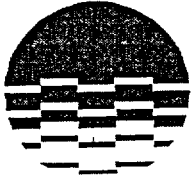


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41 SIMULATOR	TRAIN (UNIT 3/IPEC ONLY)	48-2-A
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511 L.GRANT (LRQ-OPS/TRAIN)	LRQ (UNIT 3/IPEC ONLY)	#48
512 C.STELLATO (NRQ-OPS TRN)	NRQ (UNIT 3/IPEC ONLY)	#48
513 C.STELLATO (NRQ-OPS TRN)	NRQ (UNIT 3/IPEC ONLY)	#48
517 PLANT MANAGER'S OFFICE	ADMIN/ (UNIT 2/IPEC ONLY)	IP2
518 TSC	UNIT 2 (UNIT 2/IPEC ONLY)	IP2
520 CONTROL ROOM (UNIT 2)	OPS (UNIT 2 & IPEC ONLY)	IP2
521 SIMULATOR	TRAIN (UNIT 2/IPEC ONLY)	IP2
522 NRC RESIDENT	US NRC (UNIT 2/IPEC ONLY)	IP2
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Document #	Document Name	New Rev. #/ Date	Old Rev. #/ Date	Instructions
U2	EP Implementing Procedures			
TOC	Emergency Plan Implementing Procedures Table of Contents	8/1/02	10/9/02	Replace entire document
IP-1015	Radiological Monitoring Outside the Protected Area	10 9/19/02	9 3/26/01	Replace entire document
IP-1021	Manual Update, Readout and Printout of Proteus Plant Parameter Data	Cancelled	6 4/29/02	Cancelled Remove entire document
IP-1030	Emergency Operations Facility	7 9/23/02	6 7/11/02	Replace entire document
IP-1035	Technical Support Center	17 9/23/02	16 2/20/01	Replace entire document

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Unit 2 Emergency Plan Implementing Procedures

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IP-1002	Emergency Notification and Communication	28	8/21/02
IP-1003	Planned Discharge of Containment Atmosphere During Accident Conditions	7	4/16/01
IP-1004	Post Accident Offsite Environmental Surveys, Sampling and Counting	5	9/1/99
IP-1007	Cancelled – Replaced by IP-EP-310	-	-
IP-1008	Personnel Radiological Check and Decontamination	7	4/29/02
IP-1009	Radiological Check and Decontamination of Vehicles	7	9/1/99
IP-1010	Central Control Room	7	8/21/02
IP-1011	Joint News Center	8	8/29/02
IP-1012	Onsite Medical Emergency	10	5/25/01
IP-1013	Cancelled – Replaced by IP-EP-410	-	-
IP-1014	Radiological Check of Equipment Before It Leaves the Site	6	9/1/99
IP-1015	Radiological Surveys Outside the Protected Area (Title Change)	10	9/19/02
IP-1016	Cancelled – Replaced by IP-EP-510	-	-
IP-1019	Coordination of Corporate Response	10	9/6/01
IP-1020	Airborne Activity Determination	8	01/12/01
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IP-1026	Emergency Data Acquisition	0	01/12/01
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IP-1035	Technical Support Center (TSC)	17	9/23/02

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IP-1037	Cancelled – Replaced by IP-EP-510	-	-
IP-1039	Offsite Contamination Checks	9	01/12/01
IP-1045	Cancelled – Replaced by IP-EP-251	-	-
IP-1047	Cancelled – Replaced by IP-EP-510	-	-
IP-1048	Cancelled – Replaced by IP-EP-610	-	-
IP-1050	Security	4	8/21/02

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RADIOLOGICAL MONITORING
OUTSIDE THE PROTECTED AREA

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Prescribed Use

Effective Date:

9/19/02

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RADIOLOGICAL MONITORING OUTSIDE THE PROTECTED AREA

1.0 PURPOSE

- 1.1 This procedure prescribes radiological monitoring and related activities performed by the Field (Onsite and Offsite) Monitoring Teams of the Unit 2 Emergency Response Organization (ERO) during a radiological emergency at the Indian Point Energy Center.

2.0 DISCUSSION

- 2.1 The purpose of radiological monitoring is to find and define a plume of radioactive airborne contamination and any surface contamination left in the wake of a plume.
- 2.2 Monitoring activities include detecting beta radiation, measuring gamma radiation and sampling airborne and surface contamination.
- 2.3 Monitoring data is reported to the EOF and may be used by the ERO to determine emergency action levels, emergency classifications, radiological exposure controls, protection for on-site personnel and emergency workers, and protective action recommendations for the general public.
- 2.4 Monitors will be notified of a declared emergency at either Unit 2 or Unit 3 and directed to report at the Emergency Operations Facility (EOF). They are expected at the EOF within the 60 minutes following the declaration.
- 2.5 At the EOF, Monitors report either to the Offsite Radiological Assessment Director (ORAD) for emergencies at Unit 2 or to the Radiological Assessment Team Leader (RATL) for emergencies at Unit 3 for assignment to teams for the 1st and 2nd shifts.
- 2.6 Sixty some Emergency Sampling Points are identified within the 10-Mile Emergency Planning Zone (EPZ). A 10 Mile EPZ Wind Sector Map, Site Boundary [Perimeter] Map and Street Atlases are available to identify areas, sampling points and other locations to be monitored, and to direct and track the monitoring teams.
- 2.7 In absence of the ORAD, the Shift Manager (SM) or the Emergency Plant Manager (EPM) may direct the Field Teams from the Central Control Room (CCR).
- 2.8 Field Teams may be dispatched, directed, and controlled by the Communicator either in the CCR, the EOF or the AEOF.
- 2.9 The site perimeter is not readily accessible in sectors 2 and 3. A Reuter Stokes site (sector 2, mile 3) at Annsville Circle and a TLD site at Charles Point (sector 3, mile 2) are proxies for the perimeter in these sectors and are readily monitored by a Field Team. The perimeter in sectors 13 through 1 is readily monitored by

Health Physics (HP) Technicians from the OSC directed by the Radiation Protection Coordinator (RPC) at the request of the ORAD.

<u>Perimeter Sector</u>	<u>Position</u>	<u>Team</u>
2 - 3	ORAD	Offsite Field Team
4 - 12	ORAD	Onsite Field Team
13,14,15,16,1	RPC	HP Technicians

3.0 PRECAUTIONS AND LIMITATIONS

- 3.1 Continually review and practice the prescribed radiological exposure controls.
- 3.2 Each Field Team from Unit 2 is composed of two qualified monitors from those whose names are listed in the Emergency Telephone Directory.
- 3.3 Onsite Teams monitor outside the Protected Area fence within and around the Site Boundary. Offsite Teams monitor outside this boundary (Addendum 8.2).
- 3.4 Unit 2 Field Teams use Unit 2 procedures. Unit 3 Field Teams use Unit 3 procedures.
- 3.5 Emergency Sampling Point locations are listed in Addendum 8.5 and in Unit 3 procedure IP-1011 (Reference 6.10).
- 3.6 Vehicles are checked and decontaminated as prescribed by Unit 2 procedure IP-1009 (Reference 6.9).
- 3.7 HP Technicians, including the Survey Team HP (STHP) in the EOF, check and decontaminate equipment, materials, supplies and personnel.
- 3.8 Qualified Nuclear Environmental Monitoring (NEM) Technicians from Unit 2 change TLDs and air sampling station filters at fixed sites within the 10 Mile EPZ, submit the TLDs to be read, count the filters, sample soil and water and perform other activities prescribed in the station NEM Procedures (Reference 6.11).

4.0 EQUIPMENT AND MATERIALS

- 4.1 Equipment and material for the Field Teams are at the EOF in a closet behind the south wall near the STHP Technician station.
- 4.2 A key for the closet is inside the key locker on the west wall of the Emergency Control Center (ECC) near the EOF Information Liaison station. Another key is inside the red key box outside, near the entry door to the ECC, on the east wall.
- 4.3 Equipment and material include three monitoring kits. Each kit has two sealed cases, A and B (Reference 6.3).
- 4.4 Four vehicles, with mobile radio for Area Radio Service and cellular phone, are available for the Field Teams. The keys are inside the closet at the EOF near the

STHP station. These vehicles are either at the NEM Building, the Buchanan Service Center, the Unit 3 Waterfront or on-call by Area Radio or cellular phone.

- 4.5 This additional equipment (Reference 6.2) is also available in the EOF storage closet:
 - 4.5.1 Potassium Iodide (KI)
 - 4.5.2 Full-face respirators with iodine filters (sm: w/gray trim, lg: w/orange trim)
 - 4.5.3 "Anti-C" clothing
 - 4.5.4 Batteries, "D" size
- 4.6 Field Monitoring Team Position Binders with procedures and forms are available in the EOF library.
- 4.7 The Unit 3 Field Team provides its own equipment, vehicle, and mobile radio for the Area Radio Service and cellular phone.
- 4.8 Numbers for telephone extensions in the EOF and cellular phones in the vehicles are listed in the Emergency Telephone Directory.
- 4.9 The Area Radio Service has two modes of operation, REPEATER (F1) and DIRECT (F2). The service includes these control stations and control points:
 - 4.9.1 (F1), WDA498: Unit-2 Central Alarm Station (CAS), Unit 2 Secondary Alarm Station (SAS)
 - 4.9.2 (F1) WAY744: Unit-2 Central Control Room (CCR), Unit-3 CCR, and EOF
 - 4.9.3 (F1) KNEP802: AEOF (White Plains)
 - 4.9.1 (F1 and F2) KU3575 Unit-2 and Unit-3 [all] mobile stations
 - 4.9.2 (F2) KYA424: Unit-2 Central Control Room (CCR), Central Alarm Station, and EOF

5.0 INSTRUCTIONS

- 5.1 Proceed at the EOF. Report to the ORAD [RATL] to be assigned to a team.
- 5.1.2 **IF** assigned to a team for the current shift, **THEN** assure the names of both monitors on the team are entered on the EOF Personnel Status Board **AND** continue with this procedure.
- 5.1.3 **IF NOT** assigned to a team for the current shift, **THEN** continue with this procedure. Assist other teams until dismissed by the EOF Manager or the ORAD [RATL].
- 5.2 Obtain equipment, materials and supplies.
- 5.2.1 Obtain a Field Monitoring Team Position Binder.
- 5.2.2 Obtain keys for a vehicle
- 5.2.3 Obtain a vehicle with a radio and cell phone. Check the fluid levels.
- 5.2.4 Obtain the following equipment and materials from the closet:
- A. Potassium Iodide (KI) package, 14 tablets with directions
 - B. Correct size respirator with iodine filters
 - C. "Anti-C" clothing
 - D. *Monitoring Kit (two sealed cases, A and B, per kit)*
- 5.2.5 Use "Form IP-1023-4, Emergency Response Organization Log Sheet" to record your activities.
- 5.2.6 Record the "***ERO Position:***" [and the Team Name e.g.; "Mobile One"] "***Date:***" and the team member [s] "***Name:***"[s] on Form IP-1023-4.

NOTE:

A Field Team will not necessarily use all the equipment and materials in the Monitoring Kits. Some equipment is exclusively for the use of qualified NEM Technicians.

- 5.2.7 Use "Form EP-AD-05-3, Survey Team Inventory Checklist".
- 5.2.8 Check the seal on each case in the kit. **IF** the seal is broken, **THEN** inventory the equipment in that case. Record the "***Kit #***" and results on Form EP-AD-05-3A and/or 3B.
- 5.2.9 Open Case A **AND** check that the calibration of dosimeters, ion chamber, count-rate meter and air sampler is not over due. Record results on Form EP-AD-05-3A.

- 5.2.10 Use the dosimeters and dosimeter charger. Set dosimeters to "zero".
- 5.2.11 Wear the TLD badge and dosimeters (0-500 mR and 0-5 R) on the chest between the waist and neck. Record the current "**Time**", TLD serial number and dosimeter readings for each monitor on Form IP-1023-4.
- 5.2.12 Check operation of the ion chamber, the count rate meter, and the air sampler. Record results on Form EP-AD-05-3A.
 - A. RO-2, Ion Chamber (Addendum 8.1)
 - B. E-140N, Count Rate Meter w/HP-210 probe (Addendum 8.1)
 - C. H-809C, Air Sampler (Addendum 8.1)
- 5.2.13 Check the flashlight. Record results on Form EP-AD-05-3A.

NOTE:

Without the ORAD, either the Shift Manager or the Emergency Plant Manager may direct the Field Teams through the Communicator in the CCR.

- 5.2.14 Check operation of the mobile radio and cellular phone in the vehicle with the Communicator who is dispatching and controlling the team. Record results on Form IP-1023-4.

NOTE:

IF radio communication with the EOF or AEOF is not established, **THEN** try 1) the cellular phone, 2) another location where radio or telephone communication is acceptable, 3) relaying messages through other stations in either "**REPEATER**" or "**DIRECT**" mode or 4) a pay phone. **IF** all fail, **THEN** return to EOF or AEOF.

- A. Mobile Area Radio Service (Addendum 8.1)
 - B. Cellular Phone (Addendum 8.1)
- 5.2.15 Replace or exchange missing, out of calibration, and inoperative equipment, materials and supplies with what is available at the EOF.
- 5.2.16 Complete "**Comments:**", "**Inventory Performed By:**" and the "**Date:**" on Forms EP-AD-05-3A and/or 3B.
- 5.2.17 **IF** there has been a release of radioactive material to the atmosphere, **THEN** as directed by the ORAD [RATL] or the ED, check the vehicle for contamination **BEFORE** leaving the Site. Use IP-1009 (Reference 6.9)
- 5.2.18 Place the equipment, materials and supplies in the vehicle. Place the E-140N, the RO-2 and surgeon rubber gloves in the front seat.
- 5.3 Receive briefing on emergency conditions.

- 5.3.1 Report missing, out of calibration, inoperative and replaced equipment, materials and supplies to the ORAD [RATL].
- 5.3.2 Review **AND** note conditions, monitoring locations, routes, and requirements with ORAD [RATL] and the Communicator.
 - A. Plant conditions
 - (1) Emergency classification
 - (2) Plant status
 - B. Release conditions
 - (1) Release start
 - (2) Release stop
 - (3) Noble gas / Iodine ratio
 - (4) Expected dose rate, surface and airborne contamination.
 - C. Measured and forecast meteorological conditions
 - (1) Wind direction
 - (2) Wind speed
 - (3) Pasquill stability class
 - D. Plume location
 - (1) Width (sectors)
 - (2) Plume front (miles from center of wind sector)
 - (3) Plume
 - E. Areas, routes and locations, including Emergency Sampling Points to monitor
 - F. Monitoring requirements:
 - (1) Measure radiation fields en route.
 - (2) Measure radiation fields on location
 - (3) Sample for airborne contamination
 - (4) Sample for surface contamination
 - (5) Activities for qualified NEM Technicians
 - G. Review radiological exposure controls

- (1) Minimize time (Goal: <20 min.) spent within elevated radiation fields especially those near or within the plume and/or its wake.
- (2) ALARA locations
- (3) **DO NOT** enter a radiation field within a plume that is greater than 100 mR/hr except as directed by the ORAD [RATL].
- (4) **DO NOT** enter a radiation field that is greater than 1.0 R/hr except as directed by the ORAD [RATL].

NOTE:

The ED may authorize an initial emergency exposure of 1 Rem TEDE and subsequent exposures in 1 Rem increments to 5 Rem TEDE.

- (5) **DO NOT** exceed 1 R (i.e., dosimeter reading) except when directed by the ORAD [RATL].

NOTE:

The Emergency Director using "*Form IP-1023-6, Emergency Exposure Authorization*" will authorize exposure exceeding 5 Rem TEDE.

- (6) **DO NOT** exceed 5 Rem TEDE except when authorized by the ED.
- (7) **DO NOT** wear "anti-C" clothing except when directed by the ORAD [RATL].

NOTE:

Respirator protection will be considered following a release from a steam generator with a tube rupture or other releases with a noble gas to iodine ratio of less than 100/1.

- (8) **DO NOT** wear respirators except when directed by the ORAD [RATL].

NOTE:

Administration of KI will be considered at a projected thyroid dose of 25 Rem CDE or more to the thyroid.

- (9) **DO NOT** take KI except when by the ORAD [RATL].

5.4 Proceed to the next location:

5.4.1 Use "*Form IP-1023-4, Emergency Response Organization Log Sheet*".

- 5.4.2 Use the 10-Mile Emergency Planning Zone (EPZ) Wind Sector Map, Site Boundary [Perimeter] Map, and Street Atlases.
- 5.4.3 Use the mobile radio or cellular phone and vehicle.
- 5.4.4 Maintain radio or telephone communications with the Communicator en route between locations.
- 5.4.5 Assure the Communicator has the position (e.g., "Field Team"), the name of the team (e.g., "Mobile One"), the names and the TLD serial numbers of the team members.
- 5.4.6 Determine destination and intended route.
- 5.4.7 Track your progress along the route using the maps and atlases.
- 5.4.8 Keep pertinent current information on Form IP-1023-4.
 - A. Dosimeter readings
 - B. Plant, radiological, and meteorological conditions
 - C. Monitoring requirements
 - D. Radiological, exposure controls
 - E. ALARA locations
 - F. Landmarks on the route as shown on the maps and atlases; e.g., TLD sites, Reuter Stokes sites, schools, and intersections.
- 5.5 Monitor radiation fields at landmarks en route to and on arrival at the location.
 - 5.5.1 Use "Form IP-1015-1, Monitoring Team Radiation Field Survey Data".
 - 5.5.2 Record the "**Team Name:**", "**Team Member Names**", and "**Date:**"; the instrument "**Model #**'s and "**Serial #**'s, and the data on Form IP-1015-1.
 - 5.5.3 Begin with the E-140N, Count Rate Meter:

NOTE:

Rate Meter readings will increase as a plume of radioactive material is approached.

- A. Place the speaker switch to "ON".
- B. Put the function switch to "X1".
- C. Lower the nearest window of the vehicle cab. Keep the Meter in the cab near the window.
- D. Read **AND** record each doubling of the reading (CPM) and the nearest landmark including the reading on arrival at the location.

- E. Report each doubling and landmark to the Communicator.
- F. WHEN the Rate Meter reads 1000 CPM at "X10" AND the Ion Chamber reads more than 0.1 mR/hr, THEN use the RO-2, Ion Chamber. [1000 CPM = 0.1 mR/hr (OW)]

CAUTION:

Review radiological exposure controls, prepare equipment and data forms, determine the route to the nearest ALARA location AND prepare to implement personal protective measures as directed by the ORAD [RATL] before approaching and entering a plume.

5.5.4 Continue with the RO-2, Ion Chamber.

NOTES:

- As a plume of airborne contamination is approached, both the opened window (OW) and closed window (CW) readings increase, reach a peak at the centerline across the plume and a maximum at the source along the plume.
- Inside the plume, OW readings are greater than CW readings
- Outside the plume, OW readings equal CW readings.

- A. Lower the nearest window of the vehicle cab. Place the Ion Chamber in the cab near the window.
- B. Set the function switch to "5000 mR/hr"; open the shield; turn the function switch to the lowest range without exceeding full scale on the meter.
- C. Read AND record each doubling of the "OW mR/hr" (i.e., beta and gamma) and the nearest landmark.
- D. Close the shield, read AND record "CW mR/hr" (i.e., gamma).
- E. Subtract the CW from the OW readings, multiply the difference by 2, AND record as mrad/hr (i.e., beta).
- F. Continue to adjust the function switch to the lowest scale for an on-scale reading.
- G. WHEN the Ion Chamber reads less than 0.1 mR/hr, use the E-140N, Count Rate Meter.

5.5.5 Report the data on Form IP-1015-1 to the Communicator.

5.5.6 Arrive on location. Record your arrival on Form IP-1023-4. Report your arrival to the Communicator.

5.6 Monitor radiation fields on location.

- 5.6.1 On arrival at the location, read AND record readings on Form IP-1015-1 and as directed by the ORAD.
- 5.6.2 Use the E-140N Rate Meter. If it reads full scale at "X1" AND the RO-2, Ion Chamber reads more than 0.1 mR/hr, THEN use the Ion Chamber.
- 5.6.3 Use "Form IP-1015-2, Monitoring Team Sample Data".
- 5.6.4 Use the RO-2, Ion Chamber to survey at the location.
- 5.6.5 Record the "**Team Name:**", "**Team Member Names:**", and "**Date:**" on Form IP-1015-2.
- 5.6.6 Record the "**Location:**" including the details, on Form IP-1015-2.
- 5.6.7 Record the Ion Chamber "**Model #:**", and "**Serial #:**" and the "**Time:**" on Form IP-1015-2.
- 5.6.8 Leave the vehicle and proceed to an area that is open overhead..
- 5.6.9 Measure radiation fields at 3 feet and 3 inches above the ground. Record the data on Form IP-1015-2.

A. Ion Chamber @ 3 feet:

NOTES:

- As a plume of airborne contamination is approached, both the opened window (OW) and closed window (CW) readings increase, reach a peak at the centerline across the plume and a maximum at the source along the plume.
- Inside the plume, OW readings are greater than CW readings
- Outside the plume, OW readings equal CW readings.

(1) Read AND record "**(OW) (mR/hr)**".(2) Read AND record "**(CW) (mR/hr)**".

B. Ion Chamber @ 3 inches:

NOTES:

- Outside a plume, the opened window (OW) and the closed window (CW) readings both increase as surface contamination (the plume footprint) is approached. The OW readings will be greater than CW readings.
- Inside the plume, as surface contamination (the plume footprint) is approached only the OW reading increases, the CW reading does not. The OW readings will be greater than CW readings.

(1) Read AND record "**(OW) (mR/hr)**".(2) Read AND record "**(CW) (mR/hr)**".

- 5.6.10 For both the 3" and 3' readings, subtract the CW mR/hr from the OW mR/hr, **AND** multiply the difference by 2. Record the "**(OW-CW) X 2 (mrad/hr)**" on Form IP-1015-2.
- 5.6.11 Return the Ion Chamber to the vehicle.
- 5.6.12 Report the data on Form IP-1015-2 to the Communicator.
- 5.7 Sample for airborne contamination:
- 5.7.1 Use "Form IP-1015-2, Monitoring Team Sample Data".
- 5.7.2 Use the following equipment:
- A. H-809C Portable Air Sampler with Open-Face Combination Filter and Cartridge Holder

NOTE:

IF the beta fields are determined to be **GREATER THAN** 50 mrad/hr **OR** the radioiodine activity is believed to be **GREATER THAN** 1.0 E-08 $\mu\text{Ci/cc}$, use a silver zeolite cartridge.

- B. Silver zeolite radioiodine sampler cartridge **OR**
- C. Charcoal radioiodine cartridge
- D. Glass fiber particulate filter
- E. Clock, watch or timer
- F. Personal protective equipment (PPE); face shield, rubber gloves and apron.
- 5.7.3 Place a radioiodine cartridge and a particulate filter into the holder.
- A. Disassemble the holder into the: 1) blue main body, 2) gold cartridge retainer, and 3) gold filter retainer nut.
- B. Place an iodine cartridge into the holder body.

NOTE:

A charcoal cartridge has a lip to assure it is oriented in the body correctly. Place a silver zeolite cartridge with the arrow pointing in towards the air sampler or the label to read top to bottom with the air inlet at top and the sampler connection at the bottom.

- C. Screw the cartridge retainer into the body over the cartridge.
- D. Place a particulate filter in the cartridge retainer over the screen at the center.

NOTE:

A particulate filter has a smooth, dimpled surface and a rough fluffy surface. Place the fluffy surface to face away from the sampler.

- E. Screw the retainer nut into the cartridge retainer over the filter.
- 5.7.4 Screw the holder into the sampler.
- 5.7.5 Record OR check the following on Form IP-1015-2.
 - A. Air Sampler "**Model #:**"
 - B. Air Sampler "**Serial #:**"
 - C. "**Particulate Filter**"
 - D. "**Iodine** [charcoal cartridge] (C)" OR
 - E. "**Iodine** [silver zeolite cartridge] (AgZ)"
- 5.7.6 Sample 10 cubic feet of air AND record the data on Form IP-1015-2.

!! WARNING !!

Assure the sampler power switch is "OFF" before connecting or disconnecting the sampler and the battery. Wear the PPE. Keep clear of the radiator fan.

- A. Put sampler power switch "OFF".
- B. Connect the sampler leads in the order: (1) red lead to the red [+] battery terminal and (2) black lead to the vehicle chassis away from the battery.
- C. Put sampler power switch "ON".
- D. Read AND record "**Sample Start Time (HH:MM):**".
- E. Read AND record "**Sample Start Flow (CFM):**".
- F. Estimate the "**Duration (MM):**". Divide 10 CF by "**Sample Start Flow (CFM):**"; e.g., 10 CF / 1.7 CFM = 6 min.
- G. Run the sampler for the estimated "**Duration (MM):**".
- H. Read AND record "**Sample Stop Time (HH:MM):**".
- I. Read AND record "**Sample Stop Flow (CFM):**".

- J. Put sampler power switch "**OFF**".
- K. Disconnect the sampler leads in the order: (1) the black lead from the chassis, (2) the red lead from the battery.
- 5.7.7 Calculate AND record the actual "**Duration (MM):**". Subtract "**Sample Start Time (HH:MM):**" from "**Sample Stop Time (HH:MM):**".
- 5.7.8 Calculate AND record the "**Average Flow (CFM):**". Add "**Sample Start Flow (CFM):**" to "**Sample Stop Flow (CFM):**", AND divide by 2.
- 5.7.9 Calculate AND record "**Sample Volume (CF):**". Multiply "**Average Flow (CFM):**" by the actual "**Duration (MM):**".
- 5.8 Sample for surface contamination:
 - 5.8.1 Use "Form IP-1039-1, Surface Contamination Check".
 - 5.8.2 Use the following equipment:
 - A. Surgeon's rubber gloves
 - B. Paper smear or gauze wipes
 - C. Small paper envelope or plastic bag
 - D. Pen or pencil AND magic marker or grease pencil
 - 5.8.3 Enter the "**Date**", the name of the "**Technician**" or Monitor and "**LOCATION**" on Form IP-1039-1.

NOTE:

Find a surface to sample for contamination. Avoid unfinished wooden and hard surfaces with sharp edges. Use a paper smear for smoother and a gauze wipe for rougher surfaces.

- 5.8.4 Find AND smear a surface. Smear a 100 cm² area. Put two fingers on a smear or wipe AND hold it with your thumb. Reach out AND drag it back across the surface in the pattern of an "S".
- 5.8.5 Record the "**Time**" and the "**SURFACE SMEARED**" on Form IP-1039-1.
- 5.8.6 Annotate a small paper envelope for a smear or a small plastic bag for a gauze wipe with the following information from Form IP-1039-1:
 - A. "**Date**"
 - B. "**LOCATION**"
 - C. "**Time**"
 - D. "**SURFACE SMEARED**"

- 5.8.7 Place the smear or wipe in the paper envelope or plastic bag.
- 5.9 Proceed to the ALARA area.
 - 5.9.1 Return the Air Sampler with the holder, the smears and wipes to the vehicle.
 - 5.9.2 Proceed to the ALARA location to purge and count the samples.

NOTE:

Unless otherwise directed, purge and count the samples in background that is less than 300 CPM. **IF** samples must be counted with background higher than 300 CPM, **THEN** the gross count rate for the sample must be greater than twice background. To detect minimum iodine concentration of 1.0 E-08 uCi/cc in an air sample of 10 cubic feet using an E-140N the background must be less than 4000 CPM.

- 5.10 Prepare to measure the airborne contamination sample.
 - 5.10.1 Use this equipment:
 - A. Sampler and holder
 - B. Surgeon's rubber gloves
 - C. Tweezers
 - D. Planchet
 - E. Orange plastic bag

NOTE:

Purge noble gases from the sample. With the holder on the sampler and the particulate filter and iodine cartridges in the holder, run the sampler for 30 seconds.

- 5.10.2 Unscrew the holder from the sampler.
- 5.10.3 Disassemble the holder into the 1) blue main body, 2) gold cartridge retainer, and 3) gold filter retainer nut.
 - A. Unscrew the cartridge retainer from the body.
 - B. Unscrew the retainer nut from retainer.
 - C. Remove the particulate filter with the tweezers and place it fluffy side up into a planchet.
 - D. Retain the iodine cartridge in the body of the holder.
- 5.11 Measure the airborne contamination sample.

5.11.1 Use this equipment:

- A. Count Rate Meter, Eberline Model E-140N with HP-210 pancake probe and SH-4 (or SH-4A) fixture.
- B. Planchet with particulate filter
- C. Holder body with iodine cartridge
- D. Small paper envelope
- E. Small plastic bag
- F. Pen or pencil and grease pencil or magic marker

5.11.2 Use the same Form IP-1015-1, with the data recorded in preparing the airborne contamination sample. Record the following data:

- A. ***"Count Rate Meter Model #: [E-140N]"***
- B. ***"Count Rate Meter Serial #:"***
- C. ***"Time"*** when the sample is counted

5.11.3 Annotate a small envelope for the filter and a small plastic bag for the cartridge with the following information from Form IP-1015-1:

- A. ***"Date:"***
- B. ***"Location:"***
- C. ***"Sampling Start Time (HH:MM):"***
- D. ***"Sample Volume (CF):"***

5.11.4 Determine the activity (CPM) on the particulate filter:

- A. Set up the SH-4 or SH-4A counting fixture.
 - (1) Pull out the metal tray.

NOTE:

The metal tray and aluminum cup for the SH-4 are one piece.

- (2) Place the aluminum cup in the tray. Align the bottom of the cup with the hole in the tray.

- (3) Place the spacer ring into the aluminum cup.

- (4) Push the tray in.

B. Measure background for the filter, ***"Part Filter, Bkgd (CPM):"***.

- (1) Place the probe in the fixture over the ring and cup.

(2) Adjust the function switch to the lowest multiplier without exceeding full scale on the meter.

(3) Read AND record the reading as "**Part Filter, Bkgd (CPM):**".

C. Measure the particulate filter, "**Part Filter, Gross (CPM):**".

(1) Pull the metal tray out.

(2) Place the planchet with the particulate filter into the cup on the ring.

(3) Push the tray in.

(4) Place the probe in the fixture over the filter.

(5) Adjust the function switch to the lowest multiplier without exceeding full scale on the meter.

(6) Read AND record "**Part Filter, Gross (CPM):**".

D. Calculate AND record "**Part Filter, Net (CPM):**". Subtract "**Part Filter, Bkgd (CPM):**" from "**Part Filter, Gross (CPM):**".

5.11.5 Determine the activity (CPM) on the iodine cartridge.

A. Set up the counting fixture for the iodine silver zeolite or charcoal cartridge.

(1) Pull out the metal tray and aluminum cup.

(2) Remove the planchet and filter AND place both in the small envelope prepared earlier.

(3) Remove the ring and cup. Push the tray back into the fixture.

B. Measure "**Iodine (C or Ag/Z as appropriate), Bkgd (CPM):**".

(1) Place the probe in the fixture.

(2) Adjust the function switch to the lowest multiplier without exceeding full scale on the meter.

(3) Read AND record "**Iodine (C or Ag/Z as appropriate), Bkgd (CPM):**".

C. Measure "**Iodine (C or Ag/Z as appropriate), Gross (CPM):**".

(1) Remove the probe from the fixture.

(2) Invert the holder body AND remove the iodine cartridge.

(3) Place the charcoal (lip up) or the silver zeolite cartridge (label up) on the metal tray through the hole in the fixture.

- (4) Place the probe in the fixture over the cartridge.
- (5) Adjust the function switch to the lowest multiplier without exceeding full scale on the meter.
- (6) Read AND record "*Iodine (C or Ag/Z as appropriate) Gross (CPM):*".

D. Calculate AND record "*Iodine (C or Ag/Z as appropriate) Net (CPM):*". Subtract "*Iodine (C or Ag/Z as appropriate) Bkgd (CPM):*" from "*Iodine (C or Ag/Z as appropriate) Gross (CPM):*".

NOTE:

An "*Iodine (C or Ag/Z as appropriate) Gross (CPM):*" equal to 25,000 within the 24 hours following a reactor shutdown is equivalent to an exposure rate to the thyroid of 25 Rem/hr CDE.

- 5.11.6 Remove the probe from the fixture.
- 5.11.7 Remove the cartridge from the fixture and place it in the small plastic bag that was prepared earlier.
- 5.11.8 Reassemble the fixture, tray, cup, and ring.
- 5.11.9 Remove the rubber gloves and place them in the orange plastic bag.
- 5.11.10 Repeat steps from 5.10 for additional sample filters and cartridges.
- 5.11.11 Report the data on Form IP-1015-1 to the Communicator.
- 5.11.12 Return equipment and samples to the vehicle.
- 5.12 Measure the surface contamination samples.
 - 5.12.1 Use the following:
 - A. E-140N, Count Rate Meter, with HP-210 pancake probe
 - B. Surgeon's rubber gloves
 - C. Tweezers
 - D. Planchets
 - E. Orange plastic bag
 - F. Smear or wipe in a small paper envelope or plastic bag.
 - G. Form IP-1039-1 used to record surface contamination sampling data.
 - 5.12.2 Determine the activity (CPM) on the smear or wipe.
 - A. Measure background for the smear or wipe, "**BKGD CPM**".

- (1) Place the probe about one quarter inch above an empty planchet.
- (2) Adjust the function switch to the lowest multiplier without exceeding full scale on the meter.
- (3) Read AND record the "**BKGD CPM**".

B. Measure the smear or wipe, "**SMEAR + BKGD CPM**".

- (1) Remove, using tweezers, a smear or wipe from the envelope or plastic bag. Place the smear or wipe on the planchet.
- (2) Place the probe about one quarter to one half inch above the smear or wipe.
- (3) Adjust the function switch to the lowest multiplier without exceeding full scale on the meter.
- (4) Read AND record "**SMEAR + BKGD CPM**".

C. Calculate AND record "**SMEAR CPM**". Subtract "**BKGD CPM**" from "**SMEAR + BKGD CPM**".

D. Return, using tweezers, the smear or wipe with the planchet to its small paper envelope or plastic bag

5.12.3 Remove the rubber gloves and place them in the orange plastic bag.

5.12.4 Repeat steps from 5.12 for additional smears or wipes.

5.12.5 Report the data on Form IP-1039-1 to the Communicator.

5.13 Prepare for reassignment.

5.13.1 Return the sampler and holder, the count rate meter and probe, the counting fixture and tweezers to the kit.

5.13.2 Return packaged samples to the vehicle.

5.13.3 IF at an ALARA location, THEN remain there until directed otherwise by the ORAD [RATL]. Continue monitoring for radiation fields from the vehicle. Periodically assure both the team and the Communicator has current information. Note the current information on Form IP-1023-4; IF NOT, continue below.

5.13.4 IF directed to another location THEN return to 5.4 and continue; IF NOT, continue below.

5.13.5 IF directed to deactivate; THEN continue below.

5.13.6 Return to the EOF parking area or other location as directed by the ORAD [RATL].

- 5.13.7 Check AND decontaminate the vehicle (Reference 6.9) as directed by the ORAD [RATL].
- 5.14 Return samples for analysis.
 - 5.14.1 Collect all the forms, sample filters and cartridges, smears and wipes.
 - 5.14.2 Assure samples are packaged, labeled and traceable to the corresponding data forms.
 - 5.14.3 Request assistance from the STHP to check, decontaminate OR package contaminated samples, and forms.
 - 5.14.4 Deliver samples to the Environmental Building OR the EOF Electrical Equipment Room or other location as specified by the ORAD [RATL].
- 5.15 Return equipment, materials and supplies.
 - 5.15.1 Use "Form EP-AD-05-3, Survey Team Inventory Checklist".
 - 5.15.2 Read AND record dosimeter exposures on Form IP-1023-4.
 - 5.15.3 Request assistance from the STHP to check, decontaminate OR package contaminated equipment.
 - 5.15.4 Check that the listed equipment is returned to the kit. Report missing equipment to the ORAD [RATL] AND replace missing equipment as directed. Return the kit to the closet.
 - 5.15.5 Check that the equipment removed earlier is returned to the closet. Report missing equipment AND replace as directed by the ORAD [RATL].
 - 5.15.6 Deliver TLDs and completed FORMS to the ORAD [RATL].

6.0 REFERENCES

- 6.1 Emergency Telephone Directory
- 6.2 Form EP-AD-05-1, EOF Inventory Check List
- 6.3 Form EP-AD-05-3, Survey Team Inventory Check List
- 6.4 Form IP-1015-1, Monitoring Team Radiological Data
- 6.5 Form IP-1015-2, Field Survey Form
- 6.6 Form IP-1023-4, Emergency Response Organization Log Sheet
- 6.7 Form IP-1023-6, Emergency Exposure Authorization
- 6.8 Form IP-1039-1, Surface Contamination Check
- 6.9 IP-1009, Radiological Check and Decontamination of Vehicles

6.10 IP-1011, [Unit 3] Offsite Monitoring / Site Perimeter Surveys

6.11 NEM-5.101, Nuclear Environmental Monitoring Sample and Analysis Schedule

7.0 ATTACHMENTS:

None

8.0 ADDENDA:

8.1 Equipment Operational Checks

8.2 Site Map

8.3 Monitoring Team Radiation Field Survey Data, Form IP-1015-1

8.4 Monitoring Team Sample Data, Form IP-1015-2

8.5 Offsite Emergency Sampling Locations

ADDENDUM 8.1
Equipment Operational Checks
Sheet 1 of 3

RO-2 Ion Chamber

- ☐ Use: (1) RO-2, (2) 5 uCi Cs-137 source, and (3) Form EP-AD-05-3A.
- ☐ Turn the function switch to "BATT 1" then to "BATT 2", check the meter reads "BATT OK" for both positions.
- ☐ Turn the function switch to "ZERO"; use the "ZERO" knob and adjust the meter to read "zero".
- ☐ Turn the function switch to "5", open the shield, place unshielded chamber on the 5 uCi Cs-137 source; check the meter reads upscale greater than 1.0 mR/hr.
- ☐ Turn the function switch to "OFF" and close the shield.
- ☐ Record results on Form EP-AD-05-3A.

E-140N Count Rate Meter

- ☐ Use: (1) E-140N, (2) HP-210 probe, (3) coaxial cable, (4) 5 uCi Cs-137 source, and (5) Form EP-AD-05-3A.
- ☐ Connect the probe with the coaxial cable; to the meter at the terminal marked "PROBE".
- ☐ Turn the function switch to "BATT"; check the meter reads "BATT OK".
- ☐ Turn the function switch at "X100", place probe in contact with 5 uCi Cs137 source, turn function switch to smaller multipliers until the meter reads upscale at more than 200 CPM.
- ☐ Turn the function switch to "OFF".
- ☐ Record results on Form EP-AD-05-3A.

ADDENDUM 8.1
Equipment Operational Checks
Sheet 2 of 3

H-809C Air Sampler

- Use: (1) H809C, (2) vehicle battery, and (3) Form EP-AD-05-3.

!! WARNING !!

Assure the sampler power switch is "OFF" before connecting or disconnecting the sampler and the battery. Wear the PPE. Keep clear of the radiator fan.

- Place sampler power switch "OFF"; remove the filter holder.
- Connect the sampler's red lead to the red [+] battery terminal and the black lead to the vehicle chassis away from the battery.
- Put power switch "ON".
- Check flow to be greater than 5 CFM.
- Place the power switch "OFF".
- Disconnect sampler leads from the vehicle; replace the filter holder.
- Record results on Form EP-AD-05-3.

ADDENDUM 8.1
Equipment Operational Checks
Sheet 3 of 3

Mobile Area Radio Service

- ☐ Use: (1) vehicle with Area Radio control station, (2) vehicle keys, (3) radio control station w/ press-to-talk (PTT) microphone, and (4) Form IP-1023-4.
- ☐ Turn vehicle ignition switch to "accessories" or "on".
- ☐ Press "PWR" switch to apply power to the radio control station..
- ☐ Press the station rocker "**Mode**" switch to display "**REPEATER**".
- ☐ Depress the microphone PTT switch.

NOTE:

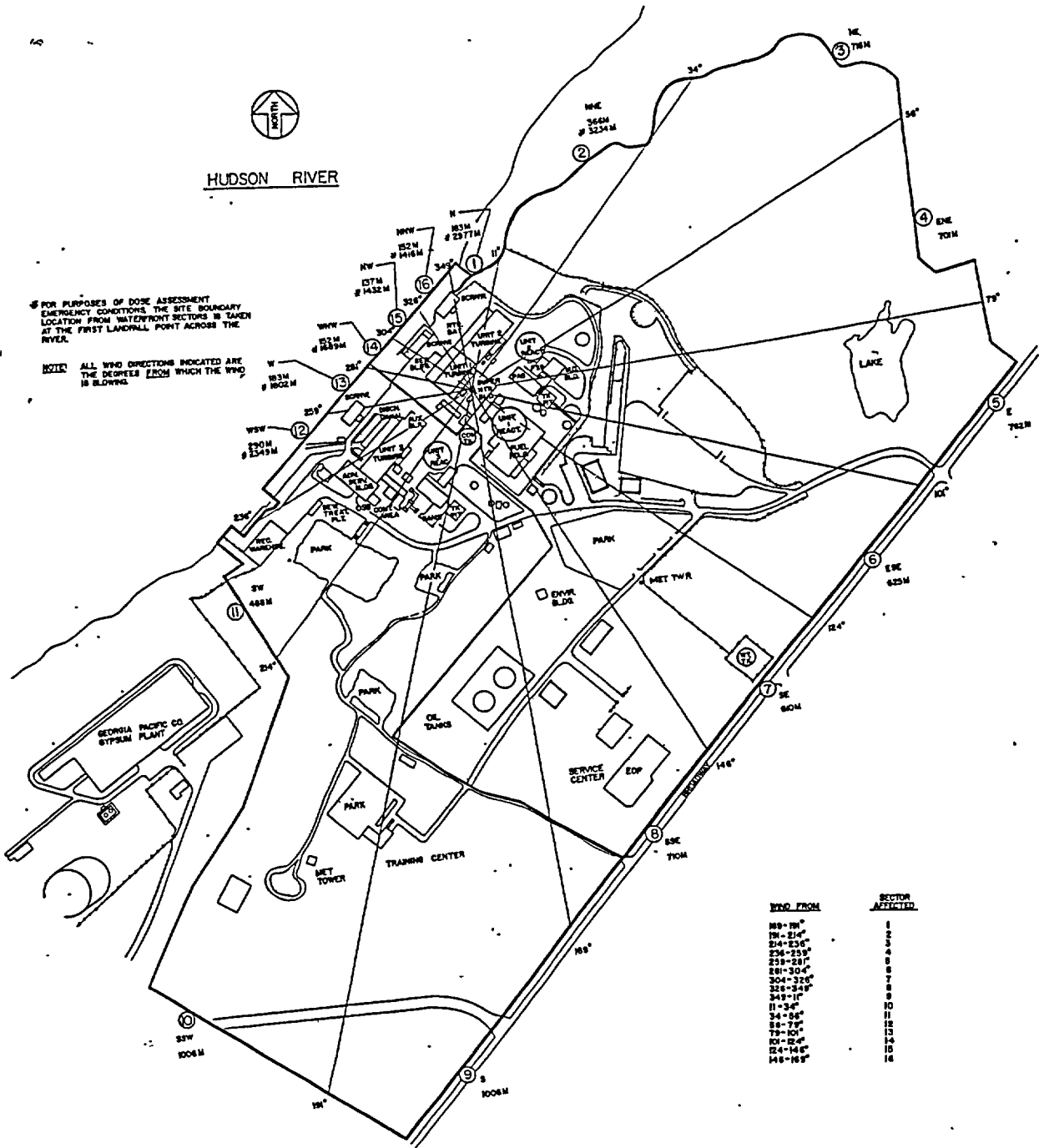
Use station call signs in the first and last transmissions between stations during a shift. Otherwise use the station name; e.g.; "Mobile One" or "EOF". Station call signs and names are listed Section 4.0.

- ☐ Request radio check; e.g., "Indian Point EOF, WAY744; this is Indian Point Mobile One, KU3575; request radio check over".
- ☐ Press the station rocker "**Mode**" switch to display "**DIRECT**".
- ☐ Depress the microphone "PTT" switch.
- ☐ Request radio check.
- ☐ Check the second radio when installed.
- ☐ Record results on Form IP-1023-4.

Cellular Phone

- ☐ Use: (1) vehicle with cellular phone, (2) cellular phone, and (4) Form IP-1023-4.
- ☐ Put phone power on.
- ☐ Display "SERVICE AVAILABLE".
- ☐ Use the number in Emergency Telephone Directory
- ☐ Call the Communicator.
- ☐ Record results on Form IP-1023-4.

ADDENDUM 8.2
Site Map
Sheet 1 of 1



ADDENDUM 8.4
MONITORING TEAM SAMPLE DATA (Form IP-1015-2)
Sheet 1 of 1MONITORING TEAM SAMPLE DATA

Team Name: _____ Date: _____

Team Member Names: _____

Sample Location:Sector _____ Mile _____
County _____ Atlas Key Map # _____ Grid _____
Street _____ Nearest Intersect _____ Mi to Intersect: _____Radiation Field Measurements:Ion Chamber, Model #: RO-2 Serial # _____ Time: _____

@ 3 in. above ground:

@ 3 ft. above ground:

Opened Window (OW) (mR/hr) _____ Opened Window (OW) (mR/hr) _____

Closed Window (CW) (mR/hr) _____ Closed Window (CW) (mR/hr): _____

(OW-CW) X 2 (mrad/hr): _____

Air Sampling:Air Sampler, Model #: H-809C Serial # _____

Particulate Filter: _____ Iodine (C) _____ Iodine (AgZ): _____

Sampling Start: _____ Time (HH MM): _____ Flow (CFM): _____

Sampling Stop: _____ Time (HH MM): _____ Flow (CFM): _____

Duration (MM) _____

Average Flow (CFM): _____

Sample Volume (CF) _____

Air Sample Counting:Count Rate Meter, Model # E-140N Serial #: _____ Time: _____

Part Filter, Bkgd (CPM) _____ Gross (CPM) _____ Net (CPM): _____

Iodine (C), Bkgd (CPM): _____ Gross (CPM): _____ Net (CPM): _____

Iodine (AgZ), Bkgd (CPM) _____ Gross (CPM): _____ Net (CPM): _____

Form IP-1015-2, Rev.10

ADDENDUM 8.5

Offsite Emergency Sampling Locations

Sheet 1 of 7

<u>Sector- Mile</u>	<u>Map Number (Grid)</u>	<u>Location</u>	<u>Directions (off major roads from site)</u>
1-2	W-1 (B-5)	Roa Hook Rd., @ 0.1-0.2 mi. fm Bear Mt. Bridge Rd. (Radiation Monitor Sta. #1)	Rte. 9 North to Annsville Circle to Rtes. 6 & 202, Bear Mt. Bridge Rd. West. Left to Roa Hook Rd.
1-7	W-1 (A-3)	Route 9D North @ 3.3-3.4 mi. north of Bear Mt. Bridge. [I] (St. Francis Friary)	(See 1-2), Bear Mt. Bridge Rd. West. to Bear Mt. Bridge. Right to Rte. 9D North.
1-10	P-2 (C-7)	Route 9D North @ 0.2-0.3 mi. north of Bridge over Indian Brook. (Derham X Rd.)	Rte. 9 North. Left to Rte. 403. Right to Rte. 9D North.
2-2	W-1 (C-5)	Old Pemart Ave. along R.R. to dead- end @ fence. (TLD Site).	Rte. 9 North to Rte's 202& 6, Main St.. Right to Main St. Exit. Right to Main St. toward river to bottom of hill. Right to Old Pemart Ave.
2-3	W-1 (C-4)	Highland Ave. @ [r] Sprout Brook Rd. (Truck Sales Room)	Rte. 9 North to Bear Mt. Pkwy. Ext. North, cross overpass, Right to Highland Ave. Exit. Right to Highland Ave.
2-6	W-1 (D-2) also P-3 (D-10)	Rte. 13 (Sprout Brook Rd.) @ [I] Old Albany Post Rd. / [r] Canopus Hollow Rd.	Rte. 9 North, to Bear Mt. Pkwy Ext. North, Right to Division St. Exit. Left to Division St., to Oregon Rd. North. Left to Gallows Hill Rd. to Rte. 13 (Sprout Brook Rd.).
2-10	P-6 (E-8)	Canopus Hollow Rd. @ [r] Bell Hollow Rd.	(See 2-6), Rte. 13, Sprout Bk. Rd. / Rte. 15, Canopus Hollow Rd. North. Left to Horton Hollow Rd. North. Left to (again) Canopus Hollow Rd. North.
3-1	W-2 (C-6)	Louisa St. @ R.R. Bridge.	Rte. 9A North. Left to Welcher Ave. Right to Lower South St. North. Left to Louisa St..

ADDENDUM 8.5

Offsite Emergency Sampling Locations

Sheet 2 of 7

<u>Sector-Mile</u>	<u>Map Number (Grid)</u>	<u>Location</u>	<u>Directions (off major roads from site)</u>
3-3	W-1 (D-5)	Horton Dr. @ Hillcrest Elementary School	Rte. 9 North to Bear Mt. Ext. North. Right to Carhart Ave. Right to Leda Drive. Right to Horton Dr.
3-6	W-1 (E-3)	Oregon Rd. @ [r] Rte. 21, Peekskill Hollow Rd.	Rte. 9 North to Bear Mt. Ext. North. Right to Division St. Exit. Left to Division St., to Oregon Rd. North.
3-10	P-6 (F-8)	Rte. 21, Peekskill Hollow Rd. @ [I] Tinker Hill Rd.	(See 3-6), Right to Rte. 21, Peekskill Hollow Rd.
4-1	W-2 (C-7)	Lower South St. [r] @ 0.1-0.2 mi. fm Welcher Ave. past A&P. (Mearl Corp. Entrance)	Rte. 9A North. Left to Welcher Ave. Right to Lower South St. North.
4-3	W-2 (D-6)	Maple Ave. @ [I] Chapel Hill Dr. (Chapel Hill Estates)	Rte. 9A North. Right to Welcher Ave. Left to Washington St. Right to Hudson Ave. Right to Maple Ave.
4-6	W-11 (F-4)	Lexington Ave. @ [r] Townsend Rd.	Rte. 9 North to Bear Mt. Ext. North. Right to Rte. 6 Exit. Left to Rte. 6 East. Right to Lexington Ave.
4-10	W-11 (J-3)	Somerston Rd. @ [I] Carol Court	Rte 9 North to Bear Mt. Ext. Right to Rte 6 Exit. Left to Rte 6 East. Right on Curry St. Left on Weskora Rd. Left on Somerston Rd.
5-2	W-2 (C-7)	McKinley St. @ [I] (former McKinley School).	Rte. 9A North. Right to Welcher Ave. Left on McKinley St.

ADDENDUM 8.5

Offsite Emergency Sampling Locations

Sheet 3 of 7

<u>Sector-Mile</u>	<u>Map Number (Grid)</u>	<u>Location</u>	<u>Directions (off major roads from site)</u>
5-4	W-2 (E-7)	Furnace Woods Rd. @ Maple Ave.	Rte. 9 South. Right to Montrose Exit. Right to Rte. 9A North. Right to Watch Hill Rd. Left to Furnace Woods Rd.
5-7	W-12 (G-7)	Hunterbrook Rd @ 0.3-0.4 mi North of Baptist Church Rd. (Coaxial Crossing #571)	Rte. 9 South. Right to Rte. 129 Exit. Left to Municipal Pl. Left to Rte.129, Maple St. North. Left to Hunterbrook Rd.
5-10	W-12 (J-7)	Hanover St. @ Moseman Rd. (St. Patrick's School)	Rte. 9 South. Right to Rte. 129 Exit. Left to Municipal Pl. Left to Rte.129, Maple St. North. Left to Underhill Ave. Right to Hanover St.
6-1	W-2 (C-7)	Rte. 9A @ Tate Ave. (Desolate Corp.)	Rte. 9A South to Tate Ave.
6-3	W-2 (D-8)	Watch Hill Rd. @ [I] Mountainside Tr.	Rte. 9A South. Left on Watch Hill Rd.
6-7	W-12 (F-9)	Rte. 129 North @ Hunter Brook Bridge	(See 5-10), Rte.129, Maple St. North.
6-10	W-13 (J-10)	Rte. 134 @ Rte. 100	Rte. 9 South. Left to Rte. 9A South. Left to Rte 134, Croton Dam Rd.
7-1	W-2 (B-7)	Westchester Ave. @ [I] 1st St.	Rte. 9A South. Right to Tate Ave. Right to Westchester Ave.
7-4	W-2 (D-9)	Watch Hill Rd. @ [I] Westminster Dr.	(See 5-4), Right to Watch Hill Rd.
7-6	W-3 (E-11)	Cleveland Dr. @ [r] Hughes St.	(See 5-10), Rte.129, Maple St. North. Right to Old Post Rd. South. Left to Cleveland Dr.
7-10	W-4 (G-13)	North State Rd. @ Ryder Ave.	Rte. 9 South. Left to Rte. 9A South. Left to North State Rd.

ADDENDUM 8.5

Offsite Emergency Sampling Locations

Sheet 4 of 7

<u>Sector-Mile</u>	<u>Map Number (Grid)</u>	<u>Location</u>	<u>Directions</u> (off major roads from site)
8-1	W-2 (B-7)	Westchester Ave. @ (Buchanan Verplank Elementary School)	(See 7-1), Westchester Ave. past 1st St., between 4th St. and Pheasant Run.
8-3	W-3 (C-9)	Crugers Station Rd. @ [r] Ripley Pl.	Rte. 9A South. Right to Crugers Station Rd.
8-7	W-3 (D-12)	Croton Pt. Ave. @ Fixed Air Sampling Sta.	Rte. 9 South. Right to Croton Pt. Ave. Exit. Right on Croton Pt. Ave.
8-10	W-4 (E-15)	Liberty St. @ Hudson St.	Rte. 9 South. Right to Revolutionary Rd. Right to Rockledge Ave. Left to Liberty St.
9-1	W-2 (B-8)	14th St. @ James St.	(See 8-1), Westchester Ave. to 14th St. Right to 14th St.
9-3	W-2 (B-8)	Montrose Pt. Road @ End (outside George's Island Park)	Rte. 9A South. Right to Kings Ferry Rd. to Montrose Pt. Rd.
9-7	R-6 (X-12)	Rte. 9W South @ Rte. 90, South Mountain Rd.	Bear Mt. Bridge West to Rte. 9W South.
9-10	R-9 (X-16)	Kings Highway North @ Old Mill Rd.	(See 9-7), Rte 9W South. Right to Rte. 303. Right on Rockland Lake Rd. Right to Rte. 13, Casper Hill Rd. / Kings Highway North.
10-1	W-2 (B-8)	11th St. @ Highland Ave. (Church)	Broadway South. Right to 11th St.

ADDENDUM 8.5

Offsite Emergency Sampling Locations

Sheet 5 of 7

<u>Sector-Mile</u>	<u>Map Number (Grid)</u>	<u>Location</u>	<u>Directions (off major roads from site)</u>
10-4	R-3 (W-8)	Grassy Point Rd. @ Beach Rd.	(See 1-2), Bear Mt. Bridge West to Rte. 9W/202 South. Left to Rte. 108, Main St. to Grassy Point Rd.
10-7	R-6 (T-12)	Central Highway / Little Tor Rd. @ Rte. 90, South Mountain Rd.	(See 1-2), Bear Mt. Bridge West to Rte. 9W/202 South. Right at Rte. 202 Westside Ave. Left to Rte. 33, Central Highway / Little Tor Rd.
10-10	R-8 (S-15)	West Clarkstown Rd. @ Palisades Pkwy. Overpass	Palisades Pky. South. Right to exit 11. Left to New Hempstead Rd. Right to West Clarkstown Rd.
11-1	W-2 (B-8)	9th St. extension @ Radiation Monitor Sta. #11. (Lock combination required)	Broadway South. Right to 9th St. past gate, between abandoned bunkers and transmission tower.
11-3	R-3 (U-7)	Adams Dr. @ Gilmore Dr.	(See 1-2), Bear Mt. Bridge West to Rte. 9W/202 South. Right to Adams Dr.
11-6	R-3 (S-9)	Willow Grove Rd. @ Knapp Rd.	Palisades Pkwy. South. Right to Exit 14. Left to Willow Grove Rd.
11-10	R-5 (N-13)	Wilder Rd. @ Rte. 202 (Haverstraw Rd.)	Palisades Pkwy. South. Right to Exit 13. Right to Rte. 202 South, to Rte. 202 (Haverstraw Rd.) Left to Wilder Rd.
12-2	R-3 (V-6)	Rte 9W/202 @ south end of West Shore Dr.	(See sector 1-2) Bear Mt. Bridge West to Rte. 9W/202 South. to south end of West Shore Dr. (formerly Gays Hill Rd.)

ADDENDUM 8.5

Offsite Emergency Sampling Locations

Sheet 6 of 7

<u>Sector-Mile</u>	<u>Map Number (Coordinates)</u>	<u>Location</u>	<u>Directions (off major roads from site)</u>
12-4	R-3 (T-7)	Franck Rd. @ Richard C. Brown Dr.	Palisades Pkwy. South. Right to Exit 15. Right on Rte 106, Old Gate Hill Rd. to Cedar Pond Rd. Left to Bulsontown Rd. Right to Franck Road.
12-7	R-3 (Q-7)	Lake Welch Dr. @ Sewage Plant.	Palisades Pkwy. South. Right to Exit 16. Right to Lake Welch Drive (Road closed during winter months).
12-10	R-2 (K-9)	Lake Welch Dr. @ Seven Lakes Dr.	(See 12-7) continue on Lake Welch Drive. (Road closed during winter months).
13-2	R-1 (V-5)	Rte 9W/202 @ north end of West Shore Dr.	(See 1-2) Bear Mt. Bridge West to Rte. 9W/202 South. Left to north end of West Shore Dr. (formerly Gays Hill Rd.)
13-3	R-3 (U-5)	Mott Farm Rd @ entrance to Camp Addison Boyce. (Lake Bullowa).	(See 1-2) Bear Mt. Bridge West to Rte. 9W/202 South. Right to Rte. 118A. Right to Rte. 118, Mott Farm Rd.
13-9	O-21 (W-16)	Arden Valley Rd. @ Arden Rd./ Bailey Town Rd.	Palisades Pkwy. South. Right to Exit 18 to Seven Lakes Dr. to Lake Tiorati Circle to Arden Valley Rd. West.
14-2	R-1 (W-4)	Thunder Mt. Rd. @ Radiation Monitor Sta. #14	(See 1-2) Bear Mt. Bridge West to Rte. 9W/202 South. Right to Thunder Mt. Rd.
14-6	O-18 (Z-14)	Rte. 6 @ 1.0 mi. West of Palisades Pkwy	Palisades Pkwy. South. Right to Exit 18. Continue to Rte. 6 West.
14-10	O-17 (X13)	Rte. 9, Smith Clove Rd. North @ NYS Twy. Overpass.	(See 14-6) Continue on Rte. 6 West. Right to Averill Ave. Continue on Rte. 32 North. Right to Rte. 9, Smith Clove Rd. North.

ADDENDUM 8.5

Offsite Emergency Sampling Locations

Sheet 7 of 7

<u>Sector- Mile</u>	<u>Map Number (Grid)</u>	<u>Location</u>	<u>Directions (off major roads from site)</u>
15-1	R-1 (W-4)	Rte 9W/202 @ Anchor Monument. (directly across from Indian Point).	(See 1-2), Bear Mt. Bridge West to Rte. 9W/202 South.
15-4	R-1 (U-2)	Rte.9W/202, 0.5 mi. south of bridge @ Bear Mount Inn.	(See 1-2), Bear Mt. Bridge West to Rte. 9W/202 South. Right to Bear Mountain Inn.
15-6	O-18 (AA-13)	Mine Rd. @ Weyants Pond Rd.	(See 1-2), Bear Mt. Bridge West to Rte. 9W North. Left to Old Rte. 9W (Firefighter's Mem. Dr.). Left to Mine Rd.
15-10	O-18 (Y-12)	Smith Clove Rd. @ Trout Brook Rd. / Mineral Springs Rd.	(See 14-6), Continue on Rte. 6 West. Right to Averill Ave. Continue on Rte. 32 North. Right to Rte. 9, Smith Clove Rd. North.
16-1	R-1 (X-4)	Ayers Rd @ Radiation Monitor Sta. #16.	(See 1-2), Bear Mt. Bridge West to Rte. 9W/202 South. Left to Ayers Rd (Old Rte. 9W).
16-4	R-1 (U-1)	Bear Mt. Bridge @ west end, (traffic circle).	(See 1-2), Bear Mt. Bridge Rd. West to Bear Mt. Bridge West.
16-6	O-18 (BB-13)	Morgan's Farm Rd. @ 0.7-0.8 Mi. West of Cragston Lakes.	(See 16-4), Bear Mt. Bridge West to Rte. 9W North. Right to Exit. Left to Rte. 218, to Morgan's Farm Rd.
16-9	O-18 (BB-11)	Rte. 9W @ Rte. 293	(See 16-4), Bear Mt. Bridge West to Rte. 9W North to Rte. 293.

Key for County Maps

W- Westchester County Map, © 2001
R- Rockland County Map, © 2000

P- Putnam County Map, © 2001
O- Orange County Map, © 2000

Map Number and Coordinates based on Hagstrom County Atlases.

CONTROLLED

COPY #

25

Emergency Operations Facility

Prepared by:

Kelly Walker

Print Name



Signature

9/22/02

Date

Approval:

Frank Inzirillo

Print Name



Signature

9/23/02

Date

Reference Use

Effective Date: 9/23/02

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1.0 PURPOSE

Along with procedure IP-EP-255, Emergency Operations Facility Management and Liaisons, to describe the activation and operation of the Emergency Operations Facility (EOF)

2.0 DISCUSSION

None

3.0 PRECAUTIONS AND LIMITATIONS

EOF habitability checks are necessary to ensure long-term manning of the EOF. Should conditions exist which may result in a loss of long-term habitability of the EOF, evaluate the need for relocation of emergency response functions to the Alternate EOF in accordance with IP-1045 "Activation of Alternate Emergency Operations Facility."

4.0 EQUIPMENT AND MATERIALS

4.1 The following types of equipment and materials are available for use in the EOF

4.1.1 Plant information systems:

- EDDS
- Plant Integration Computer System (PICS)
- Meteorological Displays

4.1.2 Radiological equipment needed to perform offsite monitoring:

- Field Monitoring kits
- Survey equipment for performance of facility habitability checks

4.1.3 Dose Assessment and plume tracking equipment:

- Plant Integration Computer System (PICS)
- MEANS
- Map table

4.1.4 Communication systems needed to transfer important data to offsite authorities:

- V-Band communications consoles
- Telephones
- Fax Machines

4.1.5 Procedures and forms:

- IPEC Emergency Plan
- IPEC & IP2 Emergency Plan Implementing Procedures
- Position Binders
- Forms

4.1.6 Office Supplies

4.2 The key to the EOF is located in a break glass container in the EOF entry way.

5.0 INSTRUCTIONS

5.1 The Offsite Radiological Assessment Director (ORAD) shall follow the instructions outlined Attachment 1, Offsite Radiological Assessment Director (ORAD) Checklist

5.2 The Dose Assessment Health Physicist (DAHP) shall follow the instructions outlined in Attachment 2, Dose Assessment Health Physicist Checklist.

5.3 The Midas Operator shall follow the instructions outlined Attachment 3, MIDAS Operator Checklist.

5.4 The Survey Team Health Physicist (STHP) shall follow the instructions outlined in Attachment 4, Survey Team Health Physicist Checklist.

5.5 The Technical Advisor to Emergency Director shall follow the instructions outlined in Attachment 5, Technical Advisor (TA) Checklist

5.6 The EOF Communicator #1 shall follow the instructions outlined in Attachment 6, EOF Communicator #1. Checklist

5.7 The EOF Communicator #2 shall follow the instructions outlined in Attachment 7, EOF Communicator #2. Checklist

5.8 The EOF Clerical Staff shall follow the instructions outlined in Attachment 8, EOF Clerks. Checklist

5.9 The EOF Data Coordinator (formerly EOF SAS/Proteus Operator) shall follow the instructions outlined in Attachment 9, EOF Data Coordinator Checklist

6.0 REFERENCES

- 6.1 IP-1024, "Emergency Classification"
- 6.2 IP-1027, "Site Personnel Accountability and Evacuation"
- 6.3 IP-EP-610, "Emergency Termination & Recovery"
- 6.4 IP-EP-255, "Emergency Operations Facility Management and Liaisons"

7.0 ATTACHMENTS

- 7.1 Attachment 1, Offsite Radiological Assessment Director (ORAD) Checklist
- 7.2 Attachment 2, Dose Assessment Health Physicist (DAHP) Checklist
- 7.3 Attachment 3, MIDAS Operator Checklist
- 7.4 Attachment 4, Survey Team Health Physicist (STHP) Checklist
- 7.5 Attachment 5, EOF Technical Advisor Checklist
- 7.6 Attachment 6, EOF Communicator #1 Checklist
- 7.7 Attachment 7, EOF Communicator #2 Checklist
- 7.8 Attachment 8, EOF Clerical Staff Checklist
- 7.9 Attachment 9, EOF Data Coordinator Checklist

8.0 ADDENDUM

- 8.1 Addendum 1, EOF Layout
- 8.2 Addendum 2, NYS Radiological Data Form (Part I & II) (Form IP-1030-1)
- 8.3 Addendum 3, Sample Form - EOF Radiological Survey Map (Form IP-1030-3)
- 8.4 Addendum 4, Directions to NYS EOC
- 8.5 Addendum 5., EPA 302.4 Nuclide Table (Form IP-1030-4)
- 8.6 Addendum 6, Sample Form - Offsite Survey Team Data Sheet (Form IP-1030-5)

Attachment 1
Offsite Radiological Assessment Director (ORAD)
Sheet 1 of 8

<u>Initial Responsibility/Activity</u>	<u>Notes</u>
<p>1.0 Assume the position of ORAD.</p> <p>1.1 Review facility status boards, EDDS information and any other available sources to become familiar with current plant status.</p> <p>1.2 Obtain briefing from the EOF Manager or Emergency Director</p> <p style="padding-left: 20px;">A. Use an Essential Information Checklist (Form IP-1035-2) to document briefing items.</p> <p style="padding-left: 20px;">B. Request any additional information on current status of emergency response.</p> <p>1.3 <u>IF</u> the EOF has <u>NOT</u> been activated <u>THEN</u>:</p> <p style="text-align: center;"><u>NOTE:</u></p> <p style="padding-left: 40px;">Offsite Dose Assessment and Radiological Monitoring responsibilities may be transferred to the ORAD before the EOF is fully activated.</p> <p style="padding-left: 20px;">A. <u>WHEN</u> the following minimum staff is available <u>THEN</u> inform the EOF Manager or the ED that you are ready to conduct offsite monitoring activity.</p> <p style="padding-left: 40px;">1. Field Monitoring Team Members (2)</p> <p style="padding-left: 40px;">2. EOF Communicator #1</p> <p style="padding-left: 20px;">B. <u>WHEN</u> ready to assume offsite (outside Protected Area) monitoring responsibilities from the CCR <u>THEN</u> contact the CCR and formally assume these responsibilities.</p> <p style="padding-left: 20px;">C. Review Normal EOF Staffing (Form IP-1030-2) to verify full EOF Staffing for offsite radiological tracking.</p> <p style="padding-left: 20px;">D. <u>IF</u> additional personnel are required <u>THEN</u> inform the EOF Manager to direct callout of needed personnel.</p> <p style="padding-left: 20px;">E. Notify the EOF staff that you have assumed these responsibilities.</p>	

Attachment 1

Offsite Radiological Assessment Director (ORAD)

Sheet 2 of 8

<u>Initial Responsibility/Activity (con't)</u>	<u>Notes</u>
<p>F Direct the MIDAS Operator to disarm (or disarm IAW steps in MIDAS Operator's Checklist) the Halon Fire Protection System (Real emergencies only)</p> <p>G <u>IF</u> there has been a release of radioactive to the environment <u>THEN:</u></p> <ol style="list-style-type: none"> 1. Direct the MIDAS Operator to place (or place IAW steps in MIDAS Operator's Checklist) the EOF ventilation in the internal recirculation mode. 2. Contact the Unit #3 Control Room and request that a Field Monitoring Team report to EOF <p>H <u>IF</u> the CCR performed offsite dose assessments and made a Protective Action Recommendation <u>THEN:</u></p> <ol style="list-style-type: none"> 1. Obtain and review NYS Radiological Emergency Data Form - Part I and Part II 2. Verify or have the Dose Assessment HP verify dose assessment calculations. 3. Evaluate Protective Action Recommendations. 4. Notify the ED or CCR if there are any discrepancies. <p>1.4 <u>IF</u> relieving another ORAD <u>THEN</u> perform a formal turnover with the current ORAD:</p> <ol style="list-style-type: none"> A Review the current ORAD's activity log B Obtain briefing form current ORAD on the emergency and any actions the have been competed or are in progress. C Make an announcement to the EOF Staff that you are now the ORAD. 	

Attachment 1
Offsite Radiological Assessment Director (ORAD)
Sheet 3 of 8

<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 Ensure habitability surveys are performed in the EOF</p> <p>2.1 Assign an HP Technician to the position of Survey Team Health Physicist (STHP) providing them the following instructions:</p> <p style="padding-left: 40px;">A Perform steps in Attachment 6, Survey Team Health Physicist (STHP) Checklist</p> <p>2.2 <u>IF</u> there is a potential for surface or airborne contamination with in the EOF <u>THEN</u></p> <p style="padding-left: 40px;">A Suspend eating and drinking until you ensure EOF food and drinking water supplies are consumable.</p> <p style="padding-left: 40px;">B Determine the survey and radiological controls needed for the EOF based on plant conditions and whether there has been a release or not.</p> <p style="padding-left: 40px;">C Provide further guidance to STHP on frequency of surveys and on the level of contamination controls required.</p> <p>2.3 <u>IF</u> the following conditions are present <u>THEN</u> inform the EOF Manager and/or the ED that an organized evacuation of the EOF to the AEOF should be considered.</p> <ul style="list-style-type: none"> • Exposure rates > 80 mRem/Hr TEDE <u>OR</u> 500mRem/Hr TODE • Projected Whole Body Dose for a 12 hour period is > 1 Rem TEDE <u>OR</u> Thyroid Dose >5 Rem TODE • Airborne concentrations which may result in exceeding occupational limits for inhalation specified in 10CFR20, Appendix B, Table 1. <p>2.4 Evacuation may be performed at rates below those listed based on plant conditions and response needs.</p>	

Attachment 1

Offsite Radiological Assessment Director (ORAD)

Sheet 4 of 8

3.0 Maintain personnel accountability in the EOF	
3.1 Keep apprised of the whereabouts of Field Monitoring Teams and other personnel assigned to you at all times.	
3.2 <u>IF</u> you are temporarily leaving the work area <u>THEN</u> A Inform the EOF Manager if you are leaving the work area. B Upon return, obtain a briefing from the EOF Manager on any events which have occurred while you were away.	
4.0 Maintain a Log	
4.1 Use Form IP-1023-4, ERO Log Sheet to log information.	
4.2 Log when you assumed the duties of ORAD.	
4.3 Log significant decisions and important details used to make decisions.	
5.0 Develop and provide recommendations for EAL and classification level changes based on radiological considerations to the ED.	
5.1 Compare dose projection and field survey results with EAL criteria to determine the impact on the existing classification level.	
5.2 Notify the ED of any EALs affected by changes in radiological conditions.	
6.0 Develop and provide recommendations for offsite PARs based on radiological considerations to the ERM.	
6.1 Notify the ED of any changes in radiological conditions which may effect the PAR	
6.2 Use procedure IP-EP-410, Protective Action Recommendations to determine proper PAR.	
6.3 Document Entergy PARs whenever a General Emergency is declared.	
6.4 Review PARs whenever radiological conditions change significantly.	

Attachment 1
Offsite Radiological Assessment Director (ORAD)

Sheet 5 of 8

<u>Continuous Responsibility/Activity (con't)</u>	<u>Notes</u>
<p>7.0 Maintain communications with the TSC Radiological Advisor to discuss radiological conditions and on and off site response actions.</p> <p>7.1 Contact the TSC Radiological Advisor for information on releases or potential releases and plant conditions which may lead to offsite radiological effects.</p> <p>7.2 Periodically contact the TSC Radiological Advisor to provide updates on new dose projections, results of environmental monitoring and to provide technical assistance as needed.</p>	
<p>8.0 Coordinate and direct the dose assessment and environmental monitoring efforts.</p> <p>8.1 Supervise the activities of the Dose Assessment HP, MIDAS Operator, EOF Communicator #1 and the Field Monitoring Teams</p> <p>8.2 Ensure the Health Physics Network (HPN) is manned when requested by the NRC</p> <p>8.3 Determine the periodicity of dose projection calculations.</p> <p style="padding-left: 20px;">A Direct the Dose Assessment HP to perform offsite dose projections using IP-EP-310, Dose Assessment.</p> <p style="padding-left: 20px;">B Direct MIDAS Operator to obtain meteorological data, plume plot and Reuter-Stokes Sentri System readings, using EP-IP-510, Meteorological, Radiological & Plant Data Acquisition System.</p> <p>8.4 Analyze dose assessment and environmental information to determine any actual or potential offsite consequences of the event.</p> <p>8.5 Determine anticipated plume based on meteorological data.</p> <p>8.6 Mark plume front and times on map table map.</p> <p>8.7 Based on projected plume travel path select offsite sample points and indicate them on Form IP-1030-5.</p>	

Attachment 1

Offsite Radiological Assessment Director (ORAD)

Sheet 6 of 8

<u>Continuous Responsibility/Activity (con't)</u>	<u>Notes</u>
<p>8.8 Determine special instructions to be provided to monitoring teams:</p> <p>A IF the expected thyroid dose is greater than 25 Rem THEN consider issuing KI</p> <p>B Team tracking efforts should be directed to limit their exposure to less than 5 Rem for the entire emergency.</p> <p>8.9 IF site perimeter surveys are needed for sectors 1,14, 15 or 16 THEN contact the OSC to have in-plant HP technicians perform survey.</p> <p>8.10 Teams should not go into radiation fields greater than 1 Rem/hr without specific directions from you. Direct EOF Communicator #1 to have Field Monitoring Teams survey anticipated plume path:</p> <p>A Brief teams on expected doses, plume path and any special instructions or safety precautions (such as use of KI, respirators, or protective clothing).</p> <p>B Have teams pick up samples from designated sample points.</p> <p>C Direct environmental monitoring be performed to confirm dose projections and track any offsite radioactive plume.</p> <p>8.11 Compare projected doses with actual readings taken by field monitoring teams.</p> <p>8.12 Determine which ERPAs are affected by any release and verify proper PARs have been issued.</p> <p>8.13 Conduct periodic briefings with the ED and the EOF Manager to discuss the status of offsite radiological information and assessments.</p> <p>8.14 Compare dose assessment and environmental monitoring efforts with state and county personnel located in the EOF or in the EOCs if county and state personnel are not located in the EOF.</p> <p>8.15 Compare dose assessment and environmental monitoring efforts with the NRC Environmental Dose Assessment Coordinator once the NRC Site Team is in the EOF.</p>	

Attachment 1
Offsite Radiological Assessment Director (ORAD)
Sheet 7 of 8

9.0	Evaluate and direct the requirements for offsite emergency exposure.	
9.1	Track EOF Staff emergency exposures. <ul style="list-style-type: none">A Monitor EOF personnel exposures or potential exposures and request ED to Authorize Emergency Exposures and the issuance of KI to Entergy emergency workers outside the Protected Area. (ED authorization of exposures is non-delegable)B <u>IF</u> EOF staff must receive exposure <u>THEN</u> request the ED authorize emergency exposures up to 1 Rem TEDE for all monitoring team personnel dispatched from the EOF and remainder of staff as required. This authorization shall be documented in the ED's ERO Log Sheet.C <u>IF</u> emergency measures require additional exposure <u>THEN</u> request the ED to raise the emergency exposure limit 1 Rem at a time up to 5 Rem.D Emergency exposures beyond 5 Rem shall be authorized on an individual basis. Request the ED authorize these exposures using Form IP-1023-6, Emergency Exposure Authorization. General guidelines (more details are listed on authorization form)<ul style="list-style-type: none">1. ERO members may receive up to 5 Rem TEDE (per event) for any required emergency activities.2. ERO members may be authorized emergency exposures up to 10 Rem TEDE to protect vital equipment.3. ERO members may be authorized emergency exposures up to 25 Rem TEDE to save a life.4. Individuals may volunteer to receive greater than 25 Rem TEDE to save a life.	
9.2	Request authorization for the issuance of KI for any large exposures or expected large exposures to the thyroid.	
9.3	Direct the use of protective clothing and respirators as necessary for Entergy workers outside the Protected Area.	
9.4	IF emergency workers are exposed to contamination or airborne activities THEN direct radiological evaluations and monitoring as needed. IP-1008, Personnel Radiological Check and Decontamination should be used for these checks.	

Attachment 1

Offsite Radiological Assessment Director (ORAD)

Sheet 8 of 8

<u>Continuous Responsibility/Activity</u> (con't)	<u>Notes</u>
<p>10.0 Report releases to the Environmental Protection Agency (EPA)</p> <p>10.1 <u>IF</u> any radionuclide release exceeds the value listed in Appendix B to § 302.4, (Form IP-1030-4) Title 40CFR302 <u>THEN</u></p> <p>A Notify the EPA National Response Center (phone number in Emergency Telephone Directory).</p> <p>B Direct Communicator to identify report is pursuant to 40CFR302.</p> <p>10.2 Document details of any communications with EPA.</p>	
<p>11.0 Initial Post Accident Environmental Sampling</p> <p style="text-align: center;"><u>NOTE:</u></p> <p>After a radiological release preliminary sampling may be performed to aid in development of more extensive plan for environmental sampling.</p> <p>11.1 Confer with Emergency Director and offsite radiological officials on need for sampling.</p> <p>11.2 Refer to IP-1004, Post Accident Offsite Environmental Surveys, Sampling and Counting for sampling guidelines</p>	
<u>Closeout Responsibility/Activity</u>	
<p>12.0 Direct Staff to return all equipment to proper storage locations.</p>	
<p>13.0 Review all documentation the EOF Radiological Staff maintained during the emergency:</p> <p>13.1 Ensure logs, forms and other documentation are complete</p> <p>13.2 Ensure all temporary procedures used and/or developed are properly documented for use by Recovery Organization so that necessary actions can be taken for plant operations</p>	
<p>14.0 Provide all logs and records to the Recovery Manager upon termination of the emergency and entry into the Recovery Phase.</p>	

Attachment 2
Dose Assessment Health Physicist (DAHP)
Sheet 1 of 4

<u>Initial Responsibility/Activity</u>	<u>Notes</u>
<p>1.0 Assume the position of DAHP.</p> <p>1.1 Review facility status boards, EDDS information and any other available sources to become familiar with current plant status.</p> <p>1.2 Obtain briefing from the ORAD or EOF Manager</p> <p style="padding-left: 20px;">A. Use an Essential Information Checklist (Form IP-1035-2) to document briefing items.</p> <p style="padding-left: 20px;">B. Review NYS Radiological Emergency Data Form, Part II if copy is available.</p> <p style="padding-left: 20px;">C. Request any additional information on current status of emergency response.</p> <p>1.5 <u>IF</u> relieving another DAHP <u>THEN</u> perform a formal turnover with the current DAHP:</p> <p style="padding-left: 20px;">D Review the current DAHP activity log</p> <p style="padding-left: 20px;">E Obtain briefing from current DAHP on the emergency and any actions the have been completed or are in progress.</p> <p>1.3 Inform the ORAD that you are now the DAHP.</p>	
<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 <u>IF</u> you are temporarily leaving the work area <u>THEN</u></p> <p>2.1 Inform the ORAD you are leaving the work area.</p> <p>2.2 Upon return, obtain a briefing from the ORAD on any events which have occurred while you were away.</p>	
<p>3.0 Maintain a Log</p> <p>3.1 Use Form IP-1023-4, ERO Log Sheet to log information.</p> <p>3.2 Log when you assumed the duties of DAHP.</p> <p>3.3 Log significant decisions and important details used to make decisions.</p>	

Attachment 2
Dose Assessment Health Physicist (DAHP)

Sheet 2 of 4

<u>Continuous Responsibility/Activity (cont.)</u>		<u>Notes</u>
4.0 Evaluate Plant Radiological Data		
4.1 Obtain Form 42c data from EDDS display, SAS printouts or fax copies received from the TSC.		
4.2 Review radiation monitor readings and evaluate for actual or potential radiological releases.		
4.3 Contact the TSC Radiological Advisor for additional information on plant radiological conditions and assistance in interpreting data.		
4.4 IF there are any indications of a radiological release THEN perform step 5.0 of this checklist.		
5.0 <u>IF</u> there has been a release or potential release of radioactive materials from the plant <u>THEN</u>:		
5.1 Perform dose projections utilizing procedure IP-EP-310, Dose Assessment, MEANS Program and procedure IP-520, Modular Emergency Assessment and Notification System (MEANS).		
6.0 Assist the ORAD in directing Field Monitoring Teams to survey locations.		
6.1 Use overlays to obtain an approximation of the plume location		
6.2 Determine which emergency sampling sites would be appropriate to send the Field Monitoring Teams to.		
6.3 Use Xu/Q values to approximate relative values between locations.		

Attachment 2
Dose Assessment Health Physicist (DAHP)
Sheet 3 of 4

<u>Continuous Responsibility/Activity</u> (con't)	<u>Notes</u>
<p>7.0 Evaluate the offsite survey data.</p> <p>7.1 Calculate the charcoal / silver zeolite iodine and particulate activities using procedure IP-1020, Airborne Radioiodine Determination.</p> <p>7.2 Determine the equivalent thyroid and whole body exposure rates utilizing Procedure IP-EP-310, "Dose Assessment"</p> <p>7.3 Complete Form IP-1030-5, Offsite Survey Data and review data with the ORAD</p>	
<p>8.0 Establish communications with the NRC via the HPN phone line.</p> <p>8.1 Dial the number listed on the V-Band console or listed in the Emergency Telephone Directory.</p> <p>8.2 Inform the NRC that the EOF is activated and performing offsite dose assessment activities. Brief them on any potential releases and answer any questions.</p> <p>8.3 <u>IF</u> requested by the NRC to stay on <u>THEN</u> stay on the line and request the ORAD to locate another individual to assist in HPN line communications.</p> <p>8.4 <u>IF</u> continuous communications are not requested <u>THEN</u> receive calls from the NRC on the HPN when phone rings.</p>	

Attachment 2
Dose Assessment Health Physicist (DAHP)

Sheet 4 of 4

<u>Continuous Responsibility/Activity</u> (con't)	<u>Notes</u>
9.0 Review Reuter-Stokes Sentri readings. 9.1 Obtain the readings from the MIDAS Operator 9.2 Compare the projected values and the measured offsite exposure rates with the Reuter-Stokes readings 9.3 <u>IF</u> there are large discrepancies <u>THEN</u> Inform the ORAD and continue to gather and analyze data to resolve values. 9.4 Present Reuter-Stokes data to ORAD for review	
<u>Closeout Responsibility/Activity</u>	
10.0 Return all equipment to proper storage locations.	
11.0 Review all documentation the DAHPs maintained during the emergency: A. Ensure logs, forms and other documentation are complete B. Ensure any items which need follow up investigations are identified to be completed during the Recovery Phase	
12.0 Provide all logs and records to the ORAD upon termination of the emergency and entry into the Recovery Phase.	

Attachment 3
MIDAS Operator

Sheet 1 of 4

<u>Initial Responsibility/Activity</u>	<u>Notes</u>
<p>1.0 Assume the position of MIDAS Operator.</p> <p>1.1 Sign in on the Facility Sign-in Board</p> <p>1.2 Review facility status boards, EDDS information and any other available sources to become familiar with current plant status.</p> <p>1.3 Obtain briefing from the DAHP or the ORAD</p> <p style="padding-left: 20px;">A. Review NYS Radiological Emergency Data Form, Part II if copy is available.</p> <p style="padding-left: 20px;">B. Request any additional information on current status of emergency response.</p> <p>1.4 <u>IF</u> relieving another MIDAS Operator <u>THEN</u> perform a formal turnover with the current MIDAS Operator:</p> <p style="padding-left: 20px;">A. Review the current MIDAS Operator activity log</p> <p style="padding-left: 20px;">B. Obtain briefing from current MIDAS Operator on the emergency and any actions they have been completed or are in progress.</p> <p>1.5 Inform the DAHP that you are now the MIDAS Operator.</p> <p>1.6 <u>IF</u> the facility has <u>NOT</u> been activated <u>THEN</u></p> <p style="padding-left: 20px;">A. Check operability and availability of MIDAS equipment, Reuter-Stokes Systems and Meteorological data.</p> <p style="padding-left: 20px;">B. Report any equipment problems to the DAHP or ORAD.</p>	
<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 <u>IF</u> you are temporarily leaving the work area <u>THEN</u></p> <p>2.1 Inform the DAHP or ORAD you are leaving the work area.</p> <p>2.2 Upon return, obtain a briefing from the DAHP or ORAD on any events which have occurred while you were away.</p>	

Attachment 3
MIDAS Operator

Sheet 2 of 4

<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>3.0 Maintain a Log</p> <p>3.1 Use Form IP-1023-4, ERO Log Sheet to log information.</p> <p>3.2 Log when you assumed the duties of MIDAS Operator.</p> <p>3.3 Log significant decisions, important details used to make decisions and any equipment operability issues.</p>	
<p>4.0 <u>WHEN</u> directed by the ORAD <u>THEN</u> disarm the EOF Halon System</p> <p>4.1 Obtain the key to the FIKE Fire Suppression System control panel from the EOF key locker.</p> <p>4.2 Open the upper compartment of the FIKE control panel located on the west wall of the EOF next to the key locker.</p> <p>4.3 Toggle the module switch (the switch is located in the lower left corner of the panel.) from the "Armed" position to the "S1" position.</p> <p>4.4 <u>IF</u> the ORAD does <u>NOT</u> direct this action <u>THEN</u> ask the ORAD if the action is required.</p>	
<p>5.0 <u>WHEN</u> directed by the ORAD <u>THEN</u> place the EOF ventilation on internal recirculation.</p> <p>5.1 Obtain the key to the EOF Electrical Equipment Room from the EOF key locker.</p> <p>5.2 Locate the EOF HVAC damper control system switches on the East wall of the EOF Electrical Equipment Room.</p> <p>5.3 Rotate all three (3) damper control knobs CLOCKWISE to close the dampers.</p> <p>5.4 Place the three (3) AC Unit control switches to the "OVERRIDE" (up) position</p> <p>5.5 Inform the ORAD and log when you have placed ventilation system in recirculation and return key to key locker.</p> <p>5.6 <u>IF</u> the ORAD does <u>NOT</u> direct this action <u>THEN</u> ask the ORAD if the action is required.</p>	

Attachment 3
MIDAS Operator

Sheet 3 of 4

<u>Continuous Responsibility/Activity (con't)</u>	<u>Notes</u>
<p>6.0 Maintain the MET Data Status Board</p> <p>6.1 Use procedure EP-IP-510, Meteorological, Radiological & Plant Data Acquisition System. to retrieve weather predictions.</p> <p>6.2 Obtain the latest measured MET data from systems every 15 minutes.</p> <p style="padding-left: 20px;">A Update the MET Data Status Board to display the correct data.</p> <p style="padding-left: 20px;">B Notify the ORAD of any changes in the meteorological data.</p> <p>6.3 Obtain weather predictions from MIDAS and/or Weather Bureau</p> <p style="padding-left: 20px;">A Update the MET Data Status Board to display the correct data.</p> <p style="padding-left: 20px;">B Notify the ORAD of any significant changes in the weather forecast data</p>	
<p>7.0 Obtain Reuter-Stokes data.</p> <p>7.1 Use procedure EP-IP-510, Meteorological, Radiological & Plant Data Acquisition System to obtain Reuter-Stokes monitor data.</p> <p>7.2 IF any readings indicate above background levels THEN inform the DAHP and ORAD immediately of the readings.</p>	
<p>8.0 Assist in obtaining radiological release data and performance dose projections as directed.</p> <p>8.1 Use the Plant Information Computer System (PICS) to, obtain data.</p> <p>8.2 Review dose assessment data with the DAHP and ORAD</p>	

Attachment 3
MIDAS Operator

Sheet 4 of 4

<u>Closeout Responsibility/Activity</u>	
9.0 Rearm the EOF Halon System	
9.1 Obtain the key to the FIKE Fire Suppression System control panel from the EOF key locker.	
9.2 Open the upper compartment of the FIKE control panel located on the west wall of the EOF next to the key locker.	
9.3 Toggle the module switch (the switch is located in the lower left corner of the panel.) from the "S1" (up) position to the "Armed" (down) position.	
10.0 Return the EOF ventilation to normal.	
10.1 Obtain the key to the EOF Electrical Equipment Room from the EOF key locker.	
10.2 Locate the EOF HVAC damper control system switches on the East wall of the EOF Electrical Equipment Room.	
10.3 Rotate all three (3) damper control knobs COUNTER - CLOCKWISE half way to open the dampers.	
10.4 Place the three (3) AC control switches to the "NORMAL" (down) position	
11.0 Return all equipment used by MIDAS Operators to it's proper storage locations.	
12.0 Review all documentation the MIDAS Operator maintained during the emergency:	
12.1 Ensure logs, forms and other documentation are complete	
12.2 Ensure any items which need follow up investigations are identified to be completed during the Recovery Phase	
13.0 Provide all logs and records to the ORAD upon termination of the emergency and entry into the Recovery Phase.	

Attachment 4
Survey Team Health Physicist (STHP)

Sheet 1 of 4

<u>Initial Responsibility/Activity</u>	<u>Notes</u>
<p>1.0 When directed by the ORAD assume the position of STHP.</p> <p>1.1 Sign in on the Facility Sign In Board.</p> <p>1.2 Periodically review this checklist throughout the emergency to determine which actions are appropriate for current conditions.</p> <p>1.3 <u>IF</u> relieving another STHP <u>THEN</u> perform a formal turnover with the current STHP:</p> <p style="padding-left: 20px;">A. Review the current EOF survey data</p> <p style="padding-left: 20px;">B. Obtain briefing from current STHP on the emergency and any actions the have been completed or are in progress.</p>	
<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 Confer with the ORAD or DAHP on the need to set up EOF Radiological Controls. When directed set up EOF entrance as follows:</p> <p>2.1 Set up stanchions, rope barricade, and frisker in the main hall entrance to EOF work area.</p> <p>2.2 Set frisker alarm to two (2) times background.</p> <p>2.3 Set up Step Off Pads (SOPs) at entrance.</p> <p style="padding-left: 20px;">A <u>IF</u> hallway contamination levels are LESS THAN 1000 dpm/100 cm² <u>THEN</u> use SOP labeled "CHECK SHOES BEFORE STEPPING HERE"</p> <p style="padding-left: 20px;">B <u>IF</u> hallway contamination levels are GREATER THAN 1000 dpm/100 cm² <u>THEN</u> use SOP labeled "REMOVE PROTECTIVE CLOTHING BEFORE STEPPING HERE"</p> <p style="padding-left: 40px;">AND</p> <p style="padding-left: 20px;">C Place a waste receptacle and clean shoe covers near the SOP location.</p> <p>2.4 Post the door in the upper level EOF near the Clerks as "Emergency Exit Only"</p> <p>2.5 Check to ensure door to West stairwell (to upper EOF) is locked.</p>	

Attachment 4
Survey Team Health Physicist (STHP)

Sheet 2 of 4

<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>3.0 Monitor Habitability of the EOF</p> <p>3.1 Survey building using an Ion Chamber instrument approximately every 30 minutes. Survey times can be changed at the discretion of the ORAD.</p> <p>3.2 Take Beta and Gamma readings throughout occupied areas of the EOF and hallways record readings on EOF Radiological Survey (Form IP-1030-3).</p> <p>3.3 Take smears at building entrance, EOF entrance and in hallways. Record results on EOF Radiological Survey (Form IP-1030-3)</p> <p>3.4 <u>IF</u> any readings are found to be above background <u>THEN</u> inform the ORAD or DAHP immediately.</p> <p>3.5 Use procedure IP-1041, Use of Triton to Monitor for Radiogas" to set up the Triton monitor.</p> <p>3.6 <u>IF</u> Triton monitor alarms or surveys indicate contamination <u>THEN</u> monitor air in the EOF</p> <p style="padding-left: 20px;">A Set up air sampler near HP Work Area</p> <p style="padding-left: 20px;">B <u>IF</u> beta survey results are greater than 50 mr/hr <u>OR</u> the iodine-131 activity on a charcoal filter cartridge is greater than 10 –8 uCi/cc <u>THEN</u> use silver zeolite filter cartridge.</p> <p style="padding-left: 20px;">C Set up MS-2/SPA-3 Counter in the lower level of the EOF by the HP area.</p> <p style="padding-left: 20px;">D Determine airborne air activity using procedure IP-1020, Airborne Activity Determination. Record results EOF Radiological Survey (Form IP-1030-3).</p>	
<p>4.0 <u>IF</u> the Security Guards do <u>NOT</u> bring two (2) radios <u>THEN</u> obtain Emergency Planning Radios</p> <p>4.1 Call the Command Guard House and request they send the two (2) Emergency Planning Radios to the EOF</p> <p>4.2 Provide radios to Security Guards</p>	

Attachment 4
Survey Team Health Physicist (STHP)

Sheet 3 of 4

<u>Continuous Responsibility/Activity (con't)</u>	<u>Notes</u>
<p>5.0 Assign Dosimetry</p> <p>5.1 <u>IF</u> the EOF Security Guards do <u>NOT</u> have a TLD or dosimeter <u>THEN</u> assign a TLD badge and dosimeter to the EOF Security Guards.</p> <p>5.2 Place one (1) each TLD badge and dosimeter in the upper and lower areas of the EOF work areas to monitor EOF personnel exposures.</p> <p>5.3 Ensure Field Monitoring Team members are issued TLD badges and dosimeter.</p>	
<p>6.0 Personnel Exposure Control - ALARA</p> <p>6.1 <u>IF</u> Entergy Emergency Personnel outside the Protected Area must receive emergency exposures <u>THEN</u> confer with the ORAD and EOF Manager to establish controls and limits.</p> <p style="margin-left: 40px;">A Emergency Exposures may be authorized by the Emergency Director up to 5 Rem for the event regardless of prior year-to-date exposures.</p> <p style="margin-left: 40px;">B Limits will normally be set at 1 Rem and raised 1 Rem at a time up to 5 Rem.</p> <p style="text-align: center;"><u>NOTE</u></p> <p>EOF Communicator #1 shall track exposures of Field Monitoring Team members.</p> <p>6.2 <u>IF</u> any Entergy emergency workers outside the Protected Area are receiving radiological exposures <u>THEN</u> record exposures on Individual Exposure Tracking Log (Form IP-1023-3)</p> <p>6.3 Maintain Total Effective Dose Equivalent (TEDE) less than established emergency exposure limits.</p> <p>6.4 <u>IF</u> any worker must receive greater than 5 Rem <u>THEN</u> Have the ORAD request the ED authorize these exposures using Form IP-1023-6, Emergency Exposure Authorization.</p>	
<p>7.0 <u>IF</u> directed to determine thyroid burdens <u>THEN</u> arrange for emergency workers to receive Whole Body counts at a onsite or offsite counting station.</p>	

Attachment 4
Survey Team Health Physicist (STHP)

Sheet 4 of 4

<u>Continuous Responsibility/Activity</u> (con't)	<u>Notes</u>
8.0 <u>IF</u> directed to perform onsite surveys <u>THEN</u> use procedure IP-1015, Radiological Surveys Outside the Protected Area.	
9.0 <u>IF</u> directed to perform site perimeter surveys <u>THEN</u> use procedure IP-1015, Radiological Surveys Outside the Protected Area..	
10.0 <u>IF</u> directed to perform personnel contamination checks and decontamination <u>THEN</u> use procedure IP-1008, Personnel Radiological Check and Decontamination.	
11.0 <u>IF</u> directed to perform vehicle contamination checks and decontamination <u>THEN</u> use procedure IP-1009, Radiological Check and Decontamination of Vehicles.	
12.0 <u>IF</u> directed to check equipment leaving the site <u>THEN</u> use procedure IP-1014, Radiological Check of Equipment Before it leaves the Site.	
<u>Closeout Responsibility/Activity</u>	
13.0 Review all documentation the STHPs maintained during the emergency: 13.1 Ensure logs, forms and other documentation are complete 13.2 Ensure any items which need follow up investigations are identified to be completed during the Recovery Phase	
14.0 Provide all logs and records to the ORAD upon termination of the emergency and entry into the Recovery Phase.	

Attachment 5
EOF Technical Advisor (TA)
 Sheet 1 of 3

<u>Initial Responsibility/Activity</u>	<u>Notes</u>
<p>1.0 Assume the position of TA.</p> <p>1.1 Sign in on the Facility Sign-in Board</p> <p>1.2 Review facility status boards, EDDS information and any other available sources to become familiar with current plant status.</p> <p>1.3 Confer with the Emergency Director and EOF Manager on emergency status</p> <p>1.4 <u>IF</u> relieving another TA <u>THEN</u> perform a formal turnover with the current TA:</p> <p style="padding-left: 20px;">A. Review the current TA activity log</p> <p style="padding-left: 20px;">B. Obtain briefing from current TA on the emergency and any actions the have been competed or are in progress.</p> <p>1.5 Inform the Emergency Director that you are now the TA.</p>	
<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 <u>IF</u> you are temporarily leaving the work area <u>THEN</u></p> <p>2.1 Inform the DAHP or ORAD you are leaving the work area.</p> <p>2.2 Upon return, obtain a briefing from the DAHP or ORAD on any events which have occurred while you were away.</p>	
<p>3.0 Maintain a Log</p> <p>3.1 Use Form IP-1023-4, ERO Log Sheet to log information.</p> <p>3.2 Log when you assumed the duties of Emergency Director Technical Advisor.</p> <p>3.3 Log significant decisions, important details used to make decisions and any equipment operability issues.</p>	

Attachment 5
EOF Technical Advisor (TA)

Sheet 2 of 3

<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>4.0 Obtain and monitor plant data:</p> <p>4.1 Monitor plant data and operations information on the EOF-TSC-CCR dedicated phone line.</p> <p>4.2 Monitor plant data on the Emergency Data Display System (EDDS), SAS Computer Terminal and Proteus Computer.</p> <p>4.3 Advise ED on the following items:</p> <p style="padding-left: 40px;">A Any significant change in the condition of the plant</p> <p style="padding-left: 40px;">B Any observable trends in plant data</p> <p style="padding-left: 40px;">C Major Operator actions being undertaken</p> <p style="padding-left: 40px;">D Any condition which may effect the emergency classification.</p> <p>4.4 Advise the ORAD of any observed changes in plant radiological data.</p> <p>4.5 <u>IF</u> any of the EOF plant data computer systems are not functioning <u>THEN</u> inform a SAS/Proteus operator of malfunctions.</p>	
<p>5.0 Maintain Plant Status Chronology on easel pad.</p> <p>5.1 Enter major information on plant status or changes to plant status obtained from CCR or TSC</p> <p>5.2 WHEN easel sheet gets full THEN:</p> <p style="padding-left: 40px;">A Have Clerical Staff transcribe information onto log sheet, place sheet with TA logs.</p> <p style="padding-left: 40px;">B Have Clerical Staff hang completed easel sheet on the wall between upper and lower levels of EOF.</p>	
<p>6.0 Assist ED in interpreting plant data</p> <p>6.1 Provide technical advice on plant operating procedures</p> <p>6.2 Provide technical advice on Severe Accident Management Guidelines.</p>	

Attachment 5
EOF Technical Advisor (TA)

Sheet 3 of 3

<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
7.0 Assist Emergency Director in conduct of briefings 7.1 Assist the ED in preparations for facility briefings. 7.2 When directed by the ED provide summary briefings of plant conditions to EOF Staff and/or offsite authorities present in the EOF.	
8.0 Return all equipment to it's proper storage locations.	
9.0 Review all documentation the ED Technical Advisors maintained during the emergency: 9.1 Ensure logs, forms and other documentation are complete 9.2 Ensure any items which need follow up investigations are identified to be completed during the Recovery Phase	
10.0 Provide all logs and records to the EOF Manager upon termination of the emergency and entry into the Recovery Phase.	

Attachment 6
EOF Communicator No. 1

Sheet 1 of 4

<u>Initial Responsibility/Activity</u>	<u>Notes</u>
<p>1.0 Assume the position of EOF Communicator No. 1.</p> <p>1.1 Review facility status boards, Emergency Data Display System (EDDS) information and any other available sources to become familiar with current plant status.</p> <p>1.2 Obtain briefing from the Dose Assessment HP (DAHP) or the Offsite Radiological Assessment Director (ORAD).</p> <p>A. Review Field Monitoring Team data.</p> <p>B. Request any additional information on current status of emergency response.</p> <p>1.3 <u>IF</u> relieving another communicator <u>THEN</u> perform a formal turnover with the current EOF Communicator No. 1:</p> <p>A. Review the current EOF Communicator No. 1 activity log.</p> <p>B. Obtain briefing from current EOF Communicator No. 1 on the emergency and any actions the have been completed or are in progress.</p> <p>1.4 Inform the ORAD and DAHP that you are now EOF Communicator No. 1.</p>	

Attachment 6
EOF Communicator No. 1
Sheet 2 of 4

<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 Transmit directions to the Offsite Teams</p> <div data-bbox="326 480 1208 562" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">Note: Offsite Teams are designated as Unit # 2 or Unit # 3</p> </div> <p>2.1 Use the Radio or Cell Phones to communicate with teams.</p> <p>2.2 Confer with the ORAD and DAHP to determine the sample points and the expected whole body exposure rates based on dose projections.</p> <p>2.3 Enter selected sample point(s) and assigned team number on Form IP-1030-5, Offsite Survey Team Data Sheet.</p> <p>2.4 Contact the each team and direct them to the designated sample point providing following information:</p> <p style="margin-left: 40px;">A The expected whole body dose rates</p> <p style="margin-left: 40px;">B Methods of traversing the plume to keep their exposure as low as possible, such as going around plume or traveling through low field areas.</p> <p>2.5 Have teams verify instructions by repeating them back.</p>	
<p>3.0 Receive and Record Field Monitoring Team Data</p> <p>3.1 Have teams state sample point for which data is being transmitted.</p> <p>3.2 Record survey data on Form IP-1030-5, Offsite Survey Team Data Sheet.</p> <p>3.3 Verify numbers by repeating values back to Team</p> <p>3.4 Inform the ORAD or DAHP immediately of survey and sample results</p>	

Attachment 6
EOF Communicator No. 1

Sheet 3 of 4

<u>Continuous Responsibility/Activity (con't)</u>	<u>Notes</u>
<p>4.0 <u>Receive and Record Field Monitoring Team Data</u></p> <p>4.1 Have teams state sample locations for which data is being transmitted.</p> <p>4.2 Record survey data on Form 1030-5, Offsite Survey Team Data Sheet.</p> <p>4.3 Verify numbers by repeating values back to each team.</p> <p>4.4 Inform the ORAD or DAHP immediately of survey and sample results.</p>	
<p>5.0 <u>Maintain Field Monitoring Team Exposure Records.</u></p> <p>5.1 <u>IF</u> any exposure rates are above background <u>THEN</u> obtain team member whole body exposure (dosimetry readings) each time they radio or call in.</p> <p>5.2 <u>IF</u> any team members are receiving radiological exposures <u>THEN</u> record exposures on Individual Exposure Tracking Log (Form IP-1023-3)</p>	
<p>6.0 <u>Keep Field Monitoring Teams informed of major changes in emergency status:</u></p> <p>6.1 Changes in emergency classification.</p> <p>6.2 Start or stop of any offsite releases of radioactive materials.</p>	
<p>7.0 <u>Obtain new sample locations and points from ORAD</u></p> <p>Repeat above steps to continue plume tracking until ORAD determined surveys and sampling are no longer necessary.</p>	

Sheet 4 of 4

Attachment 6
EOF Communicator No. 1

<u>Closeout Responsibility/Activity</u>	
8.0	Return all equipment to proper storage locations.
9.0	Review all documentation EOF Communicator No. 1s maintained during the emergency:
9.1	Ensure logs, forms and other documentation are complete
9.2	Ensure any items which need follow up investigations are identified to be completed during the Recovery Phase
10.0	Provide all logs and records to the ORAD upon termination of the emergency and entry into the Recovery Phase.

Attachment 7
EOF Communicator No. 2

Sheet 1 of 3

<u>Initial Responsibility/Activity</u>	<u>Notes</u>
<p>1.0 Assume the position of EOF Communicator No. 2.</p> <p>1.1 Review facility status boards, Emergency Data Display System (EDDS) information and any other available sources to become familiar with current plant status.</p> <p>1.2 Obtain briefing from the EOF Manager or the Emergency Director</p> <p style="padding-left: 20px;">A. Review NYS Radiological Emergency Data Form Part I data which has been transmitted</p> <p style="padding-left: 20px;">B. Request any additional information on current status of emergency response.</p> <p>1.3 <u>IF</u> relieving another communicator <u>THEN</u> perform a formal turnover with the current EOF Communicator No. 2:</p> <p style="padding-left: 20px;">A. Review the current EOF Communicator No. 2 activity log.</p> <p style="padding-left: 20px;">B. Obtain briefing from current EOF Communicator No. 2 on the emergency and any actions the have been completed or are in progress.</p> <p style="padding-left: 20px;">C. Determine the time the next notification update is due to be transmitted.</p> <p>1.4 Inform the EOF Manager and ED that you are now EOF Communicator No. 2.</p>	
<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 <u>IF</u> you are temporarily leaving the work area <u>THEN</u></p> <p>2.1 Inform the EOF Manager you are leaving the work area.</p> <p>2.2 Upon return, obtain a briefing from the EOF Manager on any events which have occurred while you were away.</p>	
<p>3.0 Maintain a Log</p> <p>3.1 Use Form IP-1023-4, ERO Log Sheet to log information.</p> <p>3.2 Log when you assumed the duties of EOF Communicator No.2.</p> <p>3.3 Log all communications that are not already documented on Forms.</p>	

Attachment 7
EOF Communicator No. 2
 Sheet 2 of 3

<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>4.0 form required notifications to Offsite Authorities.</p> <p style="text-align: center;"><u>NOTES:</u></p> <p>Start notification of any change in classification within 15 minutes of the classification change.</p> <p>The MEANS Computer program may be used to print NYS Radiological Emergency Data Forms</p> <p>4.1 <u>IF</u> the emergency classification changes(upgrade, downgrade, terminates) <u>THEN</u> perform the following:</p> <ul style="list-style-type: none"> A Complete or obtain from ED a NYS Radiological Emergency Data Form Part 1 (Form IP-1030-1) B Ensure the ED has signed the NYS Radiological Emergency Data Form to indicate approval for transmittal. C Communicate the information on the completed form(s) to the offsite authorities per instructions on Alert/SAE/GE Upgrade/Update Notification Checklist (Form IP-1002-3) <p>4.2 <u>IF</u> the emergency classification <u>DOES NOT</u> change <u>THEN</u> perform subsequent notifications as follows:</p> <ul style="list-style-type: none"> A Complete or obtain from ED a NYS Radiological Emergency Data Form (Part I) when any of the following conditions are met: <ul style="list-style-type: none"> • It has been approximately 30 minutes since the last form was transmitted. • The plant status has changed (Stable, improving, degrading or entry into the recovery phase) • There has been a change in the status of an actual or potential radiological release. B <u>IF</u> there is a change in radiological release data <u>THEN</u> include transmittal of data on NYS Radiological Emergency Data Form Part II 	

Attachment 7
EOF Communicator No. 2

Sheet 3 of 3

<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>C Ensure the ED has signed the NYS Radiological Emergency Data Form(s) to indicate approval for transmittal.</p> <p>D Communicate the information on the completed form(s) to the offsite authorities per instructions on Alert/SAE/GE Upgrade/Update Notification Checklist (Form IP-1002-3)</p>	
<p>5.0 WHEN directed by the Emergency Director (ED) THEN obtain accountability status from the OSC Manager and/ or Unit 3 Watch Supervisor.</p>	
<p>6.0 Industry group notifications</p> <p>6.1 Notify the following:</p> <ul style="list-style-type: none"> • American Nuclear Insurers • New York Public Service Commission <p>6.2 Notify the EOF Manager the notifications were made or not made.</p>	
<p style="text-align: center;"><u>Closeout Responsibility/Activity</u></p>	
<p>7.0 Return all equipment to proper storage locations.</p>	
<p>8.0 Review all documentation EOF Communicator No. 2 maintained during the emergency:</p> <p>8.1 Ensure logs, forms and other documentation are complete</p>	
<p>9.0 Provide all logs and records to the EOF Manager upon termination of the emergency and entry into the Recovery Phase.</p>	

Attachment 8
EOF Clerical Staff

Sheet 1 of 4

<u>Initial Responsibility/Activity</u>	<u>Notes</u>
<p>1.0 Assume the position of EOF Clerical.</p> <p>1.1 Sign in on the Facility Sign-in Board</p> <p>1.2 Obtain briefing from the EOF Manager</p> <p>1.3 IF relieving another clerk THEN perform a formal turnover with the current clerk:</p> <p style="padding-left: 40px;">A. Review current emergency status</p> <p style="padding-left: 40px;">B. Obtain briefing from current Clerical Staff on the emergency and any actions the have been competed or are in progress.</p> <p>1.4 Inform the EOF Manager that you are now part of the EOF Clerical Staff.</p>	
<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 Process Plant Status Data</p> <p>2.1 IF the Emergency Data Display System (EDDS) is operating THEN perform the following:</p> <p style="padding-left: 40px;">A. Obtain computer printout of Forms 42a, 42b and 42c trend data screens every 15 minutes.</p> <p style="padding-left: 40px;">B. Make and distribute copies of updated Forms 42a, 42b and 42c to representative located in the EOF.</p> <p>Telecopy forms (a, b & c) to the following locations and record times sent in the Telecopy Log, Form 19:</p> <ul style="list-style-type: none"> • State • County EOCs • NRC • JNC 	

Attachment 8
EOF Clerical Staff

Sheet 2 of 4

<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>2.2 <u>IF</u> the Emergency Data Display System (EDDS) is <u>NOT</u> operating <u>THEN</u> perform the following:</p> <ul style="list-style-type: none"> A. Inform the EOF Manager B. Receive Forms 42a, 42b and 42c via telecopier from the TSC. C. Prepare transparencies of forms and place on projector. D. Make and distribute copies of forms to NRC, FEMA, State and County Representatives at the EOF E. Telecopy forms (a, b & c) to the State and County EOCs, JNC and NRC and record times sent in the Telecopy Log (Form 19). <p>2.3 <u>IF</u> the Emergency Data Display System (EDDS) is <u>NOT</u> operating <u>AND</u> Forms 42a, 42b and 42c are <u>NOT</u> available via telecopier from the TSC <u>THEN</u> perform the following:</p> <ul style="list-style-type: none"> A. Inform the EOF Manager B. Receive data on Forms 42a, 42b and 42c from the EOF SAS Proteus Operator and the TSC C. Prepare transparencies of forms and place on projector. D. Make and distribute copies of updated Forms 42a, 42b and 42c to NRC, FEMA, State and County Representatives at the EOF. E. Telecopy forms (a, b & c) to the State and County EOCs, JNC and NRC and record times sent in the Telecopy Log (Form 19). <p>2.4 <u>IF</u> all of the following systems are <u>NOT</u> operating: EDDS, Telecopiers and EOF SAS Proteus Computer Terminals:</p> <p><u>THEN</u></p> <ul style="list-style-type: none"> A. Inform the EOF manager that equipment necessary to obtain plant data in the EOF is not operating B. Request the SAS / Proteus Operator obtain Form 42a, 42b and 42c data via phone from the TSC C. Distribute forms as specified in step 2.3 above.. 	

Attachment 8
EOF Clerical Staff

Sheet 3 of 4

<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>3.0 Process the NYS Radiological Emergency Data Form Parts I & II as follows:</p> <p>3.1 Receive form(s) from the EOF Communicator #2, verifying that the form(s) are signed by the Emergency Director.</p> <p>3.2 Telecopy form(s) to NYS, Counties, JNC and NRC</p> <p>3.3 Record time of telecopy on Telecopy Log, Form 18</p> <p>3.4 Make and distribute copies of form to NRC, FEMA, State and County representatives in the EOF.</p> <p>3.5 Return original form to EOF Communicator #2</p>	
<p>4.0 Process the Offsite Survey Team Data (Form IP-1030-5) as follows:</p> <p>4.1 Receive form from the ORAD</p> <p>4.2 Make copies of form and distribute to NRC, FEMA, State and County representatives in the EOF.</p> <p>4.3 Telecopy form to NYS and County EOCs. (Ask the ORAD for the order in which to transmit forms to the counties.)</p>	
<p>5.0 Receive and distribute telecopies from outside sources as follows:</p> <p>5.1 Make copies of all documents received.</p> <p>5.2 Distribute to addressee if known</p> <p>5.3 For any document containing radiological data distribute copies to ORAD and NRC, FEMA, State and County representatives in the EOF.</p> <p>5.4 Maintain copies of all telecopies.</p>	

Attachment 8
EOF Clerical Staff

Sheet 4 of 4

<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
6.0 Copy Chronology Easel Pad as follows: 6.1 Receive completed easel pad from ED Technical Advisor 6.2 Transcribe the information from the easel pad and give transcript to the ED Technical Advisor 6.3 Tape the easel pad to the wall between the upper and lower levels of the EOF.	
7.0 Perform accountability duty for the Upper Level of the EOF as follows: 7.1 Record the names and arrival times of personnel stationed in the upper level EOF.	
<u>Closeout Responsibility/Activity</u>	
8.0 Return all equipment to proper storage locations.	
9.0 Review all documentation maintained during the emergency by the clerical staff to ensure it is complete and organized.	
10.0 Provide all logs and records to the EOF Manager upon termination of the emergency and entry into the Recovery Phase.	

Attachment 9
EOF Data Coordinator

Sheet 1 of 2

<u>Initial Responsibility/Activity</u>	<u>Notes</u>
<p>1.0 Assume the position of EOF Data Coordinator</p> <p>1.1 Sign in on the Facility Sign-in Board</p> <p>1.2 IF the EOF has not been previously activated THEN perform the following steps:</p> <p>A. If not already active, start the EDDS computers to display plant data.</p> <ol style="list-style-type: none">1. Start computer2. Bypass network logon3. Launch "Internet Explorer" from the windows desktop4. From the "ProcessNet" screen select "logon" (no password required for guest logon)5. Select "Form 42A" for monitor labeled Form 42A6. Adjust display to display entire form.7. Return to step 1 and repeat for Forms 42B and 42C8. Repeat for the EDDS terminal(s) located upstairs in the State and County work area. <p>B. Ensure the Plant Integration Computer System (PICS) is operational.</p> <p>C. IF EDDS displays are not functioning THEN perform the following:</p> <ol style="list-style-type: none">1. Obtain Form 42A, 42B and 42C data printout from PICS.2. IF PICS is not operating THEN obtain form information from the TSC Data Coordinator via fax.	

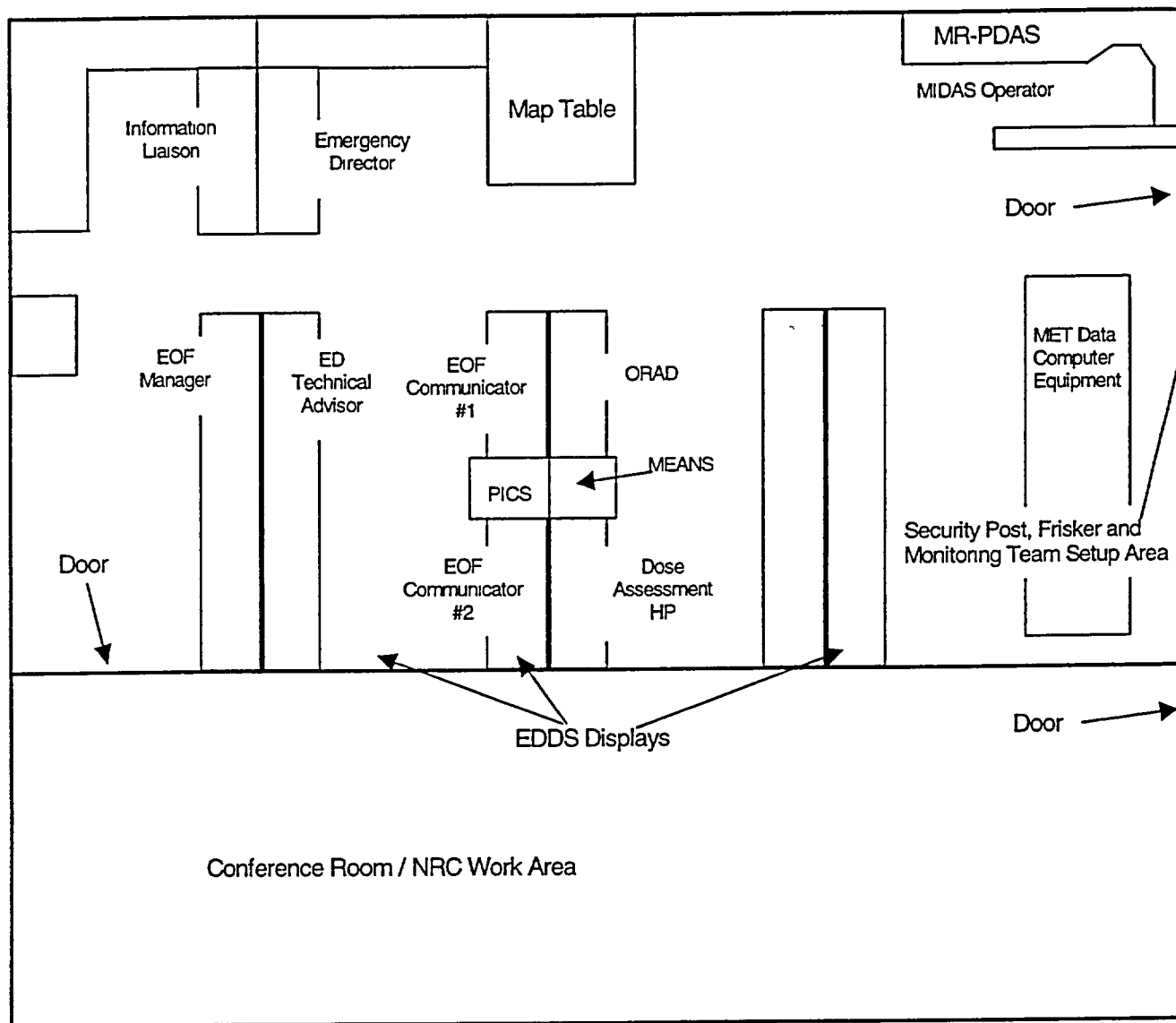
Attachment 9
EOF Data Coordinator

Sheet 2 of 2

<u>Initial Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>1.3 IF relieving another EOF Data Coordinator THEN perform a formal turnover with the current EOF Data Coordinator:</p> <ul style="list-style-type: none"> A. Review current emergency status B. Obtain briefing from current EOF Data Coordinator on the emergency and any actions the have been competed or are in progress. <p>1.4 Inform the EOF Manager that you are now the EOF Data Coordinator</p>	
<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 IF the Emergency Data Display System (EDDS) is NOT operating THEN perform the following:</p> <ul style="list-style-type: none"> A. Inform the EOF Manager B. Contact the TSC Data Coordinator to verify the server is operating properly. C. Attempt to call up data. Procedure IP-1026, Emergency Data Acquisition, provides further guidance on system troubleshooting. 	
<p>3.0 Continue to monitor EOF information systems and assist EOF Staff in obtaining information as needed.</p>	
<u>Closeout Responsibility/Activity</u>	
<p>4.0 Return all equipment to proper storage locations.</p>	
<p>5.0 Review all documentation maintained during the emergency by the EOF SAS / Proteus Operator to ensure it is complete and organized.</p>	
<p>6.0 Provide all logs and records to the EOF Manager upon termination of the emergency and entry into the Recovery Phase.</p>	

Addendum 1
EOF Layout
Sheet 1 of 2

Lower Level Work Area

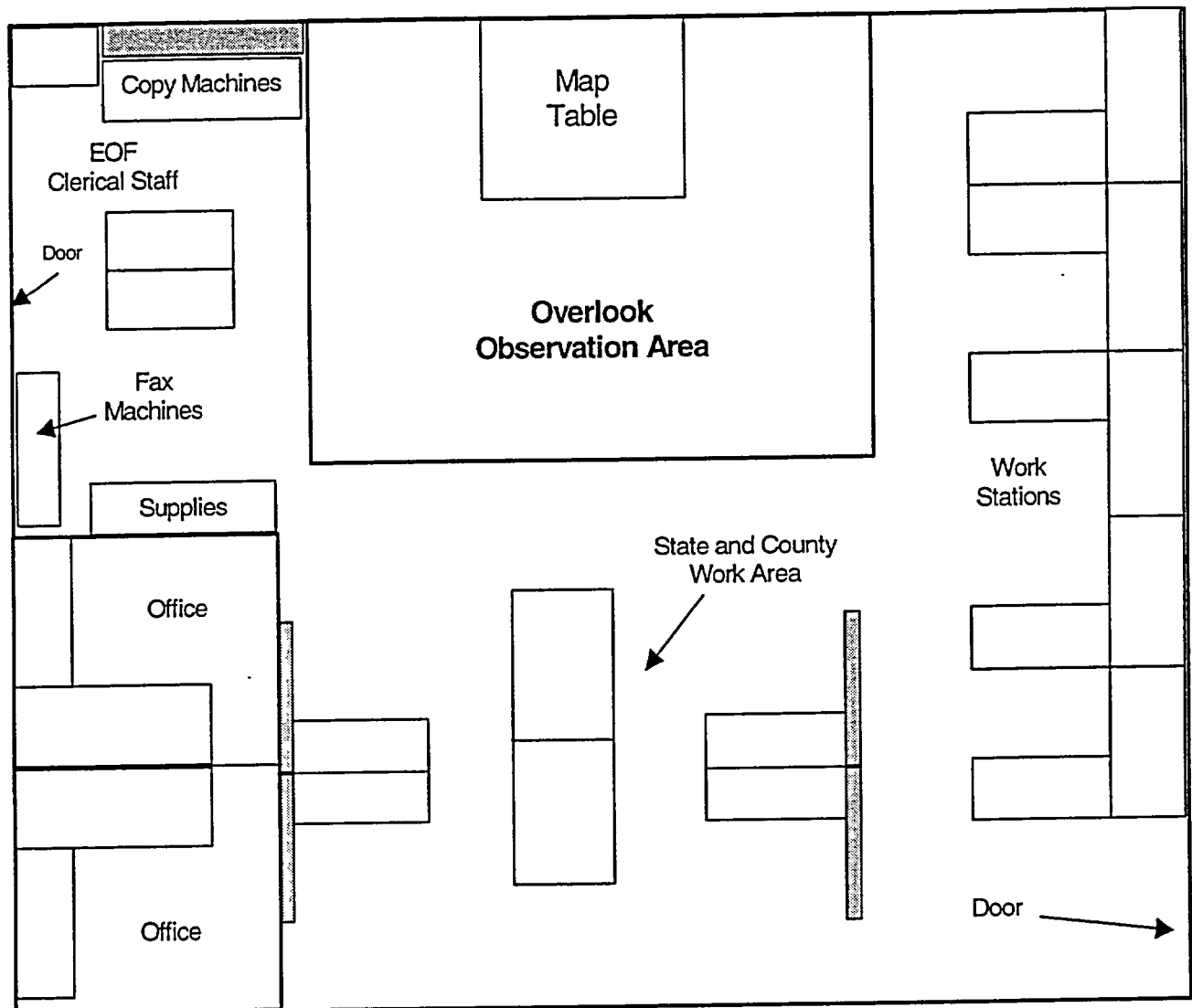


Addendum 1

EOF Layout

Sheet 2 of 2

Upper Level Work Area



Addendum 2
NYS Radiological Data Form (Part I) (Form IP-1030-1)
Sheet 1 of 2

New York State Radiological Emergency Data Form Part I - General Information Instructions																																																													
1. This message being transmitted on: _____ at: _____ (Date) (Time)	<input type="checkbox"/> AM VIA: A RECS <input type="checkbox"/> PM B Other _____																																																												
2. This is ... A. NOT an Exercise B. An Exercise																																																													
3. The Facility Providing this Information is: A. INDIAN POINT NUMBER 2 B. INDIAN POINT NUMBER 3																																																													
4. The Emergency A. Unusual Event C. Site Area Emergency E. Emergency Terminated F. Recovery B. Alert D. General Emergency G. Transportation Incident																																																													
5. This Emergency Classification Declared on: _____ at: _____ (Date) (Time) <input type="checkbox"/> AM <input type="checkbox"/> PM																																																													
6. Release of Radioactive Materials due to the Classified Event A. No Release B. Release BELOW federally approved operating limits (Technical Specifications) <input type="checkbox"/> To Atmosphere <input type="checkbox"/> To Water C. Release ABOVE federally approved operating limits (Technical Specifications) <input type="checkbox"/> To Atmosphere <input type="checkbox"/> To Water D. Unmonitored Release - requiring evaluation																																																													
7. Protective Action Recommendations: A. No need for Protective Actions outside the site boundary. B. EVACUATE the following ERPAs: <table border="0"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr><tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr><tr><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td><td>51</td><td colspan="9"></td></tr></table> C. SHELTER all remaining ERPAs		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	47	48	49	50	51									
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	47	48	49	50	51																																																			
8. EAL Number: <input type="text"/> Brief _____ Event _____ Description _____																																																													
9. The Plant status is: A. Stable C. Degrading E. Cold Shutdown B. Improving D. Hot Shutdown																																																													
10. Reactor Shutdown A. Not Applicable B. _____ at _____ (Date) (Time) <input type="checkbox"/> AM <input type="checkbox"/> PM																																																													
11. Wind Speed _____ Meters/Second at elevation <u>10</u> meters																																																													
12. Wind Direction (From) _____ Degrees at elevation <u>10</u> meters																																																													
13. Stability Class A B C D E F G																																																													
14. Report By: _____ at Telephone Number (914) 737-8929 (Communicator's Name)																																																													
Message Received by: _____ Message Ended at: _____																																																													

Emergency Director Review and Approval: _____

Addendum 2
 NYS Radiological Data Form (Part II) (Form IP-1030-1)
 Sheet 2 of 2

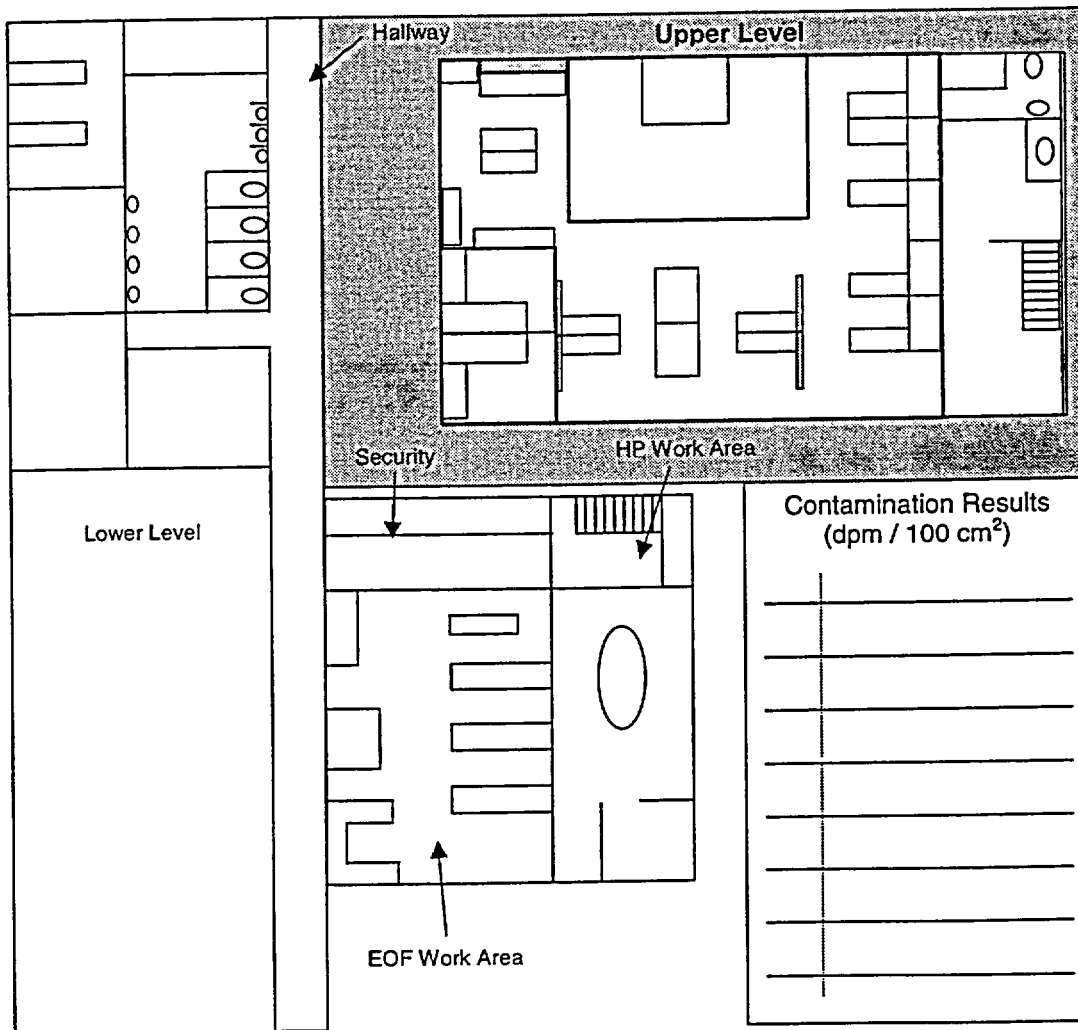
New York State Radiological Emergency Data Form Part II - Radiological Assessment Data			
This is: A. <u>NOT</u> an Exercise B. An Exercise			
14. Message transmitted at: Date _____ Time _____ Location / Facility transmitted from. _____			
16. General release information:			
A Event Release started		Date _____	Time _____
B Event Release expected to end		Date _____	Time _____
C Event Release ended		Date _____	Time _____
D Reactor Shutdown N/A OR		Date _____	Time _____
Meteorological Data		As of Date _____	Time _____
E Wind Speed		_____ meters/second	At elevation: _____ meters
F Wind Direction		_____ degrees	At elevation _____ meters
G Stability class (Pasquill)		A B C D E F G	
17. Atmospheric release information:			
		As of Date _____	Time _____
A. Release from <input type="checkbox"/> Ground <input type="checkbox"/> Elevated		D Noble gas release rate	_____ Ci/sec
B Iodine/Noble gas ratio: _____ (Assumed OR Actual)		E. Iodine release rate	_____ Ci/sec
C. Total release rate _____ Ci/sec		F. Particulate release rate	_____ Ci/sec
18. Waterborne release information:			
		As of Date _____	Time _____
A. Volume of release _____ gallons		C. Radiolnuclides in release	_____ Ci
B. Total concentration _____ $\mu\text{Ci/ml}$		D Total activity released	_____ Ci
19. Dose calculations (based on a release duration of _____ hours)			
Calculation is based on (circle one):			
A. Inplant measurements B Field Measurements C. Assumed source term			
Table below applies to (circle one) A. Atmospheric release B. Waterborne release			
DISTANCE	$X\mu/Q$	DOSE	
		TEDE (Rem)	TODE (Rem)
Site Boundary			
2 Miles			
5 Miles			
10 Miles			
_____ Miles			
20. Field measurement of dose rates or surface contamination/deposition:			
Mile/Sector OR Mile/Degrees	Location OR Sampling Point	Time of Reading	Dose Rate (mR/hr) OR Contamination ($\mu\text{Ci/m}^2$)

Emergency Director Review and Approval: _____

Addendum 3
EOF Radiological Survey Map (Form IP-1030-3)
Sheet 1 of 1

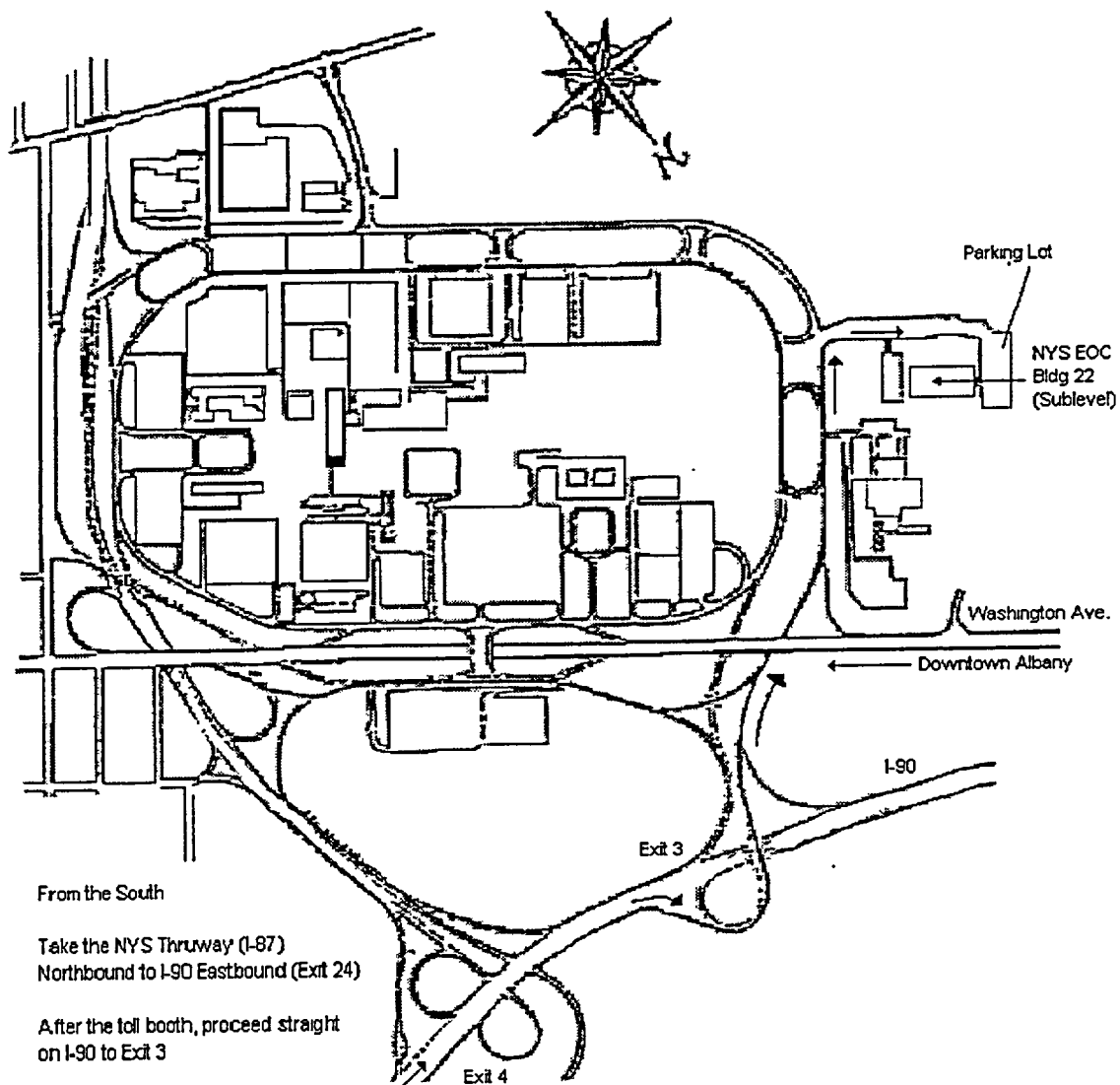
EOF Radiological Survey Map

By:		Area / Item: Occupied Areas EOF / Service Center	
Date:	Time:	Type of Survey: <input type="checkbox"/> Rad <input type="checkbox"/> Cont <input type="checkbox"/> Air	
Meter / Serial #		Smear Counter/ Serial #	
Map Key: __ =Dose Rate, * =Contact, β =Beta, O =Smear, H =Head, C =Chest, K =Knee, FL = Floor			
Air Sample Results:	RadioGas:	Particulate:	Charcoal:
Air Sample Counter / Serial #		Highest mr/hour Reading:	
Comments:			



Form IP-1030-3 Rev 0

Addendum 4
State Campus Office Building Map
Sheet 1 of 1



Addendum 5
Appendix B to § 302.4

The table of reportable amounts of radionuclides from CFR 40 PART 302—
DESIGNATION, REPORT-ABLE QUANTITIES, AND NOTIFICATION

Maintained current by Emergency Planning Department and distributed to ERO position
binders where required.

The table is designated as Form IP-1030-4, titled "APPENDIX B TO § 302.4 –
RADIONUCLIDES"

Current Revision is 0
7 pages

Addendum 6
Offsite Survey Data Sheet (Form IP-1030-5)
Sheet 1 of 1

Offsite Survey Team Data Sheet

(Formally Form 27)

[illegible]

Form IP-1030-5 Rev 0

CONTROLLED

ENTERGY
INDIAN POINT STATION
EMERGENCY PLANNING

COPY # 25

IP-1035
Rev. 17

TECHNICAL SUPPORT CENTER

Prepared by:

Kelly Walker

Print Name

C. Walker

Signature

9/22/02

Date

Technical Reviewer:

Steve Horn

Print Name

Steve Horn

Signature

9/23/02

Date

Reviewer:

Print Name

Signature

Date

Reviewer:

Print Name

Signature

Date

Reviewer:

Print Name

Signature

Date

SNSC Review:

Previous SNSC
2706

Meeting Number

--

Signature Secretary

3/16/00

Date

Approval:

Frank Inzirillo

Print Name

Frank Inzirillo

Signature

9/23/02

Date

Reference Use

Effective Date: 9/23/02

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TECHNICAL SUPPORT CENTER (TSC)

1.0 PURPOSE

To describe the activation and operation of the Technical Support Center (TSC)

2.0 DISCUSSION

None

3.0 PRECAUTIONS AND LIMITATIONS

None

4.0 EQUIPMENT AND MATERIALS

4.1 The following types of equipment and materials are available for use in the TSC

4.1.1 PICS, Emergency Display Data System (EDDS) Monitors for accessing plant data.

4.1.2 Plant Procedures

4.1.3 Plant Drawings

4.2 Keys for TSC Cabinets are contained in the TSC key locker. The key to the key locker is kept in the FSS Office. A backup key is located in a break glass container in the TSC.

5.0 INSTRUCTIONS

- 5.1 The Emergency Plant Manager (EPM) shall follow the instructions outlined in Attachment 1, EPM Checklist.
- 5.2 The TSC Manager shall follow the instructions outlined in Attachment 2, TSC Manager Checklist.
- 5.3 The Technical Assessment Coordinator shall follow the instructions outlined in Attachment 3, Technical Assessment Coordinator Checklist.
- 5.4 The Operations Advisor shall follow the instructions outlined in Attachment 4, Operations Advisor Checklist.
- 5.5 The Radiological Advisor shall follow the instructions outlined in Attachment 5, Radiological Advisor Checklist.
- 5.6 The Core Physics Engineer shall follow the instructions outlined in Attachment 6, Core Physics Engineer Checklist.
- 5.7 The Mechanical and Electrical / I&C Engineer shall follow the instructions outlined in Attachment 7, Mechanical and Electrical / I&C Engineer Checklist.
- 5.8 The TSC Data Coordinator shall follow the instructions outlined in Attachment 8, TSC Data Coordinator.
- 5.9 The TSC Communicator shall follow the instructions outlined in Attachment 9, TSC Communicator.

6.0 REFERENCES

- 6.1 IP-1027, "Site Personnel Accountability and Evacuation"
- 6.2 IP-1021, "Manual Update and Readout of Proteus Plant Parameter Data"

7.0 ATTACHMENTS

- 7.1 Attachment 1, EPM Checklist.
- 7.2 Attachment 2, TSC Manager Checklist.
- 7.3 Attachment 3, Technical Assessment Coordinator Checklist.
- 7.4 Attachment 4, Operations Advisor Checklist.
- 7.5 Attachment 5, Radiological Advisor Checklist.
- 7.6 Attachment 6, Core Physics Engineer Checklist
- 7.7 Attachment 7, Mechanical and Electrical / I&C Engineer Checklist
- 7.8 Attachment 8, TSC Data Coordinator Checklist
- 7.9 Attachment 9, TSC Communicator

8.0 ADDENDUM

8.1 Addendum 1, OSC / TSC Layout

8.2 Addendum 2, Normal TSC Staffing (Form IP-1035-1)

8.3 Addendum 3, Essential Information Checklist (Form IP-1035-2)

Attachment 1
Emergency Plant Manager Checklist
Sheet 1 of 7

Initial Responsibility/Activity	Notes
<p>1.0 Assume the position of Emergency Plant Manager (EPM).</p> <p>1.1 Go to the Central Control Room to receive briefing on plant conditions. Use an Essential Information Checklist (Form IP-1035-2) to document turnover information.</p> <p>1.2 IF the oncall ED has not assumed the ED duties THEN:</p> <p style="padding-left: 20px;">A. Relieve the Shift Manager of ED duties as outline in IP-1010, Central Control Room, Attachment 1 AND remain in the CCR until relieved by the oncall ED.</p> <p style="padding-left: 20px;">B. WHEN relieved of ED duties by the oncall ED THEN continue to assume EPM duties per this checklist.</p> <p>1.3 Go to the TSC/OSC and sign in on the facility organization chart.</p> <p>1.4 Review TSC/OSC status boards and EDDS information if available.</p> <p>1.5 IF relieving another EPM THEN perform a formal turnover with the current EPM</p> <p style="padding-left: 20px;">A. Review TSC Status Boards and PICS/EDDS Displays if available.</p> <p style="padding-left: 20px;">B. Review or complete an Essential Information Checklist (Form IP-1035-2)</p> <p style="padding-left: 20px;">C. Obtain a briefing from current EPM on the emergency, plant conditions and any actions that have been completed or are in progress.</p> <p style="padding-left: 20px;">D. Relieve current EPM</p> <p style="padding-left: 20px;">E. Make a formal announcement to TSC/OSC when relief takes place</p> <p>1.6 Inform the Control Room, Command Guard House and EOF you have assumed the duties of the EPM and are now located in the TSC/OSC Complex.</p>	

Attachment 1
Emergency Plant Manager Checklist
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<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 Maintain (or direct a clerk to maintain) a log using an, ERO Log Sheet (Form IP-1023-4).</p> <p>2.1 Log when you assumed the duties of EPM.</p> <p>2.2 Log significant communications to individuals outside the TSC/OSC complex and all communications to individuals offsite</p> <p>2.3 Log major decisions and any important details used to make decision</p>	
<p>3.0 Inform the TSC Manager and OSC Manager when temporarily leaving the work area.</p> <p>3.1 Instruct the TSC Manager to answer your phone while away.</p> <p>3.2 IF you are leaving the TSC/OSC Complex (the restroom is within complex) THEN</p> <p style="padding-left: 40px;">A. Inform the OSC Team Coordinator when you leave, where you are going and when you expect to return. (for accountability purposes)</p> <p style="padding-left: 40px;">B. Inform the OSC Team Coordinator when you return.</p> <p>3.3 Upon return, obtain a briefing from TSC Manager on any events which have occurred while you were away.</p>	
<p>4.0 Establish and maintain accountability for Plant personnel within the Protected Area</p> <p style="text-align: center;">NOTE</p> <p>After initial accountability has been completed, the Shift Manager, TSC Manager, OSC Manager and Security Supervisor are responsible for accountability of individuals assigned to their respective organizations.</p> <p>4.1 Check with the OSC Manager on the status of initial onsite accountability. Initial accountability should be completed within approximately 30 minutes of time it is called for.</p> <p>4.2 IF anyone is unaccounted for THEN direct the OSC Manager to commence search and rescue operations.</p> <p>4.3 Direct TSC Manager, OSC Manager, Shift Manager and Security Supervisor to maintain onsite accountability throughout the event.</p>	

Attachment 1
Emergency Plant Manager Checklist
 Sheet 3 of 7

<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>5.0 Confer with the Emergency Director on release or evacuation of non-essential personnel from the Energy Education Center</p> <p>5.1 Check with CCR, TSC Manager and OSC Manager to determine if additional personnel are needed to support emergency response.</p> <p>5.2 Inform the ED when you no longer have any immediate personnel needs and concur with release of non-essential personnel from the site.</p>	
<p>6.0 Coordinate and direct the Response Activities of all Onsite ERO Personnel.</p> <p>6.1 Establish and promulgate onsite priorities in response to the emergency.</p> <p>A. Designate priorities as High (H), Medium (M), or Low (L) as appropriate.</p> <ol style="list-style-type: none"> 1. High (H): The task is necessary to protect the immediate health and safety of the public. High priority tasks are in response to plant conditions that are allowing the rapid deterioration of safety barriers, or barriers have already been broken such that a release is either occurring or is imminent. 2. Medium (M): Any task that requires action by the TSC/OSC and should be worked on at the immediate time period, but does not fit the criteria of a health and safety of the public related item (for example, if a system has only one remaining component, repair of the backup components). 3. Low (L): Any task which can be worked on when resources permit (i.e. getting meals, preparations for recovery activities). <p>B. If multiple tasks exist within a single priority classification, confer with the appropriate managers and personnel to establish the preferred sequence.</p> <p>C. Direct TSC Manager and OSC Manager to maintain current task and priorities on the Status Boards.</p>	
<p>7.0 Prepare for NRC Site Team response activities.</p> <p>7.1 Coordinate the arrival of the Site Response Team with the EOF.</p> <p>7.2 Brief (or designate an individual to brief) the inplant NRC Site Team upon arrival.</p> <p>7.3 Direct the TSC Manager to coordinate activities associated with the NRC Site Team.</p>	

Attachment 1

Emergency Plant Manager Checklist

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<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>8.0 When applicable direct implementation of Severe Accident Management Guidelines.</p> <p>8.1 Determine which strategies to implement.</p> <p>8.2 Discuss actions with the Shift Manager, TSC Manager and the ED.</p>	
<p>9.0 Keep the Security Supervisor at the Command Guard House informed of emergency classification, plant status and any radioactive releases which may effect Security Personnel</p>	
<p>10.0 Authorize Emergency Exposures</p> <p>10.1 Inform the OSC Manager and RP Coordinator that you authorize emergency exposures up to 1 Rem TEDE for all OSC and Operations personnel dispatched into the plant. Document this authorization on your ERO Log Sheet.</p> <p>10.2 IF emergency measures require additional exposure THEN raise the emergency exposure limit 1 Rem at a time up to 5 Rem.</p> <p>10.3 Review and authorize, when requested by OSC Staff, emergency exposures beyond 5 Rem on an individual basis using Form IP-1023-6, Emergency Exposure Authorization. General guidelines (more details are listed on authorization form):</p> <p>A. ERO members may receive up to 5 Rem TEDE (per event) for any required emergency activities.</p> <p>B. ERO members may be authorized emergency exposures up to 10 Rem TEDE to protect vital equipment.</p> <p>C. ERO members may be authorized emergency exposures up to 25 Rem TEDE to save a life.</p> <p>D. Individuals may volunteer to receive greater than 25 Rem TEDE to save a life.</p>	
<p>11.0 Maintain communications with the Shift Manager</p> <p>11.1 Discuss current plant status and planned operations</p> <p>11.2 Discuss tasks the TSC/OSC are performing and review priorities.</p> <p>11.3 Inform Shift Manager of any other important ERO activities (such as shift changes, arrival of NRC personnel, etc.)</p>	

Attachment 1
Emergency Plant Manager Checklist
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<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>12.0 Maintain communications with the Emergency Director.</p> <p>12.1 Use an Essential Information Checklist (Form IP-1035-2) to periodically update ED on conditions.</p> <p>12.2 Inform the ED of onsite priorities and activities.</p> <p>12.3 Inform the ED of any plant conditions or events which have the potential for change of emergency classification or radiological releases status.</p>	
<p>13.0 Coordinate with TSC and OSC Managers to establish a Time Period for and Conduct of Facility Briefings</p> <p>13.1 Make an announcement approximately 5 minutes before actual brief that a brief will be conducted (if possible).</p> <p>13.2 Use Form IP1035-2, 'Essential Information Checklist as guide for leading briefings.</p> <p>13.3 Emphasize the following items in each brief:</p> <ul style="list-style-type: none"> A. What the major task and priorities are, to maintain personnel awareness. B. Everyone should review their procedure checklist to ensure proper actions are being taken. C. Everyone should ensure they are maintaining proper logs and all forms are completed and legible. <p>13.4 Establish briefing periods at approximately 30 to 60 minute intervals or as conditions change.</p> <p>13.5 Periodically update the Security Supervisor on emergency status.</p>	
<p>14.0 Maintain adequate manning, access control, and 24-hour functional continuity of the CCR, TSC, and OSC.</p> <p style="text-align: center;">NOTE:</p> <p>The OSC Accountability Clerk prepares shift relief schedules and calls out the second shift.</p> <p>14.1 Request additional material, manpower, and equipment as necessary.</p>	

Attachment 1
Emergency Plant Manager Checklist
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<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>15.0 IE the recommendation to evacuate the TSC/OSC Complex is made by the OSC Manager or RP Coordinator THEN coordinate an orderly evacuation with TSC and OSC Managers.</p> <p>15.1 Determine a suitable alternate location for TSC and OSC staffs. Key individuals may report to CCR and others may go to EOF, AEOF or Park Place Engineering Offices.</p> <p>15.2 Determine the speed at which the relocation of personnel should occur giving consideration to the following items:</p> <ul style="list-style-type: none">A. Consider the impact of immediate relocation vs. mitigation activities in progress.B. Current radiological conditions within the TSC/OSCC. Radiological conditions at the proposed TSC/OSC.D. Radiological conditions en route.E. The adequacy of response from the alternate location. <p>15.3 Determine proper path to take to new locations.</p> <p>15.4 Inform the Shift Manager and the ED of need to relocate TSC/OSC personnel.</p> <p>15.5 Direct personnel to relocate.</p> <p>15.6 Notify Security to instruct incoming personnel to report to the designated alternate TSC/OSC.</p>	

Attachment 1
Emergency Plant Manager Checklist
Sheet 7 of 7

<u>Closeout Responsibility/Activity</u>	<u>Notes</u>
16.0 Preparations for Recovery Phase: 16.1 Start preparations as soon as conditions and resources allow. This should occur several hours before actual termination of an event. 16.2 Review IP-1048, Termination and Initiation of Recovery, for guidance on termination of the emergency and entry into Recovery.	
17.0 Direct Onsite personnel to return all equipment to proper storage locations.	
18.0 Review all documentation: 18.1 Ensure logs, forms and other documentation are complete 18.2 Direct the OSC Manager to document all repairs performed by OSC Teams that deviate from normal station procedures are properly documented so that necessary actions can be taken for continuous plant operations or long term restoration. 18.3 Direct the TSC Manager to document all deviations from Technical Specifications, Quality Assurance Documents and other procedures so that these items are evaluated during the Recovery Phase.	
19.0 Provide all logs and records to the Recovery Manager upon termination of the emergency and entry into the Recovery Phase.	

Attachment 2
TSC Manager Checklist
Sheet 1 of 5

<u>Initial Responsibility/Activity</u>	<u>Notes</u>
<p>1.0 Activation of the TSC and assuming the position of TSC Manager.</p> <p>1.1 Upon arrival in the TSC/OSC Complex sign in on the facility organization chart.</p> <p>1.2 IF the TSC has not been previously activated THEN perform the following:</p> <p>A. Obtain a briefing from the Emergency Plant Manager (EPM) on plant conditions using form IP-1035-2, Essential Information Checklist (do not delay TSC activation for this briefing).</p> <p>B. Verify you have the following minimum staffing prior to activation of the TSC:</p> <ol style="list-style-type: none"> 1. TSC Manager (the Technical Assessment Coordinator shall assume the duties of TSC Manager if oncall TSC Manager does not arrive) 2. TSC Communicator (may be assigned to any TSC position) 3. Based on your judgement, adequate Engineering Staff to provide some support to Control Room Personnel for the current events <p>C. IF additional personnel are required THEN:</p> <ol style="list-style-type: none"> 1. IF it is during normal working hours THEN call or assign someone to call the Assembly Areas for needed personnel 2. IF it is NOT normal working hours THEN assign someone to call the EOF or AEOF for needed personnel. 3. IF needed individuals are not available onsite THEN assign someone to call individuals at home using the Emergency Telephone Directory. 	

Attachment 2
TSC Manager Checklist
 Sheet 2 of 5

Initial Responsibility/Activity	Notes
<p>D. Verify the following systems are operational (normally started by TSC Data Coordinator):</p> <ol style="list-style-type: none"> 1. Emergency Response Data System (ERDS is a sub-function of PICS) should be set up to transfer plant data to the NRC 2. Emergency Data Display System (EDDS) should be set up to display plant data in the TSC. 3. PICS should be started to display plant data. 4. TSC clocks shall be synchronized with CCR and EOF using the EOF GPS Satellite Clock as the correct time. <p>1.3 Report readiness status to the EPM and CCR when prepared to assume the TSC Manager position and activate the TSC.</p> <p style="text-align: center;">NOTE:</p> <p>Addendum 2 is a normal staffing level, however the TSC Manager should call in as many resources as needed to support the CCR for the event in progress.</p> <p>1.4 IF TSC staffing is less than that shown in Addendum 2, Normal TSC Staffing THEN call for additional personnel per step 1.2.C</p> <p>1.5 IF relieving another TSC Manager THEN. perform a formal turnover:</p> <ol style="list-style-type: none"> A. Review TSC Status Boards and EDDS displays if available. B. Review or complete a current Essential Information Checklist (Form IP-1035-2) C. Obtain a briefing from current TSC Manager on the emergency, plant conditions and any actions that have been completed or are in progress. D. Relieve current TSC Manager <p>1.6 Inform the EPM, CCR, OSC Manager and the TSC staff that you are now the TSC Manager.</p> <p>1.7 Log the time you assumed duties of TSC Manager.</p>	

Attachment 2
TSC Manager Checklist
Sheet 3 of 5

<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 Inform the Technical Assessment Coordinator when temporarily leaving the work area.</p> <p>2.1 Direct the Technical Assessment Coordinator to answer your phone while away.</p> <p>2.2 IF you are leaving the TSC/OSC Complex (the restroom is within complex) THEN</p> <p style="padding-left: 40px;">A. Inform the OSC Team Coordinator when you leave, where you are going and when you expect to return. (for accountability purposes)</p> <p style="padding-left: 40px;">B. Inform the OSC Team Coordinator when you return.</p> <p>2.3 Upon return, obtain a briefing from the TAC on any events which have occurred while away.</p>	
<p>3.0 Use Form IP-1023-4, ERO Log Sheet, to maintain a log</p> <p>3.1 Log the time when you assumed the duties of TSC Manager.</p> <p>3.2 Log significant communications to individuals outside the TSC/OSC complex and all communications to individuals offsite</p> <p>3.3 Log major decisions, actions and any important details</p>	
<p>4.0 Manage the activities of the TSC Staff:</p> <p>4.1 Analyze plant information to provide support to plant operations personnel in returning the plant to a safe condition.</p> <p>4.2 Develop action plans and procedures to repair and/or mitigate consequences.</p> <p>4.3 Provide a central organization and facility for the accumulation and transmittal of plant information to the EOF and NRC</p> <p>4.4 When applicable, implement and perform monitoring and evaluations as directed in the Indian Point Severe Accident Management Guidelines.</p> <p>4.5 IF requested by the NRC to provide an open communications line for plant data THEN have a Licensed or Certified Operator man the phone</p>	

Attachment 2
TSC Manager Checklist
Sheet 4 of 5

<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>5.0 Monitor containment integrity status throughout the event:</p> <p>5.1 Initiate a review of the valves listed in ES-1-4, Attachment 1 and 2 to determine if any non-automatic containment valves should be closed.</p> <p>5.2 Repeat the above review approximately every 2 hours for first 24 hours of event and thereafter at the discretion of the EPM</p>	
<p>6.0 Work with the EPM to set priorities for TSC activities.</p> <p>6.1 Designate priorities as High (H), Medium (M), or Low (L) as appropriate.</p> <p style="padding-left: 20px;">A High (H): The task is necessary to protect the immediate health and safety of the public. High priority tasks are in response to plant conditions that are allowing the rapid deterioration of safety barriers, or barriers have already been broken such that a release is either occurring or is imminent.</p> <p style="padding-left: 20px;">B Medium (M): Any task that requires action by the TSC/OSC and should be worked on at the immediate time period, but does not fit the criteria of a health and safety of the public related item (for example, if a system has only one remaining component, repair of the backup components).</p> <p style="padding-left: 20px;">C Low (L): Any task which can be worked on when resources permit (for example, getting meals, preparations for recovery activities).</p> <p>6.2 Keep TSC Staff informed of priorities</p> <p>6.3 Direct that TSC status boards are maintained to reflect priorities.</p>	
<p>7.0 Participate in periodic briefings with EPM and OSC Manager on the following items:</p> <p>7.1 Current plant conditions</p> <p>7.2 Emergency Classifications</p> <p>7.3 Activities underway to mitigate the emergency,</p> <p>7.4 Current priorities</p> <p>7.5 Log and record keeping</p>	

Attachment 2
TSC Manager Checklist
Sheet 5 of 5

<u>Closeout Responsibility/Activity</u>	
8.0	Direct TSC Staff to return all equipment to proper storage locations.
9.0	Review all documentation the TSC Managers and TSC Staff maintained during the emergency: A. Ensure logs, forms and other documentation are complete B. Ensure all temporary procedures used and/or developed are properly documented for use by Recovery Organization so that necessary actions can be taken for plant operations
10.0	Provide all logs and records to the Recovery Manager upon termination of the emergency and entry into the Recovery Phase.

Attachment 3

Technical Assessment Coordinator Checklist

Sheet 1 of 4

<u>Initial Responsibility/Activity</u>	<u>Notes</u>
<p>1.0 Assume the position of Technical Assessment Coordinator.</p> <p style="text-align: center;">NOTE:</p> <p>If the TSC Manager is not present use Attachment 2, TSC Manager Checklist to perform the duties of the TSC Manager.</p> <p>1.1 Sign in on the facility organization chart.</p> <p>1.2 Evaluate the adequacy of the Technical Assessment Team staffing and ability to support CCR in technical assessment activities. The normal Technical Assessment Team includes:</p> <ul style="list-style-type: none"> A Operations Advisor B Radiological Advisor C Core Physics Engineer D Electrical / I&C Engineer E Mechanical Engineer <p>1.3 Report readiness status to the TSC Manager when prepared to assume the Technical Assessment Coordinator position.</p> <p>1.4 IE relieving another Technical Assessment Coordinator <u>THEN</u> perform a formal relief:</p> <ul style="list-style-type: none"> A. Review TSC Status Boards and EDDS displays if available B. Review current Essential Information Checklist (Form IP-1035-2) C. Obtain a briefing from current Technical Assessment Coordinator on the emergency, plant conditions and any tasks that have been completed or are in progress. D. Relieve current Technical Assessment Coordinator. <p>1.5 Inform TSC staff that you are now the Technical Assessment Coordinator.</p>	

Attachment 3

Technical Assessment Coordinator Checklist

Sheet 2 of 4

<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 Inform a staff member when temporarily leaving the work area.</p> <p>2.1 Direct the TSC Communicator or Clerk to answer your phone while away.</p> <p>2.2 IF you are leaving the TSC/OSC Complex (the restroom is within complex) THEN</p> <p>A. Inform the OSC Team Coordinator when you leave, where you are going and when you expect to return. (for accountability purposes)</p> <p>B. Inform the OSC Team Coordinator when you return.</p> <p>2.3 Upon return, obtain a briefing on any events which have occurred while away.</p>	
<p>3.0 Use, ERO Log Sheet (Form IP-1023-4) to maintain a log of significant items.</p> <p>3.1 Time you assume position of Technical Assessment Coordinator</p> <p>3.2 Technical Assessment Team activities undertaken with information pending actions to ensure the plant is returned to a safe condition.</p> <p>3.3 Communications external to the TSC</p>	
<p>4.0 Coordinate with the TSC Manager to call in additional engineering assistance as needed:</p> <p>4.1 All Entergy engineering resources should be utilized as required. Individuals may be tasked with activities to be completed at the offsite engineering offices, be called to report to the TSC or directed to other facilities as needed.</p> <p>4.2 Non Entergy engineering support such as Westinghouse, Equipment Vendors and/or NRC Engineers. (some support organization phone numbers are located in the Emergency Telephone Directory)</p>	

Attachment 3

Technical Assessment Coordinator Checklist

Sheet 3 of 4

<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
5.0 Assist the TSC Manager in planning and performing engineering assessment of the plant conditions and/or actions to be taken to mitigate plant damage.	
6.0 Direct the activities of the Technical Assessment Team in the following areas: 6.1 Direct the technical support and engineering activities in accordance with the priorities established by the EPM and the TSC Manager. 6.2 Use EDDS and PICS computer systems along with communications with the CCR to monitor and assess vital plant parameters and conditions 6.3 Direct the Assessment Team to monitor, trend and assess plant parameters and status to: A. Determine the condition of safety related systems and the fission product barriers. B. Verify that the status of equipment out-of-service is maintained. C. Provide recommendations for emergency classification changes based on review of the EALs. D. Provide recommendations for mitigating activities. E. Forecast expected changes in the level of plant and system safety. F. Determine the extent of core damage.	

Attachment 3

Technical Assessment Coordinator Checklist

Sheet 4 of 4

<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>6.4 When applicable perform monitoring, assessment and evaluation in accordance with the Indian Point Severe Accident Management Guidelines.</p> <p>6.5 Direct personnel to develop or modify procedures to perform response activities as necessary. (Such as emergency repairs or emergency system lineups).</p> <p>6.6 Confirm that any sample requests for chemistry sampling contain specific details on the type of results information that is necessary (such as system boron concentration, activity, etc.).</p> <p>6.7 Focus TSC Engineering efforts on short term (< 12 hours) support activities. If longer term engineering activities are to be undertaken a separate team should be established at offsite engineering locations.</p> <p>6.8 Provide engineering support for OSC activities as requested.</p>	
<u>Closeout Responsibility/Activity</u>	
<p>7.0 Direct Technical Assessment Team Staff to return all equipment to proper storage locations.</p>	
<p>8.0 Review all documentation the Technical Assessment Team maintained during the emergency:</p> <p>A. Ensure logs, forms and other documentation are complete</p> <p>B. Ensure all temporary procedures used and/or developed are properly documented for use by the Recovery Organization so that necessary actions can be taken for continuous plant operations or long term restoration.</p>	
<p>9.0 Provide all logs and records to the TSC Manager upon termination of the emergency and entry into the Recovery Phase.</p>	

Attachment 4
Operations Advisor Checklist
Sheet 1 of 3

Initial Responsibility/Activity	Notes
<p>1.0 Assume the position of Operations Advisor.</p> <p>1.1 Sign in on the facility organization chart.</p> <p>1.2 Review facility status boards, EDDS information and any other available sources to become familiar with current plant status.</p> <p>1.3 Report readiness status to the Technical Assessment Coordinator or TSC Manager when prepared to assume the Operations Advisor position.</p> <p>1.4 <u>IF</u> relieving another Operations Advisor, <u>THEN</u>, perform a formal turnover:</p> <p style="padding-left: 40px;">A. Review TSC Status and EDDS displays if available</p> <p style="padding-left: 40px;">B. Review current Essential Information Checklist (Form IP-1035-2)</p> <p style="padding-left: 40px;">C. Obtain a briefing from current Operations Advisor on the emergency, plant conditions and any actions that have been completed or are in progress.</p> <p style="padding-left: 40px;">D. Relieve the current Operations Advisor</p> <p>1.5 Inform TSC staff that you are now the Operations Advisor.</p>	

Attachment 4
Operations Advisor Checklist
Sheet 2 of 3

<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 Inform the Technical Assessment Coordinator when temporarily leaving the work area.</p> <p>2.1 Designate an individual to answer your phone while away.</p> <p>2.2 IF you are leaving the TSC/OSC Complex (the restroom is within complex) THEN</p> <p>A. Inform the OSC Team Coordinator when you leave, where you are going and when you expect to return. (for accountability purposes)</p> <p>B. Inform the OSC Team Coordinator when you return.</p> <p>2.3 Upon return, obtain a briefing on any events which have occurred while away.</p>	
<p>3.0 Monitor plant data communications between CCR and other Emergency Response Facilities</p>	
<p>4.0 Monitor fission product barrier and plant status</p> <p>4.1 Provide recommendations to TSC Manager and EPM for emergency classification changes based on EALs.</p> <p>4.2 Assist the Core Physics Engineer in maintaining the Fission Product Barrier Status Board.</p>	
<p>5.0 Assist in clarifying Plant Parameter Information to EPM, TSC Manager and other members of the Technical Assessment Team.</p>	
<p>6.0 Work with other members of the Technical Assessment Team to provide support to the CCR to mitigate the effects of the event and return the plant to a safe condition.</p> <p>6.1 Provide recommendations on plant operations.</p> <p>6.2 Develop emergency procedures if needed</p> <p>6.3 Provide technical support to OSC teams as needed</p> <p>6.4 Look ahead for possible plant problems and solutions.</p>	

Attachment 4
Operations Advisor Checklist
Sheet 3 of 3

<u>Continuous Responsibility/Activity (cont.)</u>		<u>Notes</u>
7.0	When directed perform monitoring, assessment and evaluations as outlined in the Indian Point Severe Accident Management Guidelines.	
<u>Closeout Responsibility/Activity</u>		
8.0	Assist TSC personnel in returning all equipment to proper storage locations.	
9.0	Review all documentation the Operations Advisor(s) maintained during the emergency: A. Ensure logs, forms and other documentation are complete B. Ensure all emergency procedures performed that deviate from normal station procedures are properly documented so that necessary actions can be taken for continuous plant operations or long term recovery activities.	
10.0	Provide all logs and records to the Technical Assessment Coordinator upon termination of the emergency and entry into the Recovery Phase.	

Attachment 5
Radiological Advisor Checklist
Sheet 1 of 3

Initial Responsibility/Activity	Notes
<p>1.0 Assume the position of Radiological Advisor.</p> <p>1.1 Sign in on the facility organization chart.</p> <p>1.2 Review facility status boards, EDDS information and any other available sources to become familiar with plant status.</p> <p>1.3 Discuss radiological conditions with the OSC RP Coordinator.</p> <p>1.4 Report readiness status to the Technical Assessment Coordinator or TSC Manager when prepared to assume the Radiological Advisor position.</p> <p>1.5 IE relieving another Radiological Advisor THEN perform a formal turnover:</p> <p style="padding-left: 40px;">A. Review TSC Status Boards and EDDS displays if available.</p> <p style="padding-left: 40px;">B. Review a current Essential Information Checklist (Form IP-1035-2)</p> <p style="padding-left: 40px;">C. Obtain a briefing from current Radiological Advisor on the emergency, plant conditions and any actions that have been completed or are in progress.</p> <p style="padding-left: 40px;">D. Relieve current Radiological Advisor</p> <p>1.6 Inform TSC staff that you are now the Radiological Advisor.</p>	

Attachment 5
Radiological Advisor Checklist
Sheet 2 of 3

Continuous Responsibility/Activity	Notes
<p>2.0 Inform the Technical Assessment Coordinator when temporarily leaving the work area.</p> <p>2.1 Designate an individual to answer your phone while away.</p> <p>2.2 IF you are leaving the TSC/OSC Complex (the restroom is within complex) THEN</p> <p style="padding-left: 40px;">A. Inform the OSC Team Coordinator when you leave, where you are going and when you expect to return. (for accountability purposes)</p> <p style="padding-left: 40px;">B. Inform the OSC Team Coordinator when you return.</p> <p>2.3 Upon return, obtain a briefing on any events which have occurred while away.</p>	
<p>3.0 Monitor plant radiological conditions and any releases or potential releases of radioactive materials.</p> <p>3.1 Inform the ORAD in the EOF of any releases or potential releases offsite</p> <p>3.2 Inform the OSC RP Coordinator immediately of any change in conditions which may affect personnel in the field.</p>	
<p>4.0 Provide radiological status updates to TSC personnel.</p>	
<p>5.0 Assist OSC RP Coordinator in development of Emergency Radiation Work Permits.</p>	
<p>6.0 Assess plant radiological parameters and pass on information to other members of the Technical Assessment Team and the ORAD in the EOF.</p>	
<p>7.0 Assist the Emergency Plant Manager regarding decisions on Emergency Exposures Authorizations and the issuance of KI</p>	

Attachment 5
Radiological Advisor Checklist
Sheet 3 of 3

<u>Closeout Responsibility/Activity</u>	<u>Notes</u>
8.0 Assist TSC personnel in returning all equipment to proper storage locations.	
9.0 Review all documentation the Radiological Advisors maintained during the emergency: A. Ensure logs, forms and other documentation are complete B. Work with OSC RP Coordinator to ensure all emergency exposures and the issuance of KI are properly documented	
10.0 Provide all logs and records to the Technical Assessment Coordinator upon termination of the emergency and entry into the Recovery Phase.	

Attachment 6
Core Physics Engineer Checklist
Sheet 1 of 3

<u>Initial Responsibility/Activity</u>	<u>Notes</u>
<p>1.0 Assume the position of Core Physics Engineer.</p> <p>1.1 Sign in on the facility organization chart.</p> <p>1.2 Review facility status boards, EDDS information and any other available sources to become familiar with plant status.</p> <p>1.3 Discuss Fission Product Barrier status with the Operations Advisor.</p> <p>1.4 Report readiness status to the Technical Assessment Coordinator or TSC Manager when prepared to assume the Core Physics Engineer position.</p> <p>1.5 IE relieving another Core Physics Engineer THEN. perform a formal turnover:</p> <p style="padding-left: 40px;">A. Review TSC Status Boards and EDDS displays if available.</p> <p style="padding-left: 40px;">B. Review a current Essential Information Checklist (Form IP-1035-2)</p> <p style="padding-left: 40px;">C. Obtain a briefing from current Core Physics Engineer on the emergency, plant conditions, fission product barrier status and any actions that have been completed or are in progress.</p> <p style="padding-left: 40px;">D. Relieve the current Core Physics Engineer</p> <p>1.6 Inform TSC staff that you are now the Core Physics Engineer.</p>	

Attachment 6
Core Physics Engineer Checklist
Sheet 2 of 3

<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 Inform the Technical Assessment Coordinator when temporarily leaving the work area.</p> <p>2.1 Designate an individual to answer your phone while away.</p> <p>2.2 IF you are leaving the TSC/OSC Complex (the restroom is within complex) THEN</p> <p style="padding-left: 40px;">A. Inform the OSC Team Coordinator when you leave, where you are going and when you expect to return. (for accountability purposes)</p> <p style="padding-left: 40px;">B. Inform the OSC Team Coordinator when you return.</p> <p>2.3 Upon return, obtain a briefing on any events which have occurred while away.</p>	
<p>3.0 Monitor plant conditions for any indications of core damage.</p> <p>3.1 Perform and update core damage assessment based on current information using procedure NEP-1, Methodology for Assessment of Core Damage.</p> <p>3.2 Notify TSC Manager immediately of any changes in core status.</p> <p>3.3 Keep the Radiological Advisor informed on core status to assist in maintaining radiological controls for plant personnel.</p> <p>3.4 Keep the ORAD informed of the latest estimate of the amount of core damage</p> <p>3.5 Work with the Operations Advisor to maintain Fission Product Barrier Status board.</p>	
<p>4.0 Assist operations personnel in calculating and tracking core reactivity.</p>	
<p>5.0 Assist the ORAD in performance of dose projections by providing solutions to source term problems.</p>	
<p>6.0 Assist in clarifying core parameter information to other members of the Technical Assessment Team.</p>	

Attachment 6
Core Physics Engineer Checklist
Sheet 3 of 3

<u>Continuous Responsibility/Activity (cont.)</u>		<u>Notes</u>
7.0	Work with other members of the Technical Assessment Team to provide support to the CCR to mitigate the effects of the event and return the plant to a safe condition.	
7.1	Provide recommendations on plant operations.	
7.2	Assist in developing emergency procedures if needed	
<u>Closeout Responsibility/Activity</u>		
8.0	Assist TSC personnel in returning all equipment to proper storage locations.	
9.0	Review all documentation the Core Physics Engineers maintained during the emergency: A. Ensure logs, forms and other documentation are complete B. Ensure any core parameters which were outside technical specifications during the event are properly documented so that proper actions can be taken during the recovery phase.	
10.0	Provide all logs and records to the Technical Assessment Coordinator upon termination of the emergency and entry into the Recovery Phase.	

Attachment 7

Mechanical and Electrical / I&C Engineer Checklist

Sheet 1 of 3

<u>Initial Responsibility/Activity</u>	<u>Notes</u>
<p>1.0 Assume the position of Mechanical or Electrical / I&C Engineer.</p> <p>1.1 Sign in on the facility organization chart.</p> <p>1.2 Review facility status boards, EDDS information and any other available sources to become familiar with current plant status.</p> <p>1.3 Report readiness status to the Technical Assessment Coordinator or TSC Manager when prepared to assume your engineering position.</p> <p>1.4 IE relieving another Engineer THEN. perform a formal turnover:</p> <p>A. Review TSC Status Boards and EDDS displays if available.</p> <p>B. Review a current Essential Information Checklist (Form IP-1035-2)</p> <p>C. Obtain a briefing from current Electrical / I&C Engineer on the emergency, plant conditions and any actions that have been completed or are in progress.</p> <p>D. Relieve the current Mechanical or Electrical / I&C Engineer</p> <p>1.5 Inform TSC staff that you are now the Mechanical or Electrical / I&C Engineer.</p>	

Attachment 7

Mechanical and Electrical / I&C Engineer Checklist

Sheet 2 of 3

<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 Inform the Technical Assessment Coordinator when temporarily leaving the work area (such as to the restroom).</p> <p>2.1 Designate an individual to answer your phone while away.</p> <p>2.2 IF you are leaving the TSC/OSC Complex (the restroom is within complex) THEN</p> <p>A. Inform the OSC Team Coordinator when you leave, where you are going and when you expect to return. (for accountability purposes)</p> <p>B. Inform the OSC Team Coordinator when you return.</p> <p>2.3 Upon return, obtain a briefing on any events which have occurred while away.</p>	
<p>3.0 Assist in clarifying Mechanical or Electrical / I&C information to other members of the Technical Assessment Team.</p>	
<p>4.0 Work with other members of the Technical Assessment Team to provide support to the CCR to mitigate the effects of the event and return the plant to a safe condition.</p> <p>4.1 Provide recommendations on equipment operations.</p> <p>4.2 Develop emergency procedures if needed</p> <p>4.3 Identify emergency repairs that can be undertaken to restore and maintain equipment operability and plant safety.</p>	
<p>5.0 Assist the OSC Maintenance and I&C Coordinators in preparing to send repair teams into the plant.</p> <p>5.1 Provide information on parts needed.</p> <p>5.2 Provide information on tools required</p> <p>5.3 Prepare ad hoc maintenance procedures for OSC Repair Teams</p> <p>5.4 Participate in team briefing if required</p>	

Attachment 7

Mechanical and Electrical / I&C Engineer Checklist

Sheet 3 of 3

<u>Closeout Responsibility/Activity</u>	
6.0	Assist TSC personnel in returning all equipment to proper storage locations.
7.0	Review all documentation the Mechanical or Electrical / I&C Engineers maintained during the emergency: A. Ensure logs, forms and other documentation are complete B. Ensure any equipment repairs which were performed outside normal requirements during the event are properly documented so that proper actions can be taken during the recovery phase.
8.0	Provide all logs and records to the Technical Assessment Coordinator upon termination of the emergency and entry into the Recovery Phase.

Attachment 8
TSC Data Coordinator Checklist
Sheet 1 of 4

Initial Responsibility/Activity	Notes
<p>1.0 Assume the position of TSC Data Coordinator</p> <p>1.1 Sign in on the facility organization chart.</p> <p>1.2 IF the TSC has not been previously activated THEN perform the following steps:</p> <p style="padding-left: 20px;">A. Start the EDDS computers to display plant data.</p> <p style="padding-left: 40px;">1. Start computer</p> <p style="padding-left: 40px;">2. Bypass network logon</p> <p style="padding-left: 40px;">3. Launch "Internet Explorer" from the windows desktop</p> <p style="padding-left: 40px;">4. From the "ProcessNet" screen select "logon" (no password required for guest logon)</p> <p style="padding-left: 40px;">5. Select "Form 42A" for monitor labeled Form 42A</p> <p style="padding-left: 40px;">6. Adjust display to display entire form.</p> <p style="padding-left: 40px;">7. Return to step 1 and repeat for Forms 42B and 42C</p> <p style="padding-left: 20px;">B. Verify PICS Terminals are operational to display plant data (adjust brightness)</p> <p style="padding-left: 20px;">C. IF the Emergency Response Data System (ERDS) is not already transmitting data THEN start the ERDS to transfer information to the NRC</p> <p style="padding-left: 40px;">1. From the PICS main menu select "SYSTEM MENU"</p> <p style="padding-left: 40px;">2. At the SYSTEM MENU select "ERDS."</p> <p style="padding-left: 40px;">3. At the ERDS screen, select "Activate"</p> <p style="padding-left: 40px;">4. Verify that ERDS is connected and transmitting data every 15 seconds.</p> <p style="padding-left: 40px;">5. Contact an IT specialist if ERDS is not functional.</p>	

Attachment 8
TSC Data Coordinator Checklist
Sheet 2 of 4

<u>Initial Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>D. Direct Document Control Technician to assist Technical Assessment Team with obtaining drawings and procedures as needed.</p> <p>E. Verify that the CCR Communicator and CCR Data Logger are present in the CCR.</p> <p>F. Synchronized the TSC/OSC Clocks with the CCR and the EOF. Using the GPS Satellite clock in the EOF for the correct time.</p> <p>G. Direct TSC Clerical Staff to provide support as needed</p> <p>1.3 IF relieving another Data Coordinator THEN. perform a formal turnover:</p> <p>A. Obtain a briefing on the emergency, plant conditions and any actions that have been completed or are in progress.</p> <p>B. Relieve current TSC Data Coordinator</p> <p>1.4 Inform TSC staff that you are now the TSC Data Coordinator</p>	

Attachment 8
TSC Data Coordinator Checklist
Sheet 3 of 4

<u>Continuous Responsibility/Activity</u>	<u>Notes</u>
<p>2.0 Inform the TSC Manager when temporarily leaving the work area.</p> <p>2.1 Designate an individual to answer your phone while away.</p> <p>2.2 IF you are leaving the TSC/OSC Complex THEN</p> <p style="padding-left: 20px;">A Inform the OSC Team Coordinator when you leave, where you are going and when you expect to return.</p> <p style="padding-left: 20px;">B IF you left TSC/OSC Complex THEN inform the OSC Team Coordinator you have returned.</p> <p>2.3 Upon return, obtain a briefing on any events which have occurred while away.</p>	
<p>3.0 Assist the Technical Assessment Team in obtaining plant data from the various TSC Computer systems</p>	
<p>4.0 Coordinate TSC Communicators, Document Controller and Clerical Staff to assist TSC operations.</p>	
<p>5.0 Ensure EDDS displays continue to operate properly.</p> <p>IF EDDS displays are not functioning THEN perform the following:</p> <p style="padding-left: 20px;">A. Obtain Form 42A, 42B and 42C data printout from PICS.</p> <p style="padding-left: 20px;">B. IF PICS is not operating THEN obtain form information from the Data Logger in the CCR</p> <p style="padding-left: 20px;">C. Have Clerical transcribe form data to TSC Status Boards AND fax form information to the EOF</p>	

Attachment 8

TSC Data Coordinator Checklist

Sheet 4 of 4

<u>Closeout Responsibility/Activity</u>	
<p>6.0 Direct TSC support personnel to return all equipment to pre emergency conditions:</p> <p>6.1 Erase TSC Status Boards</p> <p>6.2 Return plant drawings, procedures and other items obtained from the Document Control area.</p> <p>6.3 Turn off or dim computer display systems.</p>	
<p>7.0 Provide all logs and records to the Technical Assessment Coordinator upon termination of the emergency and entry into the Recovery Phase.</p>	

Attachment 9
TSC Communicator Checklist
Sheet 1 of 3

Initial Responsibility/Activity	Notes
<p>1.0 Assume the position of TSC Communicator</p> <p>1.1 Sign in on the facility organization chart.</p> <p>1.2 Review facility status boards, EDDS information and any other available sources to become familiar with current plant status.</p> <p>1.3 IF an open phone line has not been established with the CCR and the EOF on the three-way ring down phone THEN establish open line:</p> <p style="padding-left: 20px;">A Remove handset from cradle (may use handset or headset to monitor phone line)</p> <p style="padding-left: 20px;">B Press button labeled (TSC-CCR-EOF)</p> <p style="padding-left: 20px;">C Press SIGNAL button to ring other locations</p> <p style="padding-left: 20px;">D Listen to ensure other parties pick up</p> <p style="padding-left: 20px;">E Inform all parties you are establishing open line from the TSC and are now monitoring line.</p> <p style="padding-left: 20px;">F Stay on line at all times or inform other parties when you will be off line.</p> <p>1.4 IF relieving another TSC Communicator THEN, perform a formal turnover:</p> <p style="padding-left: 20px;">A. Review TSC Communicator Log.</p> <p style="padding-left: 20px;">B. Obtain a briefing from current TSC Communicator on the emergency, plant conditions.</p> <p style="padding-left: 20px;">C. Relieve the current TSC Communicator</p> <p>1.5 Inform TSC Manager that you are now the TSC Communicator.</p>	

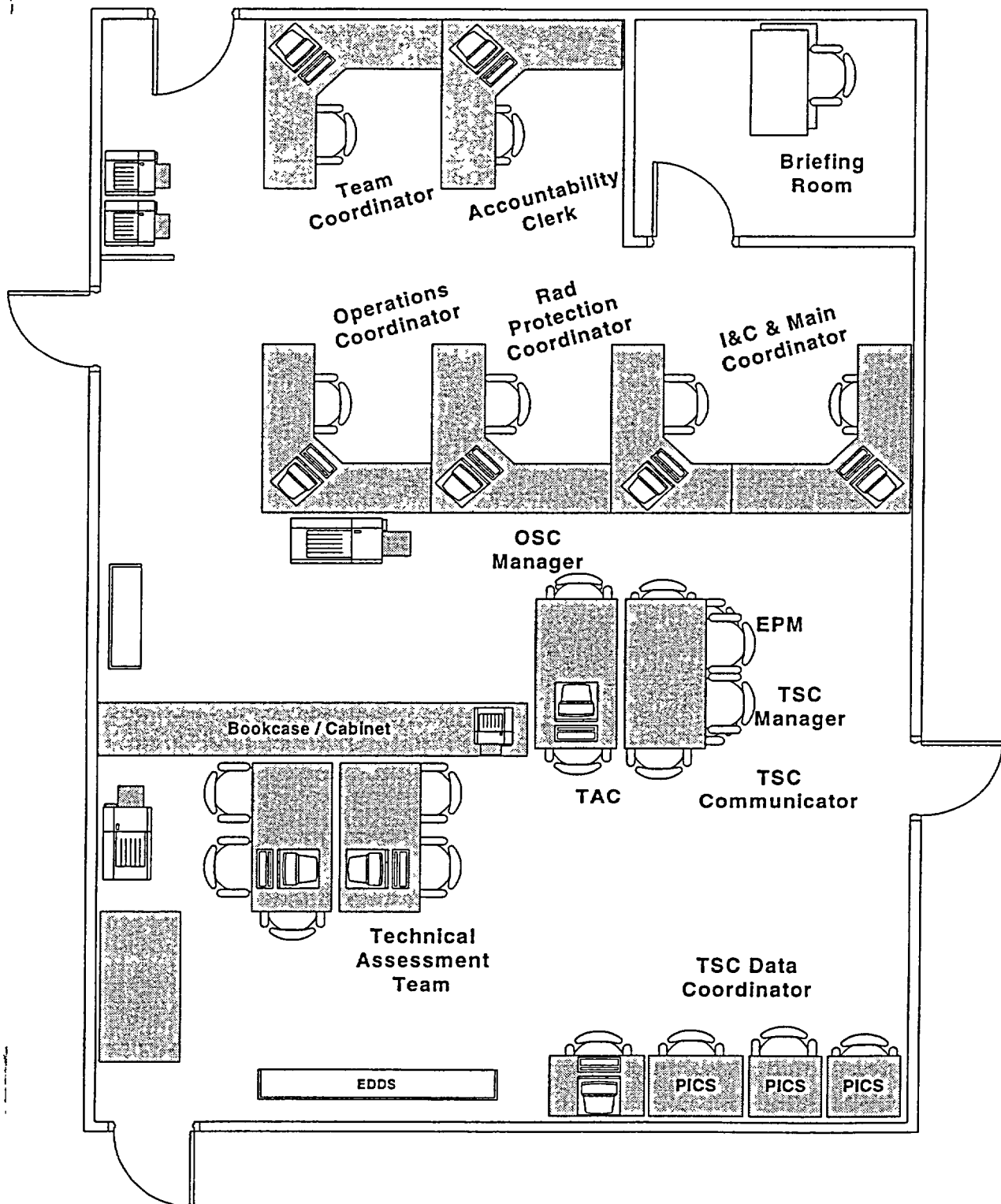
Attachment 9
TSC Communicator Checklist
Sheet 2 of 3

<u>Continuous Responsibility/Activity (cont.)</u>	<u>Notes</u>
<p>2.0 Inform the TSC Manager when temporarily leaving the work area (such as to the restroom).</p> <p>2.1 Request the TSC Operation Advisor monitor the open phone line to the CCR and EOF while you are away.</p> <p>2.2 IF you are leaving the TSC/OSC Complex (the restroom is within complex) THEN</p> <p style="padding-left: 40px;">A Inform the OSC Team Coordinator when you leave, where you are going and when you expect to return. (for accountability purposes)</p> <p style="padding-left: 40px;">B Inform the OSC Team Coordinator when you return.</p> <p>2.3 Upon return, obtain a briefing on any events which have occurred while away.</p>	
<p>3.0 Use Form IP-1023-4, ERO Log Sheet, to maintain a log</p> <p>3.1 Log the time when you assumed the duties of TSC Communicator.</p> <p>3.2 Log significant communications pertaining to plant operations and all communications to individuals offsite</p>	
<p>4.0 Monitor communications from the CCR keeping aware of CCR personnel actions and procedures being implemented.</p>	
<p>5.0 Work with other members of the TSC Staff to provide support to the CCR to mitigate the effects of the event and return the plant to a safe condition.</p>	

Attachment 9
TSC Communicator Checklist
Sheet 3 of 3

<u>Closeout Responsibility/Activity</u>	
6.0	Assist TSC personnel in returning all equipment to proper storage locations.
7.0	Review all documentation the TSC Communicators maintained during the emergency: A. Ensure logs, forms and other documentation are complete B. Ensure any equipment and procedure problems noted during the event are properly documented so that proper actions can be taken to correct them.
8.0	Provide all logs and records to the TSC Manager upon termination of the emergency and entry into the Recovery Phase.

Addendum 1
TSC / OSC Layout
Sheet 1 of 1



Addendum 2
Normal TSC Staffing (Form IP-1035-1)
Sheet 1 of 1

Normal TSC Staffing

No.	Positions	Number Present	Number Needed	Called
1	TSC Manager			
1	Technical Assessment Coordinator			
1	Operations Advisor			
1	Radiological Advisor			
1	Core Physics Engineer			
1	Electrical / I&C Engineer			
1	Mechanical Engineer			
1	TSC Data Coordinator			
1	TSC Communicator			
1	CCR Communicator			
1	CCR Data Logger			
1	Document Control Technician			
2	TSC Clerical Support			
14	Total number of individuals assigned to TSC			

TSC Manager should enter number of each position needed based on event.

Form IP-1035-1 Rev 0

Addendum 3

Essential Information Checklist (Form IP-1035-2)

Sheet 1 of 1

Essential Information Checklist

Emergency Classification: <div style="display: flex; justify-content: space-between;"> Time: _____ EAL #: _____ </div> <input type="checkbox"/> Unusual Event <input type="checkbox"/> Alert <input type="checkbox"/> Site Area Emergency <input type="checkbox"/> General Emergency		Reactor: <input type="checkbox"/> At Power <input type="checkbox"/> Tripped RCS: _____ Temp: _____ °F Pressure: _____ PSIG RVLIS / Pressurizer Level: _____ Subcooling: _____																						
Method of Core Cooling: <input type="checkbox"/> S/G <input type="checkbox"/> Safety Injection <input type="checkbox"/> RHR																								
Electrical Power Supply: <input type="checkbox"/> 138 KV <input type="checkbox"/> 13.8 KV <input type="checkbox"/> Diesel Generators																								
Event Description: _____ _____ _____ _____																								
Major Equipment Problems: _____ _____ _____																								
Current Priorities:			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">High</th> <th style="text-align: center;">Med</th> <th style="text-align: center;">Low</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	High	Med	Low																		
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Date / Time This Checklist was Completed: _____ / _____		Other: _____ _____ _____																						

Form IP-1035-2 Rev 1