

POWER AUTHORITY OF THE STATE OF NEW YORK
INDIAN POINT NO. 3, NUCLEAR POWER PLANT
EMERGENCY PLAN PROCEDURES DOCUMENT

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Nuclear Power Plant
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New York Power
Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP - Book II REV. 7

TITLE: "Book II"

Organization
Initiating Conditions
NUE
Alert
Site Area Emergency
General Emergency

7

This procedure has been extensively revised.

WRITTEN BY: [Signature]
REVIEWED BY: David D. Reed
PORC REVIEW Alchuria DATE 5/27/83
APPROVED BY: [Signature] DATE 5/27/83
EFFECTIVE DATE: _____

IP-3 EMERGENCY RESPONSE

ORGANIZATION

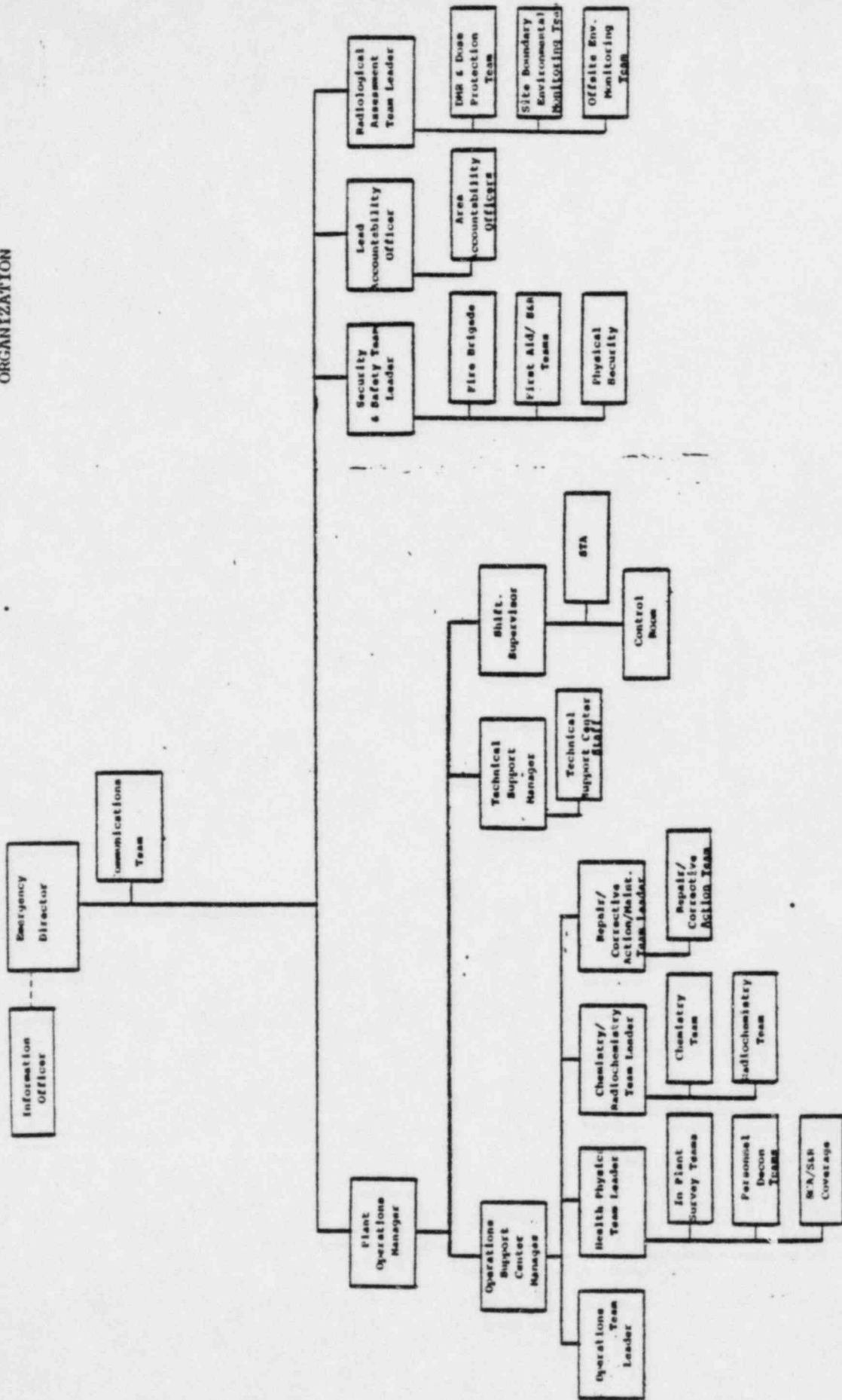


TABLE 5-2

INDIAN POINT EMERGENCY RESPONSE STAFFING

1. Emergency Director

Resident Manager
Superintendent of Power
Technical Services Superintendent
Radiological and 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 and Reliability Supervisor
Shift Technical Advisors

5. Radiological Assessment Team Leader

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

6. Lead Accountability Officer

Office Manager
Personnel Manager
Security Shift Coordinator (off hours)

EAL (INITIATING CONDITIONS)

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INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	REFERENCE PLANT EMERGENCY PROCEDURES	PROTECTIVE ACTION RECOMMENDATIONS*
<u>I. REACTOR AND REACTOR COOLANT SYSTEM</u>				
<u>A. RCS Leakage and Loss of Coolant Accident (LOCA)</u>				
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-8	
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. Acoustical Monitor iii. Temperature indicator b. Pressurizer safeties open, indications: i. Temperature indicator ii. Acoustical 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 (Radiological)	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 (Non-Radiological)	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 radioactivity in a short period of time possible. Examples: 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).	(Representative conditions found in a-d order is not important) a. LOCA identified above, and 1. R-2 Offscale 2. R-7 Offscale and Anticipated loss of containment integrity	General Emergency	PEP-ES-1	-Precautionary Evacuation out to 5 miles -Shelter out to 10 miles (downwind ENPA's)
(Cont'd)	(Cont'd)			

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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-1002 indicates 1. MG 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	-Precautionary Evacuation out to 5 miles -Shelter out to 10 miles (Downwind ERPA's)
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 $\geq (2.06 \times 10^3) \frac{Ru}{Q}$ (Site Boundary) and anticipated loss of containment integrity		PEP-ES-1 PEP-ES-1A	-Precautionary Evacuation out to 5 miles -Shelter out to 10 miles (Downwind ERPA's)
	d. R10 readings $\geq (8.06) \frac{Ru}{Q}$ (Site Boundary) with confirmation of R-10 reading by indications from R-2, R-7, R-25, R-27 or survey meters AND anticipated loss of containment integrity.			
B. Steam Generator Tube Leakage/Rupture				
1. Exceeding primary/secondary leak rate Technical Specification with ECCS initiation	a. > 0.1 gpm leakage per steam generator ≥ 1 gpm total leakage and ECCS initiation	Notification of Unusual Event	ONW-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) and, c. Loss of offsite power.	Alert (Radiological)	PEP-ES-1 PEP-ES-1B PEP-EL-1 ONW-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 (Radiological)	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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INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTION RECOMMENDATIONS*
<u>REACTOR AND REACTOR COOLANT SYSTEM (CONT'D)</u>				
<u>C. Reactor Core Degradation and Fuel Damage</u>				
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	Notification of Unusual Event	ONOP-RCS-4	
	b. GFFD alarm and lab analysis which indicates an increase on failed fuel			
2. Severe loss of fuel cladding:	a. Same as initiating conditions	Alert (Radiological)	ONOP-RCS-4	
a. Very high coolant activity sample (e.g., in excess of 300 uCi/cc equivalent of I-131).				
3. Fuel damage accident with release of radioactivity to containment and/or fuel storage building	a. Observation of fuel damage	Alert (Radiological)	PEP-RM-1	
	b. Plant vent iodine monitor >300 uCi/cc I-131		PEP-RP-1	
	c. High and increasing V.C. temperature, Pressure and humidity		PEP-RP-2	
	d. High containment or Fuel Handling Building Radiation Alarm.		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	Site Area Emergency	PEP-ES-1	-Consider Protection Actions based on actual Magnitude of damage or expected damage -Precautionary Shelter out to 5 miles (Downwind ERPA's)
	b. Primary to secondary leak >50 gpm		PEP-ES-1B	
	c. Fuel damage as indicated in Step C.1		PEP-ES-1C	
			ONOP-ES-1	
			ONOP-SG-1	
5. Degraded core with possible loss of coolable geometry.	a. Core exit thermocouples $\geq 600^{\circ}\text{F}$, or	Site Area Emergency	PEP-ES-1	
	b. RCS Temperature approaching saturation or saturated and		PEP-ES-1G	
	c. Degraded core are indicated in Step C.1 and C.2 above.			

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INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	* EMERGENCY CLASSIFICATIONS	REFERENCE PLANT EMERGENCY PROCEDURES	PROTECTIVE ACTIONS RECOMMENDATIONS*
1. 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) >15 mR/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	OROP-SFF-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, 1. R-2 Offscale 2. R-7 Offscale 3. R-10 ≥ 100 mR/hr, and anticipated loss of containment integrity b. Calculation in IP-1002 indicates 1. MG dose rate >18 r/hr at Site Boundary 2. I dose rate >58 r/hr at Site Boundary c. R-25, R-26 readings $\geq (2.06 \times 10^{-3})$ I/hr $\frac{Xu}{Q}$ (Site Boundary) and anticipated loss of containment integrity d. R10 readings $> (0.06)$ mR/hr $\frac{Xu}{Q}$ (Site Boundary) with confirmation of R-10 reading by indications from R-2, R-7, R-25, R-27 or survey meters and anticipated loss of containment integrity.	General Emergency	PEP-ES-1 PEP-ES-1A	
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 2715 psig.	a. Same as initiating conditions	Notification of Unusual Event	OROP-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 (Radiological)	OROP-RCS-1 OROP-RCS-4	

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INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

<u>INITIATING CONDITIONS</u>	<u>POSSIBLE INDICATIONS TO OPERATORS</u>	<u>EMERGENCY CLASSIFICATIONS</u>	<u>REFERENCE PLANT EMERGENCY PROCEDURE</u>	<u>PROTECTION ACTIONS RECOMMENDATIONS*</u>
II. MAIN STEAM SYSTEM				
1. Rapid 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 (Radiological)	PEP-ES-1 PEP-ES-1C PEP-ES-1B ONOP-ES-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	ROP-FP-1 ROP-FP-1	
2. Fire potentially affecting safety systems.	a. Same as initiating conditions	Alert (Non-Radiological)	PEP-FP-1 PEP-FP-2	
3. Fire compromising the functions of safety 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	-Consider Protective Actions based on actual magnitude of damage or expected damage? -Precautionary Evacuation out to 5 miles. -Precautionary shelter out to 10 miles (Downwind ERPA's)

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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*
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	REP-EM-1	- Shelter to 10 miles - Evacuate as per IP-1017
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		Protective Action recommendations for actual release conditions.
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 (Radiological)		(Downwind ERPA's)
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 1.0×10^{-5} Ci/sec, check site boundary dose for actual dose for actual release and meteorological conditions prior to classifying emergency).	Alert (Radiological)		
5. Effluent monitors (R-14, RM-16, R-27), N.P. reading on plant vent detect levels corresponding to greater than 500 mR/hr for 1/2 hour or greater than 500 mR/hr for 2 minutes (or five times these levels to the thyroid) at the site boundary for adverse meteorology.	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 1/2 hour Plant vent reading > 40 mR/hr on contact for 2 minutes. RM-16 onscale R-27 reads > 1.28 R±6 uCi/cc for 1/2 hr R-27 reads > 1.28 R±6 uCi/cc for more than 2 minutes. ii. R-25, R-26 $\geq 7.9 \times 10^4$ R/hr for 1/2 hr or more R-25, R-26 $\geq 7.9 \times 10^3$ R/hr for 2 min. or more iii. R-10 ≥ 110 mR/hr for 1/2 hour or more R-10 ≥ 1100 mR/hr for 2 minutes or more iv. Site Boundary surveys detect: WB (1) > 50 mR/hr for 1/2 hour > 500 mR/hr for 2 minutes Iodine: > 250 mR/hr breathed for 1/2 hr (based on dose projection) > 2500 mR/hr breathed for 2 minutes (based on dose projection)	Site Area Emergency		

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INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATIONS	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTIONS RECOMMENDATIONS*
IV. RADIOLOGICAL EFFLUENT MONITORING AND RADIATION MONITORING (CONT'D)	<p>6. Effluent monitors, (R-14, R-16, R-27, NP reading on plant vent) detect levels corresponding to 1 R/hr 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.</p>	<p>General Emergency</p> <p>1. Indications from effluent monitors or Environmental survey results: Noble Gas Dose rate ≥ 1 R/hr (limiting case) Iodine dose rate ≥ 5 R/hr (see above sample ratio do not use assumed ratio).</p> <p>ii. Readings on R-25, $R-26 \geq 2.06 \times 10^3$ $\frac{X_u}{Q} = \frac{R}{hr}$ (Site Boundary) and anticipated loss of containment integrity</p> <p>iii. Reading on R-10 $\geq \frac{8.06}{X_u/Q}$ (Site Boundary) $\frac{X_u}{Q} = \frac{R}{hr}$ (Site Boundary) and anticipated loss of containment integrity</p>	PSP-PM-1	-Shelter to 10 miles -Evacuate as per 1P-1017. Protective Action Recommendations for actual release conditions. (Download ERFA's)

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<u>INITIATING CONDITIONS</u>	<u>POSSIBLE INDICATIONS TO OPERATORS</u>	<u>EMERGENCY CLASSIFICATIONS</u>	<u>REFERENCE PLANT EMERGENCY PROCEDURE</u>	<u>PROTECTIVE ACTIONS RECOMMENDATIONS*</u>
<u>CONTROL ROOM INACCESSIBILITY</u>				
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 (Non-Radiological)	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	-This may create other initiating conditions which may warrant pro- tective action recom- mendations

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INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATIONS	REFERENCE PLANT EMERGENCY PROCEDURES	PROTECTIVE ACTION RECOMMENDATIONS*
1. 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 (Non-Radiological)	PEP-EL-1	
3. Loss of all onsite DC power (See Site Area Emergency for extended loss)	a. Same as initiating condition	Alert (Non-Radiological)	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-FM-1	-This item may create other initiating conditions which may warrant protective action recommendations.

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INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTION RECOMMENDATIONS*
II. 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 OMOP-SM-3	
2. Severe natural phenomena being experienced or projected	a. Same as initiating conditions	Alert (Non-Radiological)	PEP-S-1 OMOP-SM-3	
3. Severe natural phenomena being experienced or projected while plant is not in cold shutdown	a. Same as initiating conditions	Site Area Emergency	PEP-S-1 OMOP-SM-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 OMOP-SM-3	-This may create other initiating conditions which may warrant protective action recommendations

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TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

<u>INITIATING CONDITIONS</u>	<u>POSSIBLE INDICATIONS TO OPERATORS</u>	<u>EMERGENCY CLASSIFICATION</u>	<u>REFERENCE PLANT EMERGENCY PROCEDURE</u>	<u>PROTECTIVE ACTIONS RECOMMENDATIONS*</u>
<u>III. MAN-MADE HAZARDS</u>				
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-PP-1 PEP-PP-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 (Non-Radiological)	PEP-TG-2 PEP-PP-1 PEP-PP-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-PP-1 PEP-PP-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-PP-1 PEP-PP-2	-This may create other initiating conditions which may warrant protective action recommendations.

* 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

<u>INITIATING CONDITIONS</u>	<u>POSSIBLE INDICATIONS TO OPERATORS</u>	<u>EMERGENCY CLASSIFICATIONS</u>	<u>REFERENCE PLANT</u>	<u>PROTECTIVE ACTIONS</u>
<u>EMERGENCY PROCEDURE</u>	<u>RECOMMENDATIONS*</u>			
<u>IX. CONTAMINATION INJURED INDIVIDUAL</u>				
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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TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

POSSIBLE INDICATIONS
TO OPERATORS

INITIATING CONDITIONS

EMERGENCY CLASSIFICATION

REFERENCE PLANT
EMERGENCY PROCEDURE
PROTECTIVE ACTIONS
RECOMMENDATIONS*

41. 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/HCB.

Notification of Unusual Event

PEP-ES-1

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TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

<u>INITIATING CONDITIONS</u>	<u>POSSIBLE INDICATIONS TO OPERATORS</u>	<u>EMERGENCY CLASSIFICATION</u>	<u>REFERENCE PLANT EMERGENCY PROCEDURE</u>	<u>PROTECTION ACTIONS RECOMMENDATIONS*</u>
XII. 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 threatening 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 (Non-Radiological)	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	This may create other initiating conditions which may warrant protective action recommendations.

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TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

<u>INITIATING CONDITIONS</u>	<u>POSSIBLE INDICATIONS TO OPERATORS</u>	<u>EMERGENCY CLASSIFICATION</u>	<u>REFERENCE PLANT EMERGENCY PROCEDURE</u>	<u>PROTECTIVE ACTION RECOMMENDATION*</u>
XIII. <u>PLANT PROTECTION SYSTEMS</u>				
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 (Non-Radiological)	PEP-RPC-1	
2. Transient requiring operation of shutdown systems with failure of the Reactor to trip. (continued power generation but no clad 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. Same as initiating condition	General Emergency	PEP-RPC-1 PEP-ES-1 PEP-ES-1C	-This may relate to other initiating conditions which may warrant protective action recommendations.

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TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATORS	EMERGENCY CLASSIFICATION	PROTECTIVE ACTION RECOMMENDATIONS*	
			PROTECTIVE PLAN	EMERGENCY PROCEEDING RECOMMENDATIONS
RIV. CONTAINMENT 1. Loss of containment integrity requiring shutdown by technical specifications.	a. Same as initiating condition	Notification of Unusual Event	Tech. Spec	Section 3.0

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TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

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

* The recommendations listed here are extremely conservative and are based on worst case plant conditions and meteorology and no proposals 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

<u>INITIATING CONDITIONS</u>	<u>POSSIBLE INDICATIONS TO OPERATORS</u>	<u>EMERGENCY CLASSIFICATIONS</u>	<u>REFERENCE PLANT EMERGENCY PROCEDURE RECOMMENDATIONS*</u>	<u>PROTECTION ACTION RECOMMENDATIONS*</u>
<u>XVI. FEEDWATER AND CONDENSATE SYSTEMS</u>				
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-TW-1 PEP-KS-1	-This may relate to other initiating conditions which may warrant protective action recommendations.

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TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

<u>INITIATING CONDITIONS</u>	<u>POSSIBLE INDICATIONS OR OPERATORS</u>	<u>EMERGENCY CLASSIFICATIONS</u>	<u>REFERENCE PLANT EMERGENCY PROCEDURE</u>	<u>PROTECTION ACTION RECOMMENDATIONS*</u>
<u>VII. GENERAL PLANT CONDITIONS</u>				
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 the Shift 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 (Radiological)		-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		

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TABLE 4-1

INITIATING CONDITIONS AND EMERGENCY ACTION LEVELS

INITIATING CONDITIONS	POSSIBLE INDICATIONS TO OPERATING	EMERGENCY CLASSIFICATION	REFERENCE PLANT EMERGENCY PROCEDURE	PROTECTIVE ACTION RECOMMENDATION ^a
VIII. GENERAL EQUIPMENT DAMAGE				
1. Complete loss of any function needed for plant cold shutdown.	a. Same as initiating condition	Alert (Non-Radiological)	PCP-RUR-1	
2. Complete loss of any function needed for plant hot shutdown condition.	a. Same as initiating condition	Site Area Emergency	PCP-PH-1	

^a The recommendations listed here are extremely conservative and are based on worst case plant conditions and meteorology and no provision 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 conferred 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 > 2735 psig
5. Exceeding RCS leak rate technical specification of > 10 gpm from a known source or > 1/gpm from an unknown 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 results 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

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New York Power
Authority

Control Room Tabs

Should be here

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)

POM CHECK LIST

- Assign
 - S.S.
 - TSC Manager
 - OSC Manager
 - CR Communicator:
 - 1 direct line (TSC-OSC-EOF-CR)
 - 1 other as needed
- Make recommendations:
 - Technical/engineering
 - Repair
 - Corrective Action
 - RC to investigate
 - Procurement - guidance for RC through E.D.
- KI needs for Emergency workers
- Check plant status against EAL's
- Plant updates every 30 mins. on PA System (assure CR Communicator does this)
- Has EOF taken over 30 minute calls to NRC? If not assure CR Comm. calls
- Do you know what offsite is doing? Ask E.D.

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Control Room tab
should be here.

CONTROL ROOM

For Control Room activities;

See IP-1030, the flowcharts and checklists.

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ED. tab should
be here

EMERGENCY DIRECTOR CHECK LIST

- Assign EOF personnel specific functions, schedule others to return for 2nd shift.
- 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 you are in charge

Assure Communication are Accomplished:

- Have comm. talk to CR Comm. & see whose been called immediately following EOF assumes control over emergency
- Assure offsite agencies updated every 30 mins. re: status using Part I, II, III EP#8 (provide initialed form to Comm.)
- Assure NRC updated approx. every 30 min. (ENS)
- If, Control Room is not making 30 min. PA announcements, have Comm. update OSC, TSC, CR, LAO, RC, Security of any changes and keep them updated (approx. every 30 mins.)
- Keep Unit #2, Adj. businesses, Coast Guard, Rails updated

Protective Actions:

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

Discussion/Decisions:

- Site Evacuation ?
- Brief (or have RATL brief) upstairs EOF every 30 mins.
- Discuss with H.P. Team Leader/OSC Supv. re: overexposure authorizations
- Periodically check plant status against EAL's
- Advise PCM what is being done offsite
- Authorize Search & Rescue operations
- Do we need INPO/Brookhaven Lab.
- Establish comm. with Recovery Center - advise of plant status, what is being done on and offsite and what we need.

You should talk to:

- RATL: - Protective Actions
 - Meteorology changes
 - KI inplant & offsite teams
- Upstairs: Brief upper gallery approx. every 30 mins.
- POM: - Plant Status updates
 - Brief him on offsite status
- H.P. Team Leader & OSC Supv.: - overexposure authorizations
- Lead Acct. Officer: authorize search & rescue operations
- Technical Advisor: Plant Prognosis/forecast
- Provide information to P.I.O. - Discuss and review press releases
- Interface with NRC representatives.

TECHNICAL ADVISOR

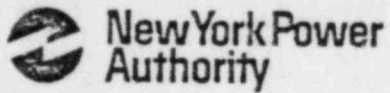
- Review incoming Technical Data (EP Form #31 a,b,&c)
 - Approve, question, change (via communicator if change or question)
 - Send up for copy & transparency
 - Log on flip charts
- Fill out Notification Fact Sheet, Part III, Form 30c
- Discuss & advise Plant conditions & prognosis with E.D.
- Check EAL table for Emerg. change in classification

Forms:

Plant Status Log	Part I	31a
	Part II	31b
	Part III	31c

Notification Fact Sheet Part III, plant parameter 30c

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Radiological Assessment

Team Leader tab

Should be here

RATL

- Scheduling & assignment of responsibilities
- Assure habitability of Assembly Areas
 - recommend moving, evac. or whatever to E.D.
- Is Con Ed effected?
- Request from OSC personnel for vehicle & equipment contamination check if necessary
- Assess need for KI (continue this thought throughout)
- Offsite recommendations
 - coast guard
 - Railroad
 - adjacent businesses } thru E.D.
- Review DAHP numbers & discuss with him
- Make recommendations:
 - Offsite
 - Sheltering - Evacuation
 - Keep PAG's in mind
 - Evacuation time estimates } thru E.D.
- Constant discussions with E.D.
- Participate in ½ hr - 45 min. briefings with upper gallery
- Fill out Part I
- Review Parts I & II of Form
- Observe dose accountability
- Will receive: noteworthy R/S
 - LCRISA, A&B runs (knowledge of)
 - Calculations & recommendations for P.A.
 - 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]
- Let POM know whats happening offsite (assure E.D. tells him)

DOSE ASSESSMENT H.P.

- HP-85
 - Calculate
 - compare numbers to MIDAS
 - incorporate R/S & field team information
 - Fill out Part II every 30 min.
 - Will receive:
 - R/S (15 min)
 - class: A&B
 - LCRISA (15 min)
 - offsite team data
 - Discuss P.A.'s with RATL
 - Post for transparency: calculation results
 - Advise to which information other than II should be sent out or up to counties.
- Out: Form for Transparency (P.A.'s)
RATL conversations
- Discuss with Rad. Communicator forecast on plume & expected fields

Reference:

IP-1001, Discussion of Determination of the Magnitude of Release
IP-1002, Determination of Magnitude of Release
IP-1017, Recommendation of Protective Actions for Offsite Population

Flow Charts & Forms:

Determining Release Rate #1a
Determining Dose #1b
Manual Dose Assessment Worksheet #40
Dose Calculation Form #41
Onsite Recommended Protection Summary #43
Offsite Recommended Protection Summary #44

MIDAS OPERATOR CHECK LIST

- Runs LCRISA (CTLV, ACL) immediately & each 15 min. & when requested
 - make run results available to RATL, DAHP & Rad. Communicator
 - record meteorology on board
 - place overlay on map table
- ** Notify RATL when meteorology and/or overlay change
(Announcement to Dose Assessment staff & upper gallery)
- Forcast (NRFP) record on board (noteworthy data to DAHP & RATL)
- Reuter Stokes RDMP $f=15$ min.
 - Give to: - Calculator (noteworthy doses RATL should be informed)
 - Rad Communicator
- ACRISO _____
- Class B DDPS } make run results available to DAHP & Rad. Comm.

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 Proc. IP-1020]
 - Check radiation survey instruments and take initial survey of the EOF & hallway. 42 Form #
 - 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 Proc. IP-1041]
 - Set up Control Point dosimetry inside main door to EOF
 - dosimetry
 - dosimetry 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.
- Start a particulate, iodine air sample (Con Ed Procedure: 10-1015)
 - Complete set-up of SAM-2 counter (Con Ed Proc. IP-1020)
 - Periodic surveys - post results for EOF (Upper & lower) overheads
 - Count samples - post results
 - Concern 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
 - Authorize personnel to have access only
(EOF communicator can provide input on whose 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
 - Recieve data from TSC (31a,b,c)
 - send to Tech. Adv. to proof
- Then: 1) make transparency & post
2) hard copy to State & County representatives upstairs
- Recieve (30a,b,c) - Xerox, send original back to communicator
 - Telecopy out forms 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 D.A.

Form 30a,b,c :

Telecopy to: Orange, Rockland, Putnam, Westchester, NYS, & Recovery Center

Hard Copy to State & County & NRC Representative in the EOF
Send Original back to Communicator

Form 31a,b,c :

- Recieve by Telecopier from TSC
- Send to Technical Advisor to proof
- Recieve 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 occurred 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 (≥ 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 monitors (R-14, RM-16, R-27 H.P. reading on plant vent) detect levels corresponding to greater than 500 mR/hr for $\frac{1}{2}$ 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 $\frac{1}{2}$ hour
Plant vent reading > 40 mR/hr on contact for 2 minutes
RM-16 onscale
R-27 reads $> 1.28 \text{ E}+5$ uCi/sec for $\frac{1}{2}$ hr.
R-27 reads greater than $1.28 \text{ E}+6$ uCi/sec for more than 2 mins.
 - b. R-25, R-26 $\geq 7.9 \times 10^4$ R/hr for $\frac{1}{2}$ hour or more
R-25, R-26 $\geq 7.9 \times 10^5$ R/hr for 2 minutes or more
 - c. R-10 ≥ 310 mR/hr for $\frac{1}{2}$ hour or more
R-10 ≥ 3100 mR/hr for 2 minutes or more
 - d. Site Boundary surveys detect:
WB (γ): > 50 mR/hr for $\frac{1}{2}$ hr
 > 500 mR/hr for 2 minutes
Iodine : > 230 mR/hr breathed for $\frac{1}{2}$ hr (based on dose projection)
 > 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, RM-16, R-27, HP 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 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 = 1 R/hr (limiting case)

Iodine dose rate = 5 R/hr (use chem sample ratio do not use assumed ratio)

- b. High Range Containment Monitor (R-25, R-26) (R/hr)
where $\star \left(\frac{2.06 \times 10^3}{X_u/Q \text{ site boundary}} \right) = \text{R/hr and anticipated loss of containment integrity}$
R-25, R-26

- c. Reading on R-10
Where R-10 $\star \left(\frac{8.06}{X_u/Q \text{ site boundary}} \right) = \text{mR/hr and anticipated loss of containment integrity}$

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 auxiliary 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 GENERAL emergency classification.

EMERGENCY PLAN PROCEDURES INDEX REV. 17

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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 - 1001

REV. 3

TITLE: " DISCUSSION OF THE DETERMINATION OF THE MAGNITUDE OF
RELEASE "

WRITTEN BY: David D. Bell

REVIEWED BY: Johnson

FORC REVIEW Archives DATE 5/27/83

APPROVED BY: B. Jones DATE 5/27/83

EFFECTIVE DATE: 5-27-83

DISCUSSION OF THE DETERMINATION OF THE MAGNITUDE OF RELEASE1.0 NEED FOR EARLY ASSESSMENT

In the event of an accidental release of radioactive material to the environment, it is important for the Shift Supervisor to assess the accident as soon as possible and to determine the exposure to the off-site population. The exposure may be only to the whole body due to fields created by the noble gas cloud or it may include exposures to the thyroid from the radio-iodines when 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, to give 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.

2.0 TYPES OF ACCIDENTSMonitor Response

- | | |
|---|--|
| a. 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 |
| b. Clad failure - up to the entire
gap activity could be released to
VC (iodines and noble gases)
(long lived gases) | -R-10 shows increase up to 65
mR/hr
-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 offscale if releasing |
| c. 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 2×10^6
R/hr.
-VC Iodine Monitor offscale
-R-14 offscale due to high
background through VC wall
-R-27 increases if releasing |

- d. Fuel element damage in FSB
("long-lived" isotopes, as in
clad failures, but on a smaller
scale)
- e. Gas release from tank rupture in
PAB (gas decay tank, VCT, CVCS tanks)
- f. Fuel melt, containment integrity
does not hold
- 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.
 - R-27 indicates up to 10^4 uCi/sec.
 - R-14 offscale
 - PAB APD may show increase
 - R-14 off scale
 - R-10 off scale greater than 1000R/hr
 - R-25/R-26 read up to 2×10^6 R/Hr.
 - R-27 shows increase
 - ARMS in RAMS and Admin. Bldg. show increase.

3.0 RADIOLOGICAL ASSESSMENT

3.1 Approximate Time of Monitor and Assessment Availability

Immediate

1.5 minutes

20-30 minutes

25 minutes

30-45 minutes

1 - 1 1/2 hrs.

1 1/2 hr.

Monitors and Surveys

R-10
R-14, (low) less than 5.0×10^4 uCi/cc
R-27
APD's and Iodine Monitors
R-25/R-26

Stack monitor₄ (RM-16 in PAB)
 7.5 to 7.5×10^4 uCi/cc
Reuter Stokes offsite monitors

Ludlum gamma detectors in the environment

Plant vent (HP tech reading)
 1.0×10^3 to 3.0×10^3 uCi/cc

Beta, Gamma readings at site boundary
Isotope analysis (chem. sample of stack air)

Iodine sample in field

3.2 Initial Steps For Assessment (Reference:IP-1002)

1. R-14 on scale: estimate offsite dose from reading on R-14.
 - a. Send chemist for sample of stack (normal method)
2. R-14 off scale:

Primary Method: - Evaluate R-27: uCi/cc and uCi/sec

Backup Method:

 - a. 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, RSCS-042), count total iodine first, then noble gases and particulates.
 - c. Send HP to site boundary sample points. (IP-1010)
 - d. Send offsite monitoring teams to do offsite surveys. (IP-1011)
 - e. Request Reuter Stokes monitor readings.
 - f. Request Ludlum monitor results. (IP-1011)
3. When chemist has results (2b) develop the ratio of Total Iodines to Noble Gas. $\frac{(\text{Total I})}{\text{NG}}$

3

4.0 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. The basic steps followed in IP-1002 to accomplish this radiological assessment are:

- a. Determine Release Rate
- b. Determine the Site Boundary Concentration
- c. Determine the Site Boundary Dose: Whole Body and Thyroid
- d. Determine Point of Interest Dose: Whole Body and Thyroid

NOTE: An estimate of the duration of the release should be obtained from the Emergency Director. If unavailable, use 4 hours as the first estimate.

NOTE: The HP-85 computer program or the MIDAS computer program (in the EOF) can be used as an alternate to the manual method of calculation outlined in IP-1002.

3

5.0 10 MILE AREA AND SECTOR MAP

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 $22\frac{1}{2}^{\circ}$. 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" which will be used when identifying areas for recommending protective actions.

Within each sector are:

- a. Sites with dose integrating devices (TLD's) (located on the map by red dots).
- b. Emergency sampling sites (located on the map by yellow dots). These are predetermined locations at which the offsite monitoring teams are to sample.
- c. Fixed air sampling sites with continuously running samples (located on the map by green dots). Charcoal and millipore filters are changed weekly.
- d. Ludlum gamma dose rate instruments at police stations, firehouses, etc; dose rates available by phone (IP-1011) (located on the map by black dots)
- e. Reuter Stokes instruments, gamma exposure, real time readings or 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.

6.0 OVERLAY DESCRIPTION

6.1 The 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; the channeling effect is negated for high wind speeds. (greater than 4m/sec)

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

X = concentration C_i/m^3 or uC_i/cc

u = windspeed m/sec

Q = source strength (release rate) C_i/sec

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

7.0 OVERLAY PLACEMENT

- 7.1 Meteorological data: wind speed, wind direction, and the Pasquill category is 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, 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

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

1. For downvalley (blue) or upvalley flow (yellow), align the E-W, N-S positions parallel to those on the map orientation point.
 - a. Downvalley (blue) overlay should be place so as the plume is traveling south.
 - b. Upvalley (yellow) overlays should be placed so as the plume is traveling north.
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 X_u/Q , within the area of the plume.

NOTE: Wind direction is always from (180° = wind from the south).

- 7.3 Table 1, IP-1002 has been compiled in a similar way as the diffusion curves. Using site meteorology, the user is able to determine the dispersion factor (X_u/Q) for the site boundary. 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. Table 1 will also give guidance to the Emergency Director as to where to deploy the onsite monitoring teams.

8.0 DOSE ASSESSMENT

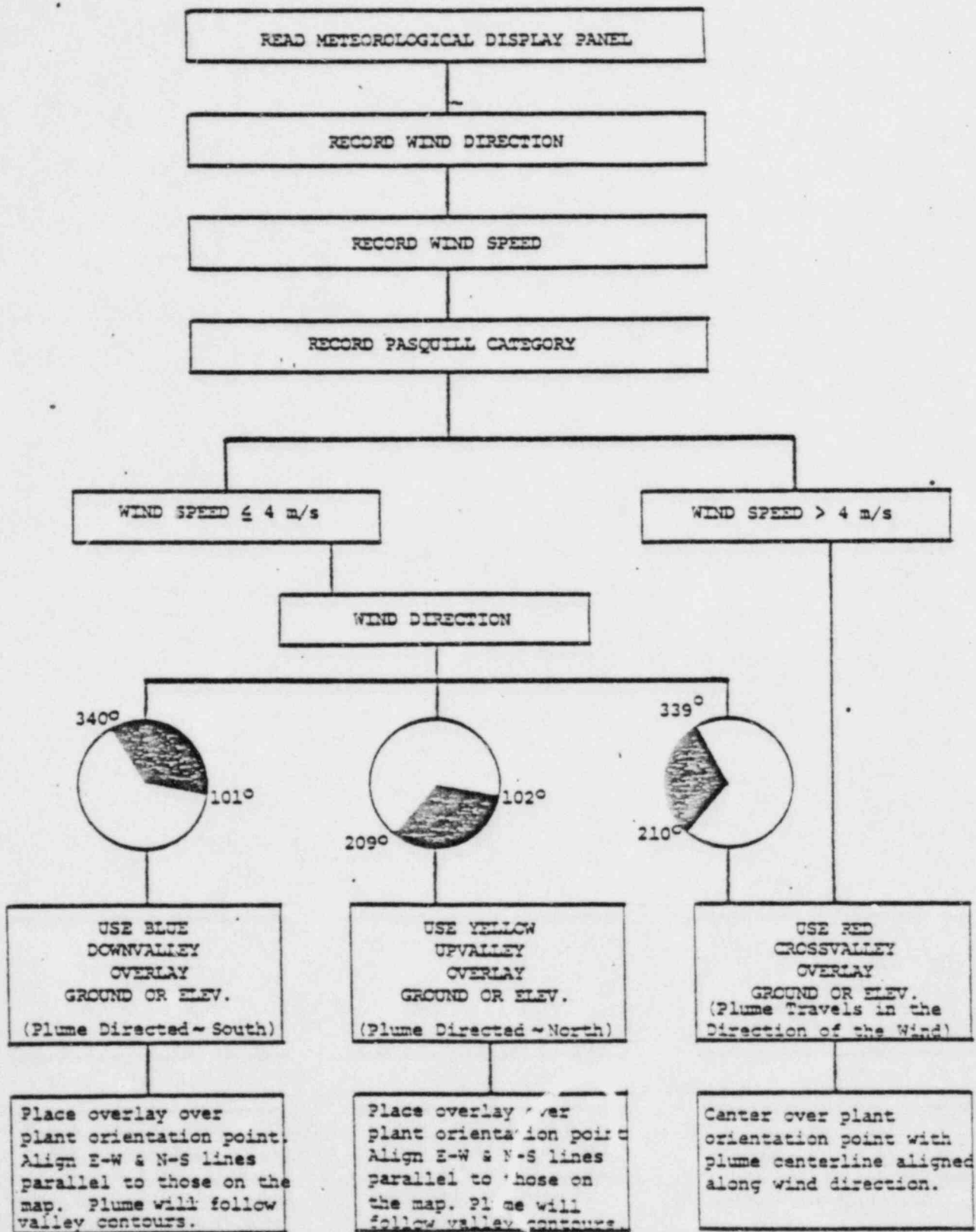
This section briefly outlines radiological dose assessment: the onsite and offsite field surveys and how to use their results in determining the projected dose to onsite and offsite individuals.

8.1 Gamma Assessment (Whole Body exposure)

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

FIGURE 1

IP-1001/3



8.1.1 Using gamma survey instruments:a. Portable gamma instrumentation:

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. Ludlum monitors: (IP-1011)

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

c. Reuter Stokes

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

8.1.2 TLD Sites

Within the 5 mile radius surrounding the Indian Point site there are IP designated TLD Sites which integrate gamma dose. These are changed monthly. In the event of a radiological accident, these must be collected and sent for processing. TLD's may provide estimates of whole body exposure.

8.1.3 Whole Body exposure guidelines as per EPA PAG's are:

<u>Projected Dose (Rem) to the Population</u>	<u>Recommended Actions</u>
Whole Body less than 1 rem	<ul style="list-style-type: none"> . No protective action required . State may issue an advisory to <u>seek shelter</u> and await further instructions or to voluntarily evacuate. . Monitor environmental radiation levels.
Whole Body 1 to 5 rem	<ul style="list-style-type: none"> . <u>Seek shelter</u> and wait further instructions . Consider evacuation particularly for children and pregnant women . Monitor environmental radiation levels. . Control Access.
Whole Body greater than 5 rem	<ul style="list-style-type: none"> . Conduct mandatory evacuation of populations in the predetermined area . Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. . Control Access.

8.2 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 emitting particles (several meters in air))

- 8.2.1 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 (e.g. RO-2, E-530)

<u>Sources of Radiation</u>	<u>OW/CW ratio (β/γ)*</u>
a. Contained source of activity (e.g. radioactive gases in V.C.)	1.0 or slightly greater than 1.0
b. Plume (reading taken <u>near</u> 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.

- 8.2.2 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.

8.3 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 cause damage 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 the child thyroid dose from inhalation is greater than the adult dose by a factor of two.

8.3.1 Field Samples:

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

- a) Charcoal and millipore filters or silver zeolite cartridges analyzed by the SAM-2 to determine I-131 activity (uCi/cc)

$$\text{I-131 (uCi/cc)} \times 1.6 \times 10^9 = \text{child thyroid dose rate (mR/hr breathed)}$$

- b) Concentrations taken in Field using an HP-210 probe (counts total Iodines)

Concentration x DCF = Dose rate child thyroid

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

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

NOTE: Dose Conversion Factors (DCF) can be found in Table 3 of IP-1002

8.3.2 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)

- a. Assuming a (Total I/NG) ratio of 10^4 :

$$\text{Gamma mR/hr} \times .15 = \text{Child thyroid dose rate (mR/hr breathed)}$$

- b. If an actual (Total I/NG) ratio is 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 in a or b by the actual hours breathed will give an estimated iodine exposure received by the child thyroid.

| 3

8.3.3 Thyroid exposure guidelines as per EPA 'PAG's':

Projected Thyroid Dose (Rem) to the Population	Recommended Actions
Thyroid less than 5	<ul style="list-style-type: none"> . No protective action required . State may issue an advisory to seek shelter and await further instructions or to voluntarily evacuate. . Monitor environmental radiation levels. . Consider issuance of KI to workers if greater than 1 rem
Thyroid greater than 5 to 25 rem	<ul style="list-style-type: none"> . Seek shelter and wait further instructions . Consider evacuation particularly for children and pregnant women . Monitor environmental radiation levels. . Control access. . Issue KI to workers
Thyroid = greater than 25 rem	<ul style="list-style-type: none"> . Conduct mandatory evacuation of populations in the predetermined area. . Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. . Control access. . Issue KI to workers.

The recommendations above should be taken only if there is a good probability of preventing a substantial portion of the projected dose. For example, evacuation would probably not be recommended for a projected thyroid dose of less than 25 Rem for a puff (short-term) release.

9.0 THYROID BLOCKING USING POTASSIUM IODIDE (KI)

The National Council on Radiation Protection and Measurements (NCRP) in Report No. 65 recommends that "individuals who have had an accidental occupational exposure to radioiodine, regardless of the route of exposure should immediately be given a 300 mg potassium iodide or sodium iodide tablet. Daily administration of 300 mg potassium iodide tablet should be continued for 7 to 14 days.

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 6 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.

- 9.1 When an indication arises that workers will potentially receive a thyroid dose due to radioiodine exposure of 5 Rem or greater, the Emergency Director or appropriate designee shall authorize the issue of KI to those workers. Consideration should be given to issuance of KI at lower projected doses. (about 1 Rem thyroid).
- 9.2 KI is located in the emergency lockers of the Control Room, Technical Support Center, Operations Support Center, Emergency Operation Facility and the Alternate Emergency Operation facility. Emergency Directors have been issued bottles of KI, and there is a well stocked supply of KI at the Con Ed Service Center building.
- 9.3 The following page is the insert as well as new instructions for KI at Indian Point.
- 9.4 Instructions for use, as recommended by the NCRP are:

Take 2 tablets per day for 7 to 14 days.

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 maybe 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 and weighed against the fact that evacuation may cause more harm by personnel being outside as well as the confusion of an evacuation rather than to remain indoors with proper sheltering.

Patient Package Insert For

THYRO-BLOCK™

(POTASSIUM IODIDE)
(pronounced pee-TASS-ee-um EYE-on-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: TWO (2) TABLETS
DAILY FOR SEVEN (7) TO
FOURTEEN (14) DAYS.

Store at controlled room temperature between 15° and 30°C (59° to 86°F). Keep container tightly closed and protect from light. Do not use the solution if it appears brownish in the nozzle of the bottle.

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.

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.

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New York Power
Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP - 1002 REV. 4

TITLE: " DETERMINATION OF MAGNITUDE OF RELEASE "

WRITTEN BY: David D. Bell

REVIEWED BY: Donald W. Magee

FORC REVIEW ASchwein DATE 5/27/83

APPROVED BY: CB DATE 5/27/83

EFFECTIVE DATE: 5-27-83

DETERMINATION OF MAGNITUDE OF RELEASE1.0 INTENT:

To describe various methods of estimating the whole body dose due to radioactive noble gas and the thyroid dose due to radioactive Iodine for the offsite population.

2.0 DISCUSSION:

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, then using ratios of dispersion factors to estimate 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.

When thyroid doses are calculated in this procedure (including flowchart), the child thyroid dose is conservatively used, since the child thyroid dose is approximately two times the adult thyroid dose for iodine inhalation. This is appropriate for offsite dose projections, but onsite dose projections should use the adult thyroid dose (Adult thyroid dose = child thyroid dose divided by 2)

3.0 PROCEDURE

3.1 Follow the flow charts, EP-Flowchart #'s 1a & 1b keeping in mind these basic steps:

1. determine the release rate
2. determine the site boundary concentration
3. determine the site boundary dose
4. determine the point of interest dose

3.2 Use graphs and tables on pages 6 - 8 in conjunction with the flow charts, (EP-Flowchart #'s 1a & 1b) as well as IP-1001, (section 7 & Figure 1) on the choice and placement of the meteorological overlays to determine the site boundary dose projections and the point of interest dose projections.

3.3 Along with these calculations,

- a) The on site monitoring team is to be sent to the site boundary (IP-1010) for actual radiological readings.
- b) The offsite team is to be called in and sent to areas the plume is expected to pass over. (The overlays are to be used as guidance for plume path and IP-1011 as guidance for the offsite team).

- c) The chem. tech. shall be directed to take a sample of the activity in the Plant Vent if the radiological conditions prove safe to do so.
- The chemist should be instructed to remove and count the normal weekly iodine plant charcoal cartridge. (This will determine how much iodine has been released)
NOTE: Total Iodines
 - Sample the Noble Gases currently in the Plant Vent by taking a gaseous Marinelli sample.

(Until the chem sample is obtained and analyzed, a total Iodine to Noble gas ratio of 10^{-4} is assumed. This may prove to be overly conservative, or an underestimate, all dependent on plant conditions. Therefore, it is necessary to have a chem sample as soon as possible and use the new value (Total I/NG) in the dose projection calculations when making any decisions on protective actions.)

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

- 3.4 When an actual chemistry sample is available, the dose projections are corrected by the following:

$$\frac{(\text{Total I/NG}) \text{ chem sample}}{10^{-4}} \times \frac{\text{estimated Iodine dose}}{\text{corrected Iodine dose}} = \text{corrected Iodine dose}$$

- 3.5 An estimate of the duration of the release should be obtained from the Emergency Director. If it is unknown, use 4 hours as a first estimate.
- 3.6 Implementation Procedure IP-1017 offers assistance on the recommendations which can be made to offsite authorities regarding offsite protective actions for the public.
- 3.7 Table 3 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.

- 3.8 If on or offsite sampling teams have reported a gamma mR/hr reading, an initial estimate of thyroid exposure can be obtained by multiplying the gamma dose rate (mR/hr) by .15.

$$\begin{array}{rcl} \text{gamma} & & \text{thyroid} \\ \text{dose rate} & \times .15 = & \text{dose rate} \end{array}$$

Multiplying the thyroid dose rate by hours breathed will give you the approximate iodine dose to an individual at that location.

NOTE: The direct gamma reading (mR/hr) is primarily the dose rate from the Noble Gases in the plume.

- 3.9 All offsite dose projections should be considered estimates until verification from measurements in the field are obtained.

4

Date:

FLOWCHART FOR DETERMINING RELEASE RATE

Time:

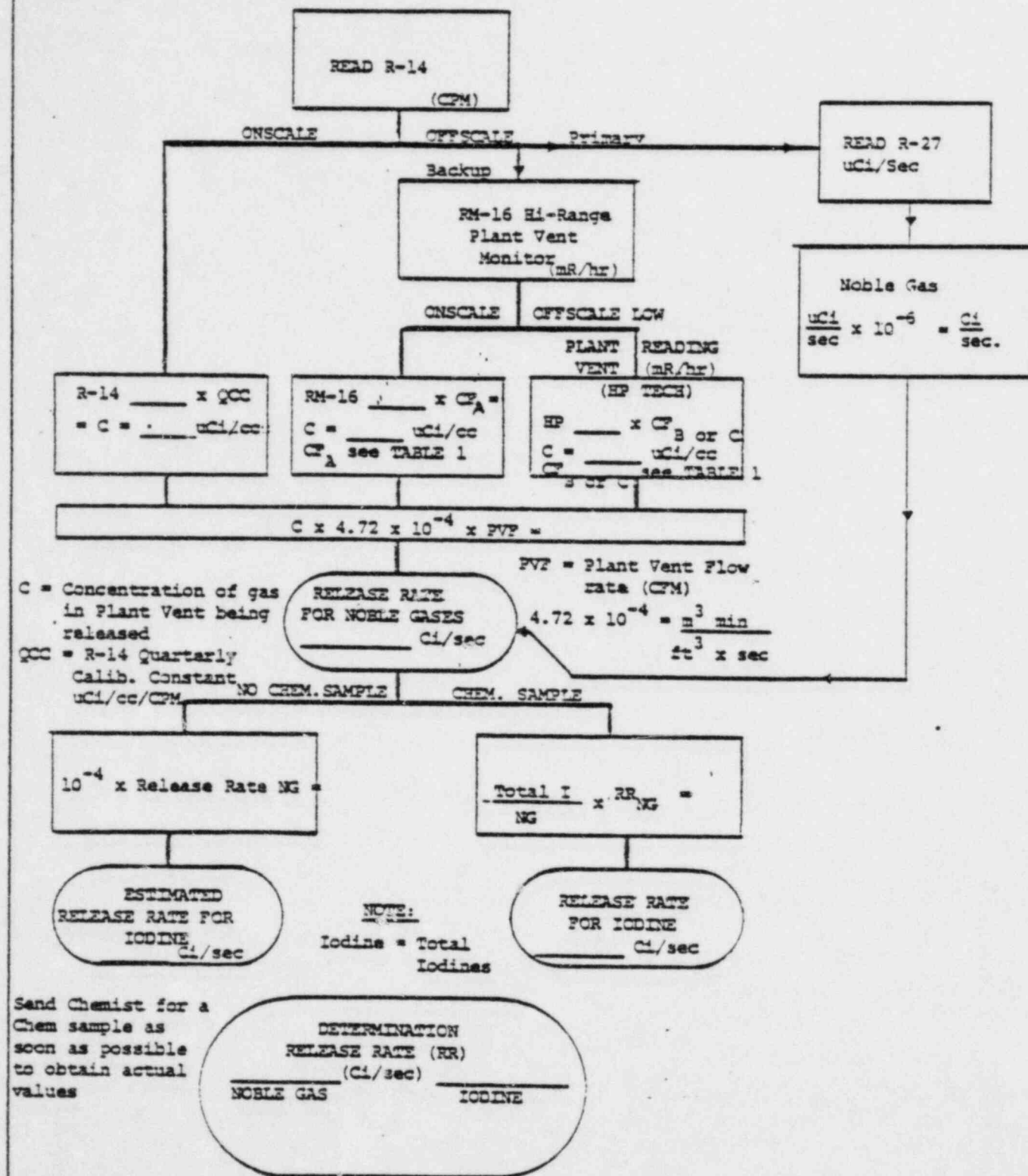




TABLE 1

CONVERSION FACTORS

$$\frac{\mu\text{Ci/cc}}{\text{mR/hr}}$$

<u>Time After Reactor Shutdown</u>	<u>Column A</u>	<u>Column B</u>	<u>Column C</u>
	<u>RM-16 High Range Plant Vent Monitor</u>	<u>Contact With Plant Vent</u>	<u>6 Ft. From Plant Vent</u>
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}

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TABLE 2

SITE BOUNDARY ISOPLETH VALUES BY WIND DIRECTION AND PASQUILL STABILITY CATEGORY

	Pasquill	A	B	C	D	E	F	G
Wind Direction (from)*	Boundary Sample Point	Boundary X u/Q	Boundary X u/Q	Boundary X u/Q	Boundary X u/Q	Boundary X u/Q	Boundary X u/Q	Boundary X u/Q
0°	10 → 12	2.2 E-6	3.4 E-6	2.8 E-5	1.7 E-4	1.2 E-4	4.0 E-4	1.2 E-3
10°	12 → 13	2.1 E-6	2.7 E-6	2.5 E-5	8.5 E-5	1.0 E-4	3.6 E-4	1.1 E-3
20°	13 → 14	2.2 E-6	3.4 E-6	2.8 E-5	1.7 E-4	1.2 E-4	4.0 E-4	1.2 E-3
30°	14 → 17	5.8 E-6	7.4 E-6	6.1 E-5	1.8 E-5	2.3 E-4	7.6 E-4	2.3 E-3
40°	18	1.3 E-5	1.6 E-5	1.1 E-4	3.9 E-4	4.4 E-4	1.5 E-3	4.5 E-3
50°	18 → 19	1.5 E-5	1.8 E-5	1.3 E-4	4.3 E-4	4.8 E-4	1.6 E-3	4.8 E-3
60°	19	1.8 E-5	2.1 E-5	1.5 E-5	5.1 E-4	5.3 E-4	1.8 E-3	5.4 E-3
70°	19 → 20	3.1 E-5	3.5 E-5	2.5 E-4	7.5 E-4	8.0 E-4	2.9 E-3	8.7 E-3
80°	20 → 21	5.7 E-5	6.2 E-5	4.0 E-4	1.1 E-3	1.3 E-3	4.8 E-3	1.4 E-2
90°	21	8.0 E-5	8.5 E-5	5.1 E-4	1.5 E-3	1.8 E-3	6.3 E-3	1.9 E-2
100°	21	9.7 E-5	1.0 E-4	6.0 E-4	1.7 E-3	2.1 E-3	7.4 E-3	2.2 E-2
110°	22	1.1 E-4	1.1 E-4	6.5 E-4	1.9 E-3	2.3 E-3	8.0 E-3	2.4 E-2
120°	22	1.4 E-4	1.4 E-4	8.0 E-4	2.3 E-3	2.8 E-3	9.9 E-3	3.0 E-2
130°	22	1.4 E-4	1.4 E-4	8.0 E-4	2.3 E-3	2.8 E-3	9.9 E-3	3.0 E-2
140°	22	1.4 E-4	1.4 E-4	8.0 E-4	2.3 E-3	2.8 E-3	9.9 E-3	3.0 E-2
150°	22	1.0 E-4	1.1 E-4	6.3 E-4	1.8 E-3	2.2 E-3	7.8 E-3	2.3 E-2
160°	22	8.6 E-5	9.2 E-5	5.5 E-4	1.6 E-3	1.9 E-3	6.7 E-3	2.0 E-2
170°	Water	9.0 E-5	9.5 E-5	5.6 E-4	1.6 E-3	2.0 E-3	6.9 E-3	2.1 E-2
180°	Water	6.0 E-5	6.5 E-5	4.1 E-4	1.2 E-3	1.4 E-3	5.0 E-3	1.5 E-2
190°	Water	3.6 E-5	4.0 E-5	2.8 E-4	8.1 E-4	9.0 E-4	3.3 E-3	1.0 E-2
200°	Water	2.0 E-6	2.4 E-6	1.8 E-4	5.8 E-4	5.8 E-4	2.0 E-3	6.0 E-3
210°	Water	9.4 E-6	1.2 E-5	8.4 E-5	2.8 E-4	3.3 E-4	1.1 E-3	3.3 E-3
220°	Water	5.4 E-6	7.0 E-6	5.8 E-5	1.8 E-4	2.2 E-4	7.3 E-4	2.2 E-3
230°	1	5.0 E-6	6.4 E-6	5.4 E-5	1.7 E-4	2.1 E-4	6.8 E-4	7.0 E-3
240°	1 → 2	5.9 E-6	7.4 E-6	6.2 E-5	1.8 E-4	2.3 E-4	7.7 E-4	2.3 E-3
250°	2 → 3	6.5 E-6	8.3 E-6	6.6 E-5	2.0 E-4	2.5 E-4	8.3 E-4	2.5 E-3
260°	3 → 4	5.1 E-6	6.6 E-6	5.5 E-5	1.7 E-4	2.1 E-4	7.0 E-4	2.1 E-3
270°	4 → 5	5.7 E-6	7.3 E-6	6.0 E-5	1.8 E-4	2.3 E-4	7.6 E-4	2.3 E-3
280°	5	7.5 E-6	9.7 E-6	7.2 E-5	2.3 E-4	2.8 E-4	9.2 E-4	2.8 E-3
290°	5 → 6	8.6 E-6	1.1 E-5	7.8 E-5	2.6 E-4	3.1 E-4	1.0 E-3	3.0 E-3
300°	6	9.6 E-6	1.2 E-5	8.6 E-5	2.9 E-4	3.4 E-4	1.1 E-3	3.3 E-3
310°	6 → 7	9.6 E-6	1.2 E-5	8.6 E-5	2.9 E-4	3.4 E-4	1.1 E-3	3.3 E-3
320°	7	8.9 E-6	1.2 E-5	8.1 E-5	2.7 E-4	3.2 E-4	1.1 E-3	3.3 E-3
330°	7 → 8	7.5 E-6	1.0 E-5	7.4 E-5	2.4 E-4	2.9 E-4	9.6 E-4	2.9 E-3
340°	8 → 9	6.1 E-6	7.7 E-6	6.3 E-5	1.9 E-4	2.4 E-4	7.9 E-4	2.4 E-3
350°	9 → 10	4.5 E-6	5.9 E-6	5.0 E-5	1.6 E-4	1.9 E-4	6.3 E-4	1.9 E-3

* The wind direction is $\pm 5^\circ$ of table value (i.e.: $5^\circ - 10^\circ - 15^\circ$)

TABLE 3

TOTAL INHALATION DOSE CONVERSION FACTORS

<u>ISOTOPES</u>	<u>DOSE CONVERSION FACTOR</u>	
	$\frac{\text{mRem}}{\text{hr}}$	$\frac{\text{uCi}}{\text{cc}}$
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

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

* 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)

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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP - 1011 REV. 3

TITLE: " OFFSITE MONITORING
_____ "

WRITTEN BY: David D. Bell
REVIEWED BY: David H. May
PORC REVIEW Alchewin DATE 5/27/83
APPROVED BY B. B. B. DATE 5/30/83
EFFECTIVE DATE: 5-22-83

OFFSITE MONITORING1.0 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 should give an idea of the radiological conditions of the environment within a 10 mile radius of Indian Point.

Various methods of offsite monitoring are:

2.1 Offsite monitoring teams:A. β , γ surveys:

1. Survey results
2. TLD's

B. Air Sampling (Iodine & Particulate):

1. Continuous Sampling
2. Emergency Locations

2.2 Reuter Stokes:A. γ monitoring

B. meteorological monitoring (wind speed & direction)

2.3 Ludlum Gamma Radiation Monitors:A. γ monitoring3.0 PROCEDURE FOR OFFSITE MONITORING TEAM MONITORING

3.1 Offsite monitoring locations have been predetermined and locations are listed on Table 1 of this procedure. To determine which locations should be monitored, use the overlays, 10 mile sector map and Table 1. The types of monitoring would include:

A. Iodine Sampling:

1. From fixed sample locations (continuous air sampling)
2. Emergency Sampling Sites

B. Whole Body dose:

1. TLD's at Fixed Locations

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

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 EP-Form #4 and EP-Form #5.

3.4 OFFSITE MONITORING TEAM:

- 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
 - 3. TLD sites
- C. Discuss the need for KI with the Emergency Director and Monitoring Teams. Issue if appropriate.
- D. Receive information via the radio:
 - 1. Monitoring team Location(s)
 - 2. Sampling results (Using forms EP-Form #4, and EP-Form #5)
 - a) Beta and gamma field readings obtained while proceeding to the site.
 - b) Beta-gamma field readings obtained at the sample point.
 - c) Concentration of radioactivity on the particulate filters. Also report the sample CPM, the instrument background CPM, the sample volume in ft³, and the counter efficiency.

- d) Concentration of Iodines on the charcoal or silver zeolite filter. Also report the sample CPM, the instrument background CPM and the sample volume in ft^3 , and the counter efficiency.

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, (γ) and meteorological (wind speed & direction) information can be remotely interrogated using the Reuter Stokes Sentrif 1011 System and the MIDAS computer.

4.2 RADIOLOGICAL ASSESSMENT TEAM:

- A. Using MIDAS, obtain Reuter Stokes data.

5.0 PROCEDURE FOR LUDLUM RESULTS

- 5.1 Ludlum monitors are a gamma field measuring instruments. These have been deployed to various locations around the Indian Point site, which are manned 24 hours per day.

5.2 RADIOLOGICAL ASSESSMENT TEAM:

- A. To determine which Ludlum monitor locations to query:
 - 1. use overlays
 - 2. 10 mile sector map
 - 3. Table 1 of this procedure
- B. Choose Ludlum monitor locations to query using Table 1 and mile & sector as guidance.
- C. Telephone Ludlum locations.
 - 1. Request digital readout of monitor.
Record on EP-Form #6.
 - 2. Request each location called to record readings every 5 minutes (time & reading) and await for further information & instructions.
- D. Expand Ludlum monitor query as necessary using existing readings, calculations, and wind direction as guidance.

5.3 Using Ludlum Readings for Assessment:

- A. Whole Body & Gamma Dose:
 - 1. A Ludlum reading of 1 mRem/hr is equivalent to a whole body dose of 1 mRem/hr.

B. Radioiodine Dose:

1. A first estimate of radioiodine dose would be: a Ludlum reading of 1 mRem/hr is approximately equivalent to 0.2 mRem thyroid per one hour of breathing.

6.0 RECORD RETENTION

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

TABLE 1

LOCATION NAME	SECT	MILE	CAS	EAS	R/S	TLD	LUDLUMS/PHONE NUMBERS
Road 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 (Carrison)	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		
Troop K St. Police, Annsville Circle	2	3					LUDLUM/ [REDACTED]
Highland Ave. & Sprout Brook Rd.	2	3		EAS			
Gallows Hill Rd.	2	6				TLD	
Canopus Hollow Rd. & Old Albany Post Rd	2	6		EAS			
Putnam Valley Police Dept.	2	9					LUDLUM/ [REDACTED]
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			
Peekskill Police Dept.	3	3					LUDLUM/ [REDACTED]
Oregon Road Substation	3	4	CAS				
Westbrook Dr.	3	6				TLD	
Oregon Corners (Putnam Valley)	3	6		EAS			
Mohegan F.D. - Lake Mohegan (Hdqts.)	3	7					LUDLUM/ [REDACTED]
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	
Centennial House F.D.	4	2					LUDLUM/ [REDACTED]
Maple Ave. Entrance to Mt. Florence School	4	3		EAS			

LOCATION NAME	SECT	MILE	CAS	EAS	R/S	TLD	LUDLUMS/PHONE NUMBERS
Pine Rd.	4	5				TLD	
Lexington Ave. & Townsend Rd. (Cortlandt)	4	6		EAS			
Mohegan F.D. - Jefferson Valley	4	10					LUDLUM/ [REDACTED]
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			
Mohegan F.D. - Furnace Dock	5	5					LUDLUM/ [REDACTED]
Croton Ave.	5	6				TLD	
Hunterbrook Rd. @ CoAx Sta. #571 (Yorktown)	5	7		EAS			
Yorktown Police Dept.	5	9					LUDLUM/ [REDACTED]
Moseman Rd. & St. Patricks School (Yorktown)	5	10		EAS		TLD	
Simulator 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			
Wiltwyck School	6	8					LUDLUM/ [REDACTED]
Millwood Sub. Sta.	6	10					LUDLUM/ [REDACTED]
Rte. 100 & Rte. 134	6	10		EAS		TLD	
Water Meter House	7	.5				TLD	
Broadway, at Service Center Gate	7	.5			R/S		
Serv. Ctr. Guard House	7	.5					LUDLUM/ [REDACTED]
Buchanan Police Dept.	7	1					LUDLUM/ [REDACTED]
Buchanan Village Hall	7	1	CAS			TLD	
Westchester Ave. & First St. (Buchanan)	7	1		EAS			
Furnace Dock	7	4	CAS			TLD	
Watch Hill Rd. & Westminster Dr. (Cortlandt)	7	4		EAS			

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LOCATION NAME	SECT	MILE	CAS	EAS	R/S	TLD	LUDLUMS/PHONE NUMBERS
Mt. Airy & Winsor Rd	7	5				TLD	
Croton Police Dept.	7	6					LUDLUM/ [REDACTED]
Cleveland Dr. & Hughes St. (Croton)	7	6		EAS			
Ossining Police Dept.	7	9					LUDLUM/ [REDACTED]
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	
Cruisers 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	
Westch. Co. O.D.E.S.	8	20					LUDLUM/ [REDACTED]
South East Corner (site)	9	1				TLD	
14th St. Between Broadway & West. Ave.	9	1		EAS			
Broadway at St. Mary's Cemetery	9	1			R/S		
Montrose Marina	9	2				TLD	
Montrose Pt. Rd. (Cortlandt)	9	3		EAS			
Warren Ave. Haverstraw	9	5				TLD	
Bowline Plant	9	5					LUDLUM/ [REDACTED]
Rte. 9W & So.Mt.Rd. (Short Cove) (Clarkstown)	9	7		EAS			
Kings Highway & Old Mill Rd. (Clarkstown)	9	10		EAS		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	
Stony Pt. Police Dept.	10	4					LUDLUM/ [REDACTED]
Beach Rd. & Grassy Pt. Rd. (Stony Pt.)	10	4		EAS			
Railroad Ave. & Rte. 9W	10	5				TLD	
Helen Hayes Hospital	10	5					LUDLUM/ [REDACTED]
Little Tor Rd. & South Mt. Rd. (Clarkstown)	10	7		EAS			

7 of 12

IP-1011/3

LOCATION NAME	SECT	MILE	CAS	EAS	R/S	TLD	LUDLUMS/PHONE NUMBERS
Rockland Co. Fire Train Str.	10	8					LUDLUM/ [REDACTED]
Rockland Co. Sheriff Hdqtrs.	10	9					LUDLUM/ [REDACTED]
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		
White Beach Guard House	11	2					LUDLUM/ [REDACTED]
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				LUDLUM/ [REDACTED]
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	
Orange County N.Y.S. Police, Monroe, NY	14	11					LUDLUM/ [REDACTED]
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			

3
12

IP-1011/3

<u>LOCATION NAME</u>	<u>SECT</u>	<u>MILE</u>	<u>CAS</u>	<u>EAS</u>	<u>R/S</u>	<u>TLD</u>	<u>LUDLUMS/PHONE NUMBERS</u>
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	
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)

LUDLUM: Location & phone # of Ludlum Sites (black dots)

Mile determinations are made in this manner:

Miles are determined by the mile sector which encompasses it.

ex: if between sector 1 & 2, it will be referred to as mile 2.

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



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Remove IP-1015
+ tab

it has been cancelled



New York Power
Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP - 1030 REV. 8

TITLE: " Procedure for Control Room: EMERGENCY NOTIFICATION,
COMMUNICATION AND STAFFING "

IP-1030 was extensively revised

WRITTEN BY: David A. Bell
REVIEWED BY: D. M. Mayne
PORC REVIEW AS Review DATE 5/27/82
APPROVED BY: J. Bruno DATE 5/27/83
EFFECTIVE DATE: 5-27-83

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 (Notification of 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. Offsite Agencies should be notified within 15 minutes of the declaration of an emergency classification. NYPA and NRC notifications, should be made simultaneously.

Persons who must (may) be notified of an Emergency Condition include:

PASNY

*Resident Manager
*Superintendent of Power
*Information Officer
*N.Y.O. Duty Officer
Emergency Response Personnel

NRC

*Resident Inspector
*Headquarters

OFFSITE

*Con Edison
*Westchester County
*City of Peekskill
*Rockland County
*Orange County
*Putnam County
*NYS Dept. of Health
U.S. Coast Guard
Con Rail Corporation
Metro North Railroad
***ANI .

(Those not * are notified under the appropriate circumstances as per procedure.)

* Persons or agencies who must always be notified (NUE, Alert, Site Area, General)

*** ANI must be notified at the Alert classification and above. (Am. Nuc. Insurers)
The Recovery Center will take the responsibility for updating ANI after R.C. activation.

NYPA maintains staffing consistent with the NRC requirements for onshift, minimum staffing (30-60 minutes), and additional support staffing during emergency conditions. Personnel required on shift are supplied by members of the Watch Organization with additional personnel available through the Con Edison Sr. Watch Supervisor. Emergency Personnel off-hours minimum staffing (30 to 60 minutes) shall be accomplished as follows:

Alert

Personnel on
Roster II

Site Area

Personnel on
Roster II

General

Personnel on
Roster II

Immediate and minimum staffing should be directed by the Shift Supervisor. Off-hours call in of Emergency Personnel will be done by Security.

3.0 PROCEDURE - Notification of Unusual Event/Alert (non-radiological) (EP Flowchart #2)

3.1 Shift Supervisor

- a) Designates a communicator
- b) Determines which support centers should be activated, and during off hours initiates the call-in of Emergency Response Personnel as necessary.

3.2 Communicator

- a) Fill out the Emergency Notification Fact Sheet, EP-Form #30a.
- b) Assure the notification of the Resident Manager, Superintendent of Power, Information Officer and the NYO Duty Officer using Part I of the Emergency Notification Fact Sheet (EP-Form #30a) and Roster I :

Normal Hours: Via Resident Manager's Secretary
Off Hours: Via Security

- c) Call Con Edison Unit 2 Control Room:
Alert them to IP-3 conditions
Off Hours: Request 1 RO immediately if needed and if needed HP, Chem, I&C or Maintenance Techs. to report to the IP-3 Control Room.
- d) Notify offsite agencies within 15 minutes of declaration of the emergency using the Hot Line Telephone and Part I of the Emergency Notification Fact Sheet (EP-Form #30a).
- e) Notify NRC Headquarters using the direct line telephone
- f) Notify the USNRC Resident Inspector
- g) Notify ANI at the Alert Classification and above.
- h) Using the Emergency Notification Fact Sheet, keep authorities (b,c,d,e,f & g) informed of significant changes (approximately every 30 minutes) - until the EOF is staffed and has taken over responsibility for offsite communications.
- i) Notify authorities (b,c,d,e,f & g) of a reduction or escalation in the Emergency Classification or Recovery Intention.
- j) Closeout to authorities (b,c,d,e,f & g).

○ NOTE: The RC will take over this ANI function after RC activation.

3.3 Personnel or Support Center Activation

3.3.1 Page: "Shift Technical Advisor report to the Control Room"

3.3.2 For an Alert:

Normal Hours: use PA:

- a) "All Technical Support Center personnel report to the Technical Support Center".
- b) "Shift Technical Advisor report to the Control Room".
- c) "Operations Support Center Personnel Report to the Operations Support Center".
- d) "All other personnel remain at your work locations".

Off Hours: Instruct Security:

- a) Call in all personnel from Roster II

4.0 PROCEDURE - Alert (radiological)/Site Area/General (EP Flowchart #3)

4.1 Shift Supervisor

- a) Designates a communicator
- b) Initiates sounding of Site Assembly Alarm and activation of support centers. (call Con Ed and notify of intent to sound Site Assembly Alarm)
- c) Initiates calculations for dose projection as necessary
- d) Dispatch onsite & offsite monitoring teams as necessary
- e) Consider Repair & Corrective Action teams as necessary

4.2 Communicator

- a) Fill out the Emergency Notification Fact Sheet, EP-Form #30a.
- b) Assure the notification of the Resident Manager, Supt. of Power, Information Officer and the NYO Duty Officer using Part I of the Emergency Notification Fact Sheet (EP-Form #30a) and Roster I:

 Normal Hours: Via Resident Manager's Secretary
 Off Hours: Via Security (see also c. below)
- c) Call IP-3 Security:
 - i. Alert them of emergency status
 - ii. Direct them to restrict access to the site
- d) Call Con Edison Unit 2 Control Room:
 - i. Alert them to IP-3 conditions (and intention to sound Site Assembly Alarm)
 - ii. Request offsite monitoring teams to report to the Emergency Operation Facility if needed.
 - iii. Request 1 RO immediately if needed and H.P., Chem, I&C or Maintenance Techs. as required to report to the IP-3 Control Room.
- e) Notify offsite agencies within 15 minutes of declaration of the emergency using the Hot Line Telephone and Part I of the Emergency Notification Fact Sheet (EP-Form #30a).
- f) Notify NRC Headquarters using the direct line telephone
- g) Notify the USNRC Resident Inspector

- h) Notify ANI
- 1) Notify the U.S. Coast Guard if emergency is Radiological in nature and will impact Hudson River traffic.
- j) Notify Rail lines if emergency is Radiological in nature and will impact east or west side of river railroad traffic.
- k) Using the Emergency Notification Fact Sheet, keep authorities (b,c, d,e,f,g,h,i & j) informed of significant changes (approximately every 30 minutes) - until the EOF is staffed and has taken over responsibility for offsite communications.
- l) Notify authorities (b,c,d,e,f,g,h,i & j) of a reduction or escalation in the Emergency Classification or Recovery Intention.
- m) Closeout to authorities (b,c,d,e,f,g,h,i & j).

○ NOTE: The Recovery Center will take over this ANI function after Recovery Center activation.

4.3 Sounding the Site Assembly Alarm and Support Center Activation

4.3.1 Sounding Site Assembly Alarm results in:

- . Shift Technical Advisor reporting to the Control Room
- . Watch H.P. & Chemist, contingency I&C & Maintenance and spare operations personnel reporting to the Control Room.

And during Normal Hours:

- . Emergency Director & Assessment Team reporting to the Emergency Operation Facility
- . Technical Support Center personnel reporting to the Technical Support Center
- . Operations Support Center personnel reporting to the Operations Support Center.

4.3.2 Announce over 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".
(repeat)

4.3.3 Additionally Off Hours:

- a) Instruct Security to call-in all Personnel from Roster II
- b) If the Emergency Director determines additional staffing other than NYPA personnel is necessary, he may request Con Edison personnel by calling the Unit 2 Watch Supervisor.

4.4 Begin Dose Projection Calculations

- a) Refer to IP-1002

- 4.5 Prepare to dispatch on & offsite monitoring teams (control of these teams will be taken over by the EOF when staffed)

4.5.1 Onsite team: (IP-1010)

- a) Should consist of one H.P. or other so qualified individual and one other person sent to survey site boundary (instruct as to which Site Perimeter locations). Report results via radio (Con Ed frequency) picked up at security command post.

NOTE: Consider the use of KI for this team.

4.5.2 Offsite team: (IP-1011)

- a) If not done already, call Unit 2 control room and request assistance of offsite monitoring teams.
 b) When these teams arrive they will report to the EOF if staffed or call in to the Unit 3 control room by radio.
 c) Instruct which offsite locations to monitor. (NOTE: Consider whether or not KI should be taken by this team.)

4.6 Consider Reapir & Corrective Action Teams: (IP-1025)

- a) Team to consist of 1 H.P. tech and other workers as necessary.
 b) Consider need of KI for these teams.

NOTE: There are 3 call-in rosters:

Roster I, NYPA Notification Telephone Numbers is a listing of those people to be called (notified) in the event of any Emergency Plan Emergency. This should be used in conjunction with the Emergency Notification Fact Sheet.

Roster II, sections A & B are the minimum staff personnel required within 30-60 minutes of the declaration of Emergency. This Roster contains Department Heads, HP, Chem., Rad. Assessment, Technical Support Center, Emergency Operations Facility, Operations, Maintenance and I&C personnel.

Roster III is a listing of NYPA personnel by department available for Call-in.

Roster II should be initiated if a Unit 2 emergency is declared and the Con Edison Watch Supervisor requests additional non-watch personnel from the NYPA Shift Supervisor. (This does not include those NYPA watch personnel who will be sent to Unit 2 immediately upon request; 1RO, 1 Maintenance person, 1 I&C Tech, 1 H.P. or Chem. Tech.)

5.0 CONTROL ROOM COMMUNICATOR CHECKLIST

- 1) When emergency is initially declared, complete Part I of EP-Form #30 (30a) Notification Fact Sheet with Shift Supervisor - Have him initial. Serialize all Fact Sheets.
- 2) Notify Roster I (via Resident Manager's Sec. during day, Security during off hours)
- 3) Call Con Ed CCR and advise (request one RO and additional personnel as needed during off hours. Request offsite teams to report to EOF if at SAE or GE. Request onsite teams if needed).
- 4) Call NYPA Security and have them restrict access to site if at SAE or GE.
- 5) Notify offsite agencies with 15 mins. of declaration of emergency using Hotline or County Radio if Hotline not working (must make separate call to State if County Radio used).
- 6) Notify NRC Headquarters using ENS direct line.
- 7) Notify NRC Resident Inspector
- 8) Notify ANI at Alert level or above.
- 9) Keep all groups and agencies updated every $\frac{1}{4}$ hr. or sooner if change in status or Emergency Classification until EOF assumes this responsibility.
- 10) At Alert stage & above, make P.A. announcements to staff TSC/OSC and EOF
- 11) Make P.A. announcements every $\frac{1}{4}$ hr. to advise plant personnel of current status.
- 12) Have Security use Roster II to call needed personnel during off hours.
- 13) When EOF is staffed, transfer offsite communications responsibilities to them. Let them know what Notification Fact Sheet # to use next. Continue communications with EOF and continue making $\frac{1}{4}$ hour P.A. announcements.
- 14) When EOF is staffed, transfer responsibility for site perimeter teams to Radiological Communicator in EOF.

THINGS WHICH SHOULD CONTINUE DURING THE COURSE OF THE EMERGENCY:

- 15) Make P.A. announcements every $\frac{1}{4}$ hour to update plant personnel if evacuation has not occurred as to current status. (Check w/POM for information to be transmitted).
- 16) Maintain communications with POM, TSC, OSC, EOF and keep them updated of Control Room conditions & receive updates from them.
- 17) Be ready to assume communications if EOF is moved to AEOF.

NOTE: Remain on direct line communication link (CR, TSC, OSC, EOF), monitor communication on that line, update and report as necessary, log appropriate communications and filter to CR staff.

EMERGENCY NOTIFICATION FACT SHEET

IP-1030/8

EP-Form #30a

PART I - GENERAL INFORMATION

☐ West. ☐ Peekskill
☐ Rock. ☐ Orange
☐ Putnam ☐ NY State
☐ Con Ed ☐ Coast Guard
☐ ANI ☐ NRC
☐ Con Rail/Metro North
☐ RC/Duty Officer

1. (a) Notification # A

1. 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 radioactivity to the ATMOSPHERE
☐ C been a release of radioactivity 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 Actions.

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)

IP-1030/8
EMERGENCY NOTIFICATION FACT SHEET
PART II - RADIOLOGICAL ASSESSMENT DATA

Notification # _____ B

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. <u>Release Information</u>	<u>Actual</u>	<u>Projected</u>
<input type="checkbox"/> A <u>ATMOSPHERIC RELEASE</u>		
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	_____	_____
 <input type="checkbox"/> B <u>WATERSBORNE RELEASE</u>		
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. <u>Dose and Measurements and Projections</u>	<u>Actual</u>	<u>Projected</u>	
<input type="checkbox"/> A <u>SITE BOUNDARY</u>			
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	
 <input type="checkbox"/> B <u>PROJECTED OFFSITE</u>			
	<u>2 Miles</u>	<u>5 Miles</u>	<u>10 Miles</u>
Whole Body Dose Rate (mR/hr)	_____	_____	_____
Whole Body Dose (Rem)	_____	_____	_____
Thyroid Dose Commitment (1 hr exposure - mRem)	_____	_____	_____
Thyroid Dose (Total Commitment-Rem)	_____	_____	_____

17. Protective Action Recommendations and the Basis for the Recommendations: _____

EMERGENCY NOTIFICATION FACT SHEET
PART III - IP-3 PLANT PARAMETER DATA

IP-1030/8

Notification# CDate: Time: MAJOR PARAMETERS

18. RCS pressure
19. RCS temperature
20. Reactor Shutdown (Y/N)
21. Natural/Forced circulation
22. Pressurizer level
23. S/G levels #31 % #33 %
 #32 % #34 %
24. Off-site/On-site power available:

25. Containment Pressure
26. Containment Temperature
27. RCS Subcooled/Saturated
 psig Subcooled
28. VC Sump Level
29. RWST Level
30. CST Level

MODES OF SAFETY INJECTION

(Circle modes in use)

31. Passive Injection - Accumulators
32. High Head Injection
33. Low Head Injection

MODES OF RECIRCULATION

(circle modes in use)

34. Low Head Recirculation - Recirc Pumps
 - RHR Pumps
35. High Head Recirculation -
 - Recirc Pumps to S.I. Pumps
 - RHR Pumps to S.I. Pumps
36. Hot Leg Recirculation - Recirc Pumps
 - RHR Pumps

STATUS OF ENGINEERED SAFEGUARDS EQUIP.

(Circle those in use)

37. Containment Spray
 VC Spray Pumps
 Recirculation Mode
38. Containment Fan Cooler units -
 31, 32, 33, 34, 35
39. Auxiliary Feed Pumps - 31, 32, 33
40. VC Phase A Isolation Complete
 YES/NO
41. VC Phase B Isolation Complete
 YES/NO
42. VC Ventilation Isolation Complete
 YES/NO
43. CR Ventilation Isolation Complete
 YES/NO
44. Emergency Diesel Generators
 Check Status 31 32 33
 Load/Running — — —
 Unloaded/Standby — — —
 Out of Service — — —

RADIOLOGICAL MONITORS

Plant Vent:

45. R-13 (particulate) CPM
46. R-14 (gaseous) CPM
47. R-27 (gaseous) uCi/cc

Area Monitors:

48. R-2 Containment mR/hr
49. R-7 Containment mR/hr
50. R-10 Accident Monitor
 (Steamline penetration) mR/hr
51. Containment High Range Monitor
 (R-25/R-26) R/hr

Additional Monitors of Importance:

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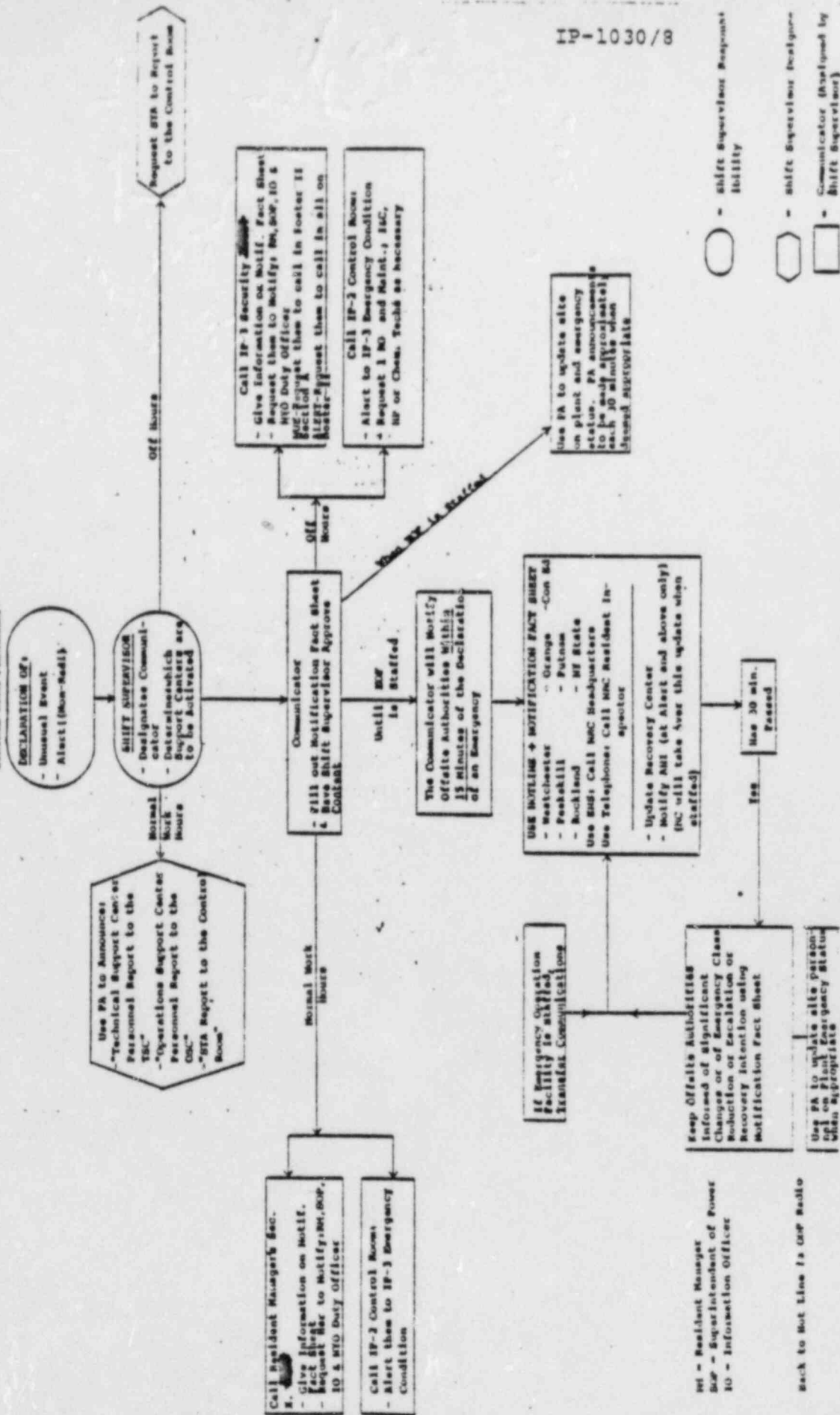
Contains Roster I phone #'s

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Contains phone #'s

NON RADIOLOGICAL EMERGENCY

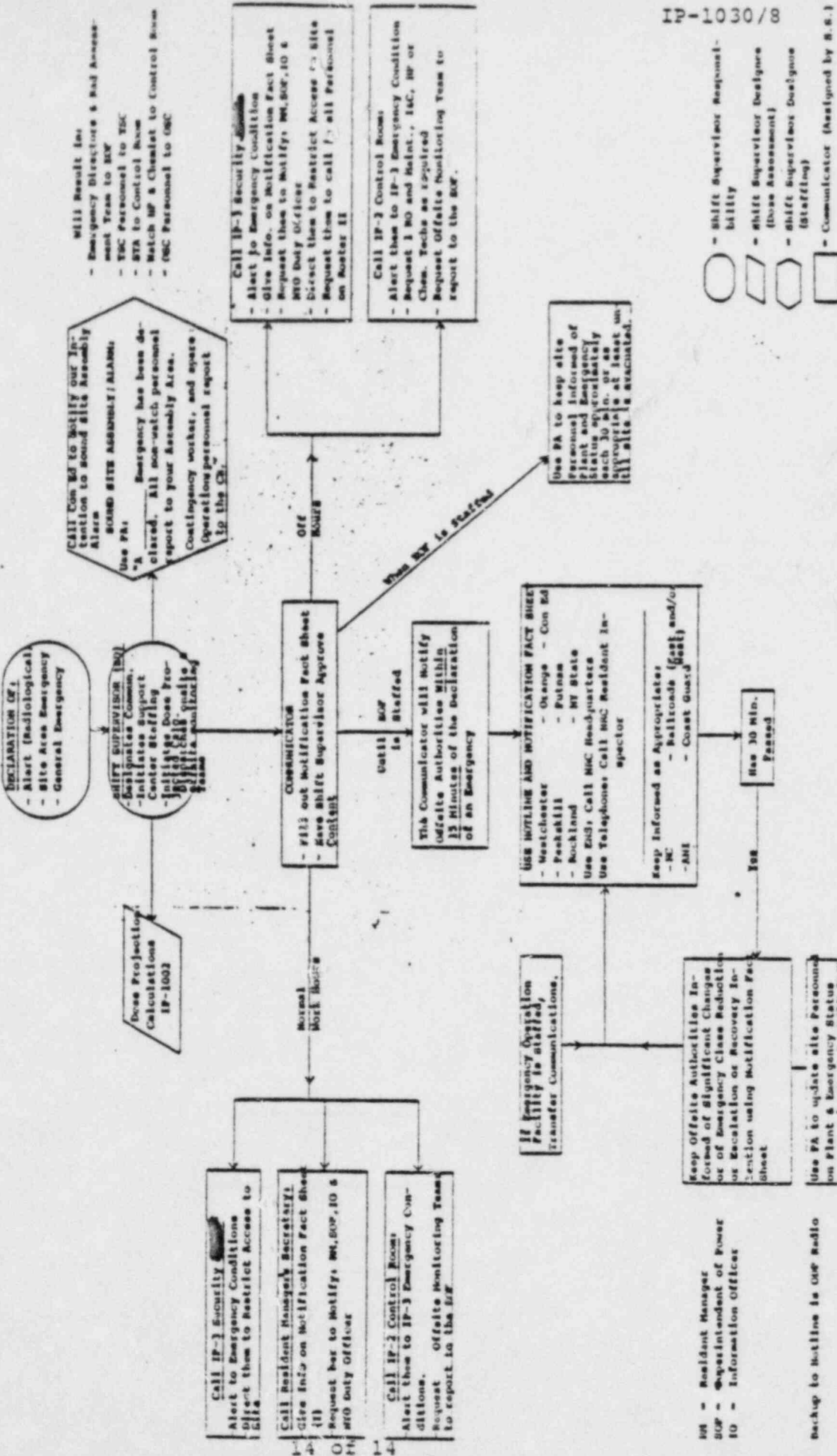
CONTROL ROOM FLOWCHART



IP-1030/8

RADIOLOGICAL EMERGENCY

CONTROL ROOM FLOWCHART



RM - Resident Manager
SUP - Superintendent of Power
IO - Information Officer

Backup to Notline is Off Radio

IP-1030/8

○ - Shift Supervisor Request
□ - Shift Supervisor Designate (Dose Assessment)
□ - Shift Supervisor Designate (Staffing)
□ - Communicator (Assigned by M.G.)



New York Power
Authority

EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP - 1031

REV. 0

TITLE: "PROCEDURE FOR EOF EMERGENCY NOTIFICATIONS AND COMMUNICATIONS"

WRITTEN BY: [Signature]

REVIEWED BY: David D. Bell

PORC REVIEW [Signature] DATE 5/27/83

APPROVED BY: [Signature] DATE 5/27/83

EFFECTIVE DATE: 5-27-83

PROCEDURE FOR EOF EMERGENCY NOTIFICATIONS AND COMMUNICATION1.0 INTENT

To outline the communications necessary to be established from the EOF during the course of emergency conditions which require the 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 emergency. At that time the 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: Communicator and 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 (PCM) and will again assume ED control and communication activities.

3.0 THREE COMMUNICATORS MAY BE AVAILABLE AT THE EOF

- a. Onsite (including Recovery Center and Con Edison)
- b. Offsite
- c. Radiological

The following checklists represent the communication responsibilities of these individuals.

COMMUNICATOR'S CHECKLIST

OFFSITE

- Assume communication responsibility from Control Room after being briefed by CR communicator as to notification and communication status. Also find out which serial number was last used on Form 30a.
- Approximately each 30 minutes:
 - a. Passout forms 30a,b, and c (Notification Fact Sheet). Be sure you serialize all sheets
 - i. You fill out 30a and have ED initial it.
 - ii. Go out over hotline with 30a.
 - iii. Collect 30 b & c and have clerks send 30 a, b, & c out over telecopiers.
 - b. NRC ENS Communication

Note: If emergency status changes, go out over line immediately. Advise them you will follow-up with Fact Sheet shortly.
- In addition to the above, notify the following when radiological conditions involve or may involve them.
 - a. Coast Guard
 - b. Rail lines (East and/or West side of river)
- If: Significant Plant Status Change
Reduction or escalation in emergency class
Close out
- Notify:
 - Offsite State and Counties
 - NRC
 - Coast Guard, Rail Lines, Adjacent Business (as necessary)
- Notify below if support or assistance is required
 - a. INPO
 - b. Brookhaven National Laboratory

- Have Recovery Center assume communication w/ANI and INPO

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.

CLOSEOUT:

Insure you close out emergency to all parties involved.

NOTE: Use ODP (County) radio if the Hotline is not working. You must call separately NYS with the microwave link when using the ODP radio.

COMMUNICATOR'S CHECKLIST

ONSITE

- Receive incoming calls
 - Filter 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, LAC, 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 f-1 radio if communication goes out -
 - location of f-1
 - TSC/OSC
 - CR
 - Off & Onsite Monitoring Teams will be on f-1 also.

RADIOLOGICAL COMMUNICATOR

- Review and talk with DAHP, Recommend to RATL need for On & Offsite teams to take KI (including security personnel)
- When ready, assume responsibility for onsite and offsite teams by radio. Tell them to report results to you. Call CR, tell them you've assumed control.
- Responsibilities regarding on & offsite teams: (IP-1010, IP-1011)
 - Dispatch
 - Keep in constant contact
 - Advise to check dosimetry
 - Keep teams informed of plant status & emergency classification
 - & plume direction and location by meteorology & calculations
 - Know where they are & don't forget them!
- Keep track of plume location & don't let security stand in plume.
- Instruct teams to:
 - located plume & define edges
 - (do not have them traverse plume unnecessarily)
- Keep map of location & plume definition
- Interrogate Ludlums in question if appropriate
- Publish & inform DAHP & RATL of off and onsite data for utility & county use (transparency) & by phone to county EOC's D.A. or county upper people for transmission
- Contact EOC's for information regarding county and state monitoring team data.
- Notify RATL & DAHP of results
- Will receive R/S info. from MIDAS man
- Will receive input from DAHP.
- See prints from MIDAS regarding plume locations

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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP - IP-1045 REV. 4

TITLE: " TECHNICAL SUPPORT CENTER (TSC)
_____ "

This procedure has been extensively revised.

WRITTEN BY: David A. Bell

REVIEWED BY: PLC

PORC REVIEW AS DATE 5/22/83

APPROVED BY: John C. Burns DATE 5/27/83

EFFECTIVE DATE: 5-27-83

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 recirculated 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 access the P-250 Plant Computer.

3.0 REFERENCES

- 3.1 P-250 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 for EOF and TSC, OSC Personnel
- 3.4 IP-1025 - Repair and Corrective Action Teams
- 3.5 IP-1027 - Emergency Personnel Exposure
- 3.6 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

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
- Reactor Analyst
- Performance & Reliability Supervisor

6.1.2 The TSM reports to the Plant Operations Manager.

6.1.3 See following checklist for TSM responsibilities

6.2 See following checklist for TSC Communicator(s), computer, and video operator responsibilities

TSC MANAGER

- Assign: (and fill out personnel status board)
 - Communicators:
 1. Usually an Engineer or STA to remain on direct line (CR-OSC-EOF-TSC) at all times
 2. TSC internal communication, outside lines & vendors, and Recovery Center as necessary
 - Be advised of TSC Accountability Officer
 - Video operator
 - P-250 plant computer operator, Direct him to complete forms 31a,b&c
 - Documents person(s)
 - Runners & Clerks
 - Xerox & Telecopier person
- Notify POM, CR, EOF when TSC is manned & ready (thru communicator on direct line)
- Schedule TSC personnel for 12 hr. shifts (if warranted)
- Insure plant status logs #31a,b,c are telecopied to the EOF approximately every 15 min. and provided to TSM & OSM.
- Discuss engineering solutions and plant forecasts with POM & OSC Manager
- Through Communicator:
 - Keep in contact with OSC regarding dispatch of teams, activities and fixes recommended by the TSC.
 - Assure TSC activities are reported to the appropriate individuals.
 - Monitor activities throughout Plant & EOF.
- Update TSC staff as conditions and parameters change - make announcements regularly.
- Coordinate the development of adhoc procedures for Repair & Corrective action teams with the OSC Manager & POM.
- Keep NRC official in TSC advised of Plant and Emergency status
- Establish communications with Recovery Center for engineering support functions.

TSC COMMUNICATOR
(direct line)

- Test CR-EOF-OSC-TSC direct line phone
- Test Con Ed radio, f=1 (back up communication for Direct Line)
- Monitor all communications on Direct Line
- Update, report and question as necessary (i.e. engineering happenings, recommendations, forecasts; ask for feed back on engineering recommendations when repair teams return)
- Log all appropriate communications (use communications routing forms where necessary)
- Filter information to TSC

TSC COMMUNICATOR
(not direct line)

- Test communication equipment
 - Telephones
 - Plant Paging System
 - Intercom
- Keep log of all TSC activities using log book and NYPA communication routing forms where necessary.
- Notify Westinghouse & UE&C of emergency conditions if applicable.
- Maintain communication as necessary with Recovery Center Technical groups.

VIDEO OPERATOR

- Monitor Control Room by camera as requested
- Provide displays from P-250 as requested

COMPUTER OPERATOR

- Access P-250
- Access P-250 as requested TSC Manager or through video operator
- Complete form 31a,b&c (approximately each 10 to 30 min)
 - Give to Xerox 4 copies
 - by runner: 2 to TSC Manager
 - 2 to OSC Manger
- Give to telecopier: to EOF
to RC

Forms

Plant Status Log #31a,b & c

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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP - 1047 REV. 5
TITLE: " Operations Support Center
_____ "

This procedure has been extensively revised.

WRITTEN BY: [Signature]
REVIEWED BY: David D. Bell
PORC REVIEW [Signature] DATE 5/27/83
APPROVED BY: [Signature] DATE 5/27/83
EFFECTIVE DATE: 5-27-83

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 recirculation 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 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)
 - 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
 - Asst. Maintenance Superintendent
 - 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 found on following Checklist.
- 6.2 Operations Support Center Team Leaders
 - 6.2.1 Senior members of the HP, Chemistry, Maintenance 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 found on following Checklists.

OSC MANAGER

- Call CR and have them send spare operations and contingency personnel to the OSC.
- Assign: (and fill out personnel status board)
 - Communicator (direct line)
 - Communicator - telephones & radios
 - Team Leaders (EP, Chem., I&C, Maintenance, Operations)
 - Accountability Officer
 - Clerk(s)
- Let POM, EOF, TSC, know when OSC is Operational
- Assure Accountability is being accomplished
- Prioritize work
- Work closely with Team Leaders & Communicators
- Assure a supplement of repair & corrective action team workers is available.
- Schedule shifts (thru OSC accountability officer)
- Know status of all Plant Teams
- Supply people to other areas
- Dispatch teams under guidance of IP-1025 (Repair & Corrective action teams)
- Coordinate development of adhoc repair and corrective action teams with TSC Manager & POM.
- Assure OSC activities are reported to the appropriate individuals (thru OSC direct line communicator)
- Update OSC personnel often
- Assure POM, TSC, EOF are aware of current repair status (thru communicator)

OSC COMMUNICATOR
(direct line)

- Test CR, TSC, EOF, OSC Direct Line
- Test Con Ed radio f=1, backup to Direct Line
- Remain on direct line, monitor all communication update and report on line as warranted (i.e.; team dispatch, repair status, team return)
- Log all appropriate communication
 - Use communications routing sheet where necessary
- Filter information to OSC

OSC COMMUNICATOR
(direct line)

- Test: telephones
intercoms
PA
base station & radio (NYPA f=2) (team communication)
- Issue radio to repair teams
- Monitor radio communication with teams
- Filter reports to OSC Manager & Team Leaders if warranted
- Particular attention to H.P. member
 - Radiological concerns - route to H.P. Team Leader
- Log team activities, use communications routing forms where necessary.
- Filter information to OSC as required.

TEAM LEADERS

- Constant contact with OSM
- Call-in personnel from accountability areas where necessary
- Choose mission teams
- Assure pre-mission briefings consist of:
 - Compliance with IP-1025
 - ALARA
 - Rad. Conditions
 - Best route
 - Tools
 - Mock-ups (simulations)
 - Diagrams (visual aids)
 - Radio
 - Task understanding
- Keep in communication with dispatched teams through communicator
- Report results of team to OSM

H.P. TEAM LEADER

- Assign: TSC/OSC Monitor
Control Point
Dosimetry Officer
Control Room Monitor
- Assure badgcs & TLD reader , tally book and margin check are brought down from 4th floor
- Check into site perimeter team - discuss dispatch with CR or EOF if not sent out yet. (EP Form #4 IP-1010)
- Assign HP members for Repair teams
- Discuss Rad. conditions with HP members of Repair & Corrective action teams and assure he briefs other members of team.
- Have overexposure power of signature thru ED
(go thru direct line communicator) (EP Form #7)
- 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
Fireman Exposure Record #13
Personnel Contamination Check #14
Skin Decon/Anatomical Man #15
Vehicle Contamination Check #16
Equipment Contamination Check #17

OSC ACCOUNTABILITY OFFICER

- Accountability
- Cognizant of whose where and what tasks are going on (assure team status board is updated & recorded on hard copy)
- Remind Team Leaders to pull people from assembly area (you take list & call assembly areas)
- Schedule shifts (assisted by TEam Leaders & OSM)

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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP - 1050 REV. 5

TITLE: " ACCOUNTABILITY

WRITTEN BY: David D. Bell
REVIEWED BY: [Signature]
POBC REVIEW [Signature] DATE 5/27/83
APPROVED BY: [Signature] DATE 5/27/83
EFFECTIVE DATE: 5-27-83

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. Maps are posted throughout the site which identify these 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. The Emergency Director and Lead Accountability Officer will discuss Search and Rescue Team mobilization.

NOTE: When the Site Assembly Alarm is sounded, the Lead Accountability Officer must call training to advise them since they cannot hear the alarm.

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 PASNY assembly areas and who reports to them are as follows:

(See page 6 for the site map with PASNY assembly area locations)

- (L) Training Trailer (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. and Chem. personnel who will report to the OSC)
- (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: PASNY 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.

- 3.4. Each unit Watch or Shift Supervisor shall account for their personnel.
- 3.5 Security shall account for their own personnel.
- 3.6 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. One individual will assume responsibility for accountability in the TSC. Missing individuals shall be reported to the Lead Accountability Officer when she/he calls.
- 3.7 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. One individual will assume responsibility for accountability in the OSC. Missing individuals shall be reported to the Lead Accountability Officer when he/she calls.
- 3.8 All watch, contingency and "spares" will report to the Control Room until requested to report to the OSC.
- 3.9 For accountability purposes, persons reporting to the EOF shall notify their secretaries that they are going to the EOF.

4.0 AREA ACCOUNTABILITY OFFICERS

- 4.1 Each assembly area has a designated Area Accountability Officer and alternate.
- 4.2 The Area Accountability Officer is responsible to survey the assembly area for radiation levels if a release is in progress. The use of each instrument available for this purpose is described below.
- 4.2.1 Eberline E-530 G.M. Meter - A portable survey meter brought to the assembly area by the Area Accountability Officer. Used to monitor radiation levels in the general area.
- 4.2.2 Ludlum 300 G.M. Meter - A fixed monitor mounted in each assembly area to monitor radiation levels in the general area. This monitor has an alarm set switch in the rear. Normally it is set on 16 which corresponds to an alarm set point of 10 mR/hr. If the alarm sounds at this setting, the alarm set point can be changed upward by moving the switch at the rear of the unit.

NOTE:	<u>Switch set point</u>	<u>Alarms at</u>
	16	10 mR/hr
	64	50 mR/hr
	256	200 mR/hr
	1024	800 mR/hr

- 4.2.3 Ludlum RM-14 with Frisker Probe - A portable survey meter brought to the assembly area by the Area Accountability Officer. Used to frisk personnel to check for possible contamination.
- 4.3 If either the E-530 or Ludlum 300 indicate a radiation level above 10 mR/hr, the OSC Supervisor shall be advised. An H.P. will be dispatched to the area for more extensive surveys, and relocation of persons in that assembly area will be assessed.
- 4.4 The Area Accountability Officer has a master list of personnel by department who should be reporting to each designated assembly area.
- 4.5 To assist the Area Accountability Officer in accounting for personnel, First Line Supervisors will account for their personnel and report any missing individuals to the Area Accountability Officer.
- 4.6 Construction has assigned, where appropriate, Accountability Officers for their personnel. The Construction Accountability Officers should report any missing individuals to the Area Accountability Officer.
- 4.7 On the master list of personnel, the Area Accountability Officer should note whether an individual is present, missing, or an extra.

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.

- 4.7 After the Area Accountability process is complete, the Area Accountability Officer in charge should receive a phone call from the Lead Accountability Officer. At that time, those persons missing and extra should be reported. "Lunch" persons should also be reported as such.
- 4.8 Area Accountability Officers should report any "late reporters" as soon as possible to prevent unnecessary Search & Rescue Team efforts.
- 4.9 For Accountability problems that need immediate attention, the Area Accountability Officer should phone the Lead Accountability Officer.
- 5.0 LEAD ACCOUNTABILITY OFFICER
- 5.1 The Lead Accountability Officer has a master list of all personnel by Accountability Area and by Department located on the Officer Manager's Book Shelves.
- 5.2 The Lead Accountability Officer shall call each of the Assembly Areas to obtain their respective missing and extra lists. (5 PASNY Assembly Areas, TSC, OSC, Security, Watch)

- 5.3 The Lead Accountability Officer shall make a cross check of missing and extra personnel.
- 5.4 A final call should be made to each assembly area to see if there are any "late reporters".
- 5.5 A final missing persons list is developed.
- 5.6 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.
- 5.7 The Lead Accountability Officer must discuss Search & Rescue Operations with the Emergency Director. It is only the Emergency Director who may authorize a Search & Rescue effort.

NOTE: The Con Edison Chief Accountability Officer should be called. This is to check if PASNY people are at Con Ed or to report any Con Ed people reported as extras at PASNY.

- 5.8 If necessary, the Emergency Director shall discuss Evacuation Routes with the Lead Accountability Officer and the LAO will transmit that information to all the assembly areas.
- 5.9 If evacuation is to the Con Ed Service Center Building, a re-accounting of personnel should be performed upon arrival.

6.0 OFF HOURS

- 6.1 Upon hearing the Site Assembly Alarm, all non-watch personnel should assemble at the nearest assembly area. All watch, contingency and "spares" should report to the Control Room. | 5
- 6.2 The Security Shift Coordinator is the Lead Accountability Officer during off-hours.
- 6.3 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
- 6.4 The Lead Accountability Officer should call each Assembly Area to gather a list of persons on-site. This includes the Control Room, TSC, OSC and Security personnel. | 5
- 6.5 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. | 5

7.0 SEARCH & RESCUE

- 7.1 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.

8.0 PERSONNEL CONTAMINATION CHECK (IP-1060)

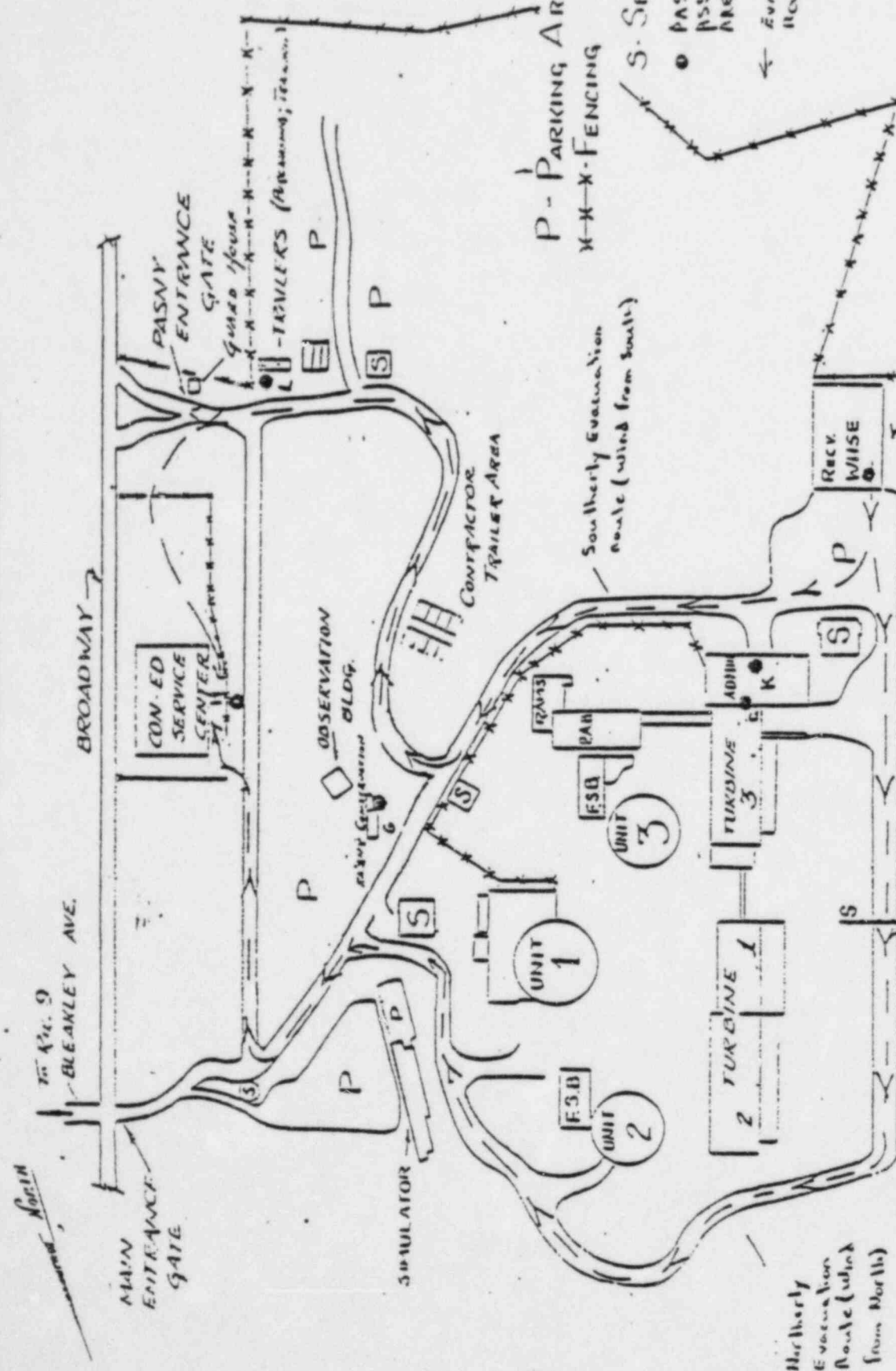
- 8.1 If personnel are relocated from an assembly area to the Con Ed Service Center due to radiation levels, they should be checked for contamination.
- 8.2 Prior to leaving the Con Ed Service Center, personnel and vehicles should be re-checked for contamination.

5

IP-3 ASSEMBLY AREA EVACUATION ROUTES

IP-1050/5

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

HUDSON RIVER

This page left blank -

Contains phone #'s

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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 AS in DATE 5/27/83

APPROVED BY: [Signature] DATE 5/27/83

EFFECTIVE DATE: 5-27-83

EARTHQUAKE EMERGENCY1.0 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 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 occurring 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 network consists 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.

STANDARD FORM NO. 64
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EMERGENCY PLAN PROCEDURES

PROCEDURE NO. IP - 1070

REV. 7

TITLE: " PERIODIC CHECK OF EMERGENCY PREPAREDNESS EQUIPMENT

"

WRITTEN BY: David D. Bell

REVIEWED BY: [Signature]

PORC REVIEW [Signature] DATE 5/27/83

APPROVED BY: [Signature] DATE 5/27/83

EFFECTIVE DATE: _____

PERIODIC CHECK OF EMERGENCY PREPAREDNESS EQUIPMENT1.0 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)
- PASNY Command Guard House (CGH)
- Unit 3 Control Room (CR)
- Unit 3 Technical Support Center (TSC)
- Unit 3 Operation Support Center (OSC)
- Peekskill Community Hospital

3.0 PROCEDURE

- 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 procedure IP-1018, Periodic Check of Stored Emergency Equipment will be used.

In addition, Con Edison personnel will perform the following communication checks in accordance with Con Edison Emergency Procedure IP-1024 (Monthly Check of Indian Point Emergency Radios, Telephones, and Outdoor Evacuation 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
- PASNY push button phones in EOF
- NRC (ENS) phones in EOF and AEOF

3.2 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 in accordance with Surveillance Test 3PT-M40. Health Physics is also responsible for changing film badges and/or TLD's at these locations (except Peekskill Hospital) 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.

- H.P. shall be issued a procedure monthly.
- Use a new check off list each month for each location checked.
- Indicate that each piece of equipment is present by placing a check (✓) next to the item on the check off list.
- Perform a functional inspection and/or battery test on equipment as indicated.
- Indicate any appropriate comments next to each item found defective.
- Note the calibration due date in the appropriate column for instruments and counters.
- Defective and/or missing equipment should be replaced and reported to the Assistant to the Radiological and Environmental Services Supt.
- If equipment calibration will expire before the next scheduled check, that equipment must be replaced.
- Follow sign off procedures as per 3PT-M40

3.3 The 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.

EQUIPMENT LOCATED INSIDE CR III

CHECK OFF LIST

No.	Equipment	Present	Operational Check	Calibration Due	Comments
<u>AIR SAMPLING & COUNTING</u>					
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-22B		N/A	N/A	
1	box charcoal cartridges		N/A	N/A	
12	silver zeolite cartridges		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	
<u>PORTABLE SURVEY INSTRUMENTS</u>					
1	RO-2A or equivalent, ionization chamber		*		
1	E-530 GM survey instrument or equivalent		*		
<u>DOSIMETRY</u>					
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	
<u>RESPIRATOR PROTECTION</u>					
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 ROOMCHECK OFF LIST (CON'T)

No.	Equipment	Present	Operational Check	Calibration Due	Comments
<u>TELEPHONES</u>					
-	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	
<u>RADIOS</u>					
-	Con Edison Radio		None Required	N/A	
-	County Radio		None Required	N/A	
-	PASNY Security Radio w/Plectron		None Required	N/A	
<u>MISCELLANEOUS</u>					
1	PASNY Emergency Plan Book		N/A	N/A	
1	PASNY 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	
	Battery Tester		N/A	N/A	
2	Step off pads		N/A	N/A	
2	Telephone Headsets		*	N/A	
1	Calculator		*	N/A	

* = Operation Check is Required

** = Respirator Inspection (As per RE-HPI-11.16)

Dates Test Performed

Signature of Checker:

ARESS Signature

EQUIPMENT LOCATED OUTSIDE CR IIICHECK OFF LIST

No.	Equipment	Present	Operational Check	Calibration Due	Comments
<u>RESPIRATORY PROTECTION</u>					
12	Full & half-face respirators		**	N/A	
24	Combination cartridges		N/A	N/A	
5	SCBA, (40l pressure demand)		N/A	N/A	
6	Spare air bottles for SCBA		N/A	N/A	
<u>ANTI "C"</u>					
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	

EQUIPMENT LOCATED IN THE TECHNICAL AND OPERATIONS SUPPORT CENTERCHECK OFF LIST

No.	Equipment	Present	Operational Check	Calibration Due	Comments
<u>AIR SAMPLING & COUNTING EQUIPMENT</u>					
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-22B		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	
<u>PORTABLE SURVEY INSTRUMENTS</u>					
1	RO-2 or equivalent ionization chamber		*		
1	E-530 GM survey instrument or equivalent		*		
2	RO-2A or equivalent ionization chamber		*		
2	Teletectors		*		
<u>DOSIMETRY</u>					
50	film badges and/or TLD's		N/A		
25	0-200 mR dosimeters		* zero		
25	0-500 mR dosimeters		* zero		
25	0-5 R dosimeters		* zero		
2	dosimeter chargers		*	N/A	
2	sets AA spare batteries		*	N/A	
8	0-50 R dosimeters		* zero		
9	0-200 R dosimeters		* zero		
9	0-100 R dosimeters		* zero		
25	0-1000 mR dosimeters		* zero		
<u>RESPIRATORY PROTECTION</u>					
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 CENTERCHECK OFF LIST (CONT'D)

No.	Equipment	Present	Operational Check	Calibration Due	Comments
<u>ANTI-C</u>					
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	
<u>TSC/OSC TELEPHONES</u>					
3	Telephone headsets (2 in TSC, 1 in OSC)		*	N/A	
	PASNY 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		*		
<u>RADIOS</u>					
2	HT-220 Handy Talkies 153.605 MHZ (Emergency Plan Frequency)		***	N/A	
2	Con Ed Handy Talkies (1 in OSC, 1 in TSC)		****	N/A	
1	Base Station		*****	N/A	

*** NOTE: To test the HT-220 handy talkies (153.605 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 CENTERCHECK OFF LIST (CONT'D)

No.	Equipment	Present	Operational Check	Calibration Due	Comments
<u>MISCELLANEOUS</u>					
2	Emergency Plan Books (1 in TSC, 1 in OSC)		N/A	N/A	
2	Emergency Plan Procedures Books		N/A	N/A	
2	Book 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		N/A	N/A	
1	Calculator		*	N/A	
2	Stopwatches		*	N/A	

* = Operation Check is Required

** = Respirator Inspection (As per RE-MPI-11.16)

Date Test Performed:

Signature of Checker:

ARESS Signature

EQUIPMENT IN COMMAND GUARD HOUSE (UNIT 3)MONTHLY CHECKOFF LIST

No. Equipment	Present	Operational Check	Calibration Due	Comments
50 - Film Badges and/or TLD's		N/A	N/A	
50 - 500 dosimeters		*		
10 - 5000 mrem 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

When completed please forward to the Assistant to the Radiological & Environmental Services Superintendent.

ARESS Signature

EQUIPMENT LOCATED AT PEEKSKILL COMMUNITY HOSPITAL DECON ROOMCHECK OFF LIST

NO.	EQUIPMENT	PRESENT	COMMENTS
1	Stainless Steel Cart		
1	4 Outlet Power Box (attached to Cart)		
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		
2	Step-off Pads		
2	30 Gal. White Poly Waste Collection Containers		
2	25 Ft. Extension Cords (one on cart)		
6	"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		
1	RMC Sampling Kit		
3	Boxes Surgical Gloves		
3	5 Gal. Yellow Poly Waste Water Collection Jugs		
1	Wall Clock		
1	Roll Saran Wrap		
80	Disposable Towels		
50Ft.	$\frac{1}{2}$ " Tygon Tubing		
1	Bung Wrench		
2	Filter Rigs		
4	Lengths Rad. Rope with Clips		

Signature of Emergency Room Representative

Date

Signature of Checker

Date

When completed, please forward to the Assistant to the Radiological & Environmental Services Superintendent.

ARESS Signature

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Contains phone #'s

3 of 6 and 5 of 6

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. 5

TITLE: " CONDUCT OF EMERGENCY EXERCISES & DRILLS

WRITTEN BY: [Signature]

REVIEWED BY: David D. Bell

FORC REVIEW ALL

DATE 5/27/83

APPROVED BY: [Signature]

DATE 5/27/83

EFFECTIVE DATE: 5-27-83

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 of development of scenarios, assignment of referees, 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 Chief Referee, 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 a.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 of Con Edison personnel may be called for. 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 monthly test plus 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 in-turn 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.

<u>Category</u>	<u>Power Authority Drills</u>
Fire	Safety & Fire Protection 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 The Chief Referee 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 Chief Referee and ARESS shall appoint referees and discuss their duties with them. The emergency drill assignment sheet (Attachment (1a or 1b)) shall be used as an aid.
- 4.3 Offsite agencies should be contacted at least one month in advance of the Radiological Exercises and invited to participate.
- 4.4 Emergency Directors and Support Personnel will normally be appointed by the Supt. of Power 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 chief referee. (It is recommended that ED's are also rotated as referees 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 CONDUCT OF THE ANNUAL EXERCISES

- 5.1 All personnel at the site shall participate in emergency exercise unless exempted by the Resident Manager or Supt. of Power.
- 5.2 Referees shall be responsible for providing the appropriate timing and data for the drill scenario to the drill participants. Referees shall be identified by some means and shall be considered invisible by the drill participants.
- 5.3 Referees shall familiarize themselves with the duties and action requirements of the personnel they are monitoring.

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 Chief Referee shall hold a critique, where all referees 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 Chief Referee 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 (1a or 1b))
- 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 (2), 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.

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 (3) (EPCAR Status List) may be used as an aid.

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 secretary 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.

Medical Drill Assignment Sheet

Attachment (1a)

Date

<u>JOB FUNCTION</u>	<u>DRILL PARTICIPANT</u>	<u>OBSERVER</u>
Chief Controller		
Shift Supervisor		
SRO		
RO		
Security (CR)		
Security Command Post		
Security at Accident Scene		
NPO		
Watch H.P.		
1 st Aider(s)		
Nurse		
Ambulance		
Hospital		
Victim		
H.P.'s at Hospital		

Attachment (1b)
Pg. 1 of 2Exercise Assignment Sheet

Date _____

JOB FUNCTION	DRILL PARTICIPANT	OBSERVER
Chief 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 SheetAttachment (1b)
Pg. 2 of 2

JOB FUNCTION	DRILL PARTICIPANT	OBSERVER
Fire Brigade		
Lead Acct. Officer		
Accountability Areas		
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 (2)

EMERGENCY PLAN CORRECTIVE ACTION REPORT NO. _____Prepared By: _____ Date: _____
NameApproved: _____
Supt. of PowerAction Addressee: _____ Reviewed: _____
Name PORC DateITEM DEFICIENCY- Description and/or Cause _____RECOMMENDED CORRECTIVE ACTION- _____CORRECTIVE ACTION TO BE COMPLETED BY _____
DATEEXTENSION REQUESTS- _____EXTENSION DATE _____
REVIEWED (PORC'D) _____
APPROVED: (Supt. of Power) _____RESOLUTION- _____Signature: _____
Date: _____CLOSEOUT: _____

PORC Reviewed _____ Date _____

RES Signature _____ Date _____

EPCAR STATUS LIST

Attachment (3)

EPCAR No.	Deficiency Description	Recommended Corrective Action	Action Addressee	PORC Approved Completion Date	Extension Date (if Appl)	Date Closed Out	PORC - Closeout Review Date