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Monticello Nuclear Generating Plant
Operated by Nuclear Management Company, LLC

December 14, 2001

10 CFR 50, Appendix E
Section V

US Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Emergency Plan Implementing Procedures

Furnished with this letter is a revision to the Monticello Nuclear Generating Plant Emergency Plan Implementing Procedures. The following procedure is revised:

Procedure	**Procedure Title**	**Revision**
A.2-408	Sample Coordination During Emergencies	7

Please post changes in your copy of the Monticello Nuclear Generating Plant Emergency Plan Implementing Procedures. Superseded procedures should be destroyed. This revision does not reduce the effectiveness of the Monticello Nuclear Generating Plant Emergency Plan.

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1060	A.2-408	7	SAMPLE COORDINATION DURING EMERGENCIES

EMERGENCY PLAN IMPLEMENTING PROCEDURE - TABLE OF CONTENTS

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Prepared By: [signature]	Reviewed By: [signature]	
ALARA Coord Review By: [signature]		
OC Review Req'd: YES	OC Meeting Number: 2293F	Date: 11/15/01
Approved By: [signature]		Date: 11/24/01

FOR ADMINISTRATIVE USE ONLY				
This revision incorporates Volume F Memos: None				
3087 (DOCUMENT CHANGE, HOLD, AND COMMENT FORM) incorporated: 01-3353				
Resp Supv: GTRNG		Assoc Ref: A.2	SR: N	Freq: 1 yrs
ARMS: A.2-408	Doc Type: 1060	Admin Initials: [initials]		Date: 12/11/01

I/cah

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 Specialists (Rad Prot Spec) 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.

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"

	GROUP 2 ISOLATION	INITIATING CONDITION
5.1.2	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"

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

	GROUP 3 ISOLATION	INITIATING CONDITION
5.1.4	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 5790-408-1 (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 5790-408-1.

6.1.9 The Chemistry Coordinator should fill out Form 5790-408-1 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 Priori

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 5790-408-1)

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 Specialist 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	N/A

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	

CHEMICAL ANALYSIS	PRIMARY COOLANT	RX BLDG VENT	OFF-GAS STACK	PRIMARY CONTAINMENT	DISCHARGE CANAL
Conductivity	X				
pH	X				
Chloride	X				
H2/O2	X			X	
Boron (NOTE 2)	X				

NOTE 1: Sample the Reactor Building vents first if vent release rate is higher than Stack release rate.

NOTE 2: Perform a boron analysis only if the Standby Liquid Control System has been initiated.

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					

Conductivity					
pH					
Chloride					
H2/O2					
Boron					

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	N/A

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	

CHEMICAL ANALYSIS	PRIMARY COOLANT	RX BLDG VENT	OFF-GAS STACK	PRIMARY CONTAINMENT	DISCHARGE CANAL
Conductivity	X				
pH	X				
Chloride	X				
H2/O2	X			X	
Boron (NOTE 1)	X				

NOTE 1: **Perform a boron analysis only if the Standby Liquid Control System has been initiated.**

NOTE 2: **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	N/A

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	

CHEMICAL ANALYSIS	PRIMARY COOLANT	RX BLDG VENT	OFF-GAS STACK	PRIMARY CONTAINMENT	DISCHARGE CANAL
Conductivity	X				
pH	X				
Chloride	X				
H2/O2	X			X	
Boron (NOTE 1)	X				

NOTE 1: Perform a boron analysis only if the Standby Liquid Control System has been initiated.

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	

CHEMICAL ANALYSIS	PRIMARY COOLANT	DW SUMP	RX BLDG VENT	OFF-GAS STACK	PRIMARY CONTAINMENT	DISCHARGE CANAL
Conductivity	X	X				
pH	X	X				
Chloride	X					
H2/O2	X				X	
Boron (NOTE 1)	X					

NOTE 1: Perform a boron analysis only if the Standby Liquid Control System has been initiated.

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
SC	Secondary 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