________

Signature of Checker: ____________________

EQUIPMENT LOCATED IN THE TECHNICAL AND OPERATIONS SUPPORT CENTER

CHECK OFF LIST

No.	Equipment	Present	Operational Check	Calibration Due	Comments
AIR SAMPLING & COUNTING EQUIPMENT					
1	HD-28B sampler/totalizer		*		
1	SPA-3/MS-2 iodine counter w/shield		*		
1	AMS-2 continuous air monitor		*		
1	Triton		*		
3	friskers (RM-14) w/HP-210 or 260 probe		*		
1	box air filters AMS-2		N/A	N/A	
1	box air filters HD-28B		N/A	N/A	
20	charcoal cartridges		N/A	N/A	
25	silver zeolite cartridges		N/A	N/A	
2	extra rolls of chart paper (AMS-2)		N/A	N/A	
2	pair tweezers		N/A	N/A	
1	check source SPA-3 (Ba-133)		*	N/A	
30	packs smears		N/A	N/A	
5	packs gauze wipes		N/A	N/A	
	Planchetts		N/A	N/A	
	Smear Envelopes		N/A	N/A	
4	Air Sample heads for HD-28B		N/A	N/A	
PORTABLE SURVEY INSTRUMENTS					
1	RO-2 or equivalent ionization chamber		*		
1	E-530 GM survey instrument or equivalent		*		
2	RO-2A or equivalent ionization chamber		*		
2	Teletectors		*		
DOSIMETRY					
20	film badges and/or TLD's		N/A		
25	0-200 mR dosimeters		* zero		
25	0-500 mR dosimeters		* zero		
25	0-1 R dosimeters		* zero		
25	0-5 R dosimeters		* zero		
8	0-50 R dosimeters		* zero		
9	0-200 R dosimeters		* zero		
9	0-1000 R dosimeters		* zero		
2	dosimeter chargers		*	N/A	
2	sets AA spare batteries		*	N/A	
RESPIRATORY PROTECTION					
25	full face respirators		**	N/A	
50	combination cartridges		N/A	N/A	
4	SCBA		N/A	N/A	
200	bottles KI (14 doses each bottle)		N/A	N/A	
4	spare air bottles (SCBA) in Fire Brigade Room		N/A	N/A	

EQUIPMENT LOCATED IN THE TECHNICAL AND OPERATIONS SUPPORT CENTER

CHECK OFF LIST (CONT'D)

No.	Equipment	Present	Operational Check	Calibration Due	Comments
ANTI-C					
24	Set Anti-"C" clothing		N/A	N/A	
-	extra surgeons gloves		N/A	N/A	
-	extra shoe covers (high & low)		N/A	N/A	
2	Step off pads		N/A	N/A	
TSC/OSC TELEPHONES					
3	Telephone headsets (2 in TSC, 1 in OSC)		*	N/A	
	NYPA extensions		*	N/A	
	Outside lines		*	N/A	
1	Emergency Notification System (ENS) telephone (NRC)		*	N/A	
1	Direct line to WPO		*	N/A	
1	Direct line to CR III/EOF/OSC/TSC		*	N/A	
1	Direct line to EOF		*	N/A	
RADIOS					
8	HT-220 Handy Talkies 153.635 MHZ (Emergency Plan Frequency) (OSC)		***	N/A	
2	Con Ed Handy Talkies (1 in OSC, 1 in TSC)		****	N/A	
1	Base Station (153.635 MHZ)		*****	N/A	
4	Model HT RR-2 duplex head sets w/throat mike		batt/check	N/A	

*** NOTE: To test the HT-220 handy talkies (153.635 MHZ):

1) Call security in the control room and ask them to switch to Frequency 2. Test handy talkies.
2) Call security at main command post and ask them to switch to Frequency 2. Test handy talkies.

**** NOTE: Test the Con Ed security frequency Handy Talkie (Frequency 2) by calling the Unit 3 Control Room prior to test.

Unit ______ to KGS 757

****** NOTE: Test base station by contacting HT-220 handy talkies. (Be sure base station is on frequency 2)

EQUIPMENT LOCATED IN THE TECHNICAL AND OPERATIONS SUPPORT CENTER

CHECK OFF LIST (CONT'D)

No.	Equipment	Present	Operational Check	Calibration Due	Comments
	MISCELLANEOUS				
2	Emergency Plan Books (1 in TSC, 1 in OSC)		N/A	N/A	
2	Emergency Plan Procedures Books		N/A	N/A	
2	Books of Forms (1 in TSC, 1 in OSC)		N/A	N/A	
2	Log Books		N/A	N/A	
2	triple outlet extension cords		N/A	N/A	
1	area map		N/A	N/A	
1	site map		N/A	N/A	
2	flashlights with spare batteries		N/A	N/A	
1	H.P. Controlled Proc. Book		N/A	N/A	
-	Radioactive Caution Signs		N/A	N/A	
1	Headquarters Emergency Plan (TSC)		N/A	N/A	
1	Calculator		*	N/A	
2	Stopwatches		*	N/A	
1	Racal-Vadic Acoustic Coupler Modem		N/A	N/A	

* = Operation Check is Required
** = Respirator Inspection (As per RE-HPI-11.16)

Date Test Performed: ____________________

Signature of Checker: ____________________

EQUIPMENT IN COMMAND GUARD HOUSE (UNIT 3)

CHECKOFF LIST

No. Equipment	Present	Operational Check	Calibration Due	Comments
40 - Film Badges and/or TLD's		N/A	N/A	
50 - 500 mR dosimeters		*		
10 - 5 R dosimeters		*		
1 - Dosimeter Charger		*	N/A	
10 - H/Face respirator with Iodine Filters		**	N/A	
1 - 100 bottles KI Tablets		N/A	N/A	
8 - Anti-C clothing kits		N/A	N/A	
2 - Emergency Notification & Call-in Books		N/A	N/A	
1 - Box Surgical Gloves		N/A	N/A	
- Yellow herculite for ambulance floor		N/A	N/A	
1 - E-530 GM Survey Meter or equivalent		*		
1 - RM-14 Frisker with HP-210 or 260 probe		*		

NOTE: Test the Con Ed Security frequency walkie-talkie (Frequency 2) by individually contacting the Unit 3 Control Room. Notify Unit 3 Control Room by phone prior to the test

Test:	Unit 201 to KGS757		*	N/A	
	Unit 203 to KGS757		*	N/A	

* = Operational check required
** = Respirator Inspection (As per RE-HPI-11.16)

________________________ ____________
Signature of Checker Date

EQUIPMENT LOCATED AT PEEKSKILL COMMUNITY HOSPITAL DECON ROOM

CHECK OFF LIST

NO.	EQUIPMENT	PRESENT	COMMENTS
1	Mobile Storage Cart		
1	Stainless Steel Cart		
1	4 Outlet Power Box		
1	Lead Pig		
-	Precut Yellow Herculite for Decon Room		
1	Roll Yellow Herculite for Hallway Floor		
-	Green Herculite for Outside Decon Room		
200	Yellow Plastic Booties		
200	Disposable Hoods		
40	Disposable Gowns		
1	Step-off Pad		
2	30 Gal. White Poly Waste Collection Containers		
2	25 Ft. Extension Cords		
9	"Caution - Contam. Area" signs		
1	Roll Large Clear Poly Bags		
10	Large Yellow Poly "Rad. Material" Bags		
10	Small Yellow Poly "Rad. Material" Bags		
1	Razor Knife		
5	Rolls Yellow Tape		
5	Rolls Masking Tape		
1	Washdown Stretcher		
1	Flexible Drain Hose for Washdown Stretcher		
1	Green Garden Hose with Washdown Fitting		
1	Decon Supplies (2 Boxes)		
1	Sampling Kit (2 Boxes)		
3	Boxes Surgical Gloves		
3	5 Gal. Yellow Poly Waste Water Collection Jugs		
1	Wall Clock		
1	Roll Saran Wrap		
80	Disposable Towels		
50Ft.	½" Tygon Tubing		
1	Bung Wrench		
2	Filter Rigs		
8	Lengths Rad. Rope with Clips		
1	E-530		
2	Friskers (RM-14 with HP-210 Probe)		
12	0-500 mR Dosimeters		
12	0-200 mR Dosimeters		
1	Dosimeter Charger		
10	TLD Badges		
20	TLD Rings		
1	Roll White Herculite		
12	Protective Clothing Packages		
4	Metal Stanchions for roping off ambulance		
1	Roll Rad. Rope for roping off ambulance		

Signature of Checker ____________________ Date ____________

Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914 739 8200

NewYorkPower Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1076 REV. 5

TITLE" BEEPERS "

THIS PROCEDURE HAS BEEN EXTENSIVELY REVISED

WRITTEN BY: [signature]

REVIEWED BY: D.W. [signature]

PORC REVIEW: W Hamlin DATE 6/12/84

APPROVED BY: John C Brons DATE 6/18/84

EFFECTIVE DATE: 6-25-84

IP-1076

BEEPERS

1.0 INTENT

To outline the procedure for Beeper page units used to contact NYPA personnel for emergency notification.

2.0 DISCUSSION

The paging service used for IP-3 is Radiofone Corporation. A VHF band is used to transmit signals to the paging units via towers located throughout the service area. The IP-3 pagers have digital readout as well as tone. This allows the person being paged to know where to call back, ie. directly to the paging party. Use of a touch tone telephone is required for the digital message. Should rotary telephones be used, the pager will beep but no digital display will be available. Therefore the paged person will not know who to call. It is best to use Security x262 as an intermediary if dialing from a rotary phone and they will be able to page personnel from the plant digital phones, or if the "air" is busy to dial (201) 569-8832 and ask radiofone to page manually. Again only a beep will be heard and a message must be left with Security on who to call back.

3.0 PRECAUTIONS AND OPERATION

3.1 Beepers are fragile and should be handled carefully.

3.2 Beepers should be worn or carried when you are away from your home telephone, office telephone or plant paging system.

3.3 Pager instructions for operation and use are found on the following pages.

3.4 Missing or defective beepers should be reported immediately to the R.E.S. department office.

4.0 PROCEDURE

4.1 Establish the necessity to use beeper paging, ie. no answer at home or office phone or plant paging.

4.2 There are 4 different ways to page individuals with these digital display pagers. In order to preference:

a. Use touch tone phone - enter telephone number for call back (see 4.3 for instructions.

b. Use rotary phone to call security (X262), security will then use plant touch tone to enter the number for call back (security to see 4.3 for instructions).

c. Use rotary phone, paged individual will only hear a beep. [in this instance Security should be called (x262), leave a message with them so when the person being paged calls in he'll know who to contact].

d. If the "air is busy" call security (x262) (don't forget to leave message for callee) and they will call radiofone at (201) 569-8832 and request that pager to be beeped manually. No digital display will appear, only beep. Therefore paged party should call security (x262) for message.

4.3 Using a touch tone phone to page, use the following directions:

daTa page SERVICE

How to send a message to:

____

Note: You *must* use a touch-tone phone or adapter.

Dial my Data Page No.:

\- - - - - - - - - - - -

\- - - - - - - - - - - -

Wait until you hear three beep tones - *beep - beep - beep.*
Enter the telephone number where you wish to be called.
(You can enter up to *24 digits.*)
Press the number sign button (#).
Hang up.

4.4 Instructions when you are paged:

a. Call back telephone number which appears on your pager printout.

b. If only a beep is heard and/or a _ _ _1_ _ _ appears in the center of the screen: this means you were 1) paged with a rotary phone or 2) paged manually by radiofone or 3) the telephone code entered was not signaled to you properly. Shcuid you recieve only a beep, call Security x262 to ask for your message, if one has been left for you.

5.0 TESTING

5.1 Beepers will be tested every other month to insure their operability and use in accordance with 3PT-TM03.

5.2 Each beeper holder will test their own beeper.

5.3 A letter will be distributed to all beeper holders notifying them of the test and the dates of the testing periods. Attachment 4 will be used to record the results of the beeper test.

5.4 Follow instructions in section 4.3 to test pager.

6.0 ATTACHMENTS

6.1 Attachment 1, Beeper use instructions

6.2 Attachment 2, Radiofone Paging Network

6.3 Attachment 3, Beeper Holders

6.4 Attachment 4, Test Record

BEEPER USE INSTRUCTIONS

INTRODUCTION

Your "BPR 2000" series display pager is a compact tone alert silent alert pager with four call capability and unique visual display of a numeric message and source identifier.

FEATURES

Four-Call Feature: The pager displays pages from two different sources and identifies the source with a display digit (1 or 2), with and without data. (See Figures 4a, 4b, 4c, and 4d)

12-Digit LCD Display with 24-Digit Message Capacity: For a single page, the pager can display 24 digits, 12 digits at a time.

Back-Lighted Display: Depress the LIGHT button to illuminate the display at night or during low light conditions.

Memory Capacity: The pager saves the two most recent messages in memory, for a total of up to 48 digits.

"Vibra-Page" Model: This model alerts the user by vibrating when in the Silent mode.

Automatic Alert Reset: The tone or "Vibra-Page" alert automatically stops after eight seconds or can be halted by pressing the Read button anytime during the eight second alert.

OPERATION (See Figure 1)

Tone Alert Mode: Set the OFF ON switch to ON. The tone symbol ( ) is displayed when in Tone Alert mode.

Power-Up Alert: A short power-up alert indicates that the pager is operating normally. No alert indicates a dead battery or bad battery contact.

Display Check: Along with the power-up alert a display consisting of the tone symbol ( ), the call source identifiers ( ), and a field of eights (8) will appear (see Fig. 2a).

Standby: Following the display check, the pager will display a field of all dashes and the source identifiers will vanish (see Fig. 2b). This display shows that the pager is in Standby, ready to receive a page.

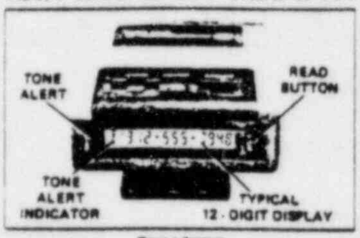


Figure 1. Controls

Paging Alert: When a page is received, the pager emits an audible beeping tone and the display changes to a checkerboard pattern (see Fig. 2c). Depress the Read button to halt the alert and interrogate the pager memory. The pager will display the call source identifier and numerical information as described in Memory and Message Display paragraphs. If the Read button is not depressed, the audible alert will halt automatically after eight seconds. Depress the Read button to interrogate the pager memory.

Figure 2a. Display Check (at power up)

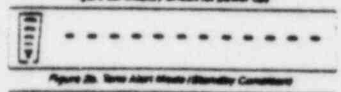


Figure 2b. Tone Alert Mode (Standby Condition)

Figure 2c. Checkerboard Display (Message Received)

Silent Mode (See Figure 3)

Tone Alert Model: Depress the SILENT button. The tone symbol will vanish from the display. The pager operates the same as described for Tone Alert mode except that no tone alert will be given.

"Vibra-Page" Model: This model pager operates the same as the Tone Alert model pager except that the unit vibrates when the SILENT button is depressed and when receiving a page.

NOTE: To return to Tone Alert mode from Silent mode, depress the SILENT button again.

NOTE: If the OFF ON switch is moved to OFF and back to ON the pager memory will be totally erased and the pager will be placed in Tone Alert mode.

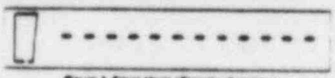


Figure 3. Silent Mode (Standby Condition)

MEMORY AND MESSAGE DISPLAYS

Memory: The pager memory can store up to two pages (message displays) containing up to 24 digits of numerical information for each page. This stored information can be interrogated at any time. If a third page is received, it is placed into memory, causing the earliest page to be lost (memory "overwrite"); hence, only the two most recent pages are stored. Figures 4a, 4b, 4c, and 4d illustrate and briefly explain the four types of message displays (standard four call pager).

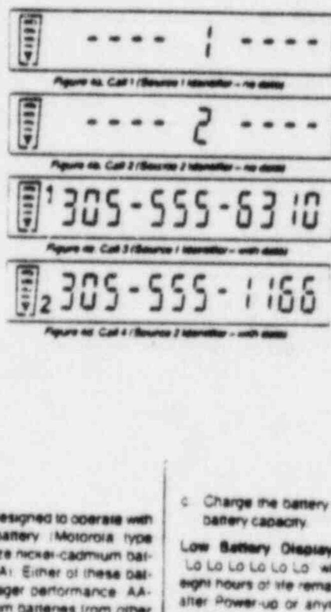


Figure 4a. Call 1 (Source 1 Identifier – no data)

Figure 4b. Call 2 (Source 2 Identifier – no data)

Figure 4c. Call 3 (Source 1 Identifier – with data)

Figure 4d. Call 4 (Source 2 Identifier – with data)

Message Examples:

Example 1: Assume that a page is received and a checkerboard display pattern is indicated for the first time since the pager was set to ON. Depress the Read button to interrogate the memory. A pattern exactly like Figure 4a or 4b, or similar to Figure 4c or 4d, is displayed (no audible alert symbol # in Silent mode). Unless the Read button is depressed, the message display remains for 12 seconds, then the pager returns to the Standby condition (Fig. 2b). If 12 digits of information are displayed and the rightmost digit is flashing, depress the Read button to interrogate the memory for a display of up to 12 additional digits of information. If the rightmost digit is flashing and the Read button is not depressed within 12 seconds, the display automatically advances to the additional 12 digits of information. Unless the Read button is depressed again, the display remains for 12 seconds, then the pager returns to Standby condition (Fig. 2b). To recall the numerical display again, depress the Read button.

Example 2: Assume that another page has been received (continuing on from Example 1). Depress the Read button to interrogate the memory. A second message is displayed as in Figures 4a, 4b, 4c, or 4d. Unless the Read button is depressed, the pager returns to the Standby condition after 12 seconds (or after 24 seconds if more than 12 digits of data are stored in memory).

Both the first and second pages remain in memory but will not be displayed unless interrogated. To interrogate the memory for the first (earliest) page (Example 1), depress the Read button *before* the second page display vanishes and the pager returns to Standby.

Example 3: If two pages have been received as described in Examples 1 and 2, then the memory is full since it contains information from the two most recent pages. If another page is received, the new (latest) page message is placed into memory, causing the page message from the earliest page to be lost. This "overwrite" feature means that you never have to clear the memory manually.

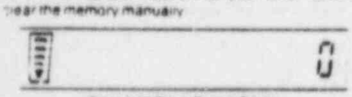


Figure 5. No Data in Memory Display

Figure 5 illustrates a "no data in memory" display which occurs when the Read button is depressed and no messages are in memory. This pattern is also displayed when interrogating for a second page when only one message has been received.

BATTERY INFORMATION

Battery Types: The pager is designed to operate with a single AA-size alkaline battery (Motorola type NLN8278A) or a single AA-size nickel-cadmium battery (Motorola type NLN7057A). Either of these batteries provide for optimum pager performance. AA-size alkaline or nickel-cadmium batteries from other manufacturers may give comparable performance, but have not been tested by Motorola. Substitution of a battery other than those recommended by Motorola could reduce operating life and may impair proper operation.

Battery Charging: The Motorola type NLN5678A Single-Unit Battery Charger is available for charging nickel-cadmium batteries. The charger provides for charging the battery either in or out of the pager.

a. If the battery is out of the pager, insert it in the battery charging pocket on the top of the charger. Observe that the charging lamp glows, indicating that the battery is being charged.
b. If the battery is in the pager, insert the pager in the charger pocket. The clip on the pager must fit into the notch on the charger pocket. Observe that the charging lamp glows, indicating that the pager is inserted properly and the battery is being charged.
c. Charge the battery at least 12 hours to reach full battery capacity.

Low Battery Display: The pager will display a "Lo Lo Lo Lo Lo Lo" when the battery has less than eight hours of life remaining. This display may occur after Power-up or anytime the pager is in Standby condition.

Battery Installation: *(See Figure 6)*

a. Locate the black locking switch on the bottom of the pager.
b. Slide the black locking switch to the UNLOCK position. This reveals a red indicator and shows that the battery compartment cover is in the unlocked condition.
c. Locate the triangular shaped arrows on the battery compartment cover.
d. Press on the square textured area and slide the battery cover in the direction of the arrows.
e. Slide the battery compartment cover completely free from the pager housing.
f. Align the positive end of the battery with the positive marking in the battery compartment, and insert the new battery. Be sure the battery is inserted properly or the pager will not work.
g. Reinstall the battery compartment cover in reverse order of disassembly by sliding the cover onto the bottom of the pager in the opposite direction of the arrows.
h. Make sure to slide the black locking switch to the locked position.

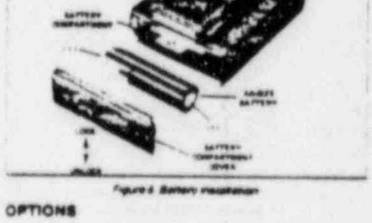


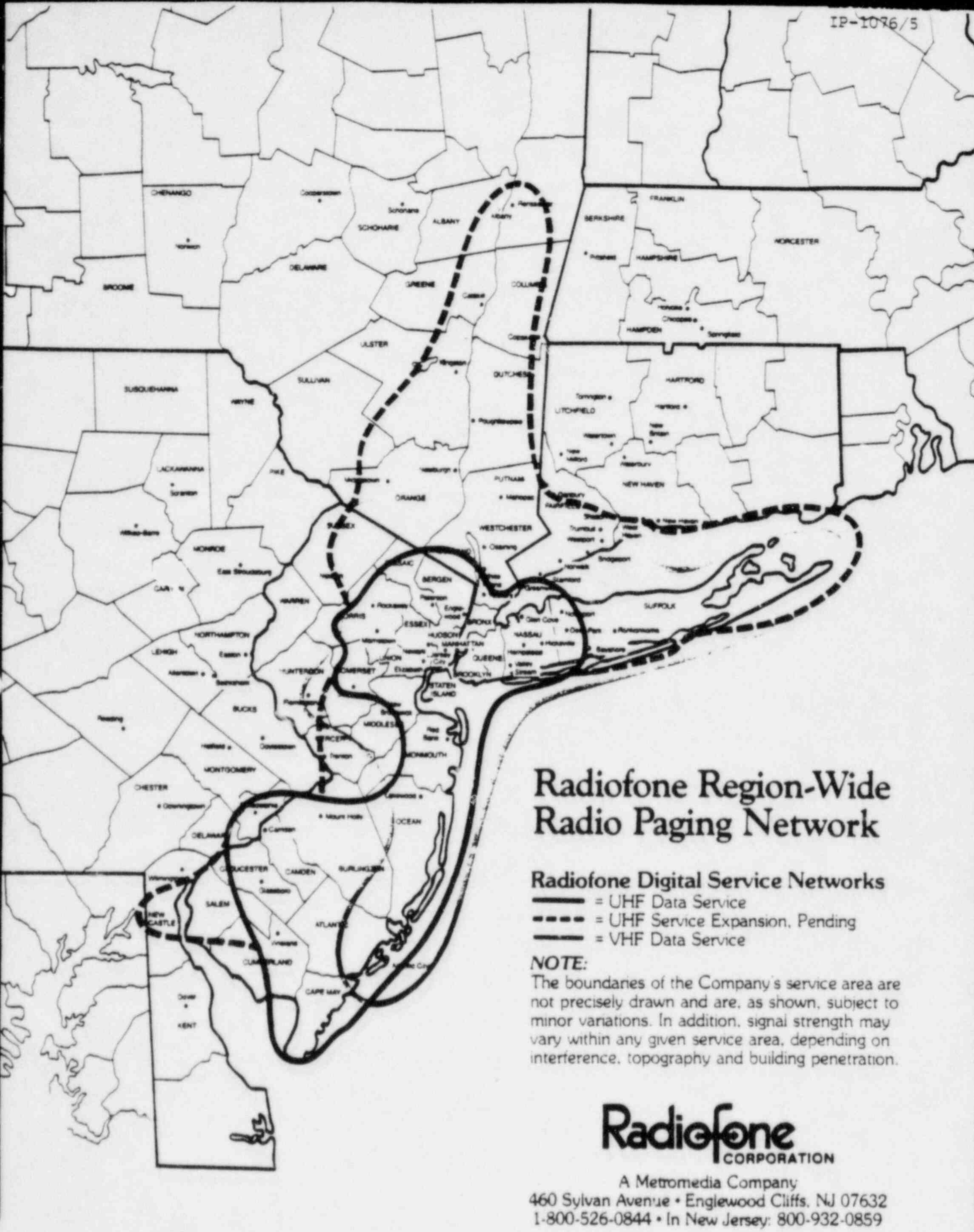
Figure 6. Battery Installation

OPTIONS

Single-Source, Single-Call Operation: The pager responds to source 1 identifier only with an alert plus data message.

Single-Source, Dual-Call Operation: The pager responds to source 1 identifier only with an alert (no data) or with an alert plus data.

Manual Reset: The pager must be reset to halt an alert.



Radiofone Region-Wide Radio Paging Network

Radiofone Digital Service Networks

- ━━━ = UHF Data Service
- ━ ━ ━ = UHF Service Expansion, Pending
- ═══ = VHF Data Service

NOTE:
The boundaries of the Company's service area are not precisely drawn and are, as shown, subject to minor variations. In addition, signal strength may vary within any given service area, depending on interference, topography and building penetration.

Radiofone CORPORATION
A Metromedia Company
460 Sylvan Avenue • Englewood Cliffs, NJ 07632
1-800-526-0844 • In New Jersey: 800-932-0859

BEEPER HOLDERS

Beeper Holders	Pager No.
Albright, Marty	(914) 683-9021
Brons, Jack	683-9107
Carano, Bill	683-9082
Deschamps, Bob	683-9120
Dube, Joe	683-9268
Gillen, Jim	683-9147
Hahn, John	683-9154
Hamlin, Bill	683-7804
Heady, Bill	683-4104
Lomonaco, Linda	683-4103
Munoz, Steve	683-9165
Perrotta, Joe	683-9200
Russell, Joe	683-7796
Russell, Pat	683-9232
Quinn, Dennis	683-9256
Tagliamonte, Ed	683-9128
Vignola, Joe	683-7718
Wollak, Janet	683-7726
Tech. Services Engineer (Mechanical)	683-4102
Tech. Services Engineer (Electrical)	683-4101
Tech. Services Engineer (Performance)	683-4109
* Nuclear Generation Duty Officer	(212) 396-7005

* When calling this number, the ring will be followed by a series of beep tones. When the beep tones stop, hang up. This pager are beep only, therefore they will call IP-3 Security for their message.

daTa page SERVICE
How to send a message to:

Note: You *must* use a touch-tone phone or adapter.

1. Dial my Data Page No.:

   - - - - - - - - - - - -

   - - - - - - - - - - - -
2. Wait until you hear three beep tones – *beep · beep · beep.*
3. Enter the telephone number where you wish to be called. (You can enter up to *24 digits.*)
4. Press the number sign button (#).
5. Hang up.

NOTE: With this type of paging, the individual will see the # you entered on his pager, and will know where to call back.

If using a rotary phone call security (X262), and they will page from the plant touch tone system. If "air busy" call security to have then call (201) 569-8832 and page manually. Only a beep will occur, no digital message, therefore pagee should call security back for their message.

NOV 14

BEEPER TEST RECORD

Dates Performed ________________

Individual	Pager No.	Result of Test	Comment
Albright, Marty	683-9021		
Brons, Jack	683-9107		
Carano, Bill	683-9082		
Deschamps, Bob	683-9120		
Dube, Joe	683-9268		
Gillen, Jim	683-9147		
Hahn, John	683-9154		
Hamlin, Bill	683-7804		
Heady, Bill	683-4104		
Lomonaco, Linda	683-4103		
Munoz, Steve	683-9165		
Perrotta, Joe	683-9200		
Russell, Joe	683-7796		
Russell, Pat	683-9232		
Quinn, Dennis	683-9256		
Tagliamonte, Ed	683-9128		
Vignola, Joe	683-7718		
Wollak, Janet	683-7726		
Tech Services Engineer (Mech.)	693-4102		
Tech Services Engineer (Electr.)	683-4101		
Tech Services (Performance)	683-4109		

For Service or Manual Paging: Radiofone Corporation (201) 569-8832

____
Signature of Test Coordinator/Date

____
Signature of A.R.E.S.S.

____
Signature of Performance & Reliability Supervisor/Date

Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914 739 8200

New York Power Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO IP- 1080 REV. 6

TITLE" CONDUCT OF EMERGENCY EXERCISES & DRILLS "

WRITTEN BY: J. Jones

REVIEWED BY: D.N. ...

PORC REVIEW: W. Hamlin DATE 6/12/84

APPROVED BY: John C Brons DATE 6/18/84

EFFECTIVE DATE: 6-25-84

CONDUCT OF EMERGENCY EXERCISES & DRILLS

1.0 INTENT

To describe the required exercises and drills for the IP-3 site as well as establishing a procedure for the conduct and evaluation of the experience. This procedure also outlines the management controls used to ensure that corrective actions are implemented.

2.0 DISCUSSION

This procedure acts as the guiding document for explanations of exercises and drills; the scheduling and development of scenarios, assignment of Controllers and Observers, critiquing and the reporting of results. Site personnel and exercise or drill participants should follow other applicable procedures within the Emergency Plan Procedure Document according to the nature and classification of the simulated emergency. Personnel involved directly but not limited to this procedure are the Lead Controller, Controllers, Observers. Superintendent of Power and the Emergency Plan Coordinator.

3.0 GENERAL DESCRIPTION OF EXERCISES AND DRILLS

This is to provide guidance in preparing scenarios for exercises or drills. In this context, fullscale exercise is a large-scale experience which directly involves offsite agencies, a smallscale exercise is an experience normally confined to plant personnel but may include offsite agencies, and a drill is a smallscale experience confined to plant personnel.

It is permitted to combine several drills into one exercise.

3.1 Fullscale Exercise

The purpose of the annual fullscale exercise, as described in NUREG-0654, is to test the fullscale response capabilities of State, Local and Federal agencies. The plant is directly involved and is drilled on its response to the simulated emergency situation.

Indian Point No. 3 will have one fullscale exercise every two years. The State and Counties will participate in that exercise. Indian Point No. 2 will have a fullscale exercise complete with State and County participation in the alternate years.

The exercise should be in the Site Area or General Emergency classification, and scenarios should be varied to test all agencies and all phases of the Emergency Plans and response. At least one exercise every 6 years should be started between 6:00 P.M. and midnight, and another between midnight and 6:00 a.m. Some exercises should be conducted in adverse weather conditions, and some should be unannounced.

Observers must include qualified State and Federal personnel. They shall also participate in the critique which follows the exercise.

3.2 Smallscale Exercise

The basic criteria for this exercise includes most of the factors listed under 3.1 above. However, the purpose is to test and instruct site personnel. The drill may be a simulation of any classification however, an Alert with activation of the TSC, OSC and EOF are recommended at a minimum. Participation by Con Edison personnel may be requested. The scenario may include one or more of the drills listed below. Operations should not be interrupted.

The NRC must be notified to participate. Other Local, State and Federal agencies should be invited to participate but are not required.

3.3 Drills

3.3.1 Quarterly Fire Drill

At quarterly intervals (as per Tech Specs), the Fire Brigade training should include an activation drill.

3.3.2 Annual Radiological Medical Emergency Drill

The scenario will involve a simulation of a contaminated individual who has suffered injuries serious enough to require hospital treatment. First-aid, decontamination, transportation to the hospital and response of hospital staff will be included.

3.3.3 Annual Environmental Monitoring Drill

The purpose of this drill is to test the response capabilities of Indian Point and the State. The scenario should provide a simulated release which will require collection and monitoring of all sample media: air, water, soil, and vegetation at onsite and offsite locations. Communications and recordkeeping will also be included. The Con Edison NEM teams shall participate. If the State has engaged in a drill at another utility site during the previous 12 months, it isn't required to participate. Indian Point has on-going environmental monitoring programs as per Tech Specs, all of which include the above requirements. New York State also has on-going programs which may in certain instances act as drill experience.

3.3.4 Semi-annual Health Physics Drill

The onsite monitoring teams, the NEM teams, and the State are tested with this drill. The scenario will include simulation of elevated levels of radioactivity in air and water and of elevated levels of radiation in the environs. The plume exposure pathway is emphasized. The State is also only required to participate at one site during a year.

3.3.5 Annual Inplant Liquid Sampling Drill

This drill should test the capabilities of the Chemistry teams to use the post-accident sampling system. Analysis should be carried out under simulated emergency conditions.

3.3.6 Communications Drill

3.3.6.1 Monthly
This drill is to test the communications between the IP-3 site and government agencies in the plume exposure pathway. A Notification of Unusual Event may be substituted in any current month or the communications check of the Hot Line and NAWAS will simulate this drill.

3.3.6.2 Quarterly This is a test of communications in the ingestion pathway area. Agencies contacted include the government agencies in the plume exposure pathway and the States of New Jersey, Pennsylvania and Connecticut and the NRC. IP-3 shall test the communications system between IP-3 and N.Y.S, the counties and the NRC quarterly. It is the responsibility of N.Y.S. to continue this communications drill by calling the surrounding states within 50 mile ingestion pathway.

3.3.6.3 Annually This drill is to test the communications among IP-3, IP-3 EOF and the State and Local Emergency Operations Centers.

4.0 PLANNING

4.1 Scenarios shall be approved for the following exercise or drill categories by the indicated individuals.

Category	Power Authority Drills
Fire	Safety & Fire Protectection Supt.
Medical	Assistant to the Radiological & Environmental Services Superintendent. (ARESS)
Radiological	Asst. to Rad. & Env. Services Supt. with input from the Superintendent of Power or his designee, New York State & NRC input for full scale and small-scale exercises.

4.2 Smallscale and fullscale exercises must follow the following NRC submittal schedule:

Objectives sent to NRC: 75 days prior to the exercise
Scenario sent to NRC: 45 days prior to the exercise

4.3 A Lead Controller will be appointed by the Supt. of Power sufficiently in advance of the drill so that he will be able to review the scenario. The Lead Controller and ARESS shall appoint Controllers and Observers for the specific areas requiring control/observation. The emergency drill/exercise assignment sheet (Attachment 7.1 or 7.2) shall be used as an aid.

4.4 Offsite agencies should be contacted at least one month in advance of the Exercises/Drills and invited to participate.

4.5 Emergency Directors and Support Center Personnel will normally be appointed by the Supt. of Power as observers on a rotational basis to facilitate training. The emergency drill assignment sheet shall be used to identify the participants for each job function and then it shall be given to the Lead Controller. (It is recommended that ED's are also rotated as Observers to aid in their training process and allow them to see how each job function relates to the overall handling of the Emergency.) This assignment sheet can then be made part of the drill scenario-critique package which will be filed.

5.0 <u>DRILL/EXERCISE CONTROLLERS/OBSERVERS</u>

5.1 Controllers are individuals whose sole responsibility is to assist in the conduct of a drill or exercise by providing information to the participants so as to ensure a smooth, consistent, and orderly continuation of the drill or exercise.

5.2 Observers are individuals used to record significant events and their time of occurrence, and the actions of participants both correct and incorrect. Actions to be observed include but are not limited to the following:

5.2.1 Notification and initial response of the emergency organization
5.2.2 Emergency facilities staffing and activation
5.2.3 Ability to control the emergency
5.2.4 Notification and communication with support facilities and offsite agencies.
5.2.5 Availability and use of equipment and personnel for assessment, control, and recovery.
5.2.6 Assessment of the consequences of the actions taken by emergency personnel.

Observers can function as controllers when assigned the task of providing information or instruction during certain aspects of a drill or exercise, e.g. field monitoring.

5.3 There shall be an adequate number of observers so that they can be stationed to observe all expected major actions of the drill or exercise as stated in the objectives of the scenario. There shall be at least (1) controller at each emergency facility and at any other location where specific information must be provided to the participants.

5.4 Controllers and Observers shall participate in an observer/controller training session, to be held prior to the exercise. Observer/Controllers should participate in a pre-drill for the experience of observing & criticizing.

5.5 Controllers and observers shall be visibly identified and shall be considered invisible by the drill or exercise participants.

5.6 Observers should take no part in the action of the exercise except to:

5.6.1 Indicate simulated conditions to the exercise participants, (e.g., survey meter readings, contamination levels, etc.), but only after instructions by the Lead Controller or individual acting on behalf of Lead Controller

5.6.2 Observe poor communication techniques and procedures and note/correct such occurrences when they occur.

5.6.3 Prevent the communication of simulated emergency conditions as actual conditions outside of the exercise or drill area and to ensure that radio or telephone messages are periodically preceded and ended by the statement "This is a Drill/Exercise".

5.6.4 Prevent actions which might create a hazard to personnel or equipment. In such cases, observers shall require personnel participating in the exercise or drill to indicate the action verbally.

5.7 Controllers and observers shall be briefed within 24 hours of the commencement of a drill or exercise and written aids and procedures shall be provided for use by them. This briefing shall include a review of the scenario, the controller and observer duties with regard to their assigned areas, and the key points to be noted.

5.8 Controllers and observers shall obtain the signatures of as many participants as possible (in their respective areas) for training documentation.

5.9 The Lead Controller and/or the ARESS shall assign observers to specific areas or locations and designate their responsibilities by completing a Drill/Exercise Observer Assignment Sheet for each observer. Each observer shall complete assigned a checklists associated with the function/area they are observing. These checklists are maintained by the ARESS and are to be returned to the ARESS following the completion of the drill or exercise and shall be used to form the basis of the critique.

6.0 FOLLOWUP

6.1 Critique

6.1.1 After the completion of the Exercises, or Medical drill, and before the end of the next normal working day, the Lead Controller shall hold a critique, where all Controllers and Observers shall discuss their observations and any noted shortcomings and present their recommendations to improve performance and emergency preparedness.

6.2 Exercise/Drill Report

6.2.1 Following the critique, the Lead Controller or his designee shall prepare an exercise/drill report and submit it to the Supt. of Power.

6.2.2 The exercise/drill report shall include as a minimum, the following:

a) The scenario

b) The assignment sheets (Attachments 7.1 or 7.2)

c) An overview of the experience and emergency preparedness

d) A listing of each noted shortcoming and associated recommended corrective action

e) Proposed Emergency Plan Corrective Action Reports (EPCAR), Attachment 7.3, for each noted deficiency.

6.3 Review

6.3.1 Following the submittal of the exercise/drill report, the Supt. of Power shall review its contents and associated proposed EPCAR's.

6.3.2 The Supt. of Power shall determine the final recommended corrective actions to be taken, assign action addressees and completion dates when necessary.

6.3.3 PORC shall review the exercise/drill report. The review of the EPCAR's and assignment of action addressees shall be incorporated into the PORC meeting minutes. The PORC secretary will sign the initiated EPCAR's.

6.3.4 The exercise/drill report shall then be forwarded to the Asst. to Rad. & Env. Services Supt. for action and filing. Additionally, a status list shall be prepared and maintained for the purpose of following the final corrective actions and close-out of each EPCAR. Attachment 7.4 (EPCAR Status List) may be used as an aid. 6

6.4 Closeout

6.4.1 The action addressee for each EPCAR will resolve the problem, indicate on the EPCAR the final corrective action taken, sign and date it and forward it to the Asst. to the Rad. & Env. Services Supt.

6.4.2 The Asst. to the Rad. & Env. Services Supt. shall inform PORC of the action to close out each EPCAR, indicating the final corrective action taken. The PORC secratary shall sign the closed out EPCAR and return to the ARESS for filing.

6.5 EPCAR Extension

6.5.1 In the event that an action addressee can not complete the final corrective actions by the date specified on the EPCAR, a request for an extension shall be presented to the Supt. of Power/PORC. The request shall include the circumstances or reasons that necessitate the extension and an estimated completion date.

6.5.2 The Supt. of Power/PORC, upon receipt of an extension request, shall review its justification and, either approve or reject the request.

6.5.3 For approved extensions, the Supt. of Power/PORC shall assign a revised completion date, and inform the action addressee of the extension. Furthermore, the Asst. to the Rad. & Env. Services Supt. shall be directed to update the EPCAR Status List and file the request for extension. For rejected extensions, the action addressee shall be informed and the request forwarded to the Asst. to the Rad. & Env. Services Supt. for filing.

7.0 <u>ATTACHMENTS</u>

7.1 Medical Drill Assignment Sheet

7.2 Exercise Assignment Sheet

7.3 Emergency Plan Corrective Action Report

7.4 EPCAR Status List

Attachment 7.1

Medical Drill Assignment Sheet

____
Date

JOB FUNCTION	DRILL PARTICIPANT	OBSERVER
Lead Controller		
Shift Supervisor		
SRO		
RO		
Security (CR)		
Security Command Post		
Security at Accident Scene		
NPO		
Watch H.P.		
1st Aider(s)		
Nurse		
Ambulance		
Hospital		
Victim		
H.P.'s at Hospital		
________________		
________________		
________________		
________________		

Attachment 7.2
Pg. 1 of 2

Exercise Assignment Sheet

____
Date

JOB FUNCTION	DRILL PARTICIPANT	OBSERVER
Lead Controller		
CR Controller		
TSC Controller		
EOF Controller		
OSC Controller		
Plant Operations Manager		
Shift Supervisor		
SRO		
RO		
CR Communicator(s)		
NPO's		
Watch H.P.		
Watch Chemist		
TSC Manager		
TSC Mechanical		
TSC Electrical		
TSC Reactor		
OSC Manager		
OSC H.P. Team Leader		
OSC Chem. Team Leader		
OSC I&C Team Leader		
OSC Maintenance Team Leader		
OSC Operations Team Leader		
OSC Accountability Officer		

Exercise Assignment Sheet

Attachment 7.2
Pg. 2 of 2

JOB FUNCTION	DRILL PARTICIPANT	OBSERVER
Fire Brigade		
Lead Acct. Officer		
Accountability Area		
Training		
Warehouse		
2^{nd} Floor		
Construction		
Machine Shop		
Onsite Monitoring Team		
Offsite Monitoring Teams		
(1)		
(2)		
Repair & Corrective Action Teams		
(1)		
(2)		
(3)		
(4)		
(5)		
Security Command Post		
Security Gates		
Emergency Director		
RATL		
Rad. Assessment Team:		
MIDAS		
EOF Monitor		
Dose Assessment		
Rad. Communicator/Survey Teams		
Communicators		
Technical Advisor		
Public Relations		
Public Relations Technical Assistant		
Clerk(s)		

Attachment 7.3

EMERGENCY PLAN CORRECTIVE ACTION REPORT NO. ____________

Prepared By: ______________________________ Date: __________________________
Name

Approved: ____________________________
Supt. of Power

Action Addressee: ____________________ Reviewed: ________________________
Name PORC Date

ITEM DEFICIENCY- Description and/or Cause

RECOMMENDED CORRECTIVE ACTION-

CORRECTIVE ACTION TO BE COMPLETED BY ________
DATE

EXTENSION REQUESTS-

EXTENSION DATE ________________
REVIEWED (PORC'D) ________________
APPROVED:(Supt. of Power) ________________

RESOLUTION-

Signature: ______________________
Date: ______________________

CLOSEOUT:

PORC Reviewed ________________________ Date __________

RES Signature ________________________ Date __________

EPC STATUS LIST

EPCAR No.	Deficiency Description	Recommended Corrective Action	Action Addressee	PORC Approved Completion Date	Extension Date (if Appl)	Date Closed Out	PORC - Closeout Review Date

APPENDIX INDEX

OFFSITE APPENDIX INDEX

ONSITE APPENDIX INDEX

FIRST AID EQUIPMENT LOCATION

CONVENTIONAL SIDE OF PLANT

1. Security Command Post

   Trauma Kit
   Resuscitator (Oxygen)
   Suction
   Burn Kit (Small)

2. Security Vehicle

   First Aid Kit
   Resuscitator (Oxygen)

3. First Aid Room - 33 Ft.
   (Shift Supervisor has key)

   All major first aid supplies

4. Shift Supervisor's Office

   Trauma Kit
   Resuscitator (Oxygen)
   Major & Minor burn kit
   Stretcher
   Wool Blanket (outside door)

5. NYPA Control Point - 4th floor - Administration

   Trauma Kit
   Backboard with splints - wool blanket
   Scoop stretcher

CONTROLLED SIDE OF PLANT

1. Stretcher and Blanket - stokes basket

   a. Entrance to PAB
   b. 44'
   c. Outside NPO Shack 55'
   d. Hallway to 80' airlock
   e. Inside containment

2. 55' Elevation - outside NPO Shack

   - First Aid Locker -

   Trauma Kit
   Resuscitator
   Wool Blankets
   Suction
   Splints
   Backboard

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FIRST AID SUPPLIES

Locations of First Aid lockers and/or supplies:

a) 33' elevation First Aid Room
b) Security Building & Vehicles
c) S.S. Office
d) H.P. Control Point
e) Outside Nuclear NPO Office
f) Decon Room
g) Medical Fac. at Training Trailers

Locations of Stretchers:

a) Outside H.P. Control Point
b) Decon Room
c) 33' Elevation First Aid Room
d) Outside Nuclear NPO Office
e) Medical Fac. at Training Trailers
f) S.S. Office
g) PAB-Hallway to 80' Airlock

Locations of Resuscitator/Inhalators:

a) S.S. Office
b) Security Building
c) Decon Room
d) H.P. Control Point
e) Outside Nuclear NPO Office
f) Medical Fac. at Training Trailers
g) 33' Elevation First Aid Room

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POLICE

Buchanan Police Department	(914) 739-6776 6777
Peekskill Police Department	(914) 737-8000
State Police Troop K	(914) 737-7171 by radio: Security Plectron Device

FIRE DEPARTMENTS (Emergency Numbers)

Verplanck Fire Department & Ambulance	(914) 737-1643
Buchanan Fire Department	(914) 737-3481

SEISMIC

Woodward Clyde Consultants:	(201) 785-0700
Off hours: T. Statton	(201) 783-3030

METEOROLOGY

ACCU Weather	(814) 237-0309
Meteorological Tower Data Link	(914) 737-6803 Trailer: NYPA Ext. 333
Back-up Met Tower Data Link	(914) 737-6913
York Research	(203) 325-1371
Climatronics	(516) 567-7300

MAR 2 1 1985

FEDERAL

Radiological Assistance Program (RAP-DOE)	(516) 282-2200
NRC - Region 1 Office of Inspection & Enforcement	(215) 337-5000 (working hrs)
U.S. Coast Guard Operations Duty Officer	(212) 668-7936

NEW YORK STATE

Warning Point	(518) 457-2200 457-6811 (Off Duty)
Emergency Operation Center:	
Operations	(518) 454-3311
Dose Assessment Information: Mr. Lee Batters	454-2176
Public Security Building, Building #22 State Office Building Campus Albany, N.Y. 12226	
Department of Health, Radiological Emergency Preparedness Group	(518) 473-3393 (working hrs) 474-2886 (working hrs)
State Police Troop K	(914) 737-7171 by radio: Security Plectron Device

COUNTY

ORANGE COUNTY

Warning Point	(914) 294-6860 294-7422
Emergency Operation Center:	(914) 294-7422 294-7216
Orange County Government Center 255-275 Main Street Goshen, NY 10924	294-5151 (Switchboard) (Ext. 266)
Department of Civil Defense	(914) 294-7422

PUTNAM COUNTY

Warning Point	(914) 225-4300
Emergency Operation Center:	(914) 225-3896
Putnam County Office Building 40 Glenieda Avenue Carmel, NY 10512	
Department of Civil Defense	(914) 225-3641 225-3896

ROCKLAND COUNTY

Warning Point	(914) 354-8300
Emergency Operation Center:	(914) 354-8259
Rockland County Sherriffs Communications Center Fire Training Center Pomona, NY 10907	
Department of Emergency Services	(914) 354-5900 354-8259 354-8287

WESTCHESTER

Warning Point	(914) 769-3100 (Ask for Watch Officers Desk)
Emergency Operation Center:	(914) 285-2011 285-2025
County Office Building 148 Martine Avenue White Plains, NY 10601	
Office of Disaster & Emergency Services	(914) 285-3026

CITY OF PEEKSKILL

Warning Point	(914) 737-8000 X 224
Emergency Operation Center:	(914) 737-8000
Peekskill Police Dept. 2 Nelson Ave. Peekskill, NY 10566	
Police Commissioner, Civil Defense Director	(914) 737-8000

LOCAL

Village of Buchanan Mayor, Hon. Cheryl Harding	W:(914) 737-1033 H:(914) 737-5764

MAR 2 1 1985

RAILROADS

Metro North Commuter Railroad	East Side of River	(212) 340-2049 through 2053
Consolidated Rail Corporation	West Side of River	(201) 558-2385, 2386

INPO

Institute of Nuclear Power Operations (For 24 hr. support)	(404) 953-0904 (Primary) (404) 953-0922 (Backup)

ADJACENT BUSINESS

Standards Brands - Ask for Plant Manager	(914) 737-4414, 737-3982
Alternate - Secretary to Plant Manager	(914) 737-3981, 737-4331
Georgia Pacific - Ask for Plant Manager	(914) 737-8600
Alternate - Office Manager	
Tensolite - Ask for Security & Safety Manager	(914) 737-5600
Alternate - Bldg & Grounds Supv. - Maintenance Supv.	
Charles Point - Ask for Chief Engineer	(914) 739-9304
Alternate - Operations Superintendent	(914) 739-9308

INSURANCE CARRIER

American Nuclear Insurers	(203) 677-7305

EVACUATION TRANSPORTATION

Con Edison Westchester Emergency Supervisor No. 9	(914) 993-6205 (914) 993-6221

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OFFSITE NOTIFICATION & COMMUNICATION PROCEDURE TELEPHONE NUMBERS

USNRC Inspector, P. Koltay	ext. 499	H: (914) 245-1007
Alternate: L. Rossbach	ext. 499	H: (914) 831-5664
American Nuclear Insurers (ANI)		(203) 677-7305
Institute of Nuclear Power Operations (INPO)		(404) 953-0904 (404) 953-0922
Westside of River: Consolidated Rail Corp.: (Chief Train Dispatcher)		(201) 558-2385 (201) 558-2386
Eastside of River: Metro North Commuter Railroad: (Chief Train Dispatcher)		(212) 340-2049 through 2053
US Coast Guard (Operations Duty Officer)		(212) 668-7936

IF THE RECS LINE, RADIO AND NAWAS ARE NOT WORKING, CALL

Westchester County Warning Point	(914) 769-3100 (ask for Watch Officers desk)
Putnam County Warning Point	(914) 225-4300
Rockland County Warning Point	(914) 354-8300
Orange County Warning Point	(914) 294-6860
City of Peekskill Police Commissioner	(914) 737-8000 X 224
N.Y. State Warning Point	(518) 457-2200 (518) 457-6811

If all communication lines are down, radio the State Police by means of the Security Plectron device. Request the State Police to contact the State Police in Albany and make contact with Westchester, Rockland, Orange & Putnam Counties & the City of Peekskill.

IF THE NRC DIRECT LINE IS NOT OPERATIONAL, CALL

1. NRC Operations Center (via Bethesda Centra; Office)	(301) 951-0550 (Primary)
2. NRC Operations Center (via Silver Spring Central Office)	(301) 427-4056, 4259
3. NRC Operations Center (via Bethesda Central Office)	(301) 492-8893
4. Health Physics Network Line (to NRC Operations Center)	22

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EMERGENCY CONDITION TELEPHONES

ORANGE COUNTY

TO: Civil Defense, Coordinator (Phil Schmer)	294-7422, 7216
TO: Dose Assessment	294-8066
TO: Public Information Officer	294-8928
TO: County Exec.	294-6924
TO: Communicator	294-7422

PUTNAM COUNTY

TO: Civil Defense, Coordinator (Mike Scalpi)	225-3896
TO: Dose Assessment	225-1320
TO: Public Information Officer	225-7094
TO: County Exec.	225-6387
TO: Communicator	225-2195

ROCKLAND COUNTY

TO: Civil Defense, Coordinator (Don McGuire)	354-5900 354-8259
TO: Dose Assessment	362-0457
TO: Public Information Officer	362-1691
TO: County Exec.	362-0604
TO: Communicator	362-1794

WESTCHESTER COUNTY

TO: Civil Defense, Coordinator (Olsen)	285-3026 285-3025
TO: Dose Assessment	285-2062 through 2069
TO: Public Information Officer	285-2034 through 2036
TO: County Exec.	285-2072 through 2075
TO: Communicator	285-2011, 2077

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NEW YORK STATE:

TO: Command Room	(518) 454-3337, 3336
TO: Dose Assessment & Evaluation	(518) 454-2176
TO: Communicator (Operations Room)	(518) 454-3311

EMERGENCY CONDITION
TELECOPY NUMBERS

ORANGE COUNTY

County Exec.: NEFAX II (1 min.) # 294-8960
Verification # 294-6924

EOC (PR) Information: Xerox (1 min.) # 294-7115
Verification # 294-6924

Dose Assessment: NEFAX III (20 sec.) # 294-8927
Verification # 294-8066

PUTNAM COUNTY

County Exec.: NEFAX II (1 min.) # 225-2633
Verification # 225-6387

EOC (PR) Information: Xerox (1 min) # 225-8777
Verification # 225-7094

Dose Assessment: NEFAX III (20 sec.) # 225-2130
Verification # 225-1320

ROCKLAND COUNTY

County Exec.: NEFAX II (1 min.) # 354-2141
Verification # 362-0604

EOC (PR) Information: Xerox (1 min.) # 362-0605
Verification # 362-0415

Dose Assessment: NEFAX III (20 sec.) # 354-4751
Verification # 362-0457

WESTCHESTER COUNTY

County Exec.: NEFAX II (1 min.) # 285-2071
Verification # 285-2072 through 2075

EOC (PR) Information: Xerox 455 (1 min.) # 285-2076
Verification # 285-2062 through 2069

Dose Assessment: NEFAX III (20 sec.) # 285-2061
Verification # 285-2062 through 2069

NEW YORK STATE

Dose Assessment: NEFAX III (20 sec.) # (518) 454-3322
Verification # (518) 454-2176

OPERATIONS: # (518) 454-3310 (Manual Machine)

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ACCOUNTABILITY

ACCOUNTABILITY AREA	DELEGATE	OFFICE EXTENSION	ASSEMBLY AREA EXTENSION
I Training	Marianna Sherman	221	221,237
	Andree Hall	237	
J Warehouse	David DiCioccio	251	253,316
	Lou Tiberi	253	
K Admin. Bldg.	Sue Ferguson (Also Lead)	319	423
	Nancy Eng	230	
	Jill Choma	234	
	Jim Reagan	227	
C Machine Shop	Jim Butler	345	345
	Fran Colwell	278	
	Mike Devlin	437	
	Bruce Witherall	437	
G Construction Conf. Trailer	Steve Guarnaccia	739-9048	739-2031
	Ronald Mackowiak		
Control Room		277, 282	
TSC	Josephine Roy	235	217
	Ed Noel	250	
OSC	Anthony Vitale	336	456
	Cliff Marks	438	
EOF	Diane Barton	258	313/
	Laura Eagens	375	526-5339
H Con Ed Service Center (West Storeroom Area)		526-5270	

MAR

TELEPHONE EXTENSIONS

Unit 3 Control Room and Page	277,282
Shift Supervisor's Office	281
Ops. Supt. Office	275
Security Shift Coordinator	260, 420
Security Bldg. Extensions	261, 262, 263
Con Ed LOA Hans Doher	526-5228, 526-5341
NVC	366, 372
Westinghouse (Ray Heisey)	508
OSC	456
TSC	422
EOF (Emergency Director)	313/450, 526-5339

Lead Accountability Officer (Normal Working Hours)

Ruthanne Bowman	208, 739-8654
Sal Golemi	319
C. Metzger	226
S. Wyskida	238

Lead Accountability Officer (Off hours)

Security	261, 262, 263

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CONTROL ROOM

POM: Direct line communications

CR: x 274
x 277 (do not use during drills - for board use only)
x 282
82-5059 (Con-Ed extension)

(212) 564-3345
737-6620 (Board, unlisted)
737-8929 (Incoming only)

Entrance Door x 378

Computer/Telecopy phone

739-7013

Direct Lines:

RECS Hot line/state and county
TSC-OSC-EOF-CR-AEOF
EOF/CR-2/CR-3/AEOF (Signal ring: 1=EOF, 2=CR-2, 3=CR-3, 4= Con Ed AEOF)
NRC ENS

Marcy ECC
NYPA System Operator (Marcy)
CE System Operator
CE District Operator
Design basis event phone (CE DO)

Radios

ODP Radio
NYPA Security, Base 2, f=1 & 2 (f=2 used for Emergency Plan)
CE Freq. 1 = WAE 280
CE Freq. 2 = KGS 757
NAWAS
Security Plectron Device

To Call NRC in CR:

737-8929

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OSC

OSC Manager:	2 Direct line phones EOF-CR-TSC-OSC-AEOF (88 PLNA 56852)	
	X	456 (Also Accountability)
Communications:	2 Direct line phones CR-TSC-OSC-EOF (88 PL 5394)	
	Radio's:	Con Ed Frequency 1
		NYPA Frequency 2 (base with handy talkies for field communication)
		Controlled Area Radio (base with head sets for field communication)
HP Team Leader	X	392
Chemistry Team Leader	X	485
Maint. Team Leader	X	455
I&C Team Leader	X	455
Operation Team Leader	X	454
Staging Area	X	473
Dosimetry	X	249
Radio Telephone	739-8246	
Control Point	X	498

TSC

TSC Manager:	Direct Line phone EOF-CR-TSC-OSC-AEOF (88 PLNA 56852) Direct line phone--CR-TSC-OSC-EOF-(88 PL 5394) X 250
TSC Communications:	Direct line EOF-CR-OSC-TSC (88 PL 5394) Direct line EOF-CR-TSC-OSC-AEOF (88 PLNA 5682) Direct line EOF-TSC (88 LP 6079) Direct line to WPO (88 PLNT 52648) ENS (GP 1534-24)
	739-7334 X 255 X 422 739-8488
TSC Areas:	X 497 X 371 (Accountability) 739-3099 X 528 to communicate with video operator (like an intercom) X 217 739-7089
Directors Office:	739-8265 X 513
STA Offices:	514, 518, 519, 521
Computer Room:	X 511 X 510
Radio:	Con Ed Frequency 1 (Handy Talkie)

COMMUNICATIONS ROOM:

Telecopier #:	739-2973
Computer Telephones:	739-3268 739-3482 X 529 used to communicate with TSC (like an intercom) X 527

Intercom type phone between TSC & Computer/video/Xerox room

X 529 Computer/Video/Xerox Room
X 528 TSC Area

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EOF UTILITY TELEPHONES

Dose Assessment:	739-8200 X450 737-3629
Rad. Communicator:	526-5262
Communicacor:	739-8200 X 450, X 313
Emergency Director:	739-8200 X 313 737-3164
Public Relations:	JNC Direct Line 737-4967
Technical Assistant:	737-6777
Clerks:	526-5339 739-7094
Upper Hallway:	739-8200 X 351 526-5322 737-6939 (ARAC)
Downstairs Hallway:	739-8200 X 351 526-5322

EOF Telecopier:	739-8417 (Upstairs - to receive information From TSC and CR)
EOF Public Relations Telecopier:	737-4967 (Downstairs)

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EOF UPPER PHONES

Orange:	526-5480
Putnam:	526-5484
Rockland:	526-5323
Westchester:	737-7235
New York State:	737-7848
FEMA:	737-7668

NYPA's Extensions to Upper State & County Gallery: X 382, X 383
(Bridged to NRC Room)

NRC
ENS
HPN
526-5456
526-5478
737-5253
737-5811
739-8200 X 365
662-8790

NYPA's Extensions to NRC Room X 382, X 383
(Bridged to State & County Upper Gallery)

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HEADQUARTERS EMERGENCY RESPONSE CENTER
TELEPHONE EXTENSIONS

Recovery Manager	* 6353
Operations	* 6354
	* 6346 (Conference Table)
	682-8307
	682-8528
Technical	* 6336
Design & Analysis	* 6337
	682-0367
	682-0368
Fuels	* 6339
Lincensing	* 6340
	682-0378
	682-0379
Administration & Logistics	* 6330
	* 6331
	682-0349
	682-0355
Scheduling & Planning	* 6327
Contract Administration	* 6328
	682-0341
	682-0343
Offsite Security	* 6342
	* 6343 (ERC Security)
	682-0394
	682-0397
Insurance	* 6333
Legal Affairs	* 6334
	682-0360
	682-0365
Radiological	* 6348
	* 6349 (Computer Desk Phone)
	682-8403
	682-0480
Quality Assurance	* 6324
	* 6325
	682-0308
	682-0309
Public Relations	* 6530
	* 6532
	682-8104
	682-8183
Conference Table	* 6345
	* 6346 (Recovery Manager)
	682-8400
	682-8401
Telcopy Machine	682-1989 (JAF NPP)
(manual)	681-0277 (IP-3NPP) verficiation: 682-8929
Technical Library	* 6363
	* 6539
Drawing Control	* 6365
	* 6366

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* NYPA White Plains Office Centrex Telephone System

UTILITY TELECOPIERS

EOF

Fact Sheet Transmittals: NEFAX III (20 sec.) phone #3 (212) 594-0749

NEFAX II (adjustable speed) phone #2 526-5550 (to receive from CR)

NEFAX II (adjustable speed) phone #1 739-5899

Xerox 455 (1 min. manual) phone # 739-8417 (To receive from TSC)

Xerox 455 (1 min. manual) phone # 737-4967 - PR

All Verifications: 526-5339
739-7094

TSC

739-2973 (manual) Verification X 527
739-4359

WPO Recovery

681-0277 (manual) Verification 682-8929

CR

739-7013 (Manual)

MAR 2 1 1980

RADIO COMMUNICATION

A. The Con Edison emergency radio system at Indian Point consists of two separate radio facilities:

1. Two Con Edison Emergency Plan Frequencies are utilized by the base station control consoles, mobile units and portable units. These units have the ability to use either Frequency 1 (456.100 MHz) or Frequency 2 (451.100 MHz) for transmitting. On Frequency 1 the repeater station at the Con Edison Center is used to boost the signal strength.

NOTE: Frequency 1 is the primary frequency for use in emergency communications.

Type	Location	Call Letters Frequency 1 & 2
Base Station	CR 1-2	KYA 424
	CR 3	KGS 757
	EOF	KYA 424
	AEOF	KMF 615
	CE - CGH	KMF 617
		Frequency 1 & 2
Mobile	2058	KU 3575 Mobile 1
	3718	KU 3575 Mobile 2
Security Portables	CE - CGH	KU 3575 Units 206 - 210
(Con Ed frequency)	CE - CGH	KU 3575 Units 216 - 218
	NYPA - CGH	KU 3575 Units 201, 203
	NYPA - TSC	KU 3575 Unit 205
	NYPA - OSC	KU 3575 Unit 4

2. The Con Edison Generating Station Frequency (456.050 MHz) is used by System Operations. This is used by Con Edison at Indian Point to communicate with Con Edison in N.Y.C.

Type	Location	Call Letters
Base Station	CR 1-2	WAE 277
	EOF	WAE 277
	AEOF	WGQ 993

B. The Power Authority also has two separate radio facilities:

1. The PASNY Security radio system (153.560 MHz) consists of 3 base stations, mobile and portable units. This system also has a separate feature, a plectron alerting device, which is used for emergencies only.

Type	Location
Base Station	CR - 3
	CGH
	CGH
Plectron Device	State Police
Mobile	
Portables	

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RADIO COMMUNICATION (CONT'D)

2. The PASNY Emergency Plan Frequency (153.635 MHz) consists of a base station and portables.

Type	Location
Base Station	CGH, CR3, OSC
Portables	OSC

C. The County Radio System:

The County Radio System (Office of Disaster Preparedness frequency 45.16 MHz) is used as a back-up to RECS.

Type	Location	Call Letters
Base Station	CR 1-2	KNFM-394
	CR 3	KNFM-394
	EOF	KNFM-394
	AEOF	KNFM-394

BEEPER HOLDERS

Beeper Holders	Pager No.
Albright, Marty	(914) 683-9021
Brons, Jack	683-9107
Carano, Bill	683-9082
Deschamps, Bob	683-9120
Dube, Joe	683-9268
Gillen, Jim	683-9147
Hahn, John	683-9154
Hamlin, Bill	683-7804
Heady, Bill	683-4104
Lomonaco, Linda	683-4103
Munoz, Steve	683-9165
Perrotta, Joe	683-9200
Russell, Joe	683-7796
Russell, Pat	683-9232
Quinn, Dennis	683-9256
Tagliamonte, Ed	683-9128
Vignola, Joe	683-7718
Wollak, Janet	683-7726
Tech. Services Engineer (Mechanical)	683-4102
Tech. Services Engineer (Electrical)	683-4101
Tech. Services Engineer (Performance)	683-4109
* Nuclear Generation Duty Officer	(212) 396-7005

* When calling this number, the ring will be followed by a series of beep tones. When the beep tones stop, hang up. This pager are beep only, therefore they will call IP-3 Security for their message.

daTa page SERVICE
How to send a message to:

Note: You *must* use a touch-tone phone or adapter.

1. Dial my Data Page No.:

- - - - - - - - - - - -

- - - - - - - - - - - -

2. Wait until you hear three beep tones – beep - beep - beep.
3. Enter the telephone number where you wish to be called. (You can enter up to 24 digits.)
4. Press the number sign button (#).
5. Hang up.

NOTE: With this type of paging, the individual will see the # you entered on his pager, and will know where to call back.

If using a rotary phone call security (X262), and they will page from the plant touch tone system. If "air busy" call security to have then call (201) 569-8832 and page manually. Only a beep will occur, no digital message, therefore pagee should call security back for their message.

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