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Monticello Nuclear Generating Plant
Operated by Nuclear Management Company, LLC

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Section V

U.S. Nuclear Regulatory Commission
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Washington, DC 20555

MONTICELLO NUCLEAR GENERATING PLANT
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EMERGENCY PLAN IMPLEMENTING PROCEDURES

Enclosed with this letter are revisions to the Monticello Nuclear Generating Plant (MNGP) Emergency Plan Implementing Procedures. The following procedures are revised:

Procedure	Procedure Title	Revision
A.2-INDEX	A.2 Emergency Plan Implementing Procedure Index	79
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Please post changes in your copy of the MNGP Emergency Plan Implementing Procedures manual. The superseded procedures should be destroyed.

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These revisions do not reduce the effectiveness of the MNGP Emergency Plan.

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Enclosure

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800 Series	EOF Procedures (Con't)
A.2-807	Off-Site Dose Assessment and Protective Action Recommendations
A.2-808	Radiological Monitoring and Control at the EOF
A.2-809	EOF Security
A.2-810	Transfer to the Backup EOF
A.2-811	Event Termination or Recovery in the EOF
A.2-812	Off-Site Agency Liaison at the EOF

EMERGENCY PLAN IMPLEMENTING PROCEDURE - TABLE OF CONTENTS

Prepared By: Jerald P. Holthaus	Reviewed By:	
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1.0 PURPOSE

This procedure specifies conditions or groups of conditions that indicate an emergency exists and the actions to be taken by Operations personnel to verify and classify the type of emergency condition.

2.0 APPLICABILITY

2.1 An off-normal condition corresponding to one of the initiating events described in FIGURE 7.2 (Emergency Classification Guidelines) of this procedure is occurring or has occurred.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 The Emergency Director (TSC) is responsible for:

3.1.1 Direction of overall site emergency response in accordance with A.2-213 (RESPONSIBILITIES OF THE EMERGENCY DIRECTOR).

3.1.2 Emergency classification, declaration and notification in accordance with Section 6.1.1.

3.1.3 Event termination or recovery in accordance with A.2-602 (EVENT TERMINATION OR RECOVERY).

3.2 The Duty Shift Manager (Interim Emergency Director) is responsible for the following until relieved by a designated Emergency Director:

3.2.1 Direction of overall site emergency response and assuming the responsibilities of Emergency Director.

3.2.2 Emergency classification, declaration and notification in accordance with Section 6.1.2.

3.2.3 Implementing the EPIP which corresponds to the declared emergency.

3.2.4 Event termination or recovery in accordance with A.2-602 (EVENT TERMINATION OR RECOVERY).

3.3 The Duty Control Room Supervisor and Control Room Operators are responsible for:

3.3.1 Immediate notification of the Duty Shift Manager of any events that may be classified as emergency conditions.

3.3.2 Verification of emergency condition indications.

3.3.3 Assisting with assessment and determination of emergency classification.

3.3.4 Taking immediate actions in accordance with plant procedures and directives to control the event and place the plant in a stable condition.

3.4 The Shift Emergency Communicator is responsible for:

3.4.1 The performance of emergency notifications and communications in accordance with plant procedures and directives.

4.0 DISCUSSION

4.1 Three distinct phases in the Emergency Classification, Declaration and Notification process

4.1.1 During the implementation of this procedure, the Emergency Director must consider the three distinct phases in the Emergency Classification, Declaration and Notification process.

A. **Classification:** The act of **assessing** the EALs to determine the appropriate classification which the ongoing events are categorized. This may take a reasonable length of time (5 to 15 minutes for most situations) depending upon the complexity of the situation. This 15 minute assessment period is consistent with the NRC Branch Position on Timeliness of Classification of Emergency Conditions, EPPOS No. 2.

B. **Declaration:** The act of formally **declaring** the classification based on the assessment of EALs. This is the point at which the classification time is set and the 10CFR50, App. E 15 minute off-site notification clock starts.

C. **Notification:** The act of **making the notification(s)** to the State, Wright and Sherburne Counties, NRC, etc.

4.2 Definitions

4.2.1 Emergency Condition - An occurrence, or combination of events and indications that fall into one of the following classifications:

A. Notification of Unusual Event (NUE)

Unusual events are in process or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.

B. Alert

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

C. Site Area Emergency

Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to exceed EPA Protective Action Guideline exposure levels except near site boundary.

D. General Emergency

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels off-site.

4.2.2 Emergency Action Levels (EAL) - Numerical or qualitative values for the operational or radiological parameters, (radiological dose rates; water borne or surface deposited concentrations of radioactivity; specific instrument indications or changes in indications) used as thresholds for initiating procedures or actions to assess and verify plant conditions. EAL may require initiating specific emergency procedures as designated by a particular class of emergency.

4.2.3 Release - The release of radioactive material to the environment attributable to the event.

4.2.4 Gap (Gap Release) - The radioactive material released from the fuel pellets during normal operation that is trapped in the fuel pin. If the pin fails (cladding fails), this material will be released from the gap into the reactor coolant.

4.3 Recognition

Attached to this procedure is FIGURE 7.2 (Emergency Classification Guidelines (1-30)). These guidelines identify the four emergency classifications, the possible initiating event(s), emergency action levels for each classification, and, where applicable, specific instruments and indications to be used to detect and classify an emergency. The identified instruments and alarms are a representative listing of various instruments that may be used to verify an emergency condition. There are many process variables referred to in the guidelines.

The instruments, indications, or alarms listed for any particular event are not necessarily a complete list of all those that will show abnormal indications or be useful in classifying the event. There is typically more than one instrument or instrument channel that monitors a specific parameter. The redundant channels and coincident indicators should be used to verify the emergency condition.

The emergency action levels specified in the guidelines do not necessitate initiation of any particular phase of the emergency plan but rather signify a need for assessment and classification of conditions. In many cases, the proper classification will be immediately apparent from in-plant instrumentation. In others, further assessment is necessary to determine the applicable emergency classification.

The plant operating staff should consider the effect that combinations of initiating events have, that if taken individually would constitute a lower emergency classification but collectively may exceed the criteria for a higher classification.

4.4 Technical Specification Shutdown

Limiting Conditions of Operation (LCOs) require the plant to be brought to a required shutdown mode when the Technical Specification required configuration cannot be restored. Depending on the circumstances, this may or may not be an emergency or precursor to a more severe condition. In any case, the initiation of plant shutdown required by the site Technical Specifications requires a one hour report under 10CFR50.72 (b) Non-Emergency Events. The plant is within its safety envelope when being shut down within the allowable action statement time in the Technical Specifications.

An immediate Notification of an Unusual Event is required when the plant is not brought to the required operating mode within the allowable action statement time in the Technical Specifications. **Declaration of an Unusual Event is based on the time at which the LCO-specified action statement time period elapses under the site Technical Specifications and is not related to how long a condition may have existed.** Other required Technical Specification shutdowns that involve precursors to more serious events such as Physical or Radiological Hazards, Fission Product Barrier Degradation, or Equipment Malfunction requires an immediate Notification of an Unusual Event.

4.5 Rapidly Escalating and/or De-escalating Events

In the case of an event that rapidly escalates then de-escalates in emergency classification or is initiated at a higher emergency class then rapidly de-escalates, the initial off-site notifications ***SHALL*** indicate the current emergency classification. In addition to the current emergency class, the off-site authorities and NRC ***SHALL*** be informed of the highest emergency classification reached during the course of the event. This information should be included in the initial emergency notifications to the off-site authorities and NRC.

4.6 Late Discovery of a Classifiable Event or Condition

Late discovery of an event or condition which met the criteria for declaration of an emergency but no emergency had been declared and the basis for the emergency classification no longer exists at the time of discovery ***SHALL*** be reported to the NRC. This may be due to a rapidly concluded event or an oversight in the emergency classification made during the event or it may be determined during a post-event review. NRC notification (or an NRC update if the event was previously reported but misclassified) within one hour of the discovery of the undeclared (or misclassified) event ***SHALL*** be the reporting format (see 4 AWI-04.08.02 (10CFR50.72 AND 10CFR 73.71 IMMEDIATE NOTIFICATION)). Notification of state and local emergency response organizations ***SHALL*** also be considered. An actual declaration of the event is not necessary.

5.0 PRECAUTIONS

5.1 There are many indications of an emergency condition that may occur either individually, in group events or sequentially. The operator must be careful not to rely on any one indication as being absolutely indicative of an emergency condition. Although the operator should believe indications and take action based on those indications, they ***SHALL*** attempt to verify indications by checking secondary or coincident indicators. Continued surveillance and assessment of plant conditions is necessary to ensure that the emergency classification is appropriately revised as conditions change, or as more definitive information is obtained.

6.0 INSTRUCTIONS

6.1 Emergency Classification, Declaration, and Notification

6.1.1 Emergency Director (TSC) Instructions:

A. Refer to A.2-213, Section 6.11 (Emergency Classification Changes).

6.1.2 Duty Shift Manager (Interim Emergency Director) Instructions:

A. **Classification** - When informed of plant parameters, radiological release levels or events which indicate that an emergency classification may be appropriate, evaluate the emergency classification.

1. Confirm that the indications have been verified using redundant or coincident indications.

2. Refer to FIGURE 7.1 (List Of Initiating Conditions) and identify any guidelines applicable to the initiating condition.

3. Locate the applicable guideline in FIGURE 7.2.

4. If multiple events and/or indications are involved, classify the emergency based on the event (or indication) that results in the highest (most conservative) emergency classification.

5. Consider the effect that combinations of events have; that, if taken individually, would constitute a lower emergency classification but collectively may exceed the criteria for a higher classification.

6. Summon the Shift Emergency Communicator(s) to the Control Room via the Site PA system (Access #305).

B. **Declaration** - Declare the emergency class.

1. Announce the emergency classification in the Control Room.

C. **Notification** - in accordance with the appropriate Emergency Classification Checklist and Emergency Call-List (included in each emergency classification folder), notify the SEC to make the required notifications (i.e., State & Locals: 15 min., NRC: 1 hr., etc....)

1. Review the completed form(s) and sign the form(s) in the space provided.

D. Implement the EPIP which corresponds to the declared emergency classification and complete the appropriate emergency classification checklist.

6.2 Event Termination or Recovery

6.2.1 Perform Event Termination or Recovery in accordance with A.2-602.

7.0 FIGURES

FIGURE

7.1 List of Initiating Conditions

FIGURE

7.2 Emergency Classification Guidelines

GUIDELINE 1

Radioactive Effluent

UNUSUAL EVENT

RADIOLOGICAL EFFLUENT OFF-SITE DOSE CALCULATION MANUAL (ODCM) LIMITS EXCEEDED

EALS

1a. Discharge Canal Monitor exceeds 400 CPS indicated by annunciator DISCHARGE CANAL HI RADIATION (4-A-22) and recorder C-02-17.358, and Shift Manager's judgement is the increase is due to release of radioactive byproduct materials from the plant.

OR

1b. Sampling identifies a liquid release to river which exceeds ODCM-02.01 limits.

OR

1c. Stack Effluent Monitor (Channel A or B) exceeds 90,000 μCi/Sec indicated by annunciator STACK EFFLUENT HI HI RADIATION (C-259-A-1) and RECORDERS RR-7801A and RR-7801B on C-257/C-258 and computer point STACK NOBLE GAS RELEASE RATE ALARM (PRM011).

OR

1d. Reactor Building Vent Effluent Monitor (Channel A or B) exceeds 4,500 uCi/sec indicated by annunciator RBV EFFLUENT HI HI RADIATION (C-259-A-2) and RECORDERS RR-7801A and RR-7801B on C-257/C-258.

OR

1e. Unmonitored gaseous release to the atmosphere which is estimated or suspected to exceed ODCM limits (4,500 μCi/Sec).

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 1

Radioactive Effluent - Cont'd

ALERT

RADIOLOGICAL EFFLUENTS GREATER THAN 10 TIMES OFF-SITE DOSE CALCULATION MANUAL (ODCM) LIMITS

EALs

1a. Discharge Canal Monitor exceeds 4000 CPS.

OR

1b. Sampling identifies a liquid release to river which is 10 times ODCM-02.01 limits.

OR

1c. Stack Effluent Monitor (Ch A or B) exceeds 9.0E + 5 μCi/Sec.

OR

1d. Reactor Building Vent Effluent Monitor (Ch A or B) exceeds 4.5E+4 μCi/Sec.

OR

1e. Unmonitored gaseous release to the atmosphere which is estimated or expected to exceed 10 times ODCM-03.01 limits (4.5E+4 μCi/Sec).

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 1

Radioactive Effluent - Cont'd

SITE AREA EMERGENCY

EFFLUENT MONITORS DETECT LEVELS CORRESPONDING TO GREATER THAN 50 Mrem/Hr FOR 1/2 HOUR OR GREATER THAN 500 Mrem/Hr (Whole Body) For 2 MINUTES (Or Five Times These Levels For Thyroid) AT THE SITE BOUNDARY FOR ADVERSE METEOROLOGY. THESE DOSE RATES ARE PROJECTED BASED ON OTHER PLANT PARAMETERS (e.g., Radiation Level In Containment With Leak Rate Appropriate For Existing Containment Pressure) OR ARE MEASURED IN THE ENVIRONS, OR EPA PROTECTIVE ACTION GUIDELINES ARE PROJECTED TO BE EXCEEDED OUTSIDE THE SITE BOUNDARY.

EALs

1a. Stack Effluent Monitor (Ch A or B) exceeds 5.7E+6 μCi/Sec for 30 minutes.
OR

1b. Stack Effluent Monitor (Ch A or B) exceeds 5.7E+7 μCi/Sec 2 minutes.
OR

1c. Stack release rate of radioiodines exceeds 5.7E+3 μCi/Sec for 30 minutes.
OR

1d. Stack release rate of radioiodines exceeds 5.7E+4 μCi/Sec for 2 minutes.
OR

1e. RB Vent Effluent Monitor (Ch A or B) exceeds 2.1E+6 μCi/Sec for 30 minutes.
OR

1f. RB Vent Effluent Monitor (Ch A or B) exceeds 2.1E+7 μCi/Sec for 2 minutes.
OR

1g. RB Vent release rate of radioiodines exceeds 3600 μCi/Sec for 30 minutes.
OR

1h. RB Vent release rate of radioiodines exceeds 3.6E+4 μCi/Sec for 2 minutes.
OR

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 1

Radioactive Effluent - Cont'd

SITE AREA EMERGENCY (Cont'd)

1i. Whole body doses (TEDE) greater than 1000 mrem or thyroid doses (CDE) of greater than 5000 mrem are projected beyond the site boundary.
OR

CAUTION

Due to temperature-induced currents, the Containment Radiation Monitor (high-range radiation monitoring) circuits could initially produce spurious high Rem/hr signal during extreme temperature heatup transient conditions and indicate a false fail signal during extreme temperature cool down transient conditions (CR19980453)

1j. Containment Radiation Monitor reading indicates above the 0.01% curve when plotted versus time after shutdown in accordance with A.2-208 (CORE DAMAGE ASSESSMENT) Section 6.2 and associated FIGURE 7.1.
OR

1k. Measured Whole Body dose rates at the site boundary or beyond exceed 50 mrem/hr for 30 minutes or 500 mrem/hr for 2 minutes.

OR

1l. Radioiodine concentrations measured at the site boundary or beyond exceed 7.0E-8 μCi/CC for 30 minutes or 7.0E-7 μCi/CC for 2 minutes.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 2

In-Plant Radiation Levels

UNUSUAL EVENT

Not Applicable

ALERT

SEVERE DEGRADATION IN CONTROL OF RADIOACTIVE MATERIALS

EAL

1a. Increase by a factor of 1000 in plant radiation levels as indicated by Area Radiation Monitoring System:

NOTE: EALs shown as FULL SCALE indicate that an increase by a factor of 1000 is beyond the range of the particular monitor. In these cases, a full scale reading combined with the Shift Manager's concurrence, *SHALL* meet the criteria for the ALERT classification. Reading in mrem/hr except as noted.

PANEL	DESCRIPTION	NORMAL	EAL
C-11	A-1 1027 RB NE Low	10	Full scale
C-11	A-2 1027 RB N High	5	5000
C-11	A-3 1027 RB W Stairway	1	1000
C-11	A-4 1001 Source Storage	20	Full scale
C-11	A-5 Fuel Pool Skimmer Tk Area	20	Full scale
C-11	A-6 1001' Decon Area	3	Full scale
C-11	A-7 985' Sample Hood	5	Full scale
C-11	A-8 Rx Cleanup System Access	0.25	250
C-11	A-9 962 RB East	0.8	800
C-11	A-10 East CRD HCU	3	Full scale
C-11	A-11 West CRD HCU	3	Full scale
C-11	A-12 TIP Drive Area	2	Full scale
C-11	A-13 TIP Cubicle	30	Full scale
C-11	A-14 HPCI Turbine Area	2	Full scale
C-11	A-15 Rx Bldg Drain Tk Area	25	Full scale
C-11	A-16 RCIC Pump Area	1	1000
C-11	A-17 East CS and RHR Area	20	Full scale

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 2

In-Plant Radiation Levels - Cont'd

ALERT - Cont'd

PANEL	DESCRIPTION	NORMAL	EAL
C-11	A-18 West CS and RHR Area	8	Full scale
C-11	A-19 Hot Chemistry Lab	.25	250
C-11	A-20 Control Room Low Range	0.02	20
C-11	A-21 Control Room High Range	3	3000
C-11	B-1 Turbine Operating Floor	90	Full scale
C-11	B-2 Turbine Front Standard	70	Full scale
C-11	B-3 Cond Demin Operating Area	3	1000
C-11	B-4 Mechanical Vacuum Pump Rm	9	Full scale
C-11	B-5 Feedwater Pump Area	1	1000
C-11	C-1 Radwaste Control Room	0.2	200
C-11	C-2 Sample Tank Area	3	Full scale
C-11	C-3 Conveyer Operating Area	0.2	200
C-11	D-1 Hot Machine Shop	0.2	200
C-252	E-1 Recombiner Instrument Room	1	Full scale
C-252	E-2 Recombiner Pump Room	3	Full scale
C-252	F-1 Off-gas Storage Foyer	0.3	100
C-11	F-2 Off-gas Storage Foyer High Range	<100	1000
C-257/C-258	Containment Rad Monitor	3-5 Rem/hr	50 Rem/hr

OR

1b. Direct measurement of radiation levels corresponding to an increase by a factor of 1000.

SITE AREA EMERGENCY

Not applicable

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 3

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FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 4

Reactor Coolant Leak

UNUSUAL EVENT

PRIMARY SYSTEM LEAK RATE EXCEEDS TECHNICAL SPECIFICATIONS

NOTE: Under this GUIDELINE, an Unusual Event should be declared when the leak rate is confirmed to be in excess of the corresponding EAL value (i.e. 5 gpm unidentified leakage, 25 gpm total drywell leakage or 2 gpm increase in unidentified leak rate in 24 hours).

EALs

1a. Unidentified leakage exceeds 5 gpm as indicated by computer point PCT 509 (DW FLOOR DRAIN SUMP RATE OF CHANGE) or calculated from indicator LR-7409 on Panel C-04 in the Control Room.

OR

1b. Total drywell leakage exceeds 25 gpm as indicated by computer point PCT 507 (DW TOTAL LEAKAGE) or calculated from indicator LR-7409 on Panel C-04 in the Control Room.

OR

1c. Unidentified leakage rate increases 2 gpm within any 24 hour period as determined from Test 0381 (CONTAINMENT COOLANT LEAKAGE LOG).

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 4

Reactor Coolant Leak - Cont'd

ALERT

PRIMARY COOLANT LEAK RATE GREATER THAN 50 gpm

NOTE: Failure of a SRV to close should not be classified using Guideline 4. The failure of a SRV to close should be classified using Guideline 7 (Safety Relief Valve Failure).

EAL

1a. Total leakage exceeds 50 gpm as indicated by computer point PCT 509 (DW FLOOR DRAIN SUMP RATE OF CHANGE) or computer point PCT 507 (DW TOTAL LEAKAGE) or as calculated from indicator LR-7409 on Panel C-04 in the Control Room.

OR

NOTE: Unisolable - The leak is NOT isolable from the Control Room OR an attempt for isolation from the Control Room has been made and was unsuccessful. An attempt for isolation should be made prior to the accident classification. If isolable upon identification, this Initiating Condition is not applicable.

1b. Unisolable primary system leakage outside the drywell as indicated by area temperatures or ARM levels ≥ maximum safe values in at least one area.

OR

1c. Shift Manager's judgement.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 4

Reactor Coolant Leak - Cont'd

SITE AREA EMERGENCY

KNOWN LOSS OF COOLANT ACCIDENT GREATER THAN MAKEUP CAPACITY

EAL

1a. Total leakage exceeds 50 gpm as indicated by computer point PCT 509 (DW FLOOR DRAIN SUMP RATE OF CHANGE) or computer point PCT 507 (DW TOTAL LEAKAGE) or as calculated from indicator LR-7409 on Panel C-04 in the Control Room.

OR

NOTE: Unisolable - The leak is NOT isolable from the Control Room OR an attempt for isolation from the Control Room has been made and was unsuccessful. An attempt for isolation should be made prior to the accident classification. If isolable upon identification, this Initiating Condition is not applicable.

1b. Unisolable primary system leakage outside the drywell as indicated by area temperatures or ARM levels ≥ maximum safe values in at least one area.

AND

2. Reactor water level decreasing below 1 foot above active fuel (-114inches) indicated by FUEL ZONE LEVEL INDICATOR (LI-2-3-91A/B) as a result of insufficient makeup capacity.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 5

Main Steam Line Break

UNUSUAL EVENT

Not applicable

ALERT

MAIN STEAM LINE BREAK WITH MSIV MALFUNCTION CAUSING LEAKAGE TO SECONDARY CONTAINMENT

EALS

1. Shift Manager's judgement that MSIV is malfunctioning or continuing steam flow with evidence that the steam line break is outside primary containment (e.g. visual observation, radiation or temperature).

AND

2a. Annunciators MAIN STEAM LINE HIGH FLOW A/B ALARM (5-A-25/26) and RX WATER LEVEL HI/LO ALARM (5-B-24).

OR

2b. Annunciator MAIN STEAM TUNNEL HIGH TEMPERATURE A/B ALARM (5-A-17/18)

OR

2c. Annunciator MAIN STEAM LINE LEAKAGE ALARM (5-B-32).

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 5

Main Steam Line Break - Cont'd

SITE AREA EMERGENCY

MAIN STEAM LINE BREAK WITH FAILURE OF MSIVs TO ISOLATE THE LEAK AND CAUSING LEAKAGE OUTSIDE SECONDARY CONTAINMENT

EALs

1. Shift Manager or Emergency Director's judgement that MSIV is malfunctioning or continuing steam flow with evidence that steam line break is outside primary containment.

AND

2a. Annunciators MAIN STEAM LINE FLOW A/B ALARM (5-A-25/26) and RX WATER LEVEL HI/LO ALARM (5-B-24).
OR

2b. Annunciator MAIN STEAM TUNNEL HIGH TEMPERATURE ALARM (5-A-17/18).
OR

2c. Annunciator MAIN STEAM LINE LEAKAGE ALARM (5-B-32).

AND

3a. Annunciator TURBINE BUILDING HIGH RADIATION ALARM (4-A-21).
OR

3b. High airborne radioactivity levels in the Turbine Building indicated by Continuous Air Monitors (CAMs) or direct measurement.
OR

3c. Visual observation that blow-out panels between the Steam Chase and Turbine Building have been ruptured.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 6

Fuel Cladding Degradation

UNUSUAL EVENT

FUEL DAMAGE INDICATION

EALs

1a. Off-gas Pretreatment Monitor exceeds 20,000 (2×10^4) mrem/hr as indicated on Recorder RR-4902 or RM-17-150A and RM-17-150B.

OR

1b. Off-gas Pretreatment Monitor increases by 4,000 mrem/hr within 30 minutes at steady power as indicated by Recorder RR-4902 or RM-17-150A and RM-17-150B.

OR

1c. Reactor coolant I-131 dose equivalent exceeds 5 μCi/gram as determined by sample and analysis.

ALERT

SEVERE LOSS OF FUEL CLADDING INDICATED BY HIGH OFF-GAS AT OFF-GAS PRETREATMENT MONITOR (greater than 5 Ci/ Sec corresponding to 16 isotopes decayed 30 minutes) **OR** VERY HIGH COOLANT ACTIVITY SAMPLE (e.g., > 300 μCi/gm I-131 dose equivalent).

EALs

1a. Off-gas Pretreatment Monitor exceeds 200,000 (2×10^5) mrem/hr indicated on Recorder RR-4902 or RM-17-150A and RM-17-150B.

OR

NOTE: Resin intrusion or excessive hydrogen injection rates may cause high radiation without fuel cladding damage.

1b. Main Steam Line Monitor indicates 6000 mrem/hr due to high radiation.

OR

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 6

Fuel Cladding Degradation - Cont'd

ALERT (Cont'd)

1c. Reactor coolant >300 μCi/gm I-131 dose equivalent as determined by sample and analysis.

OR

CAUTION

Due to temperature-induced currents, the Containment Radiation Monitor (high-range radiation monitoring) circuits could initially produce spurious high Rem/hr signal during extreme temperature heatup transient conditions and indicate a false fail signal during extreme temperature cool down transient conditions (CR19980453)

1d. Containment Radiation Monitor reading exceeds the Containment Monitor Response to Contained Source Curve (FIGURE 7.3).

SITE AREA EMERGENCY

DEGRADED CORE WITH POSSIBLE LOSS OF COOLABLE GEOMETRY

EALs

1. More than 1/3 of core uncovered as indicated by reactor water level below -174 inches.

AND

CAUTION

Due to temperature-induced currents, the Containment Radiation Monitor (high-range radiation monitoring) circuits could initially produce spurious high Rem/hr signal during extreme temperature heatup transient conditions and indicate a false fail signal during extreme temperature cool down transient conditions (CR19980453)

2. Containment Radiation Monitor reading exceeds the Containment Monitor Response to Containment Source Curve (Figure 7.3).

AND

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 6

Fuel Cladding Degradation - Cont'd

SITE AREA EMERGENCY (Cont'd)

3a. Reactor coolant >3,000 μCi/gm I-131 dose equivalent as determined by sampling and analysis.

OR

3b. Inability to insert control rods fully.

OR

3c. Inability to position SRMs or IRMs within core.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 7

Safety Relief Valve Failure

UNUSUAL EVENT

FAILURE OF A SAFETY RELIEF VALVE TO CLOSE FOLLOWING REDUCTION OF APPLICABLE PRESSURE

EALs

1a. Annunciator AUTO BLOWDOWN RELIEF VALVE LEAKAGE (3-A-09).

OR

1b. Annunciator SRV OPEN ALARM (5-A-46).

ALERT

Not applicable

SITE AREA EMERGENCY

Not Applicable

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 8

Intentionally Blank

GUIDELINE 9

Intentionally Blank

GUIDELINE 10

Intentionally Blank

GUIDELINE 11

Intentionally Blank

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 12

Reactor Protection System Failure

UNUSUAL EVENT

Not applicable

ALERT

FAILURE OF THE REACTOR PROTECTION SYSTEM TO INITIATE AND COMPLETE A SCRAM WHICH BRINGS THE REACTOR SUBCRITICAL

EALs

1. Valid Scram Signal.

AND

2. Neutron count rate indicates reactor critical.

SITE AREA EMERGENCY

TRANSIENT REQUIRING OPERATION OF SHUTDOWN SYSTEMS WITH FAILURE TO SCRAM (continued power operation but no core damage immediately evident)

NOTE: Refer to Guideline 6 for Fuel Cladding Degradation determination.

EALs

1. Failure to bring reactor subcritical with control rods.

AND

2. Failure of the Standby Liquid Control System.

AND

3. Shift Manager or Emergency Director's judgement that a transient is in progress.

AND

4. No indication of core damage (if core damage is indicated, declare a GENERAL EMERGENCY).

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 13

Loss of Plant Shutdown or Shutdown Cooling Capability

UNUSUAL EVENT

As specified in Guideline 29.

ALERT

COMPLETE LOSS OF ABILITY TO ACHIEVE OR MAINTAIN PLANT COLD SHUTDOWN

EALs

1a. Loss of core cooling capabilities needed to achieve plant cold shutdown.

OR

1b. Loss of core cooling capabilities required to maintain the Reactor Coolant Temperature < (less than) 212°F.

AND

2. Shift Manager's judgement that the plant cannot reach or maintain cold shutdown.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 13

Loss of Plant Shutdown or Shutdown Cooling Capability - Cont'd

SITE AREA EMERGENCY

COMPLETE LOSS OF ABILITY TO ACHIEVE OR MAINTAIN HOT SHUTDOWN

EALs

1. Inability to SCRAM and inoperable Standby Liquid Control System.

AND

2a. Loss of all Safety Relief Valve capability.

OR

2b. Inoperable RHR System.

OR

2c. Inoperable RHR heat sink.

AND

3a. Loss of main condenser cooling.

OR

3b. No makeup capability from either HPCI or RCIC Systems.

AND/OR

4. Shift Manager or Emergency Director's judgement that plant cannot reach or maintain hot shutdown.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 14

Loss of Instrumentation

UNUSUAL EVENT

INDICATIONS OR ALARMS ON PROCESS OR EFFLUENT PARAMETERS NOT FUNCTIONAL IN THE CONTROL ROOM TO AN EXTENT REQUIRING PLANT SHUTDOWN

ALERT

LOSS OF MOST OR ALL ANNUNCIATORS WHILE OPERATING ABOVE COLD SHUTDOWN AND PLANT IN STABLE CONDITION.

EALs

1. Unplanned loss of most or all of annunciators on panels C-03, C-04, C-05, C-08.

AND

2. Shift Manager's judgement that annunciators are non-functional.

AND

3. Loss of plant computer alarm display, alarm typer and SPDS display.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 14

Loss of Instrumentation - Cont'd

SITE AREA EMERGENCY

LOSS OF MOST OR ALL ANNUNCIATORS AND PLANT TRANSIENT INITIATED OR IN PROGRESS

EALs

1. Unplanned loss of most or all of annunciators on panels C-03, C-04, C-05, C-08.

AND

2. Shift Manager or Emergency Director's judgement that annunciators are non-functional.

AND

3. Loss of plant computer alarm display, alarm typer and SPDS display.

AND

4. Shift Manager or Emergency Director's judgement that a transient has been initiated or is in progress.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 15

Control Room Evacuation

UNUSUAL EVENT

Not applicable

ALERT

EVACUATION OF THE CONTROL ROOM IS REQUIRED OR ANTICIPATED AND CONTROL OF SHUTDOWN SYSTEMS HAVE BEEN ESTABLISHED AT LOCAL STATIONS. (If local control has not been established in 15 minutes, go to SITE AREA EMERGENCY)

EAL

1. As determined by Shift Manager.

SITE AREA EMERGENCY

EVACUATION OF CONTROL ROOM AND CONTROL OF SHUTDOWN SYSTEMS NOT ESTABLISHED FROM LOCAL STATIONS IN 15 MINUTES

EAL

1. As determined by Shift Manager or Emergency Director.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 16

Toxic/Flammable Gases

UNUSUAL EVENT

NEAR OR ON-SITE TOXIC OR FLAMMABLE GAS RELEASE

EAL

1a. Widespread toxic or flammable gaseous hazard being experienced or projected on-site (out side of plant) leading to the evacuation or sheltering of personnel outside the plant.

OR

1b. Receipt of recommendation by Local, County, or State Officials to evacuate personnel from the site based on an off-site hazardous or flammable gaseous release event.

ALERT

ENTRY INTO FACILITY ENVIRONS OF UNCONTROLLED TOXIC OR FLAMMABLE GASES

EAL

1a. Toxic gaseous concentrations being measured or projected within a large area of the plant at the breathing zone greater than:

a. 50 ppm Ammonia
b. 10 ppm Chlorine
c. 5 ppm Vinyl Chloride
d. 2000 ppm Butadiene
e. 50 ppm Ethylene Dichloride
f. 500 ppm Gasoline
g. 2100 ppm Propane
h. 2000 ppm L.P.G.
i. IDLH for any toxic gas

NOTE: IDLH = Immediately Dangerous to Life or Health. IDLH Reference: NIOSH Pocket Guide to Chemical Hazards.

OR

1b. Flammable gas concentrations being measured within the plant at a distance of greater than 10 feet from the source exceeding the lower explosive limit.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 16

Toxic/Flammable Gases - Cont'd

SITE AREA EMERGENCY

ENTRY OF UNCONTROLLED FLAMMABLE GASES INTO VITAL AREAS OR ENTRY OF UNCONTROLLED TOXIC GASES INTO VITAL AREAS WHERE LACK OF ACCESS TO THE AREA CONSTITUTES A SAFETY PROBLEM AND THE PLANT IS **NOT** IN COLD SHUTDOWN

EALs

1a. Toxic gaseous concentrations being measured or projected within a major portion of a vital area of the plant at the breathing zone greater than or equal to the following such that further access to the vital area is being prevented at a time when it is needed.

a. 50 ppm Ammonia
b. 10 ppm Chlorine
c. 5 ppm Vinyl Chloride
d. 2000 ppm Butadiene
e. 50 ppm Ethylene Dichloride
f. 500 ppm Gasoline
g. 2100 ppm Propane
h. 2000 ppm L.P.G.
i. IDLH for any toxic gas

NOTE: IDLH = Immediately Dangerous to Life or Health. IDLH Reference: NIOSH Pocket Guide to Chemical Hazards.

OR

1b. Flammable gas concentrations being measured or projected within a major portion of a vital area of the plant from an unisolable source exceeding the lower explosive limit such that further access to the vital area is being prevented at a time when it is needed.

AND

2. Plant **IS NOT** in cold shutdown.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

l/mab

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 17

Security Compromise

UNUSUAL EVENT

SECURITY THREAT OR ATTEMPTED ENTRY OR ATTEMPTED SABOTAGE

EAL

1a. Security determines the threat to be credible and the Shift Manager determines the threat would have an adverse impact on the safe operation or shutdown capability of the plant.

OR

1b. Security discovers an unauthorized attempted entry by force or stealth (secret) into the protected area.

OR

1c. Security confirms that an act of attempted sabotage did occur to vital plant equipment or security equipment.

OR

1d. Low credible security threat notification received.

ALERT

ON-GOING SECURITY COMPROMISE

EAL

1a. Security Safeguards Contingency event that results in unauthorized personnel commandeering an area within the protected area, but not controlling shutdown capability or any vital areas.

OR

1b. Bomb device discovered within plant protected area and outside of any vital area.

OR

1c. High credible security threat notification received.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 17

Security Compromise (Cont.)

SITE AREA EMERGENCY

IMMINENT LOSS OF PHYSICAL CONTROL OF THE PLANT

EAL

1a. Physical attack on the plant involving imminent occupancy of the Control Room, auxiliary shutdown panels, and any other vital areas.

OR

1b. Bomb device discovered within a vital area.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 18

Loss of AC Power

UNUSUAL EVENT

LOSS OF OFF-SITE POWER OR LOSS OF ON-SITE AC POWER CAPABILITY

EALs

1a. Verified zero voltage on bus voltage meters or breaker indicators for Bus 11, Bus 12, Bus 13, Bus 14, and 1AR transformer on Panel C-08.

OR

1b. Loss of 11 and 12 Emergency Diesel Generators when they are required to be operable by Technical Specifications and inoperability is not due to surveillance testing.

ALERT

LOSS OF OFF-SITE POWER AND LOSS OF ALL ON-SITE AC POWER (STATION BLACKOUT) (see Site Area Emergency for extended loss)

EALs

1. Verified zero voltage on bus voltage meters or breaker indicators for Bus 11, Bus 12, Bus 13, Bus 14, Bus 15, Bus 16, and 1AR transformer on Panel C-08.

AND

2. Loss of 11 and 12 Emergency Diesel Generators when they are required to be operable by Technical Specifications.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 18

Loss of AC Power - Cont'd

SITE AREA EMERGENCY

LOSS OF OFF-SITE POWER AND LOSS OF ALL ON-SITE AC POWER FOR MORE THAN 15 MINUTES

EALs

1. Verified zero voltage on bus voltage meters or breaker indicators for Bus 11, Bus 12, Bus 13, Bus 14, Bus 15, Bus 16 and 1AR transformer on Panel C-08.

AND

2. Loss of 11 and 12 Emergency Diesel Generators when they are required to be operable by Technical Specifications.

AND

3. Failure to restore power to at least one emergency bus within 15 minutes from the time of loss of both off-site and on-site AC power.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 19*

Loss of DC Power

UNUSUAL EVENT

Not applicable

ALERT

LOSS OF ALL VITAL DC POWER (see Site Area Emergency for extended loss)

EALs

1. Loss of both 125 VDC power sources and loss of both 250 VDC power sources as indicated by annunciators:

   DIV. I 250V DC HI-LO VOLTAGE (8-A-20); **and**
   DIV. II 125 & 250V DC TROUBLE (20-B-09); **and**
   NO. 12 125V DC BUS VOLTAGE HIGH/LOW (8-B-13); **and**
   NO. 11 125V DC BUS VOLTAGE HIGH/LOW (8-C-14)

AND

2. Shift Manager's judgement that all vital DC power is lost or degraded voltages are measured at battery terminals.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 19

Loss of DC Power - Cont'd

SITE AREA EMERGENCY

LOSS OF ALL VITAL ON-SITE DC POWER FOR MORE THAN 15 MINUTES

EALs

1. Loss of both 125 VDC power sources and loss of both 250 VDC power sources as indicated by annunciators:

   DIV. I 250V DC HI-LO VOLTAGE (8-A-20); **and**
   DIV. II 125 & 250 VDC TROUBLE (20-B-09); **and**
   NO. 12 125 VDC BUS VOLTAGE HIGH/LOW (8-B-13); **and**
   NO. 11 125 VDC BUS VOLTAGE HIGH/LOW (8-C-14)

AND

2. Shift Manager or Emergency Director's judgement that all vital DC power is lost or degraded voltages are measured at battery terminals.

AND

3. 15 minute time lapse.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 20

Tornado or Sustained Winds

UNUSUAL EVENT

TORNADO ON-SITE

EALs

1a. Tornado observed to touch down within the site boundary.

OR

1b. Sustained winds above 75 MPH for greater than 10 minutes at the site.

ALERT

TORNADO STRIKING THE FACILITY

EALs

1a. Tornado strikes a vital plant structure.

OR

1b. Sustained winds above 90 MPH for greater than 10 minutes at the site.

SITE AREA EMERGENCY

SUSTAINED WINDS OR TORNADO IN EXCESS OF DESIGN LEVELS

EALs

1a. Tornado causes damage to vital plant equipment or plant structures.

OR

1b. Sustained winds above 100 MPH for greater than 10 minutes at the site.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 21

River Water Hi/Lo

UNUSUAL EVENT

RIVER WATER LEVEL IN EXCESS OF 918 FEET OR RIVER FLOW BELOW 240 CFS (approximately 902.4 FT river level)

ALERT

RIVER WATER LEVEL BETWEEN 921 AND 930 FEET OR RIVER WATER LEVEL BELOW 900.5 FT

SITE AREA EMERGENCY

RIVER WATER LEVEL EXCEEDS 930 FT OR RIVER WATER LEVEL BELOW 899 FT OR FLOOD OR LOW WATER CAUSES DAMAGE TO VITAL EQUIPMENT

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 22

Earthquake

UNUSUAL EVENT

ANY EARTHQUAKE FELT IN-PLANT OR DETECTED ON STATION SEISMIC INSTRUMENTATION AND SUBSEQUENTLY CONFIRMED BY ONE OR MORE OFF-SITE SOURCES

EALs

1a. Annunciator EARTHQUAKE ALARM (6-C-8).

OR

1b. Shift Manager's judgement.

ALERT

CONFIRMED EARTHQUAKE GREATER THAN OBE LEVELS

EAL

1. Annunciator OPERATIONAL BASIS EARTHQUAKE ALARM (6-C-13).

SITE AREA EMERGENCY

CONFIRMED EARTHQUAKE GREATER THAN DBE LEVELS AND PLANT NOT IN COLD SHUTDOWN

EALs

1. Annunciator DESIGN BASIS EARTHQUAKE ALARM (6-C-18).

AND

2. Plant not in cold shutdown.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 23

Fire

UNUSUAL EVENT

FIRE WITHIN THE PLANT NOT EXTINGUISHED WITHIN 15 MINUTES OF DETECTION

EAL

NOTE: Verification of the alarm in this context means those actions taken in the Control Room to determine that the Control Room alarm is not spurious.

1. Fire in buildings or areas contiguous to any of the following areas not extinguished within 15 minutes of Control Room notification or verification of a Control Room alarm: Reactor, Turbine, Radwaste, Plant Administrative, Intake Structure, Diesel Generator, Heating Boiler, Recombiner, EFT, Condensate Storage Tanks

ALERT

FIRE POTENTIALLY AFFECTING SAFETY SYSTEM

EALs

1. Observation that fire could affect a safety system.

AND

2. Shift Manager's judgement.

SITE AREA EMERGENCY

FIRE COMPROMISING THE FUNCTIONS OF A SAFETY SYSTEM

EALs

1. Observation of fire that affects safety systems or functions.

AND

2. Shift Manager or Emergency Director's judgement.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

l/mab

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 24

Explosion

UNUSUAL EVENT

NEAR OR ON-SITE EXPLOSION

EALs

1. Visual observation or notification received.

AND

2. Shift Manager's judgement.

ALERT

KNOWN EXPLOSION DAMAGE TO THE FACILITY AFFECTING PLANT OPERATIONS

EALs

1. Visually observed evidence of an explosion directly affecting plant safe operation.

AND

2. Shift Manager's judgement.

SITE AREA EMERGENCY

SEVERE DAMAGE TO SAFE SHUTDOWN EQUIPMENT FROM MISSILES OR EXPLOSION

EALs

1. Plant **not** in cold shutdown.

AND

2. Shift Manager or Emergency Director's judgement.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 25

Aircraft and Missiles

UNUSUAL EVENT

AIRCRAFT CRASH ON-SITE OR SUSPICIOUS AIRCRAFT ACTIVITY OVER THE FACILITY

EAL

1. Visual observation or notification is received.

ALERT

AIRCRAFT CRASH ON THE FACILITY OR MISSILE IMPACT ON FACILITY

EAL

1. Visual observation.

SITE AREA EMERGENCY

AIRCRAFT CRASH AFFECTING VITAL STRUCTURES BY IMPACT OR FIRE, OR SEVERE DAMAGE TO SAFE SHUTDOWN EQUIPMENT FROM MISSILES OR EXPLOSION

EAL

1. As determined by Shift Manager or Emergency Director with plant **not** in cold shutdown.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 26

Miscellaneous

UNUSUAL EVENT

TRAIN DERAILMENT ON-SITE

OR

TURBINE ROTATING COMPONENT FAILURE CAUSING RAPID PLANT SHUTDOWN

EALs

1a. Visual observation.

OR

1b. Shift Manager's judgement.

ALERT

TURBINE FAILURE CAUSING CASING PENETRATION

EALs

1a. Visual observation

OR

1b. Shift Manager's judgement.

SITE AREA EMERGENCY

Not applicable

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 27

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FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 28

General Emergency - All GUIDELINES

A. **EFFLUENT MONITORS DETECT LEVELS CORRESPONDING TO 1 REM/HR (whole body) or 5 REM/HR (thyroid) AT THE SITE BOUNDARY UNDER ACTUAL METEOROLOGICAL CONDITIONS. DOSE RATES ARE PROJECTED BASED ON OTHER PLANT PARAMETERS** (e.g., radiation levels in containment with leak rate appropriate for existing containment pressure with some confirmation from effluent monitors) **OR ARE MEASURED IN THE ENVIRONS.**

EALs

1a. Stack Effluent Monitor (Ch A or B) exceeds 2.4E+8 μCi/Sec.

OR

1b. RB Vent Effluent Monitor (Ch A or B) exceeds 9.3E+7 μCi/Sec.

OR

1c. Stack radioiodine release rate, as determined by sampling and analysis, exceeds 1.95E+5 μCi/Sec.

OR

1d. RB Vent radioiodine release rate, as determined by sampling and analysis, exceeds 2.0E+5 μCi/Sec.

OR

CAUTION

Due to temperature-induced currents, the Containment Radiation Monitor (high-range radiation monitoring) circuits could initially produce spurious high Rem/hr signal during extreme temperature heatup transient conditions and indicate a false fail signal during extreme temperature cool down transient conditions (CR19980453)

1e. Release rate projection based on Containment Radiation Monitor or Containment Sampling exceeds any of the values in 1a, 1b, 1c, or 1d above.

OR

1f. Dose rates of 1000 mrem /hr (whole body) are measured at the site boundary or beyond.

OR

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 28

General Emergency - All GUIDELINES - Cont'd

1g. Radioiodine concentrations measured at the site boundary or beyond exceed 7.0E-6 μCi/CC.

OR

1h. Dose projection calculations, based on actual or expected meteorological conditions and source term, indicates dose rates equal to or exceeding 1000 mrem/hr (whole body) or 5000 mrem/hr (thyroid) at the site boundary or beyond.

OR

B. LOSS OF 2 OF 3 FISSION PRODUCT BARRIERS WITH A POTENTIAL LOSS OF 3RD BARRIER

CLAD/COOLANT BOUNDARY FAILURE, POTENTIAL CONTAINMENT LOSS

EALs

NOTE: Failure of MSIVs to isolate constitutes a loss of both primary coolant boundary and containment. When this is combined with cladding failure, all three barriers have been lost.

1. Evidence of Fuel Cladding Degradation per Guideline 6, Alert or Site Area Emergency level.

AND

2. Failure of primary coolant boundary as evidenced by:

- High Drywell pressure; **or**
- High Drywell temperature; **or**
- Failure of MSIVs to isolate; **or**
- Safety Relief Valve stuck open; **or**
- GAP activity in primary containment atmosphere; **or**
- Failure of Scram Discharge Volume valves to isolate

AND

3. Potential loss of containment as evidenced by:

- Containment temperature or pressure approaching design limits (281°F and 56 psig) and increasing; **or**
- Loss of containment cooling; **or**
- Failure of Scram Discharge Volume valves to isolate; **or**
- Shift Manager or Emergency Director's judgement that loss of containment is likely.

OR

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 28

General Emergency - All GUIDELINES - Cont'd

C. LOSS OF 2 OF 3 FISSION PRODUCT BARRIERS WITH A POTENTIAL LOSS OF 3RD BARRIER

CLAD/CONTAINMENT FAILURE, POTENTIAL COOLANT BOUNDARY LOSS

NOTE: In either of the following situations loss of containment should be judged to be likely:

- **Small or large LOCA with failure of ECCS to perform, or**
- **Loss of requisite decay heat removal systems (RHR and other heat sinks) following shutdown.**

EALs

1. Evidence of Fuel Cladding Degradation per Guideline 6, Alert or Site Area Emergency level.

AND

2a. Failure of containment as evidenced by **all** containment penetrations required for isolation not valved off or closed.

OR

2b. Shift Manager or Emergency Director's judgement that containment has failed.

AND

3. Potential loss of primary coolant boundary as evidenced by reactor pressure near design limits (1210 psig measured in the steam dome @ 575°F) and increasing **or** loss of all ECCS.

OR

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 28

General Emergency - All GUIDELINES - Cont'd

D. LOSS OF 2 OF 3 FISSION PRODUCT BARRIERS WITH A POTENTIAL LOSS OF 3RD BARRIER

CONTAINMENT/COOLANT BOUNDARY FAILURE, POTENTIAL CLAD FAILURE

EALs

NOTE: Failure of MSIVs to isolate constitutes a loss of both primary coolant boundary and containment. When this is combined with cladding failure, all three barriers have been lost.

1a. Failure of containment as evidenced by **all** containment penetrations required for isolation not valved off or closed.

OR

1b. Shift Manager or Emergency Director's judgement that containment has failed.

AND

2. Failure of primary coolant boundary as evidenced by:

- High Drywell pressure; **or**
- High Drywell temperature; **or**
- Failure of MSIVs to isolate; **or**
- Safety Relief Valve stuck open; **or**
- GAP activity in primary containment atmosphere; **or**
- Failure of Scram Discharge Volume valves to isolate

AND

3a. Potential loss of cladding as evidenced by loss of all ECCS

OR

3b. Reactor water level < TAF (-126") and decreasing.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 28

General Emergency - All GUIDELINES - Cont'd

E. LOSS OF PHYSICAL CONTROL OF THE PLANT

F. OTHER PLANT CONDITIONS EXIST, FROM WHATEVER SOURCE, THAT MAKE RELEASE OF LARGE AMOUNTS OF RADIOACTIVITY IN A SHORT TIME PERIOD POSSIBLE (e.g. any core melt situation, see example BWR sequences).

EXAMPLE BWR SEQUENCES

1. Transient (e.g., loss of off-site power) plus failure of requisite core shutdown systems (e.g., scram or standby liquid control system). Could lead to core melt in several hours with containment failure likely. More severe consequences if pump trip does not function.

2. Small or large LOCAs with failure of ECCS to perform, leading to core degradation or melt in minutes to hours. Loss of containment integrity may be imminent.

3. Small or large LOCA occurs and containment performance is unsuccessful affecting longer term success of the ECCS. Could lead to core degradation or melt in several hours without containment boundary.

4. Shutdown occurs but requisite decay heat removal systems (e.g., RHR) or non-safety systems heat removal means are rendered unavailable. Core degradation or melt could occur in about ten hours with subsequent containment failure.

G. ANY MAJOR INTERNAL OR EXTERNAL EVENTS (E.G., FIRES, EARTHQUAKES, SUBSTANTIALLY BEYOND DESIGN BASIS) WHICH COULD CAUSE MASSIVE COMMON DAMAGE TO PLANT SYSTEMS RESULTING IN ANY OF THE ABOVE (A-F).

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 29

Other Plant Conditions

UNUSUAL EVENT

NOTE: For plant conditions which require plant shutdown under Technical Specifications, the Unusual Event *SHALL* be declared no later than the time at which the LCO-specified action statement time period elapses. The Unusual Event may be declared earlier at the discretion of the Shift Manager or Emergency Director.

PLANT CONDITIONS EXIST REQUIRING SHUTDOWN UNDER TECHNICAL SPECIFICATION REQUIREMENTS AND INABILITY TO REACH REQUIRED OPERATING MODE WITHIN TECHNICAL SPECIFICATION TIME LIMITS.

OR

PLANT CONDITIONS EXIST THAT WARRANT INCREASE AWARENESS ON THE PART OF PLANT OPERATING STAFF OR STATE AND/OR LOCAL OFF-SITE AUTHORITIES.

OR

OTHER CONDITIONS EXIST WHICH IN THE JUDGEMENT OF THE SHIFT MANAGER OR EMERGENCY DIRECTOR INDICATE A POTENTIAL DEGRADATION OF THE LEVEL OF SAFETY OF THE PLANT.

ALERT

PLANT CONDITIONS EXIST THAT WARRANT PRECAUTIONARY ACTIVATION OF THE TECHNICAL SUPPORT CENTER AND PLACEMENT OF THE EMERGENCY OPERATIONS FACILITY AND OTHER KEY EMERGENCY PERSONNEL ON STANDBY

SITE AREA EMERGENCY

OTHER PLANT CONDITIONS EXIST THAT WARRANT ACTIVATION OF THE EMERGENCY RESPONSE CENTERS AND MONITORING TEAMS

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 30

Major Damage to Spent Fuel

UNUSUAL EVENT

Not applicable

ALERT

FUEL DAMAGE ACCIDENT WITH RELEASE OF RADIOACTIVITY TO CONTAINMENT

EALs

1. Dropping, bumping or otherwise rough handling of a spent bundle or individual fuel rods.

AND

2. Annunciator FUEL POOL RADIATION MONITOR CH A or B (5-A-1 or 5-A-2) exceeds 50 mrem/hr.

SITE AREA EMERGENCY

MAJOR DAMAGE TO SPENT FUEL IN CONTAINMENT (e.g., large object damages fuel or water loss below fuel level)

EALs

1a. Decrease in fuel pool level below 36'9" indicated by LS-2787, SPENT FUEL POOL LEVEL HI/LO ALARM on Panel C-65.

OR

1b. Dropping a heavy object onto spent fuel confirmed by direct observation.

AND

2. Annunciator FUEL POOL RADIATION MONITOR CH A or B (5-A-1 or 5-A-2) exceeds 50 mrem/hr.

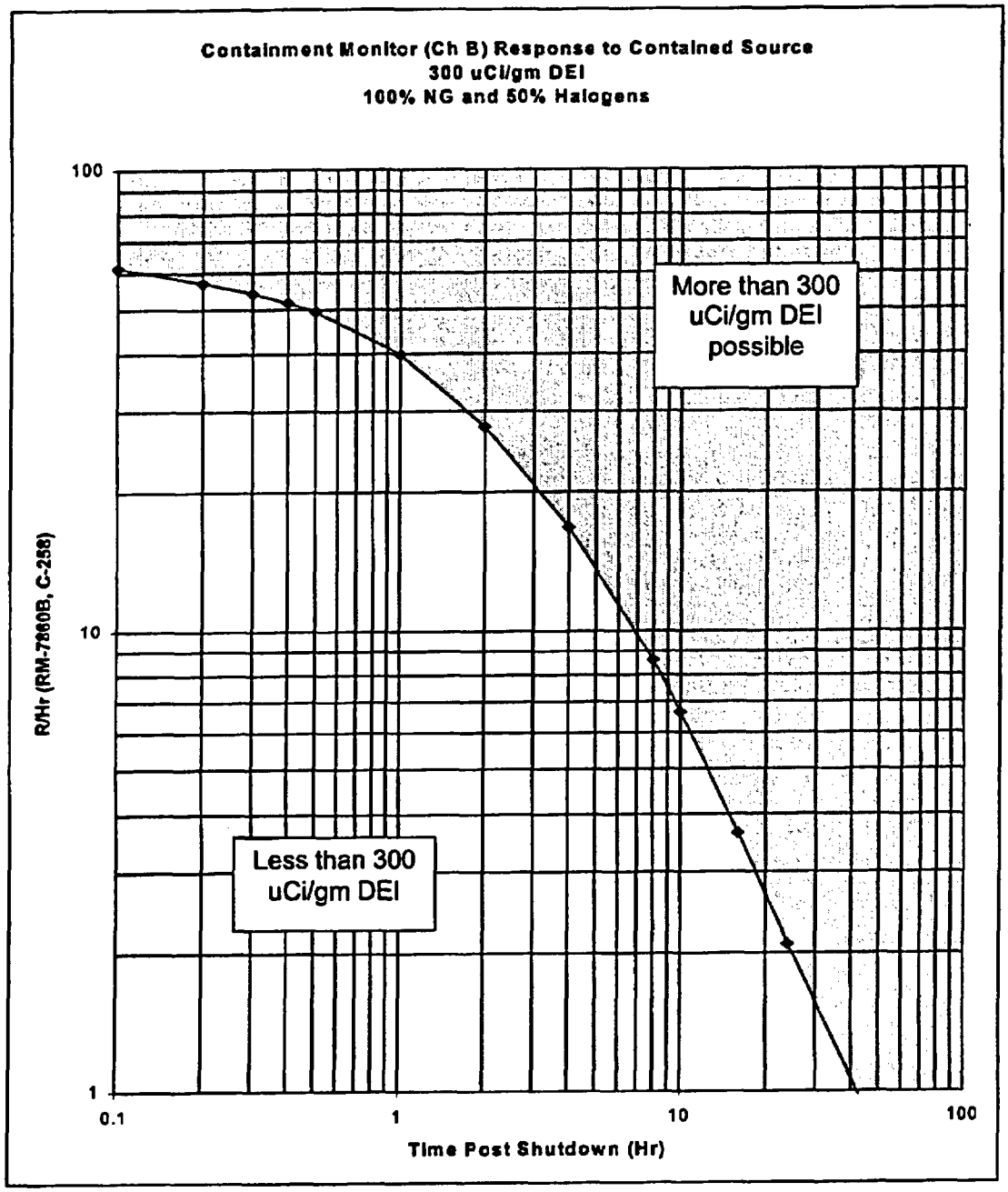
GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.3 Containment Monitor Response To Contained Source Curve

Containment Monitor Response To Contained Source
300 uCi/gm DEI
100% NG and 50% Halogens



l/mab

Basis for Containment Monitor Response Curve

Containment radiation monitoring is accomplished with two detectors. Each is located near one of the 28" recirc suction lines. The A Containment Monitor (azimuth 180°) response is complicated by its proximity to the steam lines which exit the drywell directly below it. Therefore, the B channel geometry (azimuth 0°) was used to generate the response curve.

The purpose of the response curve is to show the minimum Containment Monitor response to a fuel clad degradation condition indicated by a coolant concentration of 300 uCi/gm DEI.

Assumptions:

- The only radiation source is an 18-foot vertical section of the 28" diameter "A" Recirc suction line (933' to 951' level).
- The source is totally contained, i.e., no significant airborne radioactive material.
- Noble gases would be present in proportion to the radioiodine concentration (300 uCi/gm DEI), assuming that for each fuel rod with cladding damage, 100% of the noble gases and 50% of the radioiodines are released to the coolant.

Givens:

- The detector is located 110 inches horizontally from the outer diameter of the A Recirc suction line. Distance used in calculation is 124 inches from detector to center of source.
- The detector is located at 944' level.
- Shielding consists of 1" of steel (pipe wall).

EMERGENCY PLAN IMPLEMENTING PROCEDURE - TABLE OF CONTENTS

Prepared By: T Rogers	Reviewed By: [signature]	
ALARA Coord Review By: K Shumaker		Date: 9/18/03
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l/plr

1.0 PURPOSE

This procedure provides instructions and guidance for the direction of on-site radiological monitoring to assess the need for protective actions during an emergency.

2.0 APPLICABILITY

2.1 An emergency classification (Alert or higher) has been declared at the Monticello Plant and the Emergency Director or Radiological Emergency Coordinator has requested on-site radiological surveys.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 The Radiological Emergency Coordinator (REC) is responsible for:

3.1.1 Overall coordination of radiation protection emergency response activities including on-site radiological monitoring.

3.2 The Monitoring Section Leader (MSL) is responsible for:

3.2.1 Implementation of this procedure.

3.2.2 Coordination of on-site radiological surveys and sampling.

3.3 Rad Prot Coord (RPC) / Rad Prot Tech (RPT) are responsible for:

3.3.1 The conduct of on-site radiological surveys under the direction of the MSL in the TSC.

4.0 DISCUSSION

The extent and degree of on-site radiological monitoring following a release of radioactive material will depend on the nature, the severity, the physical/chemical form, and the radioisotopic composition of the release. The Emergency Director, REC or MSL will determine the extent and nature of post-accident radiological monitoring.

For events that occur during normal working hours, sufficient radiation protection personnel would normally be available to support several monitoring teams. During other times, the number of radiation protection personnel may be limited at the onset of the event. In this case, the Emergency Director, REC, or MSL will assign priorities for radiological monitoring based on the known or expected extent and severity of the release and/or related radiological conditions while the emergency organization is being augmented.

The ability to sample and analyze for I-131 meets NRC Commitment 03002A.

5.0 PRECAUTIONS

5.1 Exposures of on-site monitoring personnel should be in accordance with administrative control levels. They should have proper dosimetry, which is frequently checked, remain alert to their own exposure and request relief if cumulative exposure approaches administrative control levels. The Emergency Director may authorize exposure limit extensions if necessary (refer to EPIP A.2-401 (EMERGENCY EXPOSURE CONTROL)). All exposures should be maintained ALARA.

5.2 During portable radio communications, observe the following precautions.

5.2.1 Radio communications can be intercepted by commercially available scanners. All communications must be brief, factual and free of exclamatory or alarming expressions.

5.2.2 Carefully word transmissions to minimize confusion, in particular, avoid abbreviations such as "mrem" which could be misinterpreted as "Rem".

6.0 INSTRUCTIONS

6.1 MSL Recordkeeping

6.1.1 Record data, trends, and other information of radiological significance in the REC log book in accordance with the following guidance:

A. Significant events an the time(s) which they occur including changes in plant conditions, radiological releases, and trends.

B. Record key decisions and strategies developed (or implemented).

6.1.2 Periodically monitor the distribution of completed forms in the Radiation Protection area (of the TSC) to ensure accurate, consistent, approved information is used by REC.

6.1.3 Ensure all completed forms are filed in the appropriate container provided and retained as emergency records.

6.2 On-site (Out of Plant) Surveys

6.2.1 If a radioactive release is occurring or has occurred, determine (estimate) if the release is equivalent to or greater than the levels specified in GUIDELINE 1 (entitled "Radioactive Effluents") of EPIP A.2-101 (CLASSIFICATION OF EMERGENCIES) for an ALERT or higher classification.

6.2.2 If the release is determined or estimated to exceed the Alert levels, in A.2-101, direct the RPC (or any available RPT if the RPC is not yet manned) to assemble a survey team to perform on-site, out-of-plant survey in accordance with the following guidance:

A. Assemble a monitoring team to perform surveys per EPIP A.2-410 (OUT-OF-PLANT SURVEYS).

B. If necessary, initiate an Emergency RWP Checklist in accordance with EPIP A.2-107 (ACTIVATION AND OPERATION OF THE OSC).

C. Brief the team on affected sectors to be surveyed, potential radiological conditions or other hazards, precautions and protective clothing requirements.

D. Equip the team with a Rad Team frequency radio (from the TSC), direct the team to establish and maintain radio communication with the Field Team Communicator in the TSC.

E. Dispatch the team to perform surveys in affected areas.

6.2.3 Determine the starting point of the survey based on the release point, source term, magnitude of the release, wind direction, and dose projection data (if applicable). Request the initial surveys in this portion (affected sector) of the protected area.

6.2.4 Direct the team be dispatched to the selected survey points on Form 5790-201-04 (PROTECTED AREA SURVEY POINTS) and conduct Beta/Gamma dose rate surveys. Surveys should be performed in the following areas, as applicable.

A. Site areas which may be affected by shine from 1027 EL Reactor Building;

B. Stack area (if high stack release occurring);

C. Plant structure perimeter (if significant fuel damage has occurred or is suspected) especially outside Rx Bldg railroad doors;

D. Protected area perimeter;

E. Security Officer station in the gatehouse or the plant access road (if posted);

F. Other site locations where personnel are or may be present such as the Cold Machine Shop, office trailers and SAB.

6.2.5 Direct the Field Team Communicator to record survey results on Form 5790-202-01 (OFF-SITE SURVEY RESULTS DATA LOG).

6.2.6 Direct the Field Team Communicator to periodically up-date the team(s) on plant conditions, emergency classification changes, protective actions, etc. as information becomes available.

6.2.7 Direct the team to check personal dosimetry and request relief if their exposure approaches administrative limits.

6.2.8 Based on initial survey results request back-up surveys or confirmatory sampling as necessary.

6.2.9 Upon completion of on-site, out-of-plant survey operations direct the team(s) to report to OSC for exposure processing, de-briefing and re-assignment.

6.3 In-Plant Surveys

NOTE: In-Plant survey team(s) are coordinated and directed by the RPC (when manned) in the OSC via portable radio.

6.3.1 Direct the RPC (or any available RPT) to assemble survey team(s) as necessary, to perform in-plant surveys/sampling.

6.3.2 Direct the RPC to dispatch team(s) to selected survey areas and conduct surveys/sampling activities. Depending on the event, perform surveys in the following areas, as applicable.

A. In-plant area(s) that were locally evacuated based on Area Radiation Monitors (ARMs) or Continuous Air Monitors (CAMs) should be surveyed to verify the alarm condition.

B. In-plant area(s) that have higher than normal radiation levels (as indicated by ARM or CAM) to determine the reason for the elevated levels.

C. Pre-job surveys for areas in which work is planned or scheduled to occur in accordance with Form 5790-107-04 (EMERGENCY WORK REQUEST) and where radiological or environmental (steam area) conditions are NOT subject to rapid change.

6.3.3 Direct the RPC to notify the MSL of any significant changes in surveys/samples obtained from team.

6.3.4 Periodically up-date the team(s) on plant conditions, emergency classification changes, protective actions, etc. as information becomes available.

6.3.5 Upon completion of in-plant survey operations the team(s) should report to OSC for exposure processing, de-briefing and re-assignment.

6.3.6 Direct the RPC to forward survey results to the MSL by telephone or hardcopy via messenger.

6.4 Habitability and On-Site Protective Actions

NOTE: Initial habitability surveys should consist of general area dose rates. If significant releases are occurring or if the Continuous Air Monitors (CAM) alarms, initiate periodic air sampling (particulate and iodine) and smearable contamination surveys in the affected response centers.

6.4.1 Direct the RPC to perform habitability surveys in the following occupied areas:

A. Control Room

B. Operational Support Center (OSC)

C. Technical Support Center (TSC)

D. Access Control (including SAS)

E. Security Building

F. Designated on-site Assembly Point

G. Gate House

6.4.2 Review the habitability survey results and compare the results to the ON-SITE PROTECTIVE ACTION GUIDELINES, listed in FIGURE 7.1. Recommend on-site protective actions to the Radiological Emergency Coordinator (REC) as necessary.

6.4.3 Monitor effluent release paths. If effluent levels exceed the alarm setpoint(s) (alert levels in A.2.101) consider placing the EFT and EVS systems in service.

6.4.4 If loose surface contamination levels in manned response centers, within the Control Room EFT and TSC Emergency Ventilation System (EVS) envelopes reach 1000 dpm/100cm^2, coordinate the establishment of strict contamination control measures for the EFT and EVS envelopes as follows:

A. Ensure the EFT and EVS boundaries doors are closed and properly posted in accordance with EPIP A.2-106, (ACTIVATION AND OPERATION OF THE TSC).

B. Direct the setup of a step-off pad and personnel frisking station at the designated entrance doors to the Control Room EFT and TSC EVS boundaries.

C. Process contaminated personnel in accordance with EPIP A.2-402 (ON-SITE RADIOLOGICAL MONITORING).

D. Continue periodic habitability surveys in manned response centers.

6.4.5 If and when strict contamination control measures are implemented within the EFT and EVS envelopes consider restricting eating, drinking and chewing.

6.4.6 Recommend the issuance of personal dosimetry in manned response centers to the REC/ED if dose rate in manned response centers is increasing and expected to reach .5 mr/hr (refer to FIGURE 7.1). Coordinate the issuance of dosimetry in the Control Room, TSC and OSC. Form 5790-201-02 (DOSIMETRY ISSUANCE LOG) should be used to record personal dosimetry data in each response center when Pocket Ion Chambers are used.

NOTE: Electronic dosimeters are the preferred choice of dosimetry.

6.4.7 Ensure habitability survey results are posted on the Radiological Status Board in the TSC and OSC.

6.4.8 Recommend relocating TSC and OSC personnel to another location (i.e. Emergency Operations Facility, if operational), when dose rates in manned response centers ≥ 1000 mrem/hr.

7.0 FIGURES

FIGURE

7.1 On-Site Protective Action Guidelines

DDE BODY EXPOSURE RATES (mrem/hr)

0.5	2.5	100	1000
Issue dosimetry in occupied Response Centers. Evacuate unnecessary personnel and declared pregnant women (DPW)	Evacuate occupied areas not part of the emergency response.	Evaluate Personnel Doses. Implement A.2-401 for vital personnel, evacuate all others.	Consider evacuation of all affected areas except the Control Room

SMEARABLE SURFACE CONTAMINATION (dpm/100 cm2)

1000	5000
Establish EFT and EVS contamination control. Evacuate occupied areas within the Clean Area not part of the emergency response effort. Control eating, drinking, and smoking in occupied Response Centers.	Consider Implementing Protective Clothing use in Response Centers.

AIRBORNE RADIOACTIVITY DERIVED AIR CONCENTRATION

DAC-Ratio

.3	1.0	10
Evacuate occupied areas not part of the emergency response effort.	Evaluate personal DAC Hours. Consider respirator use.	Evacuate ALL personnel not vital to the emergency response effort. Consider KI use.

FIGURE

7.2 Forms Utilized in this Procedure

1. 5790-201-04 PROTECTED AREA SURVEY POINTS
2. 5790-202-01 OFF-SITE SURVEY RESULTS DATA LOG
3. 5790-201-02 DOSIMETRY ISSUANCE LOG
4. 5790-107-04 EMERGENCY WORK REQUEST

EMERGENCY PLAN IMPLEMENTING PROCEDURE - TABLE OF CONTENTS

Prepared By: Myron A Das	Reviewed By: Gerald G. Holthaus	
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l/mab

1.0 PURPOSE

This procedure provides instructions and guidance for the direction of Field Teams during an airborne release from the MNGP.

2.0 APPLICABILITY

2.1 An emergency classification (Alert or higher) has been declared at the Monticello Plant and the Emergency Director or REC has requested off-site radiological surveys.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 The Radiological Emergency Coordinator (REC) is responsible for:

3.1.1 Overall coordination of radiation protection emergency response activities including off-site radiological monitoring (until this responsibility is transferred to the RPSS in the EOF).

3.2 The Monitoring Section Leader (MSL) is responsible for:

3.2.1 Implementation of this procedure.

3.2.2 Coordination of off-site radiological surveys and sampling (until this responsibility is transferred to the EOF).

3.3 Field Team Personnel are responsible for:

3.3.1 The conduct of off-site radiological surveys under the direction of the MSL in the TSC or Radiation Protection Support Supervisor (RPSS) in the EOF.

4.0 DISCUSSION

The extent and degree of off-site radiological monitoring following a release of radioactive material will depend on the nature, the severity, the physical/chemical form, and the radioisotopic composition of the release. The Emergency Director, REC or MSL will determine the extent and nature of post-accident radiological monitoring until the EOF attains off-site monitoring capabilities.

For events that occur during normal working hours, sufficient field team personnel would normally be available to support several monitoring teams. During other times, the number of field team personnel may be limited at the onset of the event. In this case, the Emergency Director, REC or MSL will assign priorities for radiological monitoring based on the known or expected extent and severity of the release and/or related radiological conditions while the emergency organization is being augmented.

5.0 PRECAUTIONS

5.1 Exposures of Field Team personnel should be in accordance with administrative control levels. They should have proper dosimetry, which is frequently checked, remain alert to their own exposure and request relief if cumulative exposure approaches administrative control levels. The Emergency Director may authorize exposure limit extensions if necessary (refer to EPIP A.2-401 (EMERGENCY EXPOSURE CONTROL). All exposures should be maintained ALARA.

5.2 During portable radio communications, observe the following precautions

5.2.1 Radio communications can be intercepted by commercially available scanners. All communications must be brief, factual and free of exclamatory or alarming expressions.

5.2.2 Carefully word transmissions to minimize confusion, in particular, avoid abbreviations such as "mRem" which could be misinterpreted as "Rem".

5.3 Monticello Field Teams should not be recalled from the field monitoring until Prairie Island teams have relieved them in the field.

6.0 INSTRUCTIONS

6.1 Initial Activation Of Field Teams

NOTE: Field Team(s) are coordinated and directed by the MSL via RADIATION PROTECTION FREQUENCY radio until the EOF is staffed and activated. At that time, direction of the Field Teams will be transferred to the EOF.

6.1.1 Coordinate the assembly of two field teams. Each team should consist of two plant personnel qualified to perform surveys in accordance with A.2-410.

NOTE: Two field teams are automatically activated at the ALERT classification by the OSC Tag Board. MSL and/or Rad Prot Coord direction may be required to facilitate the timely activation of the Field Teams.

6.1.2 Brief the team(s) on affected sectors to be surveyed, potential radiological conditions or other hazards, precautions and protective clothing requirements.

6.1.3 Direct the team(s) to obtain emergency instruments and equipment from the EVES Building in accordance with EPIP A.2-410.

6.1.4 Identify the team(s) as Monticello Field Team 1 and 2 and direct the team(s) to establish and maintain radio communication with the Field Team Communicator in the TSC.

6.1.5 When the Prairie Island Field Teams arrive identify the PI teams as Field Team 3 and 4.

6.1.6 Dispatch the team(s) to perform surveys/sampling in selected areas in accordance with 6.2 and 6.3.

6.2 General Instructions for Directing Off-Site Monitoring Teams

6.2.1 Determine the starting point of the survey based on the release point, source term, magnitude of the release, wind direction, and dose projection data (if available).

6.2.2 Dispatch the team(s) to the selected survey/sample points to conduct surveys/sampling in accordance with EPIP A.2-410.

6.2.3 Direct the team(s) to transmit survey/sample results (by radio) to the MSL (Field Team Communicator) in the TSC.

6.2.4 Direct the Field Team Communicator to record survey results on Form 5790-202-01 (OFF-SITE SURVEY RESULTS DATA LOG) or Form 5790-410-03 (GROUND DEPOSITION SAMPLE RESULTS LOG).

6.2.5 Direct the Field Team Communicator to periodically update the team(s) on plant conditions, emergency classification changes, protective actions and meteorological information as it becomes available.

6.2.6 Direct the team to check personal dosimetry and request relief if their exposure approaches administrative limits.

6.2.7 Direct the team(s) in the use of protective measures (including Anti-C clothing, respiratory protection and exposure control) in accordance with the following guidelines:

A. Direct protective clothing and respirator (with GMR-I canisters) use if:

1. Substantial airborne activity and ground contamination is suspected or observed and the affected sectors have been evacuated; or

2. A General Emergency has been declared and measured dose rates are more than 100 mr/hr Beta.

B. Direct the implementation of ALARA exposure control measures as follows:

1. Field Teams should not linger in areas greater than 100mr/hr.

2. Field Teams should not proceed into areas projected to be greater than 1 r/hr unless directed by the REC.

3. Field Teams should not proceed into areas projected to be greater than 10 r/hr.

6.2.8 Based on initial survey results request backup surveys or confirmatory sampling as necessary.

6.2.9 When directed by the REC, transfer direction and control of off-site Field Teams to the RPSS in the EOF. Inform the REC when control has been transferred.

6.2.10 Upon completion of Field Team survey operations, direct the team(s) to report to the Emergency Operations Facility for exposure processing, de-briefing and re-assignment.

6.3 Off-Site Monitoring During Airborne Releases

NOTE: For events that do not involve a radioactive release off-site monitoring is required to confirm that a release (above normal limits) is not occurring.

6.3.1 Dispatch the Field Teams in the downwind direction to conduct a search for the plume in accordance with EPIP A.2-410.

NOTE: Do not allow the field team(s) to sit idle. Teams should traverse the projected path of the plume in downwind affected sectors rather than remain in one location awaiting plume arrival.

6.3.2 When the plume is located (positive meter deflection) instruct the team(s) to perform dose rate surveys in accordance with EPIP A.2-410.

IMPORTANT: Based on the results of the dose rate survey(s), determine if the team is in the plume (positive beta reading) or if the plume is elevated (gamma only).

6.3.3 When the plume is encountered (i.e., positive beta reading) direct the team(s) to obtain airborne particulate, gaseous and Iodine airborne, and ground deposition samples. Instruct the team to analyze the samples (in low background area) and transmit the field analysis results to the TSC.

6.3.4 Upon completion of the field analysis direct the team to retain the samples or deliver them to the EOF Count Room for further analysis.

NOTE: A sample courier may be used to transport samples from the team(s) to the applicable Count Room.

6.3.5 Direct the Field Team Communicator to record all survey results on a Form 5790-202-01 or Form 5790-410-03.

6.3.6 Track and plot the movement of the plume on the Radiological Survey Point map as follows:

A. Using current meteorological conditions (wind speed, direction, etc.) project the path of the plume;

B. Using available MIDAS data (GAMMA & THYROID PROJECTED DOSE REPORT and PROJECTED DOSE SUMMARY REPORT) project the location of the leading edge and trailing edge (if "puff" release) of the plume;

C. Using the team(s), locate the leading edge of the plume;

D. Using the field team(s), locate the lateral boundaries (sides) of the plume;

E. Using the team(s), verify that upwind ("backdoor") areas near the site are not affected by the release;

F. For "puff" releases, direct the team(s) to locate the trailing edge of the plume;

6.3.7 Compare off-site monitoring results for consistency with State (Health Department) survey results as applicable. Reconcile inconsistencies in data and/or re-survey areas of concern as necessary.

6.3.8 Determine the centerline dose rate by directing a team to traverse through the plume, while monitoring enroute.

NOTE: This survey should be coordinated with the MIDAS dose projection run in an attempt to verify the projection by comparing survey results to the projection data.

6.3.9 Compare off-site survey results with dose projections for consistency. Reconcile inconsistencies in data and/or re-survey areas of concern as necessary.

NOTE: A factor of < 100 is appropriate to use as the reasonable deviation when comparing model vs. actual field data. If the deviation is larger than this amount, investigate the reason and validate both values.

6.3.10 Direct the Field Team Communicator to periodically update the team(s) on plant conditions, emergency classification changes, protective actions and meteorological information as it becomes available.

6.4 Operation of the Main Radio Consoles

6.4.1 Ensure the Rad Team Frequency (Channel 4) has been selected by pressing the green Select Call button at the top of the Rad Team column.

6.4.2 Confirm Channel 4 is selected by observing the green light near the Select Call button.

6.4.3 Volume for unselected channels may be turned down by turning the unselect knob near the top of the consol counter clockwise.

6.4.4 Transmit on the Rad. Team frequency by any of the following methods:

A. Push down on the red Transmit Busy button in the Channel 4 column and speak into microphone.

B. Push down on the large red button located near the numeric keypad and speak into microphone.

C. Step on the foot pedal and speak into microphone.

6.4.5 The selected channel volume can be adjusted by turning the knob located in the Rad Team (Channel 4) column.

7.0 FIGURES

FIGURE

7.1 Forms Utilized in this Procedure

1. 5790-202-01 Off-Site Survey Results Data Log
2. 5790-410-03 Ground Deposition Sample Results Log

EMERGENCY PLAN IMPLEMENTING PROCEDURE - TABLE OF CONTENTS

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l/plr

1.0 PURPOSE

1.1 The purpose of this procedure is to provide instructions for chemistry sample priority, coordination, tracking, and storing of samples taken during an emergency. This procedure also provides guidance on the types of samples to be taken, sample labeling instructions, sample control, and provides instructions for shipping and disposal of radioactive samples.

2.0 APPLICABILITY

2.1 An emergency (Alert or higher classification) has been declared at Monticello Nuclear Generating Plant which involves abnormal or elevated radiological conditions which preclude use of normal sampling methods.

2.2 Plant process sampling and analysis is required to assess the extent or severity of the event.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 The Radiological Emergency Coordinator (REC) is responsible for:

3.1.1 Overall coordination of the Radiation Protection and Chemistry Group activities.

3.2 The Chemistry Section Leader (CSL) is responsible for:

3.2.1 Overall direction for PASS sampling and analysis.

3.2.2 Determining sample priorities with the REC.

3.2.3 Implementation of this procedure (in cooperation with the CC).

3.3 The Chemistry Coordinator is responsible for:

3.3.1 Coordination of Chemistry Group activities in the Chemistry Lab.

3.3.2 Implementation of this procedure (in cooperation with the CSL).

3.3.3 Coordination of sample logging, identification and documentation.

3.4 The Radiation Protection Support Supervisor (RPSS) is responsible for:

3.4.1 Coordination of the Radiation Protection and Chemistry Group activities in the EOF.

3.4.2 Determining sample priorities in the EOF.

3.5 The Radiation Protection Technicians (Rad Prot Tech) are responsible for:

3.5.1 Sample collection and analysis.

3.5.2 Coordination of sample logging, identification and documentation.

4.0 DISCUSSION

This procedure was written due to the large quantity of samples anticipated during an emergency. The procedure uses matrixes (FIGURE 7.1 - 7.5) for the establishment of a sample coordination plan. This plan should: (1) ensure the proper priorities are placed on sample and analysis of systems or effluents, (2) ensure the proper transmission and handling of samples, (3) ensure the samples are processed consistent with their assigned priorities, (4) provide for tracking samples by means of documentation, and (5) provide for shipping of samples for off-site analysis.

The guidance in this procedure assigns the highest priorities to sampling and analysis of systems or effluents which may directly affect public health and safety. Lower priorities are assigned to the sampling of systems or effluents which may aid in assessing the extent or degree of an event. The lowest priorities are assigned to the sampling of systems or effluents not affected by the event.

Sample frequencies will be dependent on the situation and available resources and should be established such that current sample results and information are readily available for decision making and trending.

The Post Accident Sampling System is used to meet NRC Commitment M03003A.

The ability to sample and analyze for I-131, Off-Site and On-Site meets NCR Commitment 03002A.

5.0 PRECAUTIONS

5.1 The samples listed below cannot be obtained when valid isolation conditions shown are in effect, without operator action to reset isolation valves.

5.1.1 GROUP 1 ISOLATION	INITIATING CONDITION
Reactor Recirc Sample	Rx press. < 840 psig while in run mode
	Steam flow > 140% of rated
	Main steam line area high temperature 195°F
	Reactor low low water level -47"

5.1.2	GROUP 2 ISOLATION	INITIATING CONDITION
	Drywell Cam Sample PASS Drywell and Torus Sample	Fuel pool radiation monitor ≥ 50 mrem/hr Reactor Building plenum monitor ≥ 26 mrem/hr Drywell high pressure 2 psig Reactor low water level +9"

5.1.3	GROUP 2 ISOLATION	INITIATING CONDITION
	Drywell Floor Drain Sump Sample Drywell Equip. Drn Sump Sample	Drywell high pressure 2 psig Reactor low water level +9"

5.1.4	GROUP 3 ISOLATION	INITIATING CONDITION
	Reactor Water Cleanup Inlet Reactor Water Cleanup A Outlet Reactor Water Cleanup B Outlet Reactor Recirc Sample	Drywell high pressure 2 psig Reactor low low water level -47" Standby liquid control system initiated

6.0 INSTRUCTIONS

6.1 In-Plant Sampling Priorities

6.1.1 The CSL should assess current plant conditions and determine which of the following sample and analysis matrixes apply:

A. Actual High Gaseous Radioactive Effluents Samples Matrix (FIGURE 7.1).

B. Actual High Liquid Radioactive Effluents Samples Matrix (FIGURE 7.2).

C. Potential High Gaseous Radioactive Effluents Samples Matrix (FIGURE 7.3).

D. Potential Core Damage with Containment Integrity Samples Matrix (FIGURE 7.4)

E. Recovery Phase Samples Matrix (FIGURE 7.5).

NOTE: **These matrixes include sampling priorities and sample analysis guidance for plant conditions or events.**

6.1.2 The CSL should determine the sampling priorities and recommended analysis as indicated on the respective matrix.

NOTE: In each of the matrixes (FIGURE 7.1 - 7.5), sample priorities are assigned on a scale of 1-6 (some are 1-4). Samples indicated with a 1 are the highest priority and may directly affect public health and safety; those assigned a 4 or 6 are the lowest priority and are generally assigned to sampling of systems or effluents not affected by the event.

6.1.3 The CSL should review the recommended sample priorities with the REC to confirm proper sampling priorities.

NOTE: The REC/CSL may request samples in addition to those specified in the matrixes.

6.1.4 Determine an adequate sampling frequency which will provide sufficient information for decision making in a timely manner. This should be based on available resources and the current situation.

6.1.5 The Chemistry Coordinator should coordinate obtaining the desired samples as directed by the CSL.

6.1.6 The Chemistry Coordinator should initiate Form 5790-408-01 (EMERGENCY CHEMISTRY SAMPLE LOG).

6.1.7 The Chemistry Coordinator should assign a sequential sample number using FIGURE 7.6, Guidelines for Assignment of Sample Identification Numbers.

6.1.8 The Chemistry Coordinator should log the requested sample and sample number on Form 5790-408-01.

6.1.9 The Chemistry Coordinator should fill out Form 5790-408-01 as sample information and results become available.

6.2 In-Plant Analysis Priority

6.2.1 The Chemistry Coordinator should assign an analysis priority number to each sample IAW the guidance in FIGURE 7.7, Guidelines for Assignment of Sample Analysis Priority.

6.2.2 The Chemistry Coordinator should ensure that all sample and analysis data is properly logged on page 1 of the Emergency Sample Log and that the log is updated and completed as required.

6.3 In-Plant Sample Storage

6.3.1 The Chemistry Coordinator should ensure that all samples are handled and stored in a manner consistent with ALARA considerations.

6.3.2 When samples are not being analyzed, they should be stored either behind lead bricks in the Hot Lab Hood or in the lead shielded storage area behind the Hot Lab.

6.4 Environmental Sample Labeling

6.4.1 All samples or sample storage bags should be labeled with:

A. Sample Number from Emergency Chemistry Sample Log (Form 5790-408-01)

B. Sample Date and Time

C. Sample Location

D. Sample Description

6.5 Environmental Sample Analysis Priority

6.5.1 Count samples in the order that they arrive from the field teams unless otherwise specified by the Radiation Protection Support Supervisor (RPSS).

6.6 Environmental Sample Storage

6.6.1 The EOF Radiation Protection Technicians should store all samples in the cabinets provided in the EOF receiving area such that they are readily available for future analysis.

6.7 Shipping and Disposal of Samples

6.7.1 IF samples are to be sent off-site for analysis,
THEN contact radwaste shipping personnel to ship the samples.

6.7.2 When samples are no longer needed, they should be stored using proper radiological and chemical control measures.

7.0 FIGURES

FIGURE

7.1 Actual High Gaseous Radioactive Effluents

CONDITIONS

Gaseous radioactive effluents have exceeded plant ODCM Limits

PARAMETER	PRIMARY COOLANT	RX BLDG VENT	OFF-GAS STACK	PRIMARY CONTAINMENT	DISCHARGE CANAL
PRIORITY	4	(NOTE 1) 2	(NOTE 1) 1	3	NA

RADIOCHEM ANALYSIS	PRIMARY COOLANT	RX BLDG VENT	OFF-GAS STACK	PRIMARY CONTAINMENT	DISCHARGE CANAL
Isotopic	X				
Iodine Charcoal		X	X	X	
Particulate		X	X	X	

NOTE: Sample the Reactor Building vents first if vent release rate is higher than Stack release rate.

FIGURE

7.2 Actual High Liquid Radioactive Effluents

CONDITIONS

Liquid radioactive effluents have exceeded plant ODCM Limits

PARAMETER	PRIMARY COOLANT	RETENT POND	TBNWS (Note 1)	SERVICE WATER (Note 1)	DISCHARGE CANAL
PRIORITY	4	5	3	2	1

RADIOCHEM ANALYSIS	PRIMARY COOLANT	RETENT POND	TBNWS	SERVICE WATER	DISCHARGE CANAL
Isotopic	X	X	X	X	X
Iodine Charcoal					
Particulate					

NOTE: Sample TBNWS first if count rate is elevated higher than service water count rate.

FIGURE

7.3 Potential High Gaseous Radioactive Effluents

CONDITIONS

Gaseous radioactive effluents have not yet exceeded ODCM limits although events are occurring or have occurred which make the potential for off-site releases exceeding ODCM limits high.

PARAMETER	PRIMARY COOLANT	RX BLDG VENT (NOTE 2)	OFF-GAS STACK (NOTE 2)	PRIMARY CONTAINMENT	DISCHARGE CANAL
PRIORITY	2	4	3	1	NA

RADIOCHEM ANALYSIS	PRIMARY COOLANT	RX BLDG VENT	OFF-GAS STACK	PRIMARY CONTAINMENT	DISCHARGE CANAL
Isotopic	X				
Iodine Charcoal		X	X	X	
Particulate		X	X	X	

NOTE: Sample the Reactor Building vents first if vent release rate is higher than stack release rate.

FIGURE

7.4 Potential Core Damage with Containment Integrity

CONDITIONS

Possible core damage has or is occurring and the primary coolant and primary containment barriers remain intact.

PARAMETER	PRIMARY COOLANT	RX BLDG VENT	OFF-GAS STACK	PRIMARY CONTAINMENT	DISCHARGE CANAL
PRIORITY	1	4	3	2	NA

RADIOCHEM ANALYSIS	PRIMARY COOLANT	RX BLDG VENT	OFF-GAS STACK	PRIMARY CONTAINMENT	DISCHARGE CANAL
Isotopic	X				
Iodine Charcoal		X	X	X	
Particulate		X	X	X	

FIGURE

7.5 Recovery Phase

CONDITIONS

The plant is stabilized and liquid or gaseous radioactive effluents are less than plant ODCM Limits and the plant is in the recovery phase.

PARAMETER	PRIMARY COOLANT	DW SUMP	RX BLDG VENT	OFF-GAS STACK	PRIMARY CONTAINMENT	DISCHARGE CANAL
PRIORITY	1	3	5	4	2	6

RADIOCHEM ANALYSIS	PRIMARY COOLANT	DW SUMP	RX BLDG VENT	OFF-GAS STACK	PRIMARY CONTAINMENT	DISCHARGE CANAL
Isotopic	X	X				X
Iodine Charcoal			X	X	X	
Particulate			X	X	X	

FIGURE

7.6 Guidelines for Assignment of Sample Identification Numbers

The following prefixes ***SHALL*** be used along with a sequential number to identify each post-accident sample:

PREFIX	DESCRIPTION
R	Rx Water
RHR	Residual Heat Removal
PC	Primary Containment
S	Stack
V	Vent
EC	Environmental Smear
EV	Environmental Vegetation
EF	Environmental Food
ED	Environmental Dirt
ES	Environmental Snow
EA	Environmental Air Sample
EL	Environmental Liquid

For example the first reactor water iodine sample obtained would be identified as "R-1". The following Rx water sample would be identified as "R-2". If the next sample obtained was a vent particulate it would be identified as "V-1" if it were the first vent sample obtained.

FIGURE

7.7 Guidelines for Assignment of Sample Analysis Priority*

PRIORITY	EXAMPLE
1	a. Samples in support of accident mitigation operations or affecting personnel safety
	b. Post accident assessment
2	a. Post accident surveillance
	b. Samples in support of recovery operations
3	a. Routine surveillance

*The Radiological Emergency Coordinator or the Chemistry Section Leader may assign analysis priority numbers as conditions dictate; however, the Chemistry Coordinator should follow these guidelines if the priority has not already been assigned.

FIGURE

7.8 Forms Utilized in this Procedure

5790-408-1 Emergency Chemistry Sample Log

EMERGENCY PLAN IMPLEMENTING PROCEDURE - TABLE OF CONTENTS

NOTE: The following Instruction sections begin with a new page for ease of use in the field: 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.13 & 6.14.

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1.0 PURPOSE

This procedure provides instructions for the activation of Off-site Radiological Monitoring Teams (Field Teams) and the various methods of radiological and environmental monitoring during a declared Emergency at either the Monticello or Prairie Island plants.

2.0 APPLICABILITY

2.1 Abnormal conditions exist which involve an airborne or liquid radiological release to the Monticello plant environs and out-of-plant surveys have been requested.

2.2 An emergency (Alert or higher classification) has been declared at the Prairie Island Nuclear Generating Plant and Monticello's assistance has been requested.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 The Radiological Emergency Coordinator (REC) is responsible for:

3.1.1 Overall direction and control of the Field Teams until these responsibilities are assumed by the Emergency Operations Facility (EOF).

3.2 The Radiation Protection Support Supervisor (RPSS) is responsible for:

3.2.1 Overall direction and control of the Field Teams after these responsibilities are transferred from the Technical Support Center (TSC).

3.3 The Field Team Communicator(s) are responsible for:

3.3.1 Coordination of the Field Teams via radio communication from the TSC or EOF.

3.4 The Field Teams are responsible for:

3.4.1 Implementation of this procedure.

3.4.2 Maintaining a constant communication link with the Field Team Communicator in the TSC or EOF.

3.4.3 Performing surveys in accordance with applicable instructions contained in this procedure and as directed by the Field Team Communicator.

3.5 The Sample Courier(s) are responsible for:

3.5.1 Transportation of samples (taken by the Field Teams) to the EOF.

4.0 DISCUSSION

Off-site surveys during an emergency are normally performed by sister plant Radiation Protection personnel when the EOF is fully activated. Prior to this, off-site surveys must be performed by the affected plant's personnel. Surveys of on-site, out-of-plant areas are always assigned to the affected plant's personnel.

During the initial stage of an emergency, the number of personnel available to perform surveys may be limited. The REC will make decisions on deployment of personnel resources. When the RPSS position is staffed and the EOF is fully operational, control of the Field Teams will be transferred to the RPSS.

There are normally two vehicles designated for off-site monitoring purposes. The Radiation Protection Coordinator maintains control of the keys (24 or 25) for these vehicles.

The EOF Count Room is the primary off-site facility for the receipt and analysis of radioactive samples. The EOF Count Room is staffed by Chemistry personnel from the affected plant who are familiar with its equipment and operation. Unless circumstances dictate otherwise, the EOF Count Room will be used for most samples taken pursuant to this procedure.

The ability to sample and analyze for I-131 meets NRC Commitment 03002A.

5.0 PRECAUTIONS

5.1 Monitoring and sampling instruments ***SHALL*** be operated in accordance with standard procedures for each instrument type.

5.2 During off-hours activations, Field Team personnel should verify their fitness-for-duty (FFD) with appropriate supervisory personnel (F/T communicator) prior to engaging in activities which directly affect the Health and Safety of the public (e.g. off-site surveys to validate MIDAS projections). This confirmation may be conducted via radio (or telephone) and need not occur in person.

5.3 Minnesota has severe weather conditions which can seriously affect instrument operation. The following guidelines have been established to eliminate or minimize cold weather instrument problems:

5.3.1 Allow approximately 5 minutes for the instrument to warm up completely.

5.3.2 If the outside temperature is greater than 32°F(0°C), instrument use is not restricted by temperature.

5.3.3 If the outside temperature is between 32°F (0°C) and 0°F (-18°C), use the instrument outside no more than 5 (five) minutes.

5.3.4 If the outside temperature is between 0°F (-18°C) and -20°F (-28°C), use the instrument outside no more than 2 (two) minutes.

5.3.5 If the outside temperature is below -20°F (-28°C), the instrument should not be used outside unless special batteries (alkaline or Ni-Cd) are installed in the instrument. These batteries increase the minimum temperature range to -40°F (-40°C) but allows less than 30 seconds of use in this type of environment.

5.4 If an instrument malfunctions or "pegs out" during survey operations, immediately exit the area by the same route used to enter, and obtain a new instrument if necessary.

5.5 During radio and cellular phone communications, observe the following precautions:

5.5.1 Since radio and cellular phone communications can be intercepted by commercially available scanners, all communications must be brief, factual and free of all exclamatory or alarming expressions.

5.5.2 Carefully word data transmission to minimize confusion, in particular, avoid abbreviations such as "mrem" which could be misinterpreted as "rem".

5.5.3 Use the phonetic alphabet when communicating sample points location, etc., as follows:

A	**ALPHA**	**J**	**JULIET**	**S**	**SIERRA**
B	**BRAVO**	**K**	**KILO**	**T**	**TANGO**
C	**CHARLIE**	**L**	**LIMA**	**U**	**UNIFORM**
D	**DELTA**	**M**	**MIKE**	**V**	**VICTOR**
E	**ECHO**	**N**	**NOVEMBER**	**W**	**WHISKEY**
F	**FOXTROT**	**O**	**OSCAR**	**X**	**X-RAY**
G	**GOLF**	**P**	**PAPA**	**Y**	**YANKEE**
H	**HOTEL**	**Q**	**QUEBEC**	**Z**	**ZULU**
I	**INDIA**	**R**	**ROMEO**		

5.5.4 Preface each communication with the title or name of the receiving party and your title and name. For example: "Monticello TSC"; Monticello Field Team 1..."

After the communication is completed, request the receiving party to repeat the message, if numerical data was relayed.

End message transmission with an appropriate termination phrase. For example: "Monticello Field Team 1, out." During drills always include the words, "THIS IS A DRILL," with each transmission.

5.6 Observe respiratory protection and exposure precautions at all times while performing off-site monitoring. If substantial airborne activity or contamination is suspected, don appropriate protective clothing as directed by the REC (or RPSS) IAW the following guidelines:

5.6.1 Field Team members should don respirators with GMR canisters if the following conditions occur:

A. A General Emergency is declared and the affected sectors have been evacuated; and

B. Measured dose rates are more than 100 mrem/hr true Beta.

5.6.2 Respiratory equipment may be removed if the following is indicated:

A. Field measurements of gross iodine activity indicates less than 1E-7 μCi/cc; or

B. The REC/RPSS indicates that no significant iodine is or has been released from the plant; and

C. Measured dose rates are less than 100 mrem/hr true Beta.

5.7 Exposures of survey team personnel ***SHALL*** be IAW administrative control levels. All Field Team members and Sample Couriers ***SHALL*** have proper dosimetry, which is frequently checked. They ***SHALL*** remain alert to their own exposure and request relief if cumulative exposure approaches administrative control levels. The Emergency Director may authorize exposure limit extensions if necessary (refer to A.2-401). All exposures ***SHALL*** be maintained AS LOW AS REASONABLY ACHIEVABLE aided by the following guidelines:

5.7.1 Field Teams should not linger in areas greater than 100 mr/hr.

5.7.2 Field Teams should not proceed to areas projected to be greater than 1000 mrem/hr unless directed by the REC or RPSS.

5.7.3 Field Teams ***SHALL NOT*** proceed to areas projected to exceed 10,000 mrem/hr.

5.8 During off-site monitoring operations, vehicles and/or survey instruments could become highly contaminated and plume, ground contamination or background radiation conditions may be encountered which could interfere with sample analysis or survey results. Remain alert to these conditions and take appropriate precautions to ensure accurate sample/survey results (i.e., move away from vehicle to analyze samples, prevent instrument contamination by bagging instrument, prevent sample from cross-contamination, etc.).

6.0 INSTRUCTIONS

6.1 Field Team Activation

6.1.1 If responding to a MNGP event, refer to the OSC tagboard to determine Field Team assignment.

6.1.2 Obtain Emergency vehicle keys. (From the Radiation Protection Controlled Key Cabinet.) If necessary obtain a dose rate meter for use enroute to the EVES Building.

6.1.3 Obtain respirator corrective lenses, as applicable.

6.1.4 Log in on RWP 902. If responding to an event at MNGP, then retain your personal dosimetry (TLD, and electronic dosimeter) from the plant when exiting. If responding to an event at Prairie Island or circumstances prevent use of normal plant dosimetry, then obtain dosimetry from the Emergency Kits in the EVES building.

6.1.5 At the EVES Building initiate Form 5790-410-02 (OUT-OF-PLANT SURVEY CHECKLIST).

NOTE: Emergency Instrument and Equipment Kits may be stored in the vehicles.

6.1.6 Obtain one (1) Instrument Kit (aluminum case) and one (1) Equipment Kit (grey case) from the storage area in the EVES Building, if not in vehicle.

6.1.7 Ensure that each member of the monitoring team has dosimetry (one TLD and either an electronic dosimeter, or a 0-200 mrem DRD and a 0-5000 mrem DRD).

6.1.8 Record the applicable dosimetry information for each member of the team on Form 5790-410-02.

NOTE: A "check source" is provided in the EVES Building for this purpose.

6.1.9 Obtain a count rate meter with 2" pancake probe and dose rate meter from the cabinet and perform the applicable operability and source checks. Leave the instruments on.

6.1.10 Obtain one (1) cellular phone and one (1) cellular phone adapter unit from the EVES Building and install in vehicle.

NOTE: **Instructions for using the cellular phones are located in each vehicle.**

6.1.11 Perform an operability check of the mobile radios by establishing contact with the TSC or EOF (when staffed). Obtain a phone number in the area (TSC or EOF) to call. Perform an operability check of the cellular phone by calling the number obtained.

6.1.12 For emergency events at the Monticello plant, contact the Field Team Communicator (TSC/EOF). When ready to depart, obtain updated information pertaining to the event and wait for further instructions.

6.1.13 If responding to a PI event, refer to Section 6.3 of EPIP A.2-702 (RESPONSE TO AN EMERGENCY AT PRAIRIE ISLAND) for travel routes and instructions for response to the Prairie Island EOF.

6.1.14 When departing the plant site area (or entering PI 10 mile EPZ), initiate a plume search (if applicable) IAW Section 6.2 of this procedure.

6.1.15 Document all survey/sample data on Form 5790-410-01 (EMERGENCY SAMPLE RESULTS LOG) or Form 5790-410-03 (GROUND DEPOSITION SAMPLE RESULTS LOG) as applicable.

6.1.16 Report all survey/sample results to the Field Team Communicator.

6.1.17 Forward samples which require further analysis (as directed by the Field Team Communicator) to the EOF Count Room via sample courier or retain the samples for future analysis and/or disposal as directed.

6.1.18 When directed, return to the EOF for debriefing and reassignment. Complete and submit all sample result logs and Form 5790-410-02 to the RPSS for review.

6.2 Plume Search Procedure

6.2.1 With the count rate meter on the lowest scale (on which meter deflection can be observed) place the probe on the dashboard facing the windshield and observe the instrument for meter deflection while in transit.

NOTE: A BETA reading indicates that the plume has been encountered. A GAMMA reading with zero BETA indicates the plume is elevated or displaced.

6.2.2 If a meter deflection is observed, stop the vehicle and perform a dose rate survey in accordance with Section 6.5

NOTE: If the survey location is NOT at a predesignated survey point, identify the location using known landmarks or road intersections, etc.

6.2.3 Report the survey results to the Field Team Communicator as recorded on Form 5790-410-01.

6.3 Particulate and Iodine Air Sampling

6.3.1 Install a particulate filter and a Silver Zeolite cartridge into the air sampler cartridge/filter holder. (See FIGURE 7.6 for Assembly Diagram.)

NOTE 1: Engine should be running to maintain a steady battery voltage.

NOTE 2: If precipitation is occurring, the sample should be drawn from a covered area. The umbrella included in the Emergency Kit may be used for this purpose.

6.3.2 Connect the air sampler to the vehicle power supply and start the air sampler.

6.3.3 Record the sample START TIME, SURVEY POINT (sample location), sample FLOW RATE and SURVEY TYPE on Form 5790-410-01.

NOTE: Whenever possible air samples should be a standard 25 cu. ft. sample (i.e. 7.07 E+5 CCs or approximately 10 minute sample run time).

6.3.4 When the desired sample time has lapsed, stop the air sampler and record the sample STOP TIME.

6.3.5 Calculate and record the sample volume in cubic centimeters (cc) using the following formula:

Sample Volume in cc's = (Flow Rate in cfm) x (Sample Time in Minutes) x (2.83 E+4 cc/ft^3).

6.3.6 Remove the particulate filter and the Silver Zeolite cartridge from the filter cartridge holder, place them in SEPARATE plastic sample bags and seal the bags.

6.3.7 Complete a pre-printed sample label including the sample time and date, sample location, sample volume and the contact dose rate and attach a label to each sample bag.

6.3.8 In a low background area (i.e. < 1000 cpm) determine the gross activity of each sample by using the following methods:

A. Particulate Activity

1. Count the particulate filter using a count rate meter with a 2" pancake probe. Subtract the background to determine the Net cpm of the sample.

NOTE 1: Probe Efficiency = 0.1 (10%) for Count Rate Meter with a 2" pancake probe.

NOTE 2: Correction Factor (CF) = 0.3 for 4" filter paper counted with a 2" pancake probe or 1.0 for 2" filter paper counted with a 2" pancake probe.

2. Calculate the gross particulate activity of the sample using the Gross Particulate Activity Table (FIGURE 7.4) or the following formula:

$$\text{ACTIVITY } (\mu Ci/cc) = \frac{(\text{NET cpm}) \times (4.5 \text{ E-7 } \mu Ci/dpm)}{(\text{PROBE EFFICIENCY}) \times (\text{SX VOLUME in cc's}) \times (\text{CF})}$$

B. Iodine Activity

1. Count the Silver Zeolite cartridge using a count rate meter with a 2" pancake probe. Subtract the background to determine the Net cpm of the sample.

2. Calculate the sample activity using the Gross Iodine Activity Table (FIGURE 7.1) or the following formula:

$$\text{IODINE ACTIVITY } (\mu Ci/CC) = \frac{(\mu Ci(s) \text{ on cartridge determined by Table})}{(\text{SX volume in cc's})}$$

6.3.9 Record the results on Form 5790-410-01.

6.4 Gaseous Air Sampling

CAUTION

If hands are contaminated, handle chamber with clean surgeon gloves.

6.4.1 Obtain the gas sampling chamber, suction bulb and filter assembly from the Emergency Kit. (See FIGURE 7.2 for assembly diagram.)

6.4.2 Install a new filter in the filter holder assembly.

6.4.3 Connect the suction bulb, sample chamber and filter assembly such that air passes through the filter assembly into the sample chamber then to the suction bulb.

6.4.4 Open the stop cocks on the gas sample chamber, squeeze the suction bulb ten (10) times to obtain a representative sample, then shut the stop cocks on the gas sampling chamber.

6.4.5 Record the SAMPLE TIME, SURVEY POINT, (sample location) and SAMPLE TYPE on Form 5790-410-01.

6.4.6 In a low background area (i.e., <1000 cpm) determine the activity of the gas sample (μCi/cc of Xe 133 equivalent) using the following method:

A. Count the gas sample chamber using a count rate meter with a 2" pancake probe by placing the probe on the chamber over the mylar window. Record the results as Gross cpm on Form 5790-410-01;

B. Obtain a second "empty" gas sample chamber from the Emergency Kit and count the "empty" chamber using a count rate meter with a 2" pancake probe by placing the probe on the chamber over the mylar window. Record the result as the BACKGROUND cpm in Form 5790-410-01;

C. Calculate the Net cpm.

D. Determine the gas sample activity by using the NET cpm and the Gas Chamber Table (FIGURE 7.2).

6.4.7 Record the sample results on Form 5790-410-01.

6.4.8 Complete a pre-printed sample label with all applicable sample data. Place the sample in a plastic sample bag, seal the bag and attach the label to the bag.

6.5 Stationary Dose Rate Survey

6.5.1 Energize the Dose Rate Meter and allow the instrument to stabilize (approximately 30 seconds) then re-zero the meter.

6.5.2 Perform a BETA/GAMMA survey of the area as follows:

A. With the window open, hold the instrument approximately one (1) meter from ground level and survey the area for the maximum meter deflection;

B. Record the "WINDOW OPEN" (BETA/GAMMA) reading.

C. Close the instrument window and obtain the GAMMA reading;

D. Record the 'WINDOW CLOSED' (GAMMA) reading.

NOTE: Assume a BETA CORRECTION FACTOR of 5.0 if the BETA CORRECTION FACTOR for the instrument is unknown.

E. Calculate the "TRUE BETA" reading as follows:

TRUE BETA = (WINDOW OPEN - WINDOW CLOSED) x (BETA CORRECTION FACTOR)

NOTE: If the survey location is NOT a predesignated survey point, identify the location using known landmarks or road intersections, etc.

F. Record the TRUE BETA results on Form 5790-410-01.

6.6 Liquid Sampling

NOTE: An additional supply of sample bottles are available at the EOF.

6.6.1 Obtain a 1 liter sample bottle and install the bottle in the holder.

CAUTION

Use the appropriate radiological precautions when handling potentially radioactive samples.

6.6.2 Cast or lower the bottle into the water to be sampled, allow the bottle to fill completely then withdraw and cap the bottle.

6.6.3 Bag the sample bottle, complete a pre-printed label. Attach the label to the sample bottle, label and seal the plastic bag.

6.6.4 Record the sample TIME, SURVEY POINT (sample location) and SURVEY TYPE on Form 5790-410-01.

6.6.5 In a low background area (i.e., <1000 cpm) determine the gross activity of the sample using the following method:

A. Count the sample using a count rate meter with a 2" pancake probe by placing the probe on the sample as indicated on the Gross Liquid Activity Table (FIGURE 7.3). Subtract the background to determine the Net cpm of the sample.

B. Record the background, and Net cpm on Form 5790-410-01 (EMERGENCY SAMPLE RESULTS LOG);

C. Determine the activity of the sample using the Gross Liquid Activity Table (FIGURE 7.3) and the Net cpm of the sample.

6.6.6 Record the sample results on Form 5790-410-01.

6.7 Discharge Canal Sampling (Monticello Only)

6.7.1 Obtain 1 liter sample bottles from an Emergency Kit or from the Chemistry lab.

6.7.2 Obtain the keys for one of the Plant vehicles (if needed) and a hand held radio. (Radios are available in the TSC and OSC. Use talk group 2A unless directed otherwise.)

6.7.3 Proceed to the Discharge Canal Sample Station (DCSS) located on the south bank of the discharge canal approximately 550' downstream of the discharge structure. (FIGURE 7.5) Sample point (3) of on-site liquid sample locations map.

6.7.4 In the DCSS Building locate pumps P-112A and P-112B. Verify the sample flow into the drain trough down stream of CW-27 is at least 10 GPM as indicated by reading flow indicator FIS-1905 centered above pumps P-112A and P-112B.

6.7.5 Using a 1 liter bottle, take the desired sample(s) from the 1.5 inch line dumping water into the trough.

6.7.6 Bag the sample bottle, complete a pre-printed sample label, attach the label to the sample bottle, label and seal the plastic bag.

6.7.7 Record the sample TIME, SAMPLE POINT (sample location) and SURVEY TYPE on Form 5790-410-01.

6.7.8 Determine the gross activity of the sample using the following method:

A. Count the sample using a count rate meter with a 2" pancake probe by placing the probe on the sample as indicated in Gross Liquid Activity Table (FIGURE 7.3). Subtract the background to determine the Net cpm of the sample.

B. Record the background and Net cpm on Form 5790-410-01;

C. Determine the activity of the sample using the Gross Liquid Activity Table (FIGURE 7.3) and the Net cpm of the sample.

6.7.9 Record sample results on the Form 5790-410-01.

6.8 **Ground Deposition - Direct Frisk Survey**

6.8.1 Obtain a count rate meter with a 2" pancake probe or equivalent.

6.8.2 Proceed to the designated survey point and carefully scan flat surfaces in the area (e.g., roads, lawns, mailboxes, vehicles, fields, etc.).

6.8.3 Record the sample TIME and SURVEY POINT (sample location) on Form 5790-410-03.

6.8.4 Calculate the ground deposition activity as follows:

$$\mu Ci/m^2 = \frac{\text{Net cpm}}{400}$$

6.8.5 Record sample results on Form 5790-410-03.

6.9 **Ground Deposition - Smear Samples**

6.9.1 Obtain the appropriate number of cloth smears from the Emergency Kit and number the smears (if necessary).

NOTE: **Each smear area should be clearly identified on a map of the area or in a written description of the area.**

6.9.2 Proceed to area to be surveyed and smear approximately $100cm^2$ of selected smooth surfaces (e.g., cars, mail boxes, machinery, rain gutters etc.).

6.9.3 Place the smear(s) in plastic sample bag(s) and seal and label the bag(s).

6.9.4 Record the sample TIME AND SURVEY POINT (sample location) SURVEY TYPE on Form 5790-410-03.

6.9.5 In a low background area (i.e., <1000 cpm), calculate the smearable activity of each smear sample using the following method:

A. Establish an area suitable for counting potentially contaminated smears;

B. Determine the background cpm;

C. Remove the smear(s) from the bag(s) and count using count rate meter with a 2" pancake probe.

D. Calculate the ground deposition activity as follows:

$$\mu Ci/m^2 = \frac{\text{Net cpm}}{200}$$

6.9.6 Rebag the smear sample(s). Contact the Field Team Communicator and arrange to have the sample(s) transported to the EOF Count Room for analysis or retain the sample(s) for future analysis and proper disposal.

6.9.7 Record smear sample results on Form 5790-410-03.

6.10 Ground Deposition - Gamma Dose Rate Survey

6.10.1 Obtain a dose rate meter. Energize the dose rate meter and allow the instrument to stabilize (approximately 30 seconds) then re-zero the meter.

6.10.2 Proceed to the designated survey area and perform a closed window dose rate survey of the area at 1 meter above the ground.

6.10.3 Record the sample TIME, SURVEY POINT (sample location) and mrem/hr readings under Gamma Survey on Form 5790-410-03.

6.10.4 Calculate ground deposition as follows:

$\mu Ci/m^2 = 100 \times$ (CLOSED WINDOW mr/hr READING)

6.10.5 Record sample results on Form 5790-410-03 and report the results to the Field Team Communicator.

6.11 Ground Deposition Samples - Snow/Dirt Survey

NOTE: The selection should be based on an evaluation of current weather and ground cover conditions (high winds, rain, snow, etc.) such that the sampled area is representative of the ground cover surface. Sample the area where the deposition of contamination is most likely to occur.

6.11.1 Proceed to the designated survey area and select an area where the sample will be taken.

6.11.2 Obtain the aluminum scoop and a large plastic sample bag from the Emergency Kit.

NOTE: The area of the scoop is approximately 1,000cm^2. When removing surface snow to a depth of 1 centimeter the volume of the melted snow is approximately 100 cc of liquid. This assumes a 10:1 snow to water ratio.

6.11.3 Using the scoop, remove snow/dirt from a surface area of about 1000 cm^2 to a depth of about 1 centimeter (0.4 inches).

6.11.4 Place the sample material in a large zip-lock bag, seal and label.

6.11.5 Record the sample TIME, SURVEY POINT (sample location), and the SAMPLE TYPE on Form 5790-410-03.

6.12 Ground Deposition - Vegetation/Food Sampling

6.12.1 Proceed to the designated survey area and select the area where the sample will be taken.

NOTE: The selection should be based on locating herbage eaten by grazing animals, since the herbage provides a key pathway to human exposure. Also, depending on season of year, plant fruit (strawberries, sweet corn, beans, wheat, oats, etc.) may be selected for sampling.

6.12.2 Obtain scissors or trimming device and large zip-lock bag from the Emergency Kit.

NOTE: If the vegetation is grass an area of at least 1 m^2 of ground should be sampled. The vegetation should be cut at approximately .5 to 1 inch from the ground and should not be contaminated in the process by soil.

6.12.3 Obtain enough vegetation/food to fill the zip-lock bag. This is about a 1/3 of a kilogram.

6.12.4 Compress the air from the bag, seal and label bag.

6.12.5 Record the sample TIME, SURVEY POINT (sample location) and SURVEY TYPE on Form 5790-410-03.

NOTE: This calculation is based on I-131 and CS-137.

6.12.6 Calculate the activity of the sample using the following method:

A. Flatten the bag and lay probe of a count rate meter with 2" pancake probe on the center of the bag.

B. Wrap bag around probe and note reading.

C. Calculate the activity using the following formula:

$$\mu Ci/kg = \frac{\text{Net cpm}}{1.32}$$

6.12.7 Record the sample results on Form 5790-410-03 and report the results to the Field Team Communicator.

6.13 Off-Site Sample Courier Instructions

6.13.1 When dispatched by the OSC Coordinator, obtain an electronic dosimeter (either from the OSC or Access Control), respirator corrective lenses, as applicable, and log onto Emergency RWP 902. Retain your TLD and dosimeter when departing the plant.

6.13.2 Obtain the keys for a plant vehicle and the keys to EVES building. Keys may be obtained from the Security Building or Nuclear Plant Helper Supervisor key cabinet.

6.13.3 Obtain one Sample Courier Kit (aluminum case), one portable mobile radio kit (Channel 2A) from the EVES Bldg.

6.13.4 Place the Sample Courier Kit in the vehicle and install the mobile radio and antenna.

6.13.5 Perform an operability check of the installed radio unit, prior to departing the EVES Building, by contacting the TSC (or EOF). Ensure the radio is selected to Channel 2A.

6.13.6 Proceed to the EOF Command Center, using the back (Receiving Area) personnel entrance, and contact the Radiation Protection Support Supervisor (RPSS) immediately upon arrival.

6.13.7 Standby in the EOF for assignments as directed by the RPSS.

6.13.8 When dispatched from the EOF to pick up samples:

A. Logout of the EOF (if necessary) with EOF Security (ensure you keep your dosimetry when departing the EOF).

B. Establish and maintain constant radio communication with the Field Team Communicator and follow the communicators instructions regarding travel routes, etc.

C. Rendezvous with Field Teams at designated locations for sample pickup.

D. Frequently check your dosimeter and notify the Field Team Communicator when exposure approaches administrative limits.

6.13.9 When picking up samples from the Field Team(s):

A. Obtain any special instructions for handling the sample(s) from the RPSS (e.g. ALARA precautions, etc.).

B. Ensure the sample(s) are properly packaged (bagged) and labeled.

NOTE: Protective clothing is provided in the Sample Courier Kit.

C. Confirm radiological conditions along your travel route(s) with the RPSS and follow the instructions regarding the use of protective clothing (e.g. respiratory protection) that may be warranted.

6.13.10 Transport the sample(s) promptly to the EOF Count Room for analysis. While enroute (to the EOF) contact the EOF Count Room (by radio) and inform the Count Room Tech you will be delivering samples.

6.13.11 Upon arrival at the EOF use the back (Receiving area) personnel entrance into the EOF Controlled Area (the posted Contaminated area in the EOF loading dock) and:

A. Notify the Count Room Tech samples have arrived.

B. Ensure the samples are properly re-bagged, re-labeled and surveyed (with a frisker or dose rate meter) prior to transfer out of the posted Contaminated Area into the EOF Count Room.

6.13.12 While at the EOF:

A. Check and report dosimeter readings to the RPSS.

B. Perform a whole body frisk (check) prior to proceeding back into the field (if immediately dispatched).

C. If remaining at the EOF, doff protective clothing (if applicable) and perform a whole body frisk when exiting the posted Contaminated Area (at the Step-Off-Pad).

D. Perform personnel decontamination (as necessary) under the direction of the Count Room Tech.

6.13.13 Upon completion of sample delivery notify the Field Team Communicator you are ready to be dispatched again.

6.13.14 If dispatched into the field again, obtain additional sampling supplies (e.g. sample bottles, filters, etc.) from the storage cabinet in the Receiving Area and deliver the supplies to the Field Teams (as requested).

6.13.15 When sample courier(s) are no longer required (or when relieved by the next shift) report to the RPSS for debriefing and next shift assignments.

6.14 Prairie Island Off-Site Field Team Driver Instructions

6.14.1 When dispatched by the OSC Coordinator, obtain an electronic dosimeter (either from the OSC or Access Control), respirator corrective lenses, as applicable, and log onto Emergency RWP 902. Retain your TLD and electronic dosimeter when departing the plant.

6.14.2 Report to the EOF and check in with the Radiation Protection Support Supervisor (RPSS).

6.14.3 Serve as a driver for the Prairie Island Off-Site Survey Team. The EOF Field Team Communicator will provide instruction on desired sample points.

6.14.4 Request advice from the RPSS regarding procedures or special precautions which should be considered when approaching or searching for the plume.

6.14.5 Provide assistance to the Field Team as requested.

7.0 FIGURES

FIGURE

7.1 Gross Iodine Activity Table

Using Count Rate Meter with 2 inch Pancake Probe and Silver Zeolite Absorber

CFM	Flow Min.		Volume
2.5	10.0	=	707500 cc
3.0	8.3	=	707500 cc
3.5	7.1	=	707500 cc
4.0	6.2	=	707500 cc

Probe eff. 0.10
Flow CF 1.0

NOTE: The μCi/cc activity assumes the above conditions.

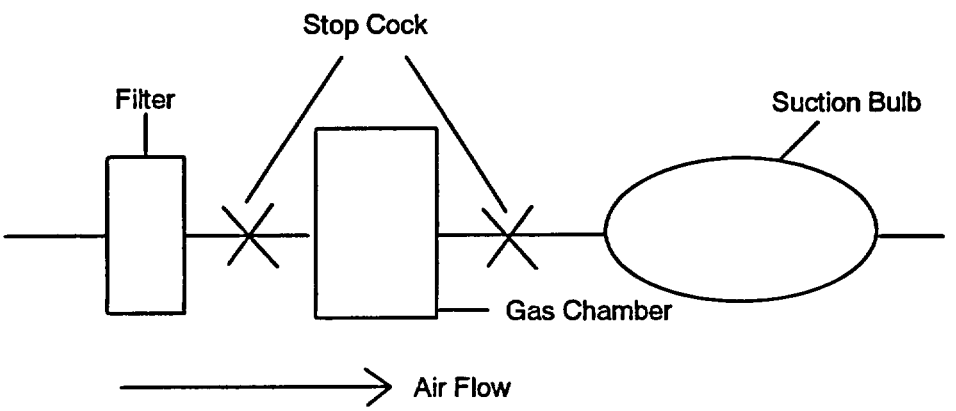
NCPM	μCi Iodine	μCi/cc	NCPM	μCi Iodine	μCi/cc	NCPM	μCi Iodine	μCi/cc
100	4.3E-02	6.E-08	800	4.OE-01	6.E-07	6000	3.2E-00	5.E-06
120	5.3E-02	7.E-08	900	4.6E-01	7.E-07	7000	3.8E-00	5.E-06
140	6.0E-02	8.E-08	1000	5.OE-01	7.E-07	8000	4.5E-00	6.E-06
160	7.OE-02	1.E-07	1200	6.OE-01	8.E-07	9000	5.OE-00	7.E-06
180	9.OE-02	7.E-07	1400	7.OE-01	1.E-06	10000	5.6E-00	8.E-06
200	1.OE-01	1.E-07	1600	8.OE-01	1.E-06	12000	6.0E-00	8.E-06
220	1.2E-01	2.E-07	1800	9.OE-01	1.E-06	14000	7.5E-00	1.E-05
240	1.4E-01	2.E-07	2000	1.0E-00	1.E-06	16000	1.OE+01	1.E-05
260	1.5E-01	2.E-07	2200	1.1E-00	2.E-06	18000	1.3E+01	2.E-05
280	1.6E-01	2.E-07	2400	1.2E-00	2.E-06	20000	1.5E+01	2.E-05
300	1.7E-01	2.E-07	2600	1.4E-00	2.E-06	25000	2.5E+01	4.E-05
350	1.8E-01	3.E-07	2800	1.5E-00	2.E-06	30000	3.3E+01	5.E-05
400	2.0E-01	3.E-07	3000	1.6E-00	2.E-06	35000	5.OE+01	7.E-05
450	2.3E-01	3.E-07	3500	1.8E-00	3.E-06	40000	6.OE+01	8.E-05
500	2.6E-01	4.E-07	4000	2.1E-00	3.E-06	45000	1.OE+02	1.E-04
600	3.0E-01	4.E-07	4500	2.5E-00	4.E-06			
700	3.6E-01	5.E-07	5000	2.8E-00	4.E-06			

FIGURE

7.2 Gas Chamber Table

using Count Rate Meter with 2 inch Pancake Probe and 100 cc S.S. Gas Chamber

NCPM	µCi/cc (Xe-133 equiv.)	NCPM	µCi/cc (Xe-133 equiv.)
100	1.OE-05	2500	4.5E-04
150	1.5E-05	3000	5.5E-04
200	2.OE-05	3500	6.5E-04
250	2.5E-05	4000	8.OE-04
300	3.2E-05	4500	9.OE-04
350	4.OE-05	5000	1.1E-03
400	4.5E-05	5500	1.3E-03
450	5.1E-05	6000	1.5E-03
500	6.0E-05	8000	1.8E-03
600	7.5E-05	10000	2.5E-03
800	1.1E-04	12000	3.0E-03
1000	1.5E-04	14000	3.5E-03
1200	1.7E-04	16000	4.OE-03
1400	2.OE-04	18000	4.7E-03
1600	2.5E-04	20000	5.5E-03
1800	3.OE-04	25000	7.5E-03
2000	3.5E-04	30000	9.5E-03



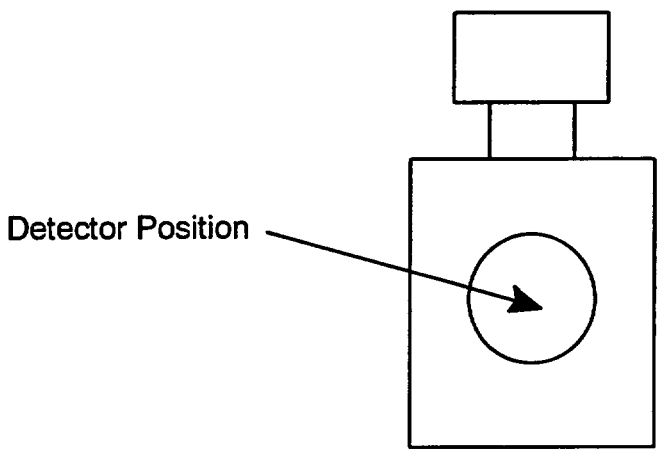
l/plr

FIGURE

7.3 Gross Liquid Activity Table

using Count Rate Meter with 2 inch Pancake Probe and 1000 ML Poly Bottle

NCPM	µCi/ML
100	1.5E-04
200	2.5E-04
300	3.5E-04
400	4.5E-04
500	5.5E-04
600	6.5E-04
700	7.5E-04
800	8.5E-04
900	9.5E-04
1000	1.0E-03
2000	1.8E-03
3000	2.6E-03
4000	3.4E-03
5000	4.1E-03
6000	4.8E-03
7000	5.5E-03
8000	6.2E-03
9000	6.9E-03
10000	7.6E-03



FIGURE

7.4 Gross Particulate Activity Table

using Count Rate Meter with 2 inch Pancake Probe

CFM	Flow Min.		Volume	
2.5	10.0	=	707500 cc	Probe eff. 0.10
3.0	8.3	=	707500 cc	Flow CF 1.0
3.5	7.1	=	707500 cc	4" filter CF 0.3
4.0	6.2	=	707500 cc	Conversion 4.51E-07 μCi/dpm

NOTE: The μCi/cc activity assumes the above conditions.

NCPM	μCi/cc	NCPM	μCi/cc	NCPM	μCi/cc
100	2.E-09	900	2.E-08	6000	1.E-07
120	3.E-09	1000	2.E-08	7000	1.E-07
140	3.E-09	1200	3.E-08	8000	2.E-07
160	3.E-09	1400	3.E-08	9000	2.E-07
180	4.E-09	1600	3.E-08	10000	2.E-07
200	4.E-09	1800	4.E-08	12000	3.E-07
220	5.E-09	2000	4.E-08	14000	3.E-07
240	5.E-09	2200	5.E-08	16000	3.E-07
260	6.E-09	2400	5.E-08	18000	4.E-07
280	6.E-09	2600	6.E-08	20000	4.E-07
300	6.E-09	2800	6.E-08	25000	5.E-07
350	7.E-09	3000	6.E-08	30000	6.E-07
400	8.E-09	3500	7.E-08	35000	7.E-07
500	1.E-08	4000	8.E-08	40000	8.E-07
600	1.E-08	4500	1.E-07	45000	1.E-06
700	1.E-08	5000	1.E-07		
800	2.E-08	5500	1.E-07		

FIGURE

7.5 On-Site Liquid Sample Locations

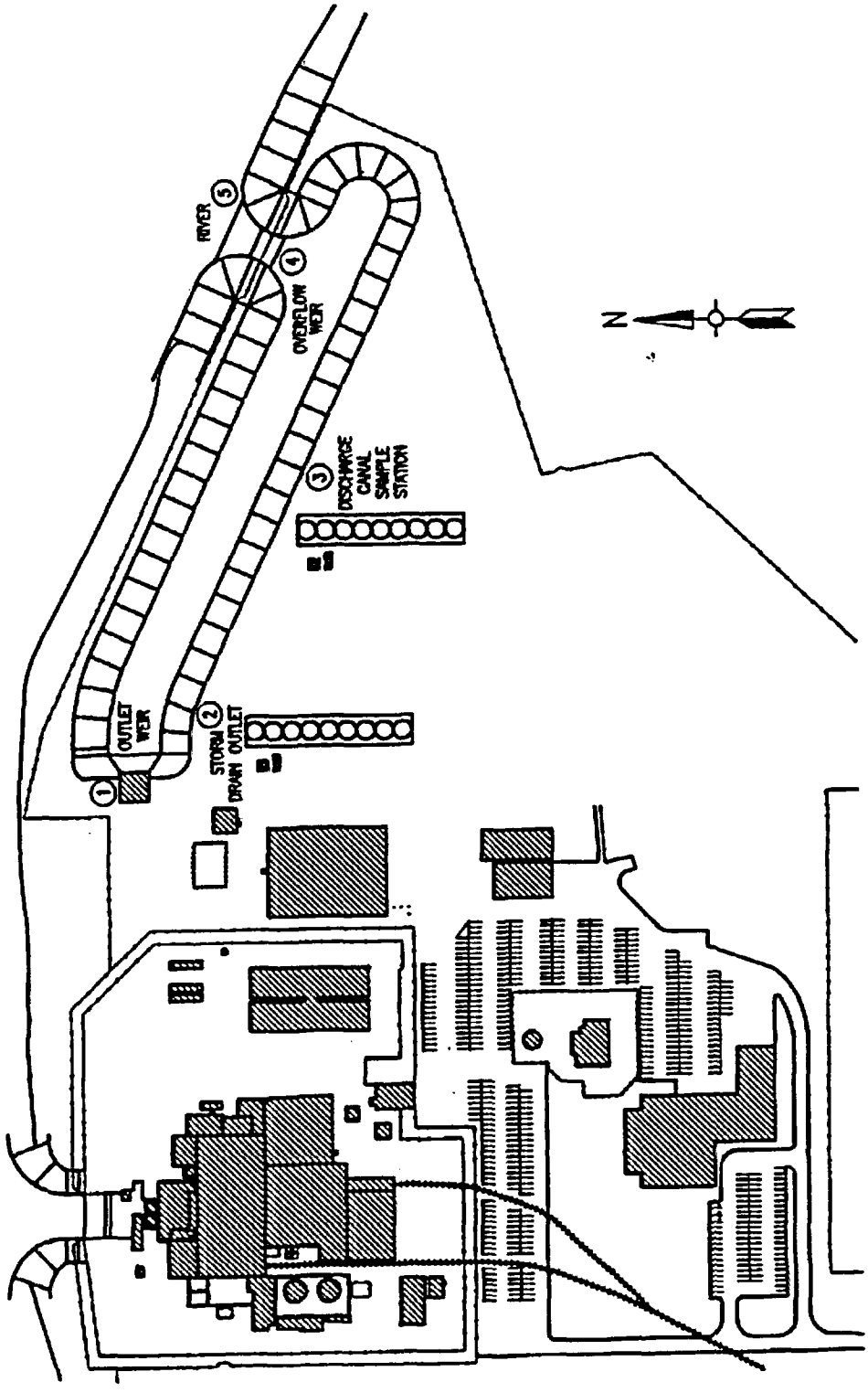


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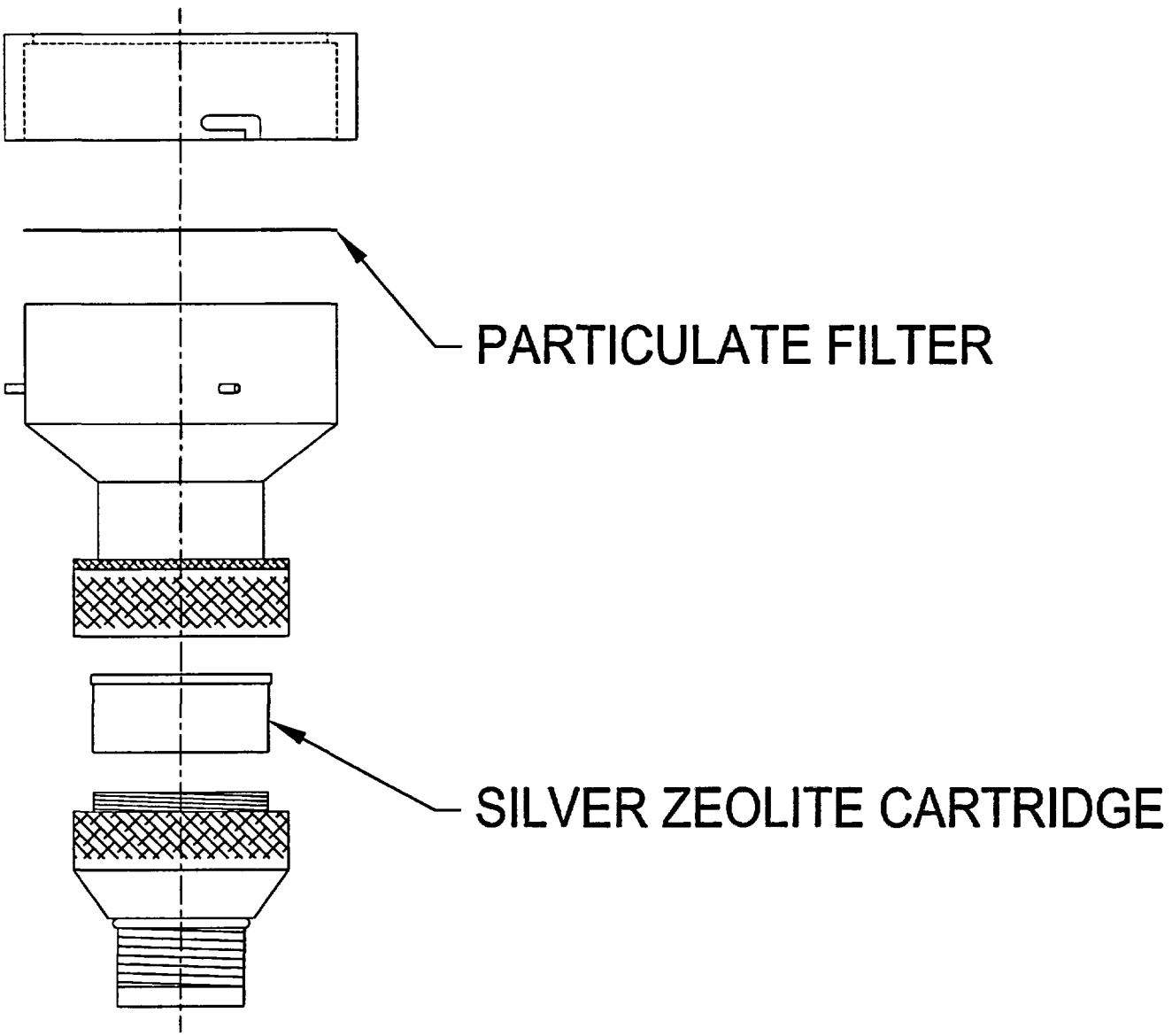
FIGURE

7.6 Air Sample Filter Assembly



FIGURE

7.7 Forms Utilized in this Procedure

1.	5790-410-02	OUT-OF-PLANT SURVEY CHECKLIST
2.	5790-410-01	EMERGENCY SAMPLE RESULTS LOG
3.	5790-410-03	GROUND DEPOSITION SAMPLE RESULTS LOG

EMERGENCY PLAN IMPLEMENTING PROCEDURE - TABLE OF CONTENTS

Prepared By: T Rogers	Reviewed By:	
ALARA Coord Review By:		
OC Review Req'd: YES	OC Meeting Number: 2314F	Date: 9/25/03
Approved By:		Date: 9/25/03

FOR ADMINISTRATIVE USE ONLY

This revision incorporates Volume F Memos: None

3087 (DOCUMENT CHANGE, HOLD, AND COMMENT FORM) incorporated: 02-1347, 03-2899

Resp Supv: EP		Assoc Ref: A.2	SR: N	Freq: 1 yrs.
ARMS: A.2-413	Doc Type: 1060	Admin Initials:		Date: 10/14/03

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1.0 PURPOSE

The purpose of this procedure is to provide instructions for collection and handling of small volume liquid samples obtained from the Post Accident Sampling System during and following an Emergency.

2.0 APPLICABILITY

2.1 An emergency (Alert or higher classification) has been declared at Monticello Nuclear Generating Plant which involves abnormal or elevated radiological conditions which preclude use of normal sampling methods.

2.2 The REC/CSL has requested analysis of RHR or Jet Pump liquid samples.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 The Radiological Emergency Coordinator (REC) is responsible for:

3.1.1 Overall coordination of the Radiation Protection and Chemistry Group activities.

3.2 The Chemistry Section Leader (CSL) is responsible for:

3.2.1 Overall direction for PASS sampling and analysis.

3.3 The Chemistry Coordinator is responsible for:

3.3.1 Coordination of Chemistry group activities in the Chemistry Lab.

3.4 The Chemistry Technicians (Chem Techs) is responsible for: |

3.4.1 Performing post accident sampling using the PASS system.

4.0 DISCUSSION

The primary objective of the Post Accident Sampling System (PASS) is to obtain a representative liquid and gas samples for radiochemical analysis. The liquid samples taken from this system are considered to be representative of liquids within the reactor vessel and suppression pool areas. |

The Post Accident Sampling System is located on the south side of the 951' level of the Turbine Building. The most efficient route to the PASS is through access control and into the Turbine Building. Move to the 951' level via the east stairway.

The Post Accident Sampling System is used to meet NRC Commitment M03003A. |

5.0 PRECAUTIONS

5.1 Exposures of sampling and analysis personnel ***SHALL*** be in accordance with A.2-401 (EMERGENCY EXPOSURE CONTROL).

5.2 Exposures to all personnel due to sampling and analysis operations should be maintained AS LOW AS IS REASONABLY ACHIEVABLE. Techniques such as temporary shielding, remote handling, and sample dilution prior to analysis should be considered to reduce exposure to personnel.

5.3 When actual or potential radiations levels so warrant, high range portable survey instruments, and self-reading dosimeters ***SHALL*** be provided to sampling and analysis personnel. Alarming dosimeters should also be considered.

5.4 Appropriate extremity dosimeters should be provided and worn when handling samples which themselves represent high level radiation sources.

5.5 Two Chem Techs should be used to obtain a post-accident sample.

6.0 INSTRUCTIONS

6.1 Pre-Sample Preparation

6.1.1 Perform the following:

A. Obtain key 55 and PASS cabinet key from the Shift Chemist key ring.

B. Initiate Form 5790-413-01 (SMALL VOLUME LIQUID SAMPLING AND ANALYSIS CHECKLIST) FIGURE 7.1.

C. Obtain sample type and number from Chemistry Coordinator per Procedure A.2-408 (SAMPLE COORDINATION DURING EMERGENCIES)

D. Call the Control Room to:

1. Determine whether A or B RHR is operating.

2. Verify RBCCW is operating.

3. Advise Control Room that Jet Pump flow transmitter may be affected. (Computer Point REC136 (REACTOR JET PUMP TOTAL FLOW))

6.2 Obtaining Samples

6.2.1 IF PASS demin water tank level is below the Low Level indicator, THEN fill the tank IAW A.2-418 (POST ACCIDENT SAMPLING STATION DEMIN WATER TANK FILL PROCEDURE).

6.2.2 Open nitrogen supply as follows:

A. OPEN main cylinder valve on one nitrogen cylinder.

B. OPEN corresponding manifold valve either PAS-57-21 (N_2 GAS BOTTLE MANIFOLD SHUTOFF) or PAS-57-11 (N_2 GAS BOTTLE MANIFOLD SHUTOFF).

C. CLOSE regulator outlet isolation valve.

D. Adjust regulator to 100 psi.

E. OPEN regulator outlet isolation valve.

6.2.3 Turn HC-730 (PASS VENTILATION) to start.

6.2.4 IF vacuum is not between 0.10" and 0.05", THEN adjust ventilation damper to obtain proper reading.

6.2.5 Insert PASS key into HC-600 (POWER SOURCE SELECTION SWITCH).

6.2.6 Place HC-600 to position A.

6.2.7 Obtain 20 ml sample vial (with velcro strip), cap, and retainer ring from the cabinet. Cap the vial and remove aluminum ring from the center of the cap.

6.2.8 Apply the sample label, from STEP 6.1.1, on the vial.

6.2.9 Insert the capped vial into the sample station as follows:

NOTE: Small volume sample needles are 1 inch long.

A. Using flashlight and inspection mirror, check condition of needles. Ensure they are not bent.

B. Place the cylinder into the sample cask.

C. Engage the cable into the sample vial by gently pushing the cable in and turning clockwise.

D. Remove the cylinder cask shield plug from the cask.

E. Raise the sample vial holder and insert capped vial. Ensure vial is firmly attached to velcro strip and aligned vertically.

F. Lower the sample vial into cask using the cable.

G. Place the shim on the LEFT SIDE of the cask.

H. Close the hydraulic valve and jack up the cask.

I. Gently roll the cask under the right side of the sample station.

J. Using the cable, raise sample vial into position.

K. Maintain sample vial in elevated position and jack up the cask until it is flush with the bottom of the station.

CAUTION

Do not allow the demin water pressure to exceed 110 psi.

6.2.10 Adjust demin water pressure regulator to 100 psi.

6.2.11 Place HC-700 (LIQUID/GAS SELECTOR) to LIQD.

6.2.12 Place HC-626 (LIQUID SAMPLE SOURCE SELECTOR) to position 2 (Jet Pump) or position 4 (RHR) as required.

6.2.13 IF bottle position status light is not green,
THEN adjust the bottle holder.

6.2.14 Place HC-626 to position 1 (Jet Pump Bypass) or position 5 (RHR Bypass).

6.2.15 Place HC-500 (SAMPLE SOURCE SELECTOR SWITCH) to required sample position.

6.2.16 Place Liquid Return Selector switch to operating RHR loop.
IF neither RHR loop is operating,
THEN place the Selector switch to A.

6.2.17 IF pressure on PI-661 (LIQUID PRESSURE - PSIG) does not increase to near target system pressure within 10 min,
THEN cycle HC-500 between 'A' and 'B' sample points.

6.2.18 Slowly turn PCV-627 (FLOW CONTROL VALVE) clockwise to get a flow of at least 0.8 gpm for jet pump sample or at least 0.4 gpm for RHR (as indicated on FI-664 (SAMPLE RETURN FLOW)).

6.2.19 Flush for 10 minutes.

6.2.20 Record the flow and flush time on Form 5790-413-01.

6.2.21 Place HC-626 to position 2 (Jet Pump) or position 4 (RHR) for the required sample.

6.2.22 Adjust PCV-627 to 0.3 +/-0.1 gpm.

6.2.23 Flush for 5 minutes.

6.2.24 Record the following on Form 5790-413-01:

A. Flow per FI-664.

B. Pressure per PI-661.

C. Temperature per TI-660.

D. Conductivity per CI-663.

E. Radiation per RI-665.

6.2.25 Place HC-616-1 (SMALL VOL SAMPLE SWITCH) to position 1 (Take Sample).

6.2.26 After CV-616 light is energized, verify flow per FI-664 is zero.

6.2.27 Record sample time on Form 5790-413-01.

6.2.28 Fill the 10 ml syringe with 10 ml demin water.

6.2.29 Connect the syringe to the top-right side of the sample station.

6.2.30 Open the two block valves and PAS-63.

6.2.31 Inject the 10 mls of water into the line.

6.2.32 Close PAS-63.

6.2.33 Remove the syringe and fill it with air.

6.2.34 Reattach the syringe.

6.2.35 Open PAS-63.

6.2.36 Inject the air.

6.2.37 Close PAS-63 and the two block valves.

6.2.38 Remove the syringe.

6.2.39 Place HC-616-1 to OFF.

6.2.40 Place HC-500 to OFF.

6.2.41 Place HC-616-1 to position 3 (Flush Loop).

6.2.42 Adjust PCV-627 for maximum flow.

6.2.43 Flush for 2 minutes or until RI-665 reaches a minimum.

6.2.44 Place HC-626 to OFF.

6.2.45 Place HC-616-1 to OFF.

6.2.46 Turn PCV-627 fully counterclockwise.

6.2.47 IF no additional sampling is required,
THEN perform Procedure A.2-417 (DRAINING THE TRAP, SUMP, AND COLLECTOR OF POST ACCIDENT SAMPLING SYSTEM).

6.2.48 Notify Control Room that sampling is completed.

6.3 Removing Vial From Sample Station

CAUTION

Observe appropriate radiological precautions when handling vial, as potentially high dose rates may exist.

NOTE: Do not twist the cable. This would bend the needles.

6.3.1 Remove the sample vial from the sample station as follows:

A. Pull up on the cable.

B. Open the hydraulic valve.

C. Roll the cask from under the sample station.

D. Install shield plug in cask top.

E. Disengage the cable from the sample vial by turning the cable counterclockwise and pulling gently outward.

F. Lift the cylinder out of the cask.

6.3.2 Turn HC-730 to stop.

6.3.3 Complete Form 5790-413-01.

7.0 FIGURES

FIGURE

7.1 Forms Utilized in this Procedure

1. 5790-413-01 (SMALL VOLUME LIQUID SAMPLING AND ANALYSIS CHECKLIST)

MONTICELLO NUCLEAR GENERATING PLANT		A.2-414
TITLE:	LARGE VOLUME LIQUID SAMPLE OBTAINED AT POST ACCIDENT SAMPLING SYSTEM	Revision 20
		Page 1 of 9

EMERGENCY PLAN IMPLEMENTING PROCEDURE - TABLE OF CONTENTS

Prepared By:	Reviewed By:	
ALARA Coord Review By:		
OC Review Req'd: YES	OC Meeting Number: 2384F	Date: 9/25/03
Approved By:		Date: 9/25/03

FOR ADMINISTRATIVE USE ONLY

This revision incorporates Volume F Memos: none

3087 (DOCUMENT CHANGE, HOLD, AND COMMENT FORM) incorporated: 02-0479, 03-0441

Resp Supv: EP	Assoc Ref: A.2		SR: N	Freq: 1 yrs
ARMS: A.2-414	Doc Type: 1060	Admin Initials:		Date: 10/14/03

I/plr

1.0 PURPOSE

The purpose of this procedure is to provide instructions and precautions for collection, handling, and analysis of large volume liquid during and following an emergency.

2.0 APPLICABILITY

2.1 The REC/CC/CSL has requested a dissolved gas analysis of RHR or jet pump liquid samples, or a large volume liquid sample for off-site analysis or on-site if coolant activity is low enough that a large volume sample can be handled without undue exposure to technicians.

2.2 Actual or potential radiological conditions are such that special methods and/or precautions are necessary in order to collect and analyze samples under conditions which may present a much greater than normal radiation hazard to individuals performing the sampling and analyses, or the normal sample points are not available.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 The Radiological Emergency Coordinator (REC) is responsible for:

3.1.1 Overall direction of the Radiation Protection and Chemistry Group activities.

3.2 The Chemistry Section Leader (CSL) is responsible for:

3.2.1 Overall direction of PASS sampling and analysis.

3.2.2 Overall coordination of Chemistry Group activities.

3.3 The Chemistry Coordinator is responsible for:

3.3.1 Coordination of Chemistry Group activities in the Chemistry Lab.

3.3.2 Coordination of sample logging, identification and documentation.

3.4 The Chemistry Technicians (Chem Techs) are responsible for:

3.4.1 Implementation of this procedure.

4.0 DISCUSSION

4.1 The Post Accident Sampling Station is located on the south side of the 951' level of the Turbine Building. The most efficient route to the PASS is through Access Control and into the Turbine Building. Move to the 951' level via the east stairway.

4.2 The Post Accident Sampling System is used to meet NRC Commitment M03003A.

5.0 PRECAUTIONS

5.1 Exposures of sampling and analysis personnel ***SHALL*** be in accordance with A.2-401 (EMERGENCY EXPOSURE CONTROL).

5.2 Exposures to all personnel due to sampling and analysis operations should be maintained as low as is reasonably achievable. Techniques such as temporary shielding, remote handling, and sample dilution prior to analysis should be considered to reduce exposure to personnel.

5.3 When actual or potential radiation levels so warrant, high range portable survey instruments, and self-reading dosimeters should be provided to sampling and analysis personnel. Alarming dosimeters should also be considered.

5.4 Appropriate extremity dosimeters should be provided and worn when handling samples which themselves represent high level radiation sources.

5.5 Two Rad Prot Specs should be used to obtain a post-accident sample when applicable and possible.

6.0 INSTRUCTIONS

6.1 Preparation for Sampling

6.1.1 Obtain key 55 and the PASS cabinet key from the Shift Chemist key ring.

6.1.2 Initiate a Form 5790-414-01 (LARGE VOLUME LIQUID SAMPLING AND ANALYSIS CHECKLIST).

6.1.3 Obtain sample type and number from Chemistry coordinator (see FIGURE 7.7 in A.2-408 (SAMPLE COORDINATION DURING EMERGENCIES)).

6.1.4 Call the Control Room to:

A. Determine whether A or B RHR is operating.

B. Verify RBCCW is operating.

C. Advise the Control Room that jet pump flow transmitter may be affected. (Computer Point REC136 (REACTOR JET PUMP TOTAL FLOW)).

6.2 Obtaining Samples

6.2.1 IF PASS demin water tank level is below the Low Level indicator, THEN fill the tank IAW A.2-418 (POST ACCIDENT SAMPLING STATION DEMIN WATER TANK FILL PROCEDURE).

6.2.2 Open nitrogen supply as follows:

A. OPEN main cylinder valve on one nitrogen cylinder.

B. OPEN corresponding manifold valve either PAS-57-21 (N_2 GAS BOTTLE MANIFOLD SHUTOFF) or PAS-57-11 (N_2 GAS BOTTLE MANIFOLD SHUTOFF).

C. CLOSE regulator outlet isolation valve.

D. Adjust regulator to 100 psi.

E. OPEN regulator outlet Isolation valve.

6.2.3 Turn HC-730 (PASS VENTILATION) to start.

6.2.4 IF vacuum is not between 0.10" and 0.05", THEN adjust ventilation damper to obtain proper reading.

6.2.5 Insert PASS key into HC-600 (POWER SOURCE SELECTOR SWITCH).

6.2.6 Place HC-600 to position A.

6.2.7 Obtain 20 ml sample vial (with velcro strip), cap, and retainer ring from cabinet. Cap the vial and remove the aluminum ring from the center of the cap.

6.2.8 Label the vial with the sample number obtained in STEP 6.1.3.

6.2.9 Insert the capped vial into the sample station as follows:

NOTE: Large volume sample needles are 7/8 inches long.

A. Using a flashlight and inspection mirror, check the condition of the needles. Ensure that they are not bent.

B. Place the cylinder into the cask.

C. Engage the cable in the sample vial by gently pushing the cable in and turning clockwise.

D. Remove the cylinder cask shield plug from the cask.

E. Raise the sample vial holder and insert the capped vial. Ensure vial is firmly attached to velcro strip and aligned vertically.

F. Lower the sample vial into the cask using the cable.

G. Place the shim on the RIGHT SIDE of the cask.

H. Close the hydraulic valve and jack up the cask.

I. Gently roll the cask under the left side of the station.

J. Using the cable, raise the sample vial into position.

K. Maintain sample vial in elevated position and jack up the cask until lit is flush with the bottom of the station.

CAUTION

Do not allow the demin water pressure to exceed 110 psi.

6.2.10 Adjust demin water pressure regulator to 100 psi.

6.2.11 Place HC-700 to LIQD.

6.2.12 Place HC-626 (LIQUID SAMPLE SOURCE SELECTOR) to position 2 (JET PUMP) or position 4 (RHR) as required.

6.2.13 IF bottle position status light is not green,
THEN adjust the bottle holder.

6.2.14 Place HC-626 to position 1 (JET PUMP BYPASS) or position 5 (RHR BYPASS).

6.2.15 Place HC-500 (SAMPLE SOURCE SELECTOR SWITCH) to required sample position.

6.2.16 Place LIQUID RETURN SELECTOR switch to the operating RHR loop.
IF neither RHR loop is operating,
THEN place the selector switch to A.

6.2.17 IF pressure on PI-661 (LIQUID PRESSURE - PSIG) does not increase to near target system pressure within 10 minutes,
THEN cycle HC-500 between 'A' and 'B' sample points.

6.2.18 Slowly turn PCV-627 (FLOW CONTROL VALVE) clockwise to get a flow of at least 0.8 gpm for jet pump sample or at least 0.4 gpm for RHR (as indicated on FI-664 (SAMPLE RETURN FLOW)).

6.2.19 Flush for 10 minutes.

6.2.20 Record flow and flush time on Form 5790-414-01.

6.2.21 Place HC-626 to position 2 (JET PUMP) or position 4 (RHR) for the required sample.

6.2.22 Adjust PCV-627 to 0.3 +/-0.1 gpm.

6.2.23 Flush for 5 minutes.

6.2.24 Record the following on Form 5790-414-01:

A. Flow per FI-664.

B. Pressure per PI-661.

C. Temperature per TI-660.

D. Conductivity per CI-663.

E. Radiation per RI-665.

6.2.25 Place HC-601 to position 2 (START P-601).

6.2.26 Flush for 10 minutes.

6.2.27 Place HC-601 to position 10 (TAKE LIQUID SAMPLE).

6.2.28 Press and hold in pushbutton HC-629-1 for 10 seconds.

6.2.29 Place HC-601 to OFF.

6.2.30 Inform Control Room sampling is completed.

CAUTION

Do not position body at any time directly over cask, as potentially high dose rates may exist.

6.2.31 Lower the sample into the large volume cask by pulling up on the cable. DO NOT twist the plunger.

6.2.32 Lower the cask.

6.2.33 Roll the cask out from under the station.

6.2.34 Install the shield plug in the cask.

6.2.35 Disengage the cable from the sample vial by turning the cable counterclockwise and pulling gently outward.

6.2.36 Place or verify HC-601 to OFF.

6.2.37 Place HC-500 to OFF.

6.2.38 Place HC-628-1 (FLUSH SYSTEM) to position 2 (START FLUSH), AND adjust PCV-627 for MAXIMUM flow per FI-664.

6.2.39 After RI-665 shows radiation has decreased significantly, place HC-628-1 to position 3 (FLUSH V-610 LOOP).

6.2.40 WHEN the radiation no longer decreases, place HC-628-1 to position 4 (FLUSH P-601 LOOP).

6.2.41 WHEN the radiation no longer decreases, place switch HC-628-1 to position 5 (FLUSH P-601 LOOP).

6.2.42 WHEN the radiation no longer decreases, place switch HC-628-1 to position 6 (FLUSH PIPING STATION).

6.2.43 Flush for 3 minutes.

6.2.44 Place HC-628-1 to position 7 (FLUSH CV-622 LOOP).

6.2.45 IF any abnormal radiation levels are indicated on RI-665, THEN repeat 6.2.39 through 6.2.44.

6.2.46 Place HC-626 to OFF.

6.2.47 Place HC-628-1 to OFF.

6.2.48 Turn PCV-627 fully counterclockwise.

6.2.49 IF no additional sampling is required, THEN perform A.2-417 (DRAIN THE TRAP, SUMP, AND COLLECTOR OF POST ACCIDENT SAMPLING SYSTEM).

6.2.50 Turn HC-730 to stop.

6.3 Sample Transport and Analysis

6.3.1 Transport the large volume liquid sample or dissolved gas sample in a shielded container for high activity samples or use a remote carrying device for low activity samples.

6.3.2 Perform analysis requested by REC/CC/CSL IAW Chemistry Manual Procedures.

6.3.3 IF a large volume sample is to be sent off-site for analysis, THEN notify the REC for instructions.

7.0 FIGURES

None

EMERGENCY PLAN IMPLEMENTING PROCEDURE - TABLE OF CONTENTS

Prepared By: T Rogers	Reviewed By: [signature]	
ALARA Coord Review By: K Shumaker		
OC Review Req'd: YES	OC Meeting Number: 2384F	Date: 9/25/03
Approved By: [signature]		Date: 9/25/03

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Resp Supv: EP		Assoc Ref: A.2	SR: N	Freq: 1 / yrs
ARMS: A.2-415	Doc Type: 1060	Admin Initials: [initials]		Date: 10/14/03

1.0 PURPOSE

The purpose of this procedure is to provide instructions and precautions for collection and handling of containment gas samples during and following an emergency.

2.0 APPLICABILITY

2.1 An emergency (Alert or higher classification) has been declared at Monticello Nuclear Generating Plant which involves abnormal or elevated radiological conditions which preclude use of normal sampling methods.

2.2 The REC/CSL has requested analysis of containment gas samples.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 The Radiological Emergency Coordinator (REC) is responsible for:

3.1.1 Overall direction of the Radiation Protection and Chemistry Group activities.

3.2 The Chemistry Section Leader (CSL) is responsible for:

3.2.1 Overall coordination for PASS sampling and analysis.

3.2.2 Overall coordination of Chemistry Group activities.

3.3 The Chemistry Coordinator is responsible for:

3.3.1 Coordination of Chemistry Group activities in the Chemistry Lab.

3.4 The Chemistry Technicians (Chem Techs) are responsible for:

3.4.1 Implementation of this procedure.

3.4.2 Performing post-accident sampling using the PASS system.

4.0 DISCUSSION

The primary objective of the Post-Accident Sampling System (PASS) is to obtain representative liquid and gas samples for radiochemical analysis in the event of a LOSS-OF-COOLANT ACCIDENT (LOCA). The gas samples taken from this system are considered to be representative of the atmosphere within the primary containment.

The Post-Accident Sampling System (PASS) is located on the south side of the 951' level of the Turbine Building. The most efficient route to the PASS is through access control and into the Turbine Building. Move to the 951' level via the east stairway.

The Post Accident Sampling System is used to meet NRC Commitment M03003A.

5.0 PRECAUTIONS

5.1 Exposures of sampling and analysis personnel ***SHALL*** be in accordance with EPIP A.2-401 (EMERGENCY EXPOSURE CONTROL).

5.2 Exposures to all personnel due to sampling and analysis operations should be maintained AS LOW AS REASONABLY ACHIEVABLE. Techniques such as temporary shielding, remote handling and sample dilution prior to analysis should be considered to reduce exposure to personnel.

5.3 When actual or potential radiation levels so warrant, high range portable survey instruments, and self-reading dosimeters ***SHALL*** be provided to sampling and analysis personnel. Alarming dosimeters should also be considered.

5.4 Appropriate extremity dosimeters should be provided and worn when handling samples which themselves represent high level radiation sources.

5.5 Two-man teams should be used to obtain a post-accident sample, when possible.

6.0 INSTRUCTIONS

6.1 Pre-Sample Preparations

6.1.1 Notify the Control Room of impending sample.

6.1.2 Obtain PASS key 55 and the PASS cabinet key from the Shift Chemist key ring.

6.1.3 Obtain the desired sample location from the Chemistry Coordinator and determine which primary containment isolation valves need to be opened using the following table:

HC-500 Position	PASS Sample Valve	Associated Primary Containment Valves
1. DW High	SV-4010	SV-4001A/SV-4005A and SV-4020A/SV-4004A
2. DW Med	SV-4011	SV-4081 and SV-4082 and SV-4005A and SV-4004A
3. Torus 1	SV-4012A	SV-4003A/SV-4005A and SV-4002A/SV-4004A
4. Torus 2	SV-4012B	SV-4003B/SV-4005B and SV-4002B/SV-4004B and SV-4005A and SV-4004A

6.1.4 Initiate Form 5790-415-01 (CONTAINMENT GAS SAMPLING AND ANALYSIS CHECKLIST) (FIGURE 7.1) and prepare a label for the sample.

6.1.5 Proceed to the Control Room with Form 5790-415-01 and have an Operator open the applicable primary containment valves for the desired sample as follows: I

A. IF a Group II isolation signal exists, THEN perform the following:

1. Place the ISOL/BYPASS switch in BYPASS on Panel C-259 and C-260.

2. IF SV-4081 and SV-4082 need to be opened, THEN perform the following:

a. Place the handswitches at Panel C-26 for the following valves to close:

SV-3307	CV-3311	CV-3313	SV-4081
SV-3308	CV-3312	CV-3314	SV-4082

b. At Panel C-26, lift and tape the external wires at the following terminals:

Q530/1

Q528/1

c. At Panel C-26, jumper the following terminals:

Q530/x1 - Q530/1

Q528/x1 - Q528/1

NOTE: The sample return valves SV-4004A and SV-4005A OPEN when a Div I H_2 O_2 Analyzer sample inlet line's isolation valves are opened.

B. OPEN the primary containment valves indicated on Form 5790-415-1.

6.1.6 Proceed to the PASS Sample Station.

6.1.7 IF the PASS Demin Water Tank level is below the Low Level indicator on the sightglass, THEN fill the tank IAW A.2-418 (PASS DEMIN WATER TANK FILL PROCEDURE).

CAUTION

Do not allow the demin water pressure to exceed 110 psi.

NOTE: It will take several minutes to bring the system to 100 psi.

6.1.8 Open the nitrogen supply as follows:

A. OPEN main cylinder valve on one nitrogen cylinder.

B. OPEN corresponding manifold valve either PAS-57-21 (N_2 GAS BOTTLE MANIFOLD SHUTOFF)or PAS-57-11 (N_2 GAS BOTTLE MANIFOLD SHUTOFF).

C. CLOSE regulator outlet isolation valve.

D. Adjust regulator to 100 psi.

E. OPEN regulator outlet isolation valve.

6.2 Obtaining Sample

6.2.1 Turn HC-730 (PASS VENTILATION) to start.

6.2.2 IF vacuum is not between 0.10" and 0.05",
THEN adjust ventilation damper to obtain proper reading.

6.2.3 Insert PASS key into HC-600 (CONTROL PANEL POWER SELECTOR SWITCH).

6.2.4 Place switch HC-600 to position A.

6.2.5 Verify HC 715-1 (SUMP DRAIN SYSTEM SWITCH) is in OFF.

6.2.6 Switch HC-700 (LIQUID/GAS SELECTOR) to "Gas" position.

6.2.7 Label a standard 15 milliliter off-gas vial.

6.2.8 Perform the following:

A. Place the off-gas vial with Rubber Septum into the gas vial holder.

B. With the bottle plunger fully out, slideholder fully into gas port at the sample station.

C. Push bottle plunger in until vial status light changes from red to green.

6.2.9 Turn HC-723 (GAS SAMPLE SELECTOR SWITCH) to the desired sample location.

6.2.10 Verify primary containment isolation valves are open by checking Form 5790-415-01 (CONTAINMENT GAS SAMPLING AND ANALYSIS CHECKLIST) is complete through part 3.

CAUTION

Part 3 of Form 5790-415-01 must be completed or the CAMS analyzers performance may be affected.

6.2.11 Place switch HC-500 (SAMPLE SOURCE SELECTOR SWITCH) in the position corresponding to the desired sample.

6.2.12 Turn HC-705 (10 ML GAS SAMPLE SWITCH) to position 2 (CIRCULATE GAS).

6.2.13 Circulate gas for 5 minutes.

6.2.14 Record the flow as indicated on Rotameter FI-725 and flush duration on Form 5790-415-01.

6.2.15 Call Control Room to obtain primary containment pressure and temperature. Unless directed otherwise by the REC, use the bulk drywell temp shown on SPOTMOS. Log both on Form 5790-415-01.

6.2.16 Turn HC-705 to position 3 (EVACUATE BOTTLE).

6.2.17 Record stabilized pressure (P_1) from PI-708 (SAMPLE GAS PRESSURE-PSIA) on Form 5790-415-1.

6.2.18 Turn HC-705 to position 4 (TAKE SAMPLE).

6.2.19 IF pressure on PI-708 changes,
THEN there is a leak in the system. Notify the CSL.

6.2.20 Press button HC-720 (PRESS FOR SAMPLE) until a steady pressure is received on PI-708.

6.2.21 Record the final pressure of the sample from PI-708 (P_2), sample temperature from TI-724 and sample time on Form 5790-415-01.

6.2.22 Turn HC-705 to position 5 (FLUSH SYSTEM).

6.2.23 Flush for approximately one minute or until the area radiation monitor located on the sample station reaches a minimum.

6.2.24 Turn HC-705 through position 6 (OFF), 7 (OFF), and 8 (OFF) and then to OFF.

CAUTION

Potentially high dose rates may exist, use appropriate radiological precautions when handling sample.

6.2.25 Withdraw the gas vial positioner. Keep the vial at a maximum distance and quickly insert the sample bottle into the gas vial cask.

6.2.26 Perform Procedure A.2-417 (DRAINING THE TRAP, SUMP, AND COLLECTOR OF POST-ACCIDENT SAMPLING SYSTEM).

6.2.27 Turn HC-730 to the STOP.

6.2.28 Transport the sample to the Hot Lab for analysis per Procedure A.2-420 (CONTAINMENT ATMOSPHERE RADIOCHEMICAL ANALYSIS).

6.2.29 IF valves were opened in section 6.1.5,
THEN proceed to the Control Room and request that an Operator close the valves that were opened in 6.1.5.

6.2.30 Complete analysis and log results per Form 5790-415-01.

7.0 FIGURES

FIGURE

7.1 Forms Utilized in the Procedure

1. 5790-415-01 (CONTAINMENT GAS SAMPLING AND ANALYSIS CHECKLIST).

EMERGENCY PLAN IMPLEMENTING PROCEDURE - TABLE OF CONTENTS

Prepared By: T Rogers	Reviewed By:	
ALARA Coord Review By:		
OC Review Req'd: YES	OC Meeting Number: 2384F	Date: 9/25/03
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ARMS: A.2-420	Doc Type: 1060	Admin Initials:		Date: 10/14/03

l/plr

1.0 PURPOSE

The purpose of this procedure is to provide instructions and precautions for analysis of containment atmosphere samples during and following an emergency.

2.0 APPLICABILITY

Analysis of a gas sample obtained at the PASS is requested by the Emergency Director/REC/CSL.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 The Radiological Emergency Coordinator (REC)/Chemistry Section Leader (CSL) are responsible for:

3.1.1 Assigning sample priority and frequency.

3.1.2 Results review.

3.2 The Chemistry Technicians (Chem Tech) are responsible for:

3.2.1 Implementation of this procedure.

3.2.2 Sample analysis and results reporting.

4.0 DISCUSSION

This procedure provides instructions for the analysis of primary containment atmosphere samples obtained using the PASS System.

The Post Accident Sampling System is used to meet NRC Commitment M03003A.

5.0 PRECAUTIONS

5.1 Exposures of analysis personnel ***SHALL*** be in accordance with A.2-401 (EMERGENCY EXPOSURE CONTROL).

5.2 Exposures to all personnel due to analysis operations should be maintained as low as is reasonably achievable. Techniques such as temporary shielding, remote handling and sample dilution prior to analysis should be considered to reduce exposure to personnel.

5.3 When actual or potential radiation levels so warrant, high range portable survey instruments, and self-reading dosimeters should be provided to sampling and analysis personnel. Alarming dosimeters should also be considered.

5.4 Appropriate extremity dosimeters should be provided and worn when handling samples which themselves represent high level radiation sources.

6.0 INSTRUCTIONS

6.1 Sample Analysis

6.1.1 Verify the sample is correctly labeled IAW A.2-408 (SAMPLE COORDINATION DURING EMERGENCIES).

6.1.2 Place vial in a poly bag and count IAW Chemistry Procedure I.03.39 (MCA OPERATION/GAMMA ISOTOPIC ANALYSIS).

6.1.3 IF dilution is necessary (due to high dead time), THEN complete the following:

A. Evacuate another 15 cc gas vial.

B. Remove 1 cc of gas from sample vial.

C. Inject gas into vial from section 6.1.3.A.

D. Label the new vial IAW A.2-408.

E. Repeat section 6.1.2.

6.1.4 Record the result on 5790-415-01 (CONTAINMENT GAS SAMPLING AND ANALYSIS CHECKLIST).

6.1.5 Forward the sample results to the Chemistry Coordinator or Chemistry Section Leader for review.

7.0 FIGURES

None

EMERGENCY PLAN IMPLEMENTING PROCEDURE - TABLE OF CONTENTS

Prepared By:	Reviewed By:	
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l/plr

1.0 PURPOSE

1.1 The purpose of this procedure is to provide instructions, precautions, and guidance for collection, handling and analysis of stack iodine/particulate samples during and following an emergency.

2.0 APPLICABILITY

2.1 An emergency (Alert or higher classification) has been declared at Monticello Nuclear Generating Plant which involves abnormal or elevated radiological conditions which preclude use of normal sampling methods.

2.2 The REC/CSL has requested sampling and analysis of stack releases.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 The Radiological Emergency Director (REC) is responsible for:

3.1.1 Overall direction of the Radiation Protection and Chemistry Group activities.

3.2 The Chemistry Section Leader (CSL) is responsible for:

3.2.1 Overall direction for stack sampling and analysis.

3.2.2 Overall coordination of Chemistry Group activities.

3.3 The Chemistry Coordinator is responsible for:

3.3.1 Coordination of Chemistry Group activities in the Chemistry Lab.

3.3.2 Coordination of sample logging, identification and documentation.

3.4 The Chemistry Technicians are responsible for:

3.4.1 Implementation of this procedure.

4.0 DISCUSSION

The ability to sample and analyze for I-131 meets NRC Commitment 03002A. |

5.0 PRECAUTIONS

5.1 Exposures of sampling and analysis personnel ***SHALL*** be in accordance with A.2-401 (EMERGENCY EXPOSURE CONTROL).

5.2 Exposures to all personnel due to sampling and analysis operations should be maintained as low as is reasonably achievable. Techniques such as temporary shielding, remote handling and sample dilution prior to analysis should be considered to reduce exposure to personnel.

5.3 When actual or potential radiation levels so warrant, high range portable survey instruments, and self-reading dosimeters should be provided to sampling and analysis personnel. Alarming dosimeters should also be considered.

5.4 Appropriate extremity dosimeters should be provided and worn when handling samples which themselves represent high level radiation sources.

5.5 Two-person teams should be used to obtain a post-accident sample when possible.

5.6 Due to reliability problems with WRGM grab sample timers, they are no longer used for this activity. The standby sample filter is used and samples are taken with a stopwatch using the filter selector switch. See CR 20024613.

6.0 INSTRUCTIONS

6.1 Obtaining Samples

6.1.1 Obtain key No. 179 from the Radiation Protection key cabinet to access stack.

6.1.2 Initiate Form 5790-422-01 (STACK IODINE/PARTICULATE ANALYSIS CHECKLIST).

6.1.3 Verify that the Hot Lab South Exhaust Hood is functioning.
IF the hood is not working,
THEN notify the Chemistry Coordinator and continue.

6.1.4 Proceed to the Control Room and record the process flow (monitor item 029), sample flow (monitor item 028 for high flow or 033 for low flow) and Release Activity (LOW, MID, HIGH buttons) on Form 5790-422-01.

6.1.5 Determine the sampling time required according to the following chart. Record the time setting on Form 5790-422-01:

PUMP	ACTIVITY	TIME
high flow	up to 0.1 μCi/cc	1.0 Min
low flow	0.1 to 50 μCi/cc	10 Sec
low flow	50 to 1E5 μCi/cc	5 Sec

6.1.6 Determine the sample filter to be used and record on Form 5790-422-01. (If the high range channel is required and the filter selector switch is on C, then record D and if its switch is on D, then record C. If the low range channel is required and its filter selector switch is on A, then record B and if the switch is on B, then record A.)

6.1.7 Using a calibrated stopwatch, toggle the filter selector switch for the required channel to the standby filter position for required time and return it to the used filter position. Record time started on Form 5790-422-01.

6.1.8 Don the required protective clothing and dosimetry as specified by the Radiation Protection Coordinator.

6.1.9 Proceed to the stack sample area while observing radiation protection precautions.

6.1.10 Close the four valves on the Sample Filter Apparatus for the channel recorded on Form 5790-422-01. Disconnect and remove the Sample filter holder. Leave the filter in the holder and transport to the Hot Lab, keeping filters as far away from your body as possible.

6.2 Analyzing Samples

6.2.1 Place the filter set into the south hood.

6.2.2 Connect the sample filter holder to the purge air fitting in south hood of Hot Lab. Open the plant air supply valve in the hood and purge the filter holder set into the hood for 5 minutes.

6.2.3 Remove the charcoal filter from the filter holder and place in a poly bag labeled as directed by the Chemistry Coordinator.

6.2.4 Remove the particulate filter from the filter holder and place in a petri dish labeled as directed by the Chemistry Coordinator.

6.2.5 Count the filters IAW Chem Procedure I.03.39 (MCA OPERATION/GAMMA ISOTOPIC ANALYSIS).

6.2.6 IF the charcoal filter < 10% Dead Time,
THEN from the gamma isotopic printout record the Iodine Release Rate on Form 5790-422-01.

6.2.7 IF the charcoal filter > 10% Dead Time,
THEN measure the dose rate at one foot. Calculate the μCi/sec as I-131 using the following equation:

Iodine Release Rate (μCi/sec) =

$$\frac{420 \times \text{Dose Rate (mR/HR)} \times \text{Process Flow (cfm)}}{\text{Sample Flow (cfm)} \times \text{Timer Setting (sec)}}$$

Record the I-131 μCi/sec on Form 5790-422-01.

6.2.8 Store the charcoal filter in the shielded storage area when not required for analysis.

6.2.9 IF the particulate filter < 10% Dead Time,
THEN from the gamma isotopic print out record the Release Rate on Form 5790-422-01.

6.2.10 IF the particulate filter is > 10% Dead Time,
THEN measure the dose rate at 1 foot. Calculate the particulate activity in μCi/Sec using the following equation:

Particulate Release Rate (μCi/sec) =

$$\frac{620 \times \text{Dose Rate (mRem/HR)} \times \text{Process Flow (cfm)}}{\text{Sample Flow (cfm)} \times \text{Timer Setting (sec)}}$$

Record the activity on Form 5790-422-01.

6.2.11 Place the sample into the shielded storage area.

6.2.12 Provide the release rate information and checklist to the Chemistry Coordinator.

6.2.13 Install fresh charcoal and particulate filters into the filter holder.

7.0 FIGURES

FIGURE

7.1 Forms Utilized in this Procedure

5790-422-01 (STACK IODINE/PARTICULATE ANALYSIS CHECKLIST)

EMERGENCY PLAN IMPLEMENTING PROCEDURE - TABLE OF CONTENTS

Prepared By:	Reviewed By:	
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1.0 PURPOSE

The purpose of this procedure is to provide instructions, precautions, and guidance for collection, handling and analysis of Reactor Building vent iodine/particulate samples during and following an emergency.

2.0 APPLICABILITY

2.1 An emergency (Alert or higher classification) has been declared at Monticello Nuclear Generating Plant which involves abnormal or elevated radiological conditions which preclude use of normal sampling methods.

2.2 The REC/CSL has requested sampling and analysis of Reactor Building vent releases.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 The Radiological Emergency Coordinator (REC) is responsible for:

3.1.1 Overall direction of the Radiation Protection and Chemistry Group activities.

3.2 The Chemistry Section Leader (CSL) is responsible for:

3.2.1 Overall direction for Reactor Building vent sampling and analysis.

3.2.2 Overall coordination of Chemistry Group activities.

3.3 The Chemistry Coordinator is responsible for:

3.3.1 Coordination of Chemistry Group activities in the Chemistry Lab.

3.3.2 Coordination of sample logging, identification and documentation.

3.4 The Chemistry Technicians are responsible for:

3.4.1 Implementation of this procedure.

4.0 DISCUSSION

The ability to sample and analyze for I-131 meets NRC Commitment 03002A. I

5.0 PRECAUTIONS

5.1 Exposure of sampling and analysis personnel ***SHALL*** be in accordance with A.2-401 (EMERGENCY EXPOSURE CONTROL).

5.2 Exposures to all personnel due to sampling and analysis operations should be maintained as low as is reasonably achievable. Techniques such as temporary shielding, remote handling and sample dilution prior to analysis should be considered to reduce exposure to personnel.

5.3 When actual or potential radiation levels so warrant, high range portable survey instruments, and self-reading dosimeters should be provided to sampling and analysis personnel. Alarming dosimeters should also be considered.

5.4 Appropriate extremity dosimeters should be provided and worn when handling samples which themselves represent high level radiation sources.

5.5 Two Chem Techs should be used to obtain a post-accident sample when possible.

5.6 Due to reliability problems with WRGM grab sample timers, they are no longer used for this activity. The standby sample filter is used and samples are taken with a stopwatch using the filter selector switch. See CR 20024613.

6.0 INSTRUCTIONS

6.1 Obtaining Samples

6.1.1 Prior to sampling, notify the Control Room and advise Shift Supervisor of your intentions.

6.1.2 Plan the route to the 1001' level,

IF area radiation levels prohibit access to the 1001' level by normal access routes,
THEN access should be from the Third Floor Admin Building H&V Room into the 962' Reactor Building MG Set Room. From the MG Set Room Air Lock, up the northeast stairs to the 1001' level.

6.1.3 To access through the third floor Admin Building H&V Room, obtain Vital Key 211 from the Shift Supervisor and notify Security for access through Door 211.

6.1.4 Initiate Form 5790-423-01 (REACTOR BUILDING VENTS IODINE/PARTICULATE ANALYSIS CHECKLIST) (FIGURE 7.1).

6.1.5 Verify that the Hot Lab South Exhaust Hood is functioning,

IF the hood is not working,
THEN notify the Chemistry Coordinator and continue.

6.1.6 Proceed to the Control Room and verify that the Reactor Building Vent Wide Range Gas Monitors are selected to Operating Vent Exhaust Fans, then record the process flow on both channels (monitor item 029), sample flow on the channel being sampled (monitor item 028 for high flow or 033 for low flow) and Release Activity (LOW, MID, HIGH buttons) on Form 5790-423-01.

6.1.7 Determine the sampling time required according to the following chart. Record the time settings on Form 5790-423-01.

PUMP	ACTIVITY	TIME
high flow	up to 0.1 μCi/cc	1.0 Min
low flow	0.1 to 50 μCi/cc	10 Sec
low flow	50 to 1E5 μCi/cc	5 Sec

6.1.8 Determine the sample filter to be used and record on Form 5790-423-01. (If the high range channel is required and its filter selector switch is on C, then record D and if the switch is on D, then record C. If the low range channel is required and its filter switch is on A, then record B and if the switch is on B, then record A.)

6.1.9 Using a calibrated stopwatch, toggle the filter selector switch for the required channel to the standby filter position for required time and return it to the used filter position. Record time started on Form 5790-423-01.

6.1.10 Don the required protective clothing and dosimetry as set by the Radiation Protection Coordinator.

6.1.11 Proceed to the Reactor Building Vent sample area while observing radiation protection precautions.

6.1.12 Close the four valves on the Sample Filter Apparatus for the channel recorded on Form 5790-423-01. Disconnect and remove the Sample filter holder. Leave the filter in the holder and transport to the Hot Lab, keeping filters as far away from your body as possible.

6.2 Analyzing Sample

6.2.1 Place the filter set into the south hood.

6.2.2 Connect the sample filter holder to the purge air fitting in south hood of Hot Lab. Open the plant air supply valve in the hood and purge the filter holder set into the hood for 5 minutes.

6.2.3 Remove the charcoal filter from the filter holder and place in a poly bag labeled as directed by the Chemistry Coordinator.

6.2.4 Remove the particulate filter from the filter holder and place in a petri dish labeled as directed by the Chemistry Coordinator.

6.2.5 Count the filters IAW Chem Procedure I.03.39 (MCA OPERATION/GAMMA ISOTOPIC ANALYSIS).

6.2.6 IF the charcoal filter < 10% dead time,
THEN from the gamma isotopic printout record the Iodine Release Rate on Form 5790-423-01.

6.2.7 IF the charcoal filter > 10% dead time,
THEN measure the dose rate at one foot. Calculate the μCi/sec as I-131 using the following equation:

Iodine Release Rate (μCi/sec) =

$$\frac{420 \times \text{Dose Rate (mR/HR)} \times \text{Process Flow (cfm)}}{\text{Sample Flow (cfm)} \times \text{Timer Setting (sec)}}$$

Record the I-131 μCi/sec on Form 5790-423-01.

6.2.8 Place the charcoal filter in the shielded storage area.

6.2.9 IF the particulate filter < 10% dead time,
THEN from the gamma isotopic printout record the Release Rate on Form 5790-423-01.

6.2.10 IF the particulate filter > 10% dead time,
THEN measure the dose rate at 1 foot. Calculate the particulate activity in μCi/sec using the following equation:

Particulate Release Rate (μCi/sec) =

$$\frac{620 \times \text{Dose Rate (mRem/HR)} \times \text{Process Flow (cfm)}}{\text{Sample Flow (cfm)} \times \text{Timer Setting (sec)}}$$

Record the activity on Form 5790-423-01.

6.2.11 Place the sample into the shielded storage area.

6.2.12 Provide the release rate information and checklist to the Chemistry Coordinator.

6.2.13 Install fresh charcoal and particulate filters into the filter holder.

7.0 FIGURES

FIGURE

7.1 Forms Utilized in this Procedure

1. 5790-423-01 (REACTOR BUILDING VENTS IODINE/PARTICULATE ANALYSIS CHECKLIST)

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1.0 PURPOSE

This procedure provides instructions and guidance for the conduct of various communication functions at the Technical Support Center (TSC) and Operations Support Center (OSC) during an emergency at the MNGP.

2.0 APPLICABILITY

An Alert or higher emergency has been declared at the MNGP and the TSC/OSC has been activated.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 TSC/OSC Emergency Communicators and Technical Emergency Communicators are responsible for performing the duties described in this procedure as directed by the appropriate TSC or OSC personnel.

4.0 DISCUSSION

Personnel qualified to fill these positions are identified in the Emergency Communicators section of Form 5790-001-01 (EMERGENCY RESPONSE ORGANIZATION).

5.0 PRECAUTIONS

5.1 The initial notifications to the State and Counties must be completed within 15 minutes after the declaration or re-classification of an emergency. The initial notification of the NRC should be completed immediately after State, County, and ERO notifications and must be completed within 1 hour after declaring or re-classification of an emergency.

5.2 The transmission of off-site Protective Action Recommendations (PARs) to the State EOC (State Duty Officer and Counties if the State is not activated) ***SHALL*** be completed within 15 minutes of the PAR authorization by the Emergency Director.

5.3 All inquiries from the news media and/or general public should be directed to the Joint Public Information Center (JPIC) at the State Emergency Operations Center (EOC). Emergency response organization personnel should not release information to the media or general public without prior approval of the Chief Nuclear Officer or designee.

5.4 Communications regarding the existence of severity of the event, or protective action recommendations should be made on circuits that cannot be readily intercepted by persons outside the established emergency organizations. Telephone circuits ***SHALL*** serve as the primary means with radio as a backup method.

5.5 Communications by radio should be brief, factual, free of exclamatory or alarming expressions and worded so as to not cause undue anxiety.

5.6 Messages should be worded to avoid possible errors in transcription or interpretation. Avoid the use of technical jargon (particularly in communications with off-site agencies), ensure the message is complete, avoid the use of abbreviations (i.e., millirem vs. MR) and read numbers individually (i.e., 100 as one-zero-zero).

5.7 All communications during drills, exercises, or tests should begin and end with "THIS IS A DRILL" or "THIS IS A TEST".

6.0 INSTRUCTIONS

6.1 Initial Activation Instructions

6.1.1 Upon activation of the TSC/OSC all communicators should report to the TSC.

6.1.2 The Communicator positions should be staffed in the following order.

NOTE: The Assembly Point Coordinator position should be staffed immediately IF a plant or site evacuation is in progress. The Assembly Point Coordinator position may be staffed prior to the declaration of a plant or site evacuation in anticipation of the need for a plant or site evacuation.

A. Lead Emergency Communicator - Tagboard #20

B. Assistant Emergency Communicators - Tagboard #21 & #22

C. Emergency Director Communicator - Tagboard #23

D. Plant Status Communicator - TSC - Tagboard #25

E. Plant Status Communicator - Control Room - Tagboard #26

F. OSC Plant Status Communicator - OSC Tagboard #2

G. TSC Work Status Communicator - Tagboard #27

H. OSC Work Status Communicator - OSC Tagboard #3

I. OSC Radio console Communicator

J. Emergency Notification System (ENS) Communicator

K. Assembly Point Coordinator - Tagboard #24

6.2 Lead Emergency Communicator Instructions

6.2.1 Report to the TSC Tagboard, review the instructions on Tag #20, and assume the Lead Emergency Communicator duties by turning over Tag #20.

6.2.2 The Lead Emergency Communicator should establish residence in the TSC Communications Room.

6.2.3 Determine the status of initial notifications in progress.

A. Assess the notifications in progress or completed by the duty Shift Emergency Communicator(s) (SECs) via Form 5790-104-04 (EMERGENCY CALL LIST - ALERT/SITE AREA/GENERAL) and provide necessary assistance to the SEC in completion of the initial notifications.

6.2.4 Obtain staffing of the TSC Emergency Communicator positions.

A. Two Assistant Emergency Communicators should be assigned (TSC Tagboard #21, #22). If these positions are not filled, contact the Engineering Coordinator or Support Group Leader and request that these positions are filled.

NOTE: All five 3739 extensions must be activated at the same time or the callers will not receive a busy signal. If there are more phones ringing than can be answered, leave some of the phones off the hook.

6.2.5 Activate the five incoming 3739 extensions in the TSC communications room prior to or during the initial notification process.

6.2.6 When time permits, activate the TSC - Control Room Intercom and the TSC - State EOC Low Band Radio. This equipment is in the TSC communications room.

6.2.7 Assume responsibilities for off-site notifications.

A. Once the 2 Assistant Emergency Communicator positions are filled and the SECs are ready to turnover communication duties, assume responsibility for all off-site communications from the TSC. The duty SECs should be released to their assigned emergency response duties once this transfer has occurred.

B. The Lead Emergency Communicator should review all emergency forms, used for off-site communications, for accuracy and completeness prior to their transmission.

NOTE: Upon completion of the initial emergency notifications, Emergency Follow-up Messages should be transmitted at 30 minute intervals or as directed by the State.

C. Transmit Emergency Notification Follow-up Messages in accordance with the instructions provided in A.2-501 (COMMUNICATIONS DURING AN EMERGENCY).

D. Maintain the emergency Call Log in accordance with the instructions provided in A.2-501.

E. If or when changes in emergency classification occur (i.e., escalation or termination), make the notifications in accordance with A.2-501.

6.2.8 Transfer of off-site communications to the EOF.

A. An EOF Off-Site Communicator should contact you to determine the status of off-site notifications and determine the appropriate timing for transfer of off-site communication responsibilities. Transfer should not occur while emergency notifications are in progress (i.e., notification of a classification change).

CAUTION

Do not transfer off-site communications responsibilities to the EOF until you have completed Part B (Immediate Notifications) and Part C (NRC Notifications) of Form 5790-104-04for the current emergency classification.

B. Transfer responsibilities as appropriate.

C. After the transfer of off-site communications to the EOF a TSC Emergency Communicator should monitor transmissions and communications from the EOF (i.e., Emergency Follow-up Messages, Classification Changes etc.) and ensure that copies of the transmissions are routed to the appropriate personnel in the TSC.

6.3 Emergency Director Communicator Instructions

6.3.1 Report to the TSC Tagboard, review the instructions on Tag #23, and assume the duties by turning over Tag #23.

6.3.2 Assist the Emergency Director with the use of Emergency Plan Implementing Procedures.

6.3.3 Review and monitor the implementation of A.2-213 (RESPONSIBILITIES OF THE EMERGENCY DIRECTOR).

6.3.4 Monitor and inform the ED of emergency communications in progress.

6.3.5 If a change in emergency classification is declared, make a public address (PA) announcement of the new emergency classification. The announcement should include a brief description of the situation, the reason for declaration and specific instructions for plant/site personnel. The announcement should be made to all site area (using page access 305) and repeated a minimum of three times. Example announcements are as follows:

ALERT, SITE AREA EMERGENCY, OR GENERAL EMERGENCY

"ATTENTION SITE PERSONNEL, AN (ALERT, SITE AREA EMERGENCY, OR GENERAL EMERGENCY) HAS BEEN DECLARED. THE (ALERT, SITE AREA EMERGENCY, OR GENERAL EMERGENCY) WAS DECLARED AS A RESULT OF (state reason for declaration). "ALL MEMBERS OF THE EMERGENCY ORGANIZATION SHOULD REPORT TO THEIR DUTY STATIONS. ALL OTHER PERSONNEL STAND-BY FOR FURTHER INSTRUCTIONS."

6.3.6 Update placards.

6.4 TSC Plant Status Technical Communicator Instructions

6.4.1 Report to the TSC Tagboard, review the instructions on Tag #25, and assume the duties by turning over Tag #25.

6.4.2 This communicator will establish communications with Technical Communicators in the Control Room (Simulator Control Room for drills/exercises), OSC, and EOF.

6.4.3 The assigned communicator should establish residence at the phone near the TSC Operational Status Board. If a white board is covering the status board it must be removed. A headset is stored at the communicator's phone. Directions for use of the headset are posted near the phone.

6.4.4 When the communication link has been established with the Control Room or Simulator Control Room obtain technical and operational data related to the event including:

A. Reactor and containment systems and component status.

B. Critical plant parameters (i.e., temperatures, flows, water levels, etc.).

C. EOP/SAMG implementation status.

D. Accident mitigation strategies employed by the Control Room.

E. As necessary, monitor the SPDS terminal to supplement the information obtained from the Control Room.

F. Continuously update and maintain the TSC Operational Status Board.

NOTE: Use the Bell to obtain the attention of the TSC staff prior to announcing significant operational events.

G. If significant operational events occur (i.e., ECCS failure, radioactive release, etc.), immediately announce the event in the TSC.

6.4.5 Adding other technical communicators to the link.

A. As the technical communicator positions are staffed in the OSC and EOF, they will be calling into the TSC to join the communication link. Complete the following steps to add another communicator to the link.

1. When an in-coming call is received, inform the party(s) currently on the link that you will be adding another and placing them on hold. Push the phone's conference button once, this places members currently on the link on hold.

2. Answer the in-coming call by pushing the phone's 1126 button that is flashing slowly. Determine who is being added to the link and ask them to hold while you add them to the link.

3. Push the phone's conference button once and verify that all of the conference members are on the link.

4. Repeat the above steps as necessary to complete the link.

6.5 **Plant Status Technical Communicator (Control Room - Simulator Control Room for drills) Instructions**

6.5.1 Report to the TSC Tagboard, review the instructions on Tag #26, and assume the duties by turning over Tag #26.

6.5.2 This communicator will establish communications with Technical Communicator in the TSC.

6.5.3 Obtain a telephone headset and necessary administrative supplies from the TSC cabinet.

6.5.4 The assigned communicator should establish residence at the Control Room or Simulator Control Room back-counter.

6.5.5 Install the headset on the Plant Status Communicator telephone (Control Room extension 1478, Simulator Control Room extension 1815) and establish the link with the TSC Technical Communicator by calling extension 1126.

NOTE: Form 5790-504-01 (CONTROL ROOM COMMUNICATOR STATUS UPDATE GUIDE) which depicts the information contained on the TSC, EOF, and OSC Operational Status boards. This form may be utilized as a guide to transfer information from the Control Room to the TSC, EOF, and OSC.

6.5.6 When the communication link has been established, obtain the technical and operational data related to the event as requested by other members of the link.

6.6 **OSC Plant Status Technical Communicator Instructions**

6.6.1 Report to the OSC Tagboard, review the instructions on Tag #2, and assume the duties by turning over Tag #2.

6.6.2 Obtain necessary administrative supplies (markers, etc.) from the OSC supply cabinet.

6.6.3 Establish residence near the OSC Operational Status Board.

6.6.4 Install the headset on the Plant Status Communicator telephone (1260) and establish the link with the TSC Technical Communicator by calling extension 1126.

6.6.5 When the communication link has been established, obtain technical and operational data related to the event including:

A. Reactor and containment systems and component status.

B. Critical plant parameters (i.e., temperatures, flows, water levels, etc.).

C. EOP/SAMG implementation status.

D. Accident mitigation strategies employed by the Control Room.

E. As necessary, monitor the SPDS terminal to supplement the information obtained from the Control Room.

F. Continuously update and maintain the OSC Operational Status Board.

G. If significant operational events occur (i.e., ECCS failure, radioactive release, etc.), immediately announce the event in the OSC.

6.6.6 Update placards.

6.7 TSC Emergency Work Status Communicator Instructions

6.7.1 Report to the TSC Tagboard, review the instructions on Tag #27, and assume the duties by turning over Tag #27.

6.7.2 Obtain necessary administrative supplies (markers, etc.).

6.7.3 Establish residence near the TSC Emergency Work Status Board.

6.7.4 Install the headset on the TSC-OSC Communicator telephone (1461) and establish contact with the OSC Team Tracking Board by calling extension 1219.

6.7.5 When the communication link is established begin updating the TSC Emergency Work Status Board with available information on emergency teams already dispatched by the Control Room or OSC (if any).

6.7.6 Monitor emergency response discussions in the TSC to determine when Operators or an OSC Team may be needed.

6.7.7 When the TSC requests an Emergency Team be dispatched (Operators from the Control Room or an OSC Team), notify the OSC Communicator and:

A. Inform the OSC Communicator that a team has been requested and the details of the team assignment and the priority assigned to the task (by the TSC).

B. Identify the Team Number (next team number in order) assigned by the OSC Communicator. Do not reuse OSC Team numbers to avoid confusion.

6.7.8 Update the TSC Emergency Work Status Board with the Team Number, Priority and task description.

6.7.9 When the team is dispatched, monitor the team progress. Inform the TSC of team progress as requested.

6.7.10 Report any problems encountered by the team immediately to the TSC Group Leaders.

6.7.11 Continuously maintain the TSC Emergency Work Status Board.

6.7.12 As teams complete their missions and report back to the OSC, obtain missions results and update the TSC Emergency Work Status Board by indicating the completion status on the team on the Board.

NOTE: Do not erase completed tasks from the Board unless space is needed for new team and then erase the oldest completed task from the Board.

6.8 OSC Emergency Work Status Communicator Instructions

6.8.1 Report to the OSC Tagboard, review the instructions on Tag #3, and assume the duties by turning over Tag #3.

6.8.2 Obtain necessary administrative supplies (markers, etc.) from the OSC supply cabinet.

6.8.3 Establish residence near the OSC Personnel Availability Board and the OSC Team Tracking Board.

6.8.4 Install the headset on the OSC-TSC Communicator telephone (1219) and establish contact with the TSC Emergency Work Status Board Communicator (1461).

NOTE: When the 2-way link is established and the operational test of the OSC radio console is complete, inform the OSC Coordinator that you are prepared to direct OSC teams.

6.8.5 When the TSC requests an OSC Team be dispatched:

A. Inform the OSC Coordinator an OSC Team has been requested and the details of the team assignment.

B. Assign a Team Number (next team number in order) and inform the TSC Emergency Work Status Board keeper. Do not reuse OSC Team numbers to avoid confusion.

C. Record the job (team mission) on the OSC Team Tracking Board (adjacent to the team number).

D. As the OSC Coordinator assigns personnel to the team, relocate their name tag from the OSC Personnel Availability Board to the OSC Team Tracking Board.

6.8.6 Provide information regarding the OSC emergency team progress to the TSC.

6.8.7 Report problems encountered by the OSC teams immediately to the OSC Coordinator.

6.8.8 Continuously maintain the OSC Team tracking Board and the OSC Personnel Availability Board.

6.8.9 As OSC teams complete their missions and report back to the OSC, remove their entry from the OSC Team Tracking Board and relocate the name tags to the OSC Personnel Availability Board.

NOTE: Do not erase completed tasks from the Board unless space is needed for new team and then erase the oldest completed task from the Board.

6.9 OSC Radio Console Communicator Instructions

6.9.1 Activate the OSC radio console and perform an operations test of the console as follows:

A. Set the console to the scan mode (indicated by a triangle being highlighted on the LED display above the SCAN button).

B. Contact one of the OSC portable radios on Talk Groups 1A (Cont. Room) and 5D (Misc.).

6.9.2 As teams are dispatched from the OSC ensure that they are issued a portable radio (set to talk group 5D) and establish radio communications with the team prior to the team's departure from the OSC.

6.9.3 Maintain continuous radio contact with the OSC team(s) and direct the team(s) as directed by the OSC Coordinator.

6.9.4 If necessary, when communicating with the OSC teams, use the phonetic alphabet:

A	ALPHA	J	JULIET	S	SIERRA
B	BRAVO	K	KILO	T	TANGO
C	CHARLIE	L	LIMA	U	UNIFORM
D	DELTA	M	MIKE	V	VICTOR
E	ECHO	N	NOVEMBER	W	WHISKEY
F	FOXTROT	O	OSCAR	X	X-RAY
G	GOLF	P	PAPA	Y	YANKEE
H	HOTEL	Q	QUEBEC	Z	ZULU
I	INDIA	R	ROMEO		

6.9.5 Report problems encountered by the OSC teams immediately to the OSC Coordinator.

6.10 Emergency Notifications System (ENS) Communicator Instructions

NOTE: The ENS link with the NRC Headquarters *SHALL* be continuously staffed at the Alert classification (or higher) as requested by the NRC. The link could be maintained in the Control Room, TSC, or EOF depending on the resources available and the availability of timely information.

6.10.1 Obtain a telephone headset and necessary administrative supplies from the TSC Supply cabinet.

6.10.2 Establish residence in the TSC Engineering Support area, near the FTS-ENS telephone.

NOTE: The NRC may request continuous staffing of the ENS link upon completion of the initial NRC notification.

6.10.3 If staffing the ENS during initial TSC activation, determine if the initial NRC notification has been completed by the TSC Emergency Communicator staff. If the initial notification has not been completed, provide assistance as necessary to complete the notification. If the initial notification is complete, determine if continuous staffing of the ENS is required.

6.11 Assembly Point Coordinator Instructions

6.11.1 Report to the TSC Tagboard, review the instructions on Tag #24, and assume the duties by turning over Tag #24.

6.11.2 Perform the duties of the Assembly Point Coordinator in accordance with A.2-302 (ACTIVATION OF THE ASSEMBLY POINTS).

6.12 Communicator Shift Turnover Instructions

6.12.1 Check in with the Engineering Coordinator upon arrival at the TSC to determine communication assignments.

6.12.2 Oncoming Communicators should review the TSC Chronological Flipcharts, Status Boards, and other available information prior to or during their turnover discussions.

6.12.3 When generally familiar with the event status the oncoming Communicator(s) should conduct a turnover review with their counterparts which should include (as applicable):

A. The status of communication activity in-progress in their respective areas including telephone notifications and fax transmissions.

B. Recently transmitted forms or notifications.

C. The status of links and the names of individual contacts on the link.

D. Emergency Call Logs for their respective area.

E. The status of ENS links and NRC counterparts.

6.12.4 Upon completion of the turnover the oncoming Communicator should assume the duties and inform the Support Group Leader of the turnover.

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Prepared By: [signature]	Reviewed By: Gerald G. Holtzman	
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1.0 PURPOSE

This procedure provides guidance and instructions for the initial activation and continued operation of the Emergency Operations Facility (EOF) in the event of an emergency (Alert classification or higher) at the Monticello Nuclear Generating Plant.

2.0 APPLICABILITY

2.1 An emergency (Alert or higher classification) has been declared at the Monticello Nuclear Plant and the EOF is activated.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 The Emergency Manager is responsible for:

3.1.1 Overall coordination and direction of the utility emergency response activities at the EOF

3.2 The EOF Coordinator is responsible for:

3.2.1 Implementation of this procedure and overall coordination of EOF activation and operation.

3.2.2 Coordination of initial EOF staffing, conduct of FFD evaluation during initial EOF staffing and coordinating the establishment of ERO shift schedules for protracted events.

3.2.3 Coordination of Off-site Communicator activities including communications with State and Local authorities and Federal agencies.

3.2.4 EOF access including establishment of the EOF access point, personnel ingress radiological monitoring and badging.

3.2.5 Coordination of administrative support in the EOF including recorders, fax operators, switchboard, chronological flipchart, document control and distribution.

3.2.6 Coordination of emergency procurement and logistics for the EOF (and as required by the TSC).

3.2.7 Liaison with State, Local, or Federal agency personnel (e.g., NRC, etc.) responding to the EOF.

3.3 The Assistant EOF Coordinator, Emergency (Off-site) Communicators, Agency Liaison, Security Coordinator, and EOF Support Personnel are responsible for:

3.3.1 The conduct of emergency response activities specified in this (and other) procedures under the direction of the EOF Coordinator.

4.0 DISCUSSION

This procedure provides instructions for the activation and operation of the Monticello Emergency Operations Facility under the supervision of the EOF Coordinator. It includes guidance for initial staffing, activation and other emergency response activities for which the EOF Coordinator is responsible. Where applicable, this procedure references other procedures that contain instructions for the EOF Coordinator or the emergency response personnel that report to the EOF Coordinator.

Two stages of EOF activation are defined in this procedure. Normal (full) EOF activation occurs anytime the EOF is activated (at the Alert Classification or higher). Expanded EOF activation occurs when off-site federal agencies are mobilized and respond to the EOF (usually at a Site Area Emergency or higher classification). In the expanded activation mode the designated classrooms (immediately adjacent to the EOF Command Center) are arranged and additional telecommunications installed to accommodate the off-site agency response. The EOF Coordinator is responsible to monitor the progress of off-site agency response and setup for expanded activation of the EOF prior to the arrival of agency personnel (initial NRC Site Team).

Where applicable the instructions within each section of this procedure are provided in the most probable sequence of events. However, the EOF Coordinator should use judgment in implementing the instructions based on the circumstances and resources available at the time.

5.0 PRECAUTIONS

5.1 Emergency response personnel ***SHALL NOT*** release information to the news media or general public without prior review and approval by Emergency Manager. All inquiries should be directed to the NMC Executive Spokesperson at the Joint Public Information Center (JPIC).

5.2 When operating in the "emergency" mode the EOF ventilation system (HEPA filters) may be a radiological hazard due to increased concentration of radioactive material. Proper radiological precautions should be observed when performing maintenance and operating the system for extended periods of time.

6.0 INSTRUCTIONS

6.1 Initial EOF Activation and Staffing

6.1.1 Upon notification of an emergency the EOF Coordinators should report directly to the EOF. If the event is occurring off-hours and you do not have your NMC badge, keys for the Training Center complex may be obtained from the plant Security Building.

6.1.2 Upon arrival at the EOF, refer to the EOF Tagboard to determine initial EOF Coordinator assignment in accordance with A.2-001 (EMERGENCY ORGANIZATION) as follows:

A. If no one has assumed the EOF Coordinator position turn the appropriate tag and sign in as the EOF Coordinator.

B. If another EOF Coordinator has already assumed the duties of EOF Coordinator, report to the EOF Coordinator for duty assignment.

6.1.3 Upon assuming the EOF Coordinator position proceed to the EOF Command Center.

6.1.4 If the event is occurring during normal working hours make a public address announcement in the Training Center informing personnel of the event. In the announcement, instruct ERO personnel to proceed to their emergency duty stations and other personnel to standby for further instructions.

6.1.5 Unlock all designated EOF areas and supply lockers.

6.1.6 Obtain the EOF Coordinator ball cap, log book and necessary administrative supplies from the administrative supplies locker in the EOF Fax Room.

6.1.7 Establish residence at the EOF Coordinator station in the EOF Command Center. Initiate the EOF Coordinator Log.

6.1.8 Obtain Form 5790-802-01 (EOF COORDINATOR ACTIVATION CHECKLIST) from the EOF controlled forms file and initiate the checklist.

6.1.9 Perform an initial assessment to determine if radiological monitoring and controls should be immediately established in the EOF by reviewing the current Stack and Vent release rates on SPDS. If a radioactive release in excess of the Alert levels (specified in A.2-101, Guideline 1 for Stack and Vent effluents) has or is occurring (or is imminent based on deteriorating plant conditions):

A. Shift the EOF ventilation system to the emergency mode in accordance with Section 6.11 of this procedure.

B. Ensure radiation protection personnel monitor for airborne activity by performing periodic air samples.

C. Ensure that radiation protection personnel setup and activate the Dosimeter Area Radiation Monitor (DARM) in the EOF Command Center.

6.1.10 As EOF Group Leaders and personnel report to the EOF ensure they have necessary materials.

6.1.11 Initiate Form 5790-802-02 (EOF STAFFING AND ORGANIZATION CHART) and establish minimum EOF staffing as follows:

A. Check EOF ERO Tagboard to confirm key EOF positions identified on the chart are staffed.

B. Check on the status of staffing various EOF groups with the respective group leader. Coordinate contacting additional personnel as requested by the group leaders.

C. Complete the EOF STAFFING AND ORGANIZATION CHART with the names of qualified, fit-for-duty personnel from the tagboard or present in the EOF.

6.1.12 As Radiation Protection Support group personnel become available ensure individuals are assigned to perform the following functions:

A. Radiation Protection Support Supervisor (RPSS). Contact the REC if the RPSS position is not staffed.

B. Assistant RPSS (staffed by qualified personnel identified in A.2-001).

C. Field Team Coordinator/Communicator (may be performed by the same person, staffed from available qualified personnel identified as Assistant RPSS in A.2-001).

D. HPN Communicator (staffed preferably by personnel who have three years of technical/operational experience and familiar with RP terminology).

E. RP Status Board Keeper (staffed by personnel familiar with RP terminology).

6.1.13 As Technical Support personnel become available ensure individuals are assigned to perform the following functions:

A. Technical Support Supervisor (staffed by qualified personnel identified in A.2-001).

B. A Technical Communicator (preferably Technical Instructor personnel who are licensed, formerly licensed, certified, formerly certified, or who have three years of technical/operational experience) to man the 4-way link in the EOF and maintain the Operational Status Board in the EOF Command Center.

C. A Technical Communicator (preferably Technical Instructor personnel who are licensed, formerly licensed, certified, formerly certified, or who have three years of technical/operational experience) to man the EOF-JPIC link in the EOF.

D. A Technical Communicator (preferably Technical Instructor personnel who are licensed, formerly licensed, certified, formerly certified, or who have three years of technical/operational experience) to man the Emergency Notification System (ENS) link with NRC Headquarters.

6.1.14 Verify that a minimum of three (3) plant personnel are available (at the EOF) to function as Field Team Drivers (for the PI teams when they arrive) and Sample Courier(s). Contact the OSC Coordinator (in the OSC) to confirm personnel have been or are being dispatched to the EOF.

6.1.15 As the EOF Support Group personnel become available ensure individuals are assigned support functions in accordance with Section 6.2 of this procedure.

6.1.16 If the event is occurring off-hours (i.e., ERO personnel are called in) verify personnel reporting to the EOF are fit-for-duty in accordance with FFD requirements using the following methods as necessary:

NOTE: The fitness of individuals should be assessed prior to their engaging in safety related emergency response activities. The fitness-for-duty assessment should include, at a minimum, a determination of whether individuals have consumed alcohol within the last 5 hours.

A. Question individuals as they arrive in the EOF, or

B. During initial staffing make announcements in the EOF (in conjunction with status updates) requesting personnel that are not fit-for-duty or that have consumed alcohol within the last five (5) hours identify themselves.

6.1.17 Coordinate the disposition of personnel that indicate they are not fit-for-duty or that have consumed alcohol within the last 5 hours as follows:

A. Evaluate whether the individual is essential to the emergency response and the individual's ability to perform assigned functions.

B. Individuals that are considered essential to emergency response should immediately be tested for BAC (i.e., breathalyzer).

1. Individuals whose test results are less than FFD Guidelines may engage in emergency response activities.

2. Individuals whose test results exceed FFD Guidelines should be evaluated to determine if they are able to perform their assigned functions, and if so, may be assigned emergency response duties under supervision.

C. Non-essential personnel may be directed to a waiting area (e.g., lunch room), sent home or evacuated if a Site evacuation is conducted. Personnel assigned to the next shift should be directed in accordance with Section 6.4.

D. Coordinate any FFD testing that may be required (e.g., breathalyzer analysis) with the EOF Security Coordinator.

6.1.18 When all positions, denoted on the EOF STAFFING AND ORGANIZATION CHART as "minimum staffing requirements" are filled, inform the Emergency Manager that EOF minimum staffing is complete and the EOF may be declared activated.

6.1.19 When EOF minimum staffing is complete, prompt the Emergency Manager to make an announcement in the EOF Command Center that the EOF is activated.

6.1.20 Continue to establish full EOF staffing by filling all remaining positions identified on the EOF STAFFING AND ORGANIZATION CHART. When all positions are filled, inform the Emergency Manager the EOF is fully staffed.

6.1.21 When full EOF staffing is complete (i.e., all positions on the EOF STAFFING AND ORGANIZATION CHART are filled) direct excess personnel as follows:

A. If in an Alert, excess EOF personnel may return to their normal work duties (restricted to activities outside the EOF portion of the Training Center).

B. If a Site Area Emergency is declared and/or habitability conditions in the non-EOF areas of the Training Center dictate, evacuate non-essential personnel from the Training Center (e.g., classes, visitors, etc.)

C. If an evacuation of non-essential personnel is ordered, excess EOF personnel should be evacuated with other non-essential personnel. Prior to their departure from the EOF, 24 hour shift staffing should be considered in accordance with Section 6.4.

6.1.22 If, after initial staffing is established, additional personnel or expertise is needed in the EOF, coordinate contacting additional ERO personnel.

NOTE: Refer to the Monticello and Prairie Island Nuclear Emergency Telephone Directory for telephone numbers.

6.2 EOF Support Group Assignments

6.2.1 Assign an Assistant EOF Coordinator to assist with EOF Coordinator duties specified in this procedure. Refer to A.2-001 to identify candidates. Some suggested duties for the Assistant EOF Coordinator are:

A. EOF logistics including administrative supplies, communications needs, food and beverages in accordance with A.2-804 (EOF SUPPORT AND LOGISTICS).

B. ERO shift scheduling in accordance with Section 6.4.

C. EOF Classroom setup (for expanded EOF activation) in accordance with Section 6.9.

D. EOF Ventilation system operation in accordance with Section 6.11.

6.2.2 Assign EOF Administrative Support personnel to perform the following administrative functions:

A. Recorder for the Emergency Manager and maintain the Emergency Manager Log.

B. Setup and maintain the EOF Chronological Events Flipchart.

C. Administrative and document control support in the EOF including:

1. Telecopy machine operation for off-site communications.

2. Completed forms copying and distribution.

3. Print, drawing, technical manual and document retrieval and control.

D. Maintain the EOF Organization Status Board.

6.2.3 Verify an EOF Security group member has responded to the EOF, assumed the duties of EOF Security Coordinator, and is implementing A.2-809 (EOF SECURITY). If no EOF Security group members are present, contact the Security Group Leader (in the TSC) or refer to A.2-001 and contact a qualified EOF security group member (refer to the Monticello and Prairie Island Nuclear Emergency Telephone Directory for home telephone numbers).

6.2.4 Assign Emergency (Off-site) Communicator qualified personnel to perform the following communications functions:

A. Assign 2 (two) personnel to function as Emergency (Off-site) communicators and implement A.2-803 (EMERGENCY COMMUNICATIONS AT THE EOF).

B. Assign one individual (preferably a member of the MTC administrative staff familiar with switchboard operation) to man the EOF switchboard.

C. Assign one individual to function as a messenger between EOF groups (i.e., forms routing, etc.).

6.2.5 Assign a member of the EOF Support group to serve as the liaison for off-site agencies or organizations responding to the EOF (e.g., NRC, INPO, FEMA, Counties, etc.) in accordance with A.2-812 (OFF-SITE AGENCY LIAISON AT THE EOF).

6.3 Transfer of Off-Site Responsibilities

6.3.1 When the EOF is operational (per 5790-802-02), assist in coordinating the transfer of off-site responsibilities (from the TSC to the EOF) when directed by the Emergency Manager as follows:

A. Verify the Emergency (Off-Site) Communicator positions are manned and operational checks of telecommunications completed and communication links are operational.

B. Verify the appropriate forms and checklists used for off-site communications are available.

C. Confirm the responsibility for initiation of the Follow-up Message, PAR Checklist and Emergency Notification Report Form with the RPSS.

D. Check the status of off-site communications with the Lead EC in the TSC (e.g., status of Follow-up Message transmission, etc.).

E. Inform the Emergency Manager when prepared to assume off-site communications responsibilities.

6.3.2 When directed by the Emergency Manager, assume responsibilities for off-site communications.

6.3.3 Ensure the transfer of off-site responsibilities is announced in the EOF Command Center and note the transfer and time in the EOF Coordinator Log.

6.3.4 Ensure the transfer of responsibilities is indicated on the EOF Organization Status board.

6.3.5 Immediately after the transfer, direct the Emergency (Off-Site) Communicators to contact the State (either duty officer or EOC and both counties (Dispatchers or EOCs)) and inform them the EOF has assumed responsibility for off-site communications.

6.3.6 Direct the performance of off-site communications throughout the event in accordance with A.2-803.

6.4 EOF ERO Shift Scheduling

6.4.1 If the duration of the event could exceed 12 hours, evaluate the EOF staffing required to support 24 hour coverage. Assist the EOF Group Leaders with the assignment of "next shift" personnel as follows:

A. Obtain Forms 5790-802-03 through 5790-802-05 (ERO SHIFT SCHEDULES) for each EOF Group Leader.

NOTE: The EOF Support Group ERO Shift Schedule includes the EOF Direction & Control positions in addition to the other support group positions. The EOF Coordinator should coordinate the Direction & Control assignments with the Emergency Manager.

B. Establish a date and time the next shift is to begin and record the date and time of the on-duty shift and the next shift in the spaces provided.

C. Issue the shift schedules to the respective EOF group leaders and instruct them to identify the present ERO shift and assign the next shift personnel (in their group) for each position identified on the shift schedule.

D. Collect the completed ERO shift schedules and review for completeness.

E. Make two copies of the completed ERO Shift Schedules and distribute as follows:

1. Return one copy of the ERO Shift Schedule to the respective EOF group leader (e.g., RPSS gets RP Support Group ERO Shift Schedule, etc.).

2. Retain one complete set of ERO Shift Schedules.

6.4.2 If removal of non-essential personnel from the EOF has been recommended or is occurring and the ERO shift schedules have not been established:

A. Request the Emergency Manager delay the removal of non-essential personnel until next shift ERO assignments are made.

B. Complete the ERO Shift Schedules in accordance with 6.4.1.

C. Ensure non-essential personnel that are assigned to the next ERO shift are informed and they are provided instructions for EOF access when returning to the EOF (i.e., company ID badge required for EOF access).

6.4.3 If 24 hour coverage is required, coordinate the assignment of next shift EOF ERO personnel as follows:

A. Ensure ERO personnel are informed of their next ERO shift in accordance with the applicable ERO Shift Schedule.

B. Ensure personnel are instructed to contact the EOF if their final destination, after departing the site, is a location other than their permanent residence. In this case, they should provide a telephone number at which they can be reached if needed sooner than their next scheduled shift.

C. Ensure ERO personnel are instructed to carry their company ID card to regain access to the site (in the event road blocks are established by off-site authorities).

6.4.4 Next shift ERO personnel should depart the EOF as follows depending on the situation:

A. If no releases (above ODCM limits) are occurring and no off-site protective actions are in effect personnel may depart the EOF and site as normal.

B. If significant releases are occurring and/or off-site protective actions are in effect, coordinate the departure of next shift ERO personnel with the local county authorities (Sheriff Dispatcher or County EOC). The departure route should take personnel upwind of any releases.

6.5 EOF Coordinator Recordkeeping

6.5.1 Upon activation initiate the EOF Coordinator Log Book and maintain the log throughout the event.

6.5.2 Record significant events and other information in the log in accordance with the following guidance:

A. Significant events and the time(s) which they occur including changes in plant conditions, radiological releases, and plant parameter trends.

B. Items related to EOF operation including the facilities, ventilation system operation, EOF security and logistics.

C. Log contacts with off-site vendors, contractors and consultants whose services have been requested including status reports of their response to the site.

D. Other items to cover during EOF Coordinator shift turnover or to consider upon termination of the emergency phase.

6.5.3 Initiate and/or review the following forms (as appropriate):

A. Form 5790-802-01

B. Form 5790-802-02

C. Form 5790-802-03 (ERO SHIFT SCHEDULE - EOF RADIATION PROTECTION SUPPORT GROUP).

D. Form 5790-802-04 (ERO SHIFT SCHEDULE - EOF TECHNICAL SUPPORT GROUP).

E. Form 5790-802-05 (ERO SHIFT SCHEDULE - EOF SUPPORT GROUP).

F. Form 5790-802-06 (EOF COORDINATOR STATUS UPDATE).

G. Form 5790-804-01 (LOGISTICS INFORMATION FORM).

H. Form 5790-602-01 (RECOVERY ACTION ITEM FORM).

6.5.4 Periodically monitor the distribution of completed forms in the EOF to ensure accurate, consistent, approved information is used by EOF personnel.

6.5.5 When directed by the Emergency Manager assist in the compilation of short and long-term recovery action items lists using Form 5790-602-01.

6.5.6 Upon termination of the event (or transition to the Recovery phase) collect all emergency records, logs, checklists and forms generated during the emergency in accordance with Section 6.13 of this procedure.

6.6 EOF Status Updates and EM Briefings

6.6.1 Throughout the event assist the Emergency Manager with the coordination of status updates in the EOF Command Center (if necessary prompt the Emergency Manager to conduct updates at pre-established times).

6.6.2 When notified of an upcoming EOF status update, use Form 5790-802-06 to prepare for your portion of the update. Record the date and time of the status update in the spaces provided on the form.

6.6.3 During EOF updates the EOF Coordinator should provide a status of the following topics using Form 5790-802-06 as a guide:

A. Review off-site communications (in-progress) and the operability of off-site communications links including the activation status of off-site agencies (e.g., State and county EOCs, etc.).

B. Review the status of EOF facility activation and/or operations including EOF access, EOF security, ventilation system operational status, and the setup of designated classrooms for expanded EOF operation.

C. Review the status of any emergency procurement including spare parts, off-site vendor/contractor services requested and logistics (e.g., food, beverages, administrative supplies, etc.).

D. Review the status of off-site agency response to the EOF (e.g., NRC incident response team, etc.).

E. Review current overall EOF staffing, EOF Support Group staffing and the status of establishing ERO shift schedules (if applicable).

6.6.4 If the NRC is present (in the EOF) your NRC counterpart should provide input immediately after the EOF Coordinator portion of the status update.

6.6.5 On Form 5790-802-06 note significant items reviewed during the RPSS, Technical Support Supervisor and EM portion of the status update. Use this information for the conduct of general EOF PA status announcements immediately following the status update.

6.6.6 Upon completion of the status update note the time of the next status update (if established by the EM).

6.6.7 Immediately following the status update(s) (in the EOF Command Center) consider conduct of general status announcement(s) over the Training Center Public Address (PA) system. The announcements should include the following information (if applicable):

A. The current emergency classification and status of the plant (reactor).

B. The extent of any off-site radiological releases and status of on-site and off-site protective actions taken.

C. The habitability of the EOF including general area dose rates (if applicable).

6.6.8 As necessary, assist the Emergency Manager in coordination of EM briefings including:

A. Coordinate establishing the briefing time, participants and topics.

B. Arrange the Emergency Manager Conference Room (Classroom 14) to accommodate all briefing participants.

C. Notify briefing participants (via announcement in the EOF or messenger).

D. Take notes during the EM briefing and note assignments made, strategies developed, etc.

6.7 Operation of the EOF

6.7.1 Maintain the EOF spaces in an operational state throughout the event including keeping the EOF Command Center (and adjacent EOF spaces) clear of unassigned or unnecessary personnel and equipment which could interfere with EOF operation.

6.7.2 Establish positive control of the EOF portion of the Training Center (e.g., locking doors to non-EOF spaces, etc.). Designate and maintain a single EOF entry/exit point in accordance with Section 6.10 of this procedure.

6.7.3 Ensure the EOF security positions are manned and security is maintained in accordance with A.2-809.

6.7.4 Supervise the conduct of administrative functions specified in Section 6.8 of this procedure.

6.7.5 Ensure the Emergency (Off-site) Communicator positions are manned and off-site communications performed (after turnover from the TSC) in accordance with A.2-803.

6.7.6 Ensure the EOF Switchboard Operator position is manned and routes incoming communications in accordance with A.2-803.

6.7.7 Ensure the following status boards (located in the EOF Command Center) are continuously manned and maintained:

A. EOF Organization Status Board.

B. Operational Status Board (maintained by technical support).

C. Radiological Status Board (maintained by RP).

6.7.8 Ensure the Emergency Manager Recorder position is manned and the Emergency Manager Log is maintained.

6.7.9 Continuously monitor overall EOF staffing and EOF Support Group staffing and augment as necessary.

6.7.10 If the event is projected to last more than 12 hours coordinate the establishment of ERO shift schedules in cooperation with the respective EOF group leader(s) in accordance with Section 6.4 of this procedure.

6.7.11 Coordinate EOF logistics and support throughout the event in accordance with A.2-804.

6.7.12 Coordinate liaison activities between MNGP and off-site agencies/organizations responding to the EOF in accordance with A.2-812.

6.7.13 Periodically formulate and make general status PA announcements (using the Training Center PA system). The general status announcements should follow EOF status updates and include the following information (if applicable):

A. The current emergency classification and status of the plant (reactor).

B. The extent of any off-site radiological releases and status of on-site and off-site protective actions taken.

C. The habitability of the EOF including general area dose rates (if applicable).

6.7.14 Assist the Emergency Manager with the conduct of periodic status updates in the EOF Command Center as follows:

A. Status updates should be conducted approximately every 30 minutes or as determined by the Emergency Manager.

B. During status updates the noise in the EOF Command Center should be kept to a minimum and all key EOF personnel should participate.

C. Significant events should be announced in the EOF Command Center as they occur (versus waiting for a status update).

6.7.15 Monitor the results of EOF habitability surveys and environmental radiological conditions (from the RPSS) to determine:

A. When to initiate EOF ventilation in accordance with Section 6.11 of this procedure.

B. When to transfer access to EOF to the Receiving Area entrance in accordance with Section 6.10 of this procedure.

C. If evacuation of non-essential EOF personnel and/or evacuation of the EOF is warranted in accordance with the criteria in A.2-808 (RADIOLOGICAL MONITORING AND CONTROL AT THE EOF).

6.7.16 If circumstances require the presence of a Communications representative (e.g., persistent media presence at the EOF, etc.) contact the JPIC and request a communications representative be dispatched to the EOF.

6.7.17 If radiological or other circumstances (e.g., fire, etc.) force the evacuation of the EOF to the back-up EOF coordinate the transfer to the backup EOF in accordance with A.2-810 (TRANSFER TO THE BACKUP EOF) and as directed by the Emergency Manager.

6.7.18 Assist in event termination or the transition to the recovery phase in accordance with Section 6.13 of this procedure and A.2-811 (EVENT TERMINATION OR RECOVERY IN THE EOF).

6.8 EOF Administrative Procedures

6.8.1 Emergency Manager Recorder (Narrative Log Keeper)

A. The Emergency Manager Recorder should make all entries into the EM Log Book (or an equivalent log consisting of narrative log sheets which are numbered sequentially and bound in a three-ring binder).

B. The EM Recorder should be stationed at the Emergency Manager table in the EOF Command Center immediately adjacent to the EM to facilitate the timely and accurate flow of information.

C. The EM Recorder should document all significant information and communications involving the Emergency Manager (e.g., decisions made, strategies developed and messages communicated) in accordance with Section 6.3 of this procedure.

D. The EM Recorder should periodically review the entries in the log with the Emergency Manager to verify accuracy of the entries.

6.8.2 Chronological Flipchart

A. The Chronological Flipchart Recorder should be stationed strategically in the EOF to facilitate the timely and accurate flow of information from key EOF personnel (e.g., EM, RPSS, TSS, etc.).

B. The Flipchart Recorder should monitor the dialogue in the EOF Command Center and record significant events and the times that they occur including classification changes, changes in release rates, off-site protective actions recommended, etc.

C. As Flipchart sheets are filled they should be prominently posted in a designated location of the EOF.

6.8.3 Facsimile (telecopy) Operations

A. Upon initial activation the facsimile operator should perform an operational test of both EOF fax machines by sending a test message between the two EOF machines.

B. The Facsimile operator should be stationed in the EOF Fax Room.

C. The Facsimile operator should perform fax transmissions as requested by the Emergency (Off-site) Communicators and/or other EOF personnel in accordance with the applicable section of A.2-803.

D. Upon completion of fax transmissions the Fax operator should confirm successful transmission by obtaining and reviewing a transaction report applicable to the transmission and attaching the transaction report to the original document being transmitted.

E. The Fax Operator should inform the originator (Emergency Off-site) Communicator, etc.) when facsimile transmission is complete and successful transmission is confirmed.

6.8.4 Form Duplicating (Copy machine operator)

A. The EOF administrative support group member assigned form duplicating should be stationed in the EOF Fax Room.

B. The copy machine operator should receive documents for printing (and distribution) from the Emergency (Off-site) Communicators (or Facsimile Operator) and other EOF personnel.

C. The copy machine operator should obtain a rubber stamp or EOF distribution form indicating the distribution of duplicated forms (to EOF personnel).

D. Upon completion of copying completed forms for distribution the copy machine operator should forward the original document to EOF Document Control and inform the requestor that copying and distribution is complete.

E. If the forms were copies for general EOF distribution (indicated on the rubber stamp or distribution list) forward the copies to the EOF messenger for distribution.

6.8.5 Document Control

A. The EOF Administrative support member assigned to document control should be stationed in the EOF Fax Room.

B. EOF Document Control should receive completed, approved original documents and forms from various EOF personnel (Emergency (Off-site) Communicators, Fax Operator, etc.) when their immediate use is no longer required.

C. EOF Document Control should review the forms for completeness and file in an appropriate container provided for emergency records.

D. EOF Document Control should periodically inventory the blank forms in the EOF Controlled Forms file to ensure sufficient blank forms are available.

6.8.6 Messenger (messages and forms distribution)

A. For messages between personnel located at the EOF (internal) or messages from outside organizations (outside telephone messages, etc.) the EOF Messenger should deliver the messages to the appropriate addressee.

B. The EOF Messenger should continuously tour the EOF Command Center (and adjacent classrooms if occupied) picking up the outbox material (outgoing completed forms, etc.) and deliver to the appropriate location (usually EOF Document Control for completed forms filing or the Copy Machine operator for copying and distribution).

C. The EOF Messenger should deliver incoming messages and completed forms distribution (copies) to individual inboxes throughout the EOF Command Center (and adjacent classrooms) in accordance with the distribution indicated on the form (distribution stamp).

6.8.7 EOF (Training Center) Switchboard Operator

A. The EOF (Training Center) Switchboard Operator position should be staffed by a Training Center person knowledgeable in the use of the switchboard.

B. The switchboard may remain manned, in its normal location (Training Center reception area) at the discretion of the EOF Coordinator provided no radiological hazard exists in the EOF (i.e., the EOF ventilation system is not operating in the emergency mode).

C. The EOF Switchboard Operator should route incoming calls (received at the normal MTC telephone number) to the appropriate EOF personnel or take telephone messages to be routed to personnel via the EOF Messenger.

6.9 EOF Classroom Setup (expanded EOF activation)

6.9.1 Upon activation of the EOF (at Alert or higher) the EOF Coordinator should coordinate the setup of Classrooms 10 and 14 as follows:

A. Classroom 10 should be setup for Technical Support Group use by arranging the existing tables and chairs into a useful arrangement (refer to FIGURE 7.1 for suggested arrangement). Technical reference and resource materials should be relocated from the Training Center Library to Classroom 10.

B. Classroom 14 should be setup as the Emergency Manager conference room (refer to FIGURE 7.1 for suggested arrangement). The designated telephone should be plugged-in to the designated telephone jack (refer to the tag affixed to the telephone) and operationally tested.

6.9.2 The EOF Coordinator should prepare EOF Classrooms 8, 9, 11 and 12 for expanded EOF activation if any of the following conditions are met:

NOTE: The EOF may be setup for expanded activation at the Alert Classification at the discretion of the Emergency Manager (based on recommendations from the EOF Coordinator) depending on time and personnel resources available.

A. If a Site Area Emergency (or higher) emergency classification is declared (off-site agency response to the EOF is very likely).

B. If off-site agencies (e.g., State, Counties, NRC, FEMA, etc.) are responding to the EOF.

C. If the event is security related and NMC Security (and law enforcement agencies) are using the EOF as a base of operations.

6.9.3 Set up EOF Classrooms 8, 9, 11 and 12 for expanded EOF activation as follows:

A. Arrange the existing tables and chairs in each room (refer to FIGURE 7.1 for suggested arrangement).

B. Plug-in the telephone(s) in each room into their respective telephone wall jack(s) (specified on the tag attached to the telephone) and operationally test each telephone.

C. Classrooms are designated for EOF use as follows:

1. Classroom 8 (NRC Administrative support including typists, messengers, facsimile operator, etc.)

2. Classroom 9 (NRC Emergency Response and NRC Director Site Operations conference room including ENS and HPN monitors, Emergency Response Coordinator, etc.).

3. Classroom 11 (NRC Public Affairs Coordinator and Communications representatives).

4. Classroom 12 (NRC Government Liaison, EOF Liaison and State and/or County government representatives).

6.9.4 If the event involves NRC site team response to the EOF obtain the title placards (from the EOF administrative supplies cabinet) and position them in their respective classrooms and in the EOF Command Center (adjacent to their EOF counterparts) in accordance with FIGURE 7.2.

6.9.5 Throughout the event assist the off-site agencies with facility and communications needs as necessary.

6.10 <u>EOF Access/Radiological Control</u>

6.10.1 Select the EOF Access Point in accordance with the following criteria:

A. If <u>no</u> radiological releases have occurred or are occurring establish access to the EOF at the designated front entrance.

B. If radiological releases have occurred or are occurring or if contaminated personnel or samples will be arriving establish access to the EOF at the EOF Receiving Area.

6.10.2 Establish the EOF Access Point as follows:

A. Set up a table for dosimetry issuance and the EOF Sign-In/Out Log. Obtain the Access Log and necessary administrative supplies, dosimeters (0-200mr) and TLDs from the EOF admin supply cabinet.

B. Close and post all other doors to the EOF and/or Training Center (all other access doors to the EOF should be posted with signs located in the EOF Administrative Locker).

C. Man the Access Point with a Security Officer and operate the Access Point in accordance with A.2-809.

D. Ensure all personnel entering the EOF have proper identification, are issued dosimetry and log-in in accordance with A.2-809.

6.10.3 If the Access Point is established at the Receiving Area entrance:

A. Place a step-off pad and set up a personnel frisking station just inside the entrance to the EOF.

B. Ensure incoming personnel frisk prior to entering the EOF.

C. Assist the EOF RPS with the setup of a Controlled Area within the EOF Receiving Area (i.e., rad rope, postings, SOP, etc.) in accordance with Form 5790-802-07 (EOF RECEIVING AREA FLOOR PLAN). Supplies for Receiving Area setup are stored in the designated cabinet in the Receiving Area. |

6.10.4 If the EOF Access Point is transferred to the Receiving Area announce the transfer in the EOF Command Center (or review during the next EOF status update).

6.10.5 Ensure all personnel entering the EOF are issued a 0-200mr dosimeter and TLD and that dosimetry issuance data is recorded on Form 5790-809-02 (EOF SIGN-IN/OUT LOG) in accordance with A.2-809 (SECURITY IN THE EOF). |

6.10.6 Periodically review the results of EOF habitability surveys and effluent release levels (both posted on RP Status Board).

NOTE: Upon activation of the EOF the RPSS will direct the conduct of periodic habitability surveys in the EOF and adjacent classrooms. The results of these surveys will be posted on the EOF RP Status Board.

6.10.7 During EOF status updates, remind EOF personnel to read their dosimeter. Instruct personnel whose dosimeter reaches 3/4 scale (150 mr) to record and rezero their dosimeter (at the EOF Access Point). |

6.10.8 If radioactive effluent levels exceed the ALERT level (specified in A.2-101) coordinate the activation of the EOF Ventilation system in the emergency mode in accordance with Section 6.11 of this procedure.

6.10.9 If contamination levels in excess of 1000 DPM/100 cm^2 are detected in the EOF (or adjacent occupied spaces) assist the RPSS in controlling the contaminated area and establishing strict contamination control measures in the EOF as follows:

A. Ensure all personnel entering the EOF properly frisk.

B. Control eating and drinking in the EOF until foodstuffs and surfaces are properly surveyed and cleared of contamination.

C. Assist with the issuance of protective anti-contamination clothing to EOF personnel (if required by the RPSS).

6.10.10 If thyroid doses for EOF personnel are projected to exceed 25 Rem assist the RPSS in the administration of Potassium Iodide in accordance with A.2-304 (THYROID PROPHYLAXIS).

6.11 EOF Emergency Ventilation System Operation

CAUTION

The EOF ventilation system may become a radiological hazard during operation.

NOTE: The EOF mechanical room key may be obtained from the EOF Coordinator or any member of MTC Staff.

6.11.1 If the event involves radiological releases (Stack, Vent or unmonitored) to the environment in excess of the Alert levels specified in A.2-101, Guideline 1, shift the EOF ventilation system to the emergency mode as follows:

A. Open HEPA inlet filter damper on ventilation unit (Bottom Damper) by performing the following:

1. Loosen wing-nuts on both sides of unit.
2. Move lever to OPEN position.
3. Tighten wing-nuts.

B. Close HEPA bypass damper on ventilation unit (Top Damper) by performing the following:

1. Remove bolt.
2. Move lever to CLOSED position (use assist bar if necessary).
3. Reinstall bolt.

C. Place the control switch on the control cabinet to the "EMERGENCY" position.

D. Verify the OCC/UNOCC/AUTO (3 position) toggle switch on the control cabinet is in the "OCC" position. If not, place the switch in the "OCC" position.

E. Observe ventilation system operation and verify the Supply and Return fans are operating (red indicating lights located on the electrical control cabinet in the ventilation room).

6.11.2 During system operation periodically observe the system to confirm proper operation as follows:

A. At least every 8 hours check the Filter D/P manometer (located on the side of the filter housing). Acceptable D/P is < 0.8" W.G. If necessary, replace the disposable pre-filter pads.

B. Periodically verify the outside air damper is OPEN at least 10% (as indicated on the indicator in the EOF Command Center) for fresh air makeup.

C. At least every eight (8) hours check the EOF magnahelic gauge (located in the EOF Command Center) for positive pressure indication.

6.11.3 During system operation periodic dose rate surveys should be performed in the ventilation equipment room (on HEPA filters) and immediately outside the room to verify dose rates.

6.11.4 During extended operation routine maintenance of the ventilation equipment may be necessary, including replacement of the HEPA filters. Proper radiological precautions should be observed during these activities.

6.11.5 When the EOF ventilation system is no longer required in the emergency mode (i.e., releases have diminished below the Alert levels) shift the ventilation system back to normal operation as follows:

A. Verify the OCC/UNOCC/AUTO (3 position) toggle switch on the control cabinet is in the "OCC" position.

B. Place the control switch to the NORMAL position.

C. Open HEPA bypass damper on ventilation unit (Top Damper) by performing the following:

1. Remove bolt.

2. Move lever to OPEN position (use assist bar if necessary).

3. Reinstall bolt.

D. Close HEPA inlet filter damper on ventilation unit (Bottom Damper) by performing the following:

1. Loosen wing-nuts on both sides of unit.

2. Move lever to CLOSED position.

3. Tighten wing-nuts.

E. Evaluate the need to replace the HEPA filters and pre-filter pads.

6.12 EOF Coordinator Turnover

6.12.1 Upon arrival at the EOF the on-coming EOF Coordinator should review the:

A. Chronological Events Flipchart to become familiar with key events that have occurred.

B. The EOF Coordinator Log book entries (for the previous 12 hours if applicable).

6.12.2 Review the following information with the existing EOF Coordinator. If the NRC is present include the counterpart (Emergency Response Coordinator and/or Resource Coordinator) in the turnover review if possible:

A. Review the status of overall EOF and EOF Support Group staffing and future staffing needs.

B. Review the EOF operations including designated access point, EOF security, ventilation system operation and expanded EOF activation (for NRC response).

C. Review the status of emergency procurement, vendor and/or contractor support requested and any logistics support requested by the TSC.

D. Review the status of off-site communications in-progress or upcoming.

E. The status of communications links (ENS, etc.) and off-site agency interface (e.g., NRC incident response, etc.).

6.12.3 If the Emergency Manager is conducting a turnover briefing attend the EM briefing as requested.

6.12.4 The on-coming EOF Coordinator should contact the Support Group Leader (in the TSC) to review the current status and determine any assistance that the EOF support group can provide.

6.12.5 Upon completion of the turnover discussions the on-coming EOF Coordinator should formally assume the duty and note the turnover in the EOF Coordinator Log Book.

6.12.6 Inform the Emergency Manager the EOF Coordinator turnover is complete.

6.12.7 Make an announcement in the EOF Command Center regarding the turnover of EOF Coordinator responsibilities.

6.13 Event Termination/Recovery

6.13.1 If and when the criteria for termination of the event are met assist with event termination as follows:

A. Ensure off-site notifications for the termination are made within specified times.

B. Coordinate the dissolution of the EOF staff (e.g., termination of off-site communicators, etc.) and the return to normal Training Center operation.

C. Ensure the EOF is properly secured and all equipment and supplies returned to their normal storage location and to pre-emergency stock levels.

D. If post event action item lists are developed participate in their development as appropriate.

6.13.2 If and when the criteria for Recovery are met assist in the transition to the Recovery phase as follows:

A. When directed by the Emergency Manager, compile a list of short and/or long term recovery actions in the EOF Coordinator area (e.g., actions required to return the MTC to pre-accident conditions, long-term vendor support required, etc.).

B. Use Form 5790-602-01 to compile the recovery action list.

C. Refer to A.2-811 to identify items to consider when compiling the Recovery Action Item list.

D. Coordinate the development of the Recovery Action Item list with the Support Group Leader (in the TSC).

E. Submit the completed Recovery Action Item list to the Technical Support Supervisor for review and inclusion with the other recovery action item lists.

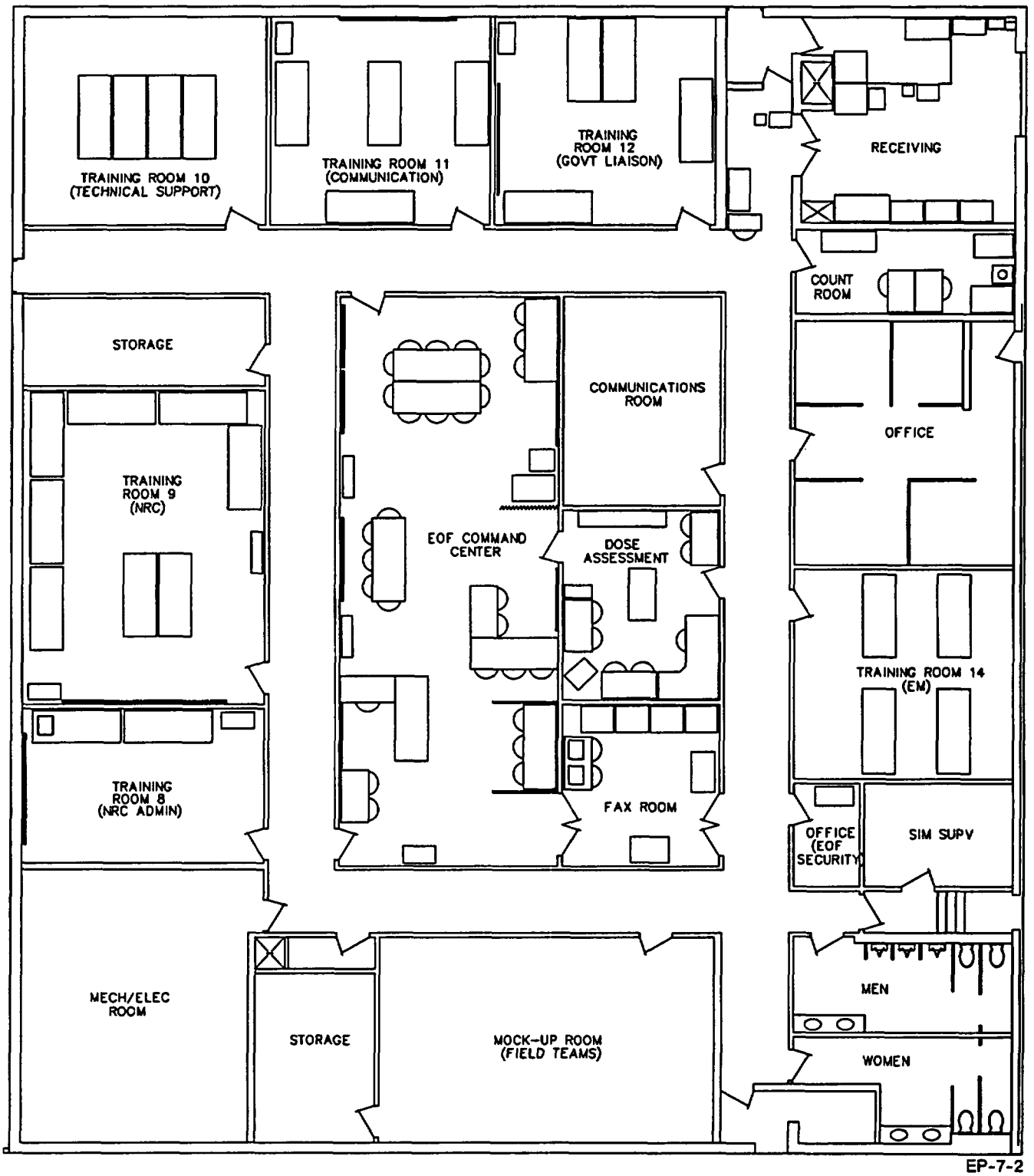
F. Participate in the transition to recovery and turnover discussions as requested by the Emergency Manager.

6.13.3 Upon termination or the event or the completion of the transition to the recovery phase collect all emergency records, forms and logs generated during the event in the EOF and forward to the Emergency Preparedness group.

7.0 FIGURES

FIGURE

7.1 Emergency Operations Facility Floor Plan



EP-7-2

l/mab

FIGURE

7.2 Expanded EOF Activation for NRC Co-Location

CLASSROOM DESIGNATIONS

Classroom 8 - NRC administrative support including fax and typists

Classroom 9 - NRC conference room for Director Site Operations

Classroom 10 - Technical Support Room (EOF and NRC)

Classroom 11 - Communications/Media Room (EOF and NRC)

Classroom 12 - Government Liaison Room (EOF, NRC, State and Local)

Classroom 14 - Emergency Manager Conference Room

NRC PLACARD LOCATIONS

EOF Command Center (adjacent to ERO counterpart)

NRC Director Site Operations (Emergency Manager)

NRC Protective Measures Coordinator (RPSS)

NRC Protective Measures Assistant (Assistant RPSS)

NRC Reactor Safety Coordinator (Technical Support Supervisor)

NRC Reactor Safety Assistant (Technical Support Supervisor)

NRC Emergency Response Coordinator (EOF Coordinator)

Classroom 8 (NRC Administrative Support)

NRC Resource Coordinator

NRC LAN Jack

FAX Jack

7.2 Expanded EOF Activation for NRC Co-Location (Cont.)

Classroom 9 (NRC DSO Conference Room)

NRC Emergency Response Assistant

NRC Reactor Safety Liaison Communicator

NRC Protective Measures Liaison Communicator

NRC ENS Monitor

NRC HPN Monitor

EOF Security Office (office immediately outside EOF Fax Room)

NRC Safeguards Coordinator

NRC Security Coordinator

EOF Dose Assessment Room

NRC Environmental Measurements Coordinator

Environmental Dose Assessment Coordinator

Classroom 11 (EOF Media/Communications Room)

NRC Public Affairs Coordinator

Agency/Media Liaison Coordinator

Classroom 12 (Government Liaison Room)

NRC Government Liaison Coordinator

NRC Government Liaison Communicator