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R	PROC	EIP-ZZ-C0010	022	021	C	1			
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R	PROC	EIP-ZZ-00231	010	009	C	1			

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EIP-ZZ-C0010
Revision 022
October 25, 2000

CALLAWAY PLANT

EMERGENCY PLAN IMPLEMENTING PROCEDURE

EIP-ZZ-C0010

EMERGENCY OPERATIONS FACILITY OPERATIONS

RESPONSIBLE DEPARTMENT **EMERGENCY PREPAREDNESS**

PROCEDURE OWNER **S. J. Crawford**

WRITTEN BY **S. J. Crawford**

PREPARED BY **S. J. Crawford**

APPROVED BY Warren A. Witt

DATE ISSUED 11-22-00

This procedure contains the following:

Pages	1	through	6
Attachments	1	through	7
Tables		through	
Figures		through	
Appendices		through	
Checkoff Lists		through	

This procedure has _____ checkoff list(s) maintained in the mainframe computer.

Conversion of commitments to TRS reference/hidden text completed by Revision Number:

Non-T/S Commitments 018

ORIGINAL
for the NRC

TABLE OF CONTENTS

EMERGENCY OPERATIONS FACILITY OPERATIONS

1 PURPOSE AND SCOPE

1.1 The purpose of this procedure is to provide guidance to Emergency Response Personnel who report to the Emergency Operations Facility (EOF) and Backup EOF (BEOF).

2 RESPONSIBILITIES

2.1 RECOVERY MANAGER (RM)

2.1.1 The Recovery Manager is responsible for ensuring that the EOF/BEOF becomes operational after notification of an ALERT, SITE or GENERAL EMERGENCY classification and has overall command and control of the entire Ameren-UE Emergency Response Organization. Duties include the following: **(COMN 3361, 3415)**

NOTE:	The responsibilities that the RM may delegate are indicated with an asterisk (*).

2.1.1.1 * Establishing and maintaining communications with the Emergency Coordinator.

2.1.1.2 * Requesting off-site support (i.e., NSSS, A/E, INPO, Federal, State and Local).

2.1.1.3 * Ensuring responsibility for communications with off-site agencies is transferred from the Control Room to the EOF Emergency Response Organization (excluding NRC ENS communications).

2.1.1.4 Authorizing notifications to off-site agencies.

2.1.1.5 Assuming responsibility from the Control Room for making Protective Action Recommendations.

2.1.1.6 * Maintaining command and control over personnel in the EOF and providing considerations necessary for their safety.

2.1.1.7 * Ensuring coordinated emergency response among Ameren UE and off-site agencies

2.1.1.8 Authorizing personnel exposure in excess of 10CFR20 limits (the Emergency Coordinator also has this authority).

2.2 PROTECTIVE MEASURES COORDINATOR (PMC)

2.2.1 The PMC reports to the RM and is responsible for formulating Protective Action Recommendations and assisting the RM, State and Federal Officials in the interpretation of any plant related data.

2.3 PLANT ASSESSMENT COORDINATOR (PAC)

2.3.1 The PAC reports to the PMC and reviews plant conditions and EALs to verify the adequacy of the existing Protective Action Recommendations (PARs) and assists in formulating new PARs when necessary.

2.4 PLANT ASSESSMENT STAFF

2.4.1 The Plant Assessment Staff reports to the PAC and is knowledgeable in plant equipment, systems, and operations. They may provide additional technical expertise while maintaining status boards displaying plant conditions.

2.5 DOSE ASSESSMENT COORDINATOR (DAC)

2.5.1 The Dose Assessment Coordinator reports to the PMC (or the RM if the PMC has not arrived) and is responsible for providing dose projection calculations based on radiological effluent monitors and field data. The DAC directs Field Monitoring Teams (FMTs), reviews effluent based EALs and assists the PMC in formulating Protective Action Recommendations. **(COMN 3375)**

2.6 DOSE ASSESSMENT STAFF

2.6.1 The Dose Assessment Staff reports to the DAC and is responsible for FMT communications and updating radiological status boards. **(COMN 3355)**

2.7 FIELD MONITORING TEAMS (FMTs)

2.7.1 Field Monitoring Teams are dispatched by the DAC and are responsible for taking direct radiation measurements and collecting air, soil, water and vegetation samples.

2.8 LOGISTICAL SUPPORT COORDINATOR (LSC)

2.8.1 The LSC reports to the RM and is responsible for contracting with vendors for engineering services, materials, and services needed for emergency mitigation and restoration. The LSC also provides administrative and logistical support to the Emergency Response Organization (ERO).

2.9 LOGISTICAL SUPPORT STAFF

2.9.1 The Logistical Support Staff reports to the LSC and is responsible for the development of specifications for repair parts, equipment, and services, locating materials and services needed, and expediting their delivery to the site. They may initiate purchase orders, contracts for services, or use whatever procurement means approved by the RM to obtain goods and services to assist in mitigation and recovery of this situation. The Logistical Support Staff also provides administrative support to the EOF Emergency Response Organization.

2.10 OFF-SITE LIAISON COORDINATOR (OSL)

2.10.1 The OSL reports to the RM and assumes off-site notification responsibilities from the Communicator in the Control Room. The OSL is also responsible for keeping off-site authorities up-to-date regarding on-site emergency response activities, receiving responding representatives from off-site agencies, assisting in meeting their communications and logistic needs, and other duties as assigned by the RM. **(COMN 3329)**

2.11 EOF COMMUNICATORS

2.11.1 The EOF Communicators report to the Off-site Liaison Coordinator. EOF Communicators transmit PARs and emergency notification updates to State and Local agencies and other off-site authorities as directed by the Off-Site Liaison Coordinator.

3 INITIATING CONDITIONS

This procedure is initiated to startup the Emergency Operations Facility upon declaration of an ALERT or higher emergency classification. The EOF ERO may also be activated at the discretion of the EC for any classification.

4 PROCEDURE

4.1 STARTUP

4.1.1 Staff members arriving at the EOF are responsible for signing in with name and badge number on the facility sign-in board.

4.1.2 Coordinators should obtain their emergency packet and commence activation of their respective areas utilizing checklists 1 through 6.

4.1.3 The Control Room Staff should be expeditiously relieved of peripheral duties and communications not directly related to Control Room manipulations.

4.2 OPERATIONS

4.2.1 EOF personnel ensure the assumption of the following responsibilities:

- Notifications.
- Protective Action Recommendations.
- Dose Assessment.
- Requests for outside assistance.
- Interface with Federal, State and Local authorities.

4.2.2 Declaration of Recovery

4.2.2.1 The Recovery Manager should coordinate the establishment of a Recovery Organization with the Emergency Coordinator per **EIP-ZZ-00260**, Event Closeout/Plant Recovery.

4.2.2.2 EOF personnel continue activities until the Recovery Organization is established.

4.2.3 Event Closeout

4.2.3.1 The Recovery Manager should coordinate Closeout with the Emergency Coordinator per **EIP-ZZ-00260**, Event Closeout/Plant Recovery.

4.3 BACKUP EOF (BEOF)

4.3.1 If the EOF is uninhabitable, the Recovery Manager directs the Off-site Liaison Coordinator to ensure EOF responsibilities are transferred to the TSC and/or Control Room, EOF personnel are relocated, and the BEOF is activated in accordance with Attachment 7, Backup EOF Checklist **(COMN 5730, 42514)**

4.3.1.1 If time permits, operations should continue at the EOF until the designated individuals reach the BEOF and assume responsibilities. Then the remaining personnel should report to their designated facilities.

4.3.2 The Recovery Manager transfers responsibilities to the Emergency Coordinator until the Backup EOF is activated.

5 REFERENCES

5.1 **EIP-ZZ-00201,** Notifications

5.2 **EIP-ZZ-00211,** Field Monitoring

5.3 **EIP-ZZ-00212,** Protective Action Recommendations

5.4 **EIP-ZZ-00260,** Event Closeout/Plant Recovery

5.5 **EIP-ZZ-01211,** Management Action Guides for Nuclear Emergencies (MAGNEM)

5.6 **OOA-UB-EPG50,** EOF Diesel Emergency Start

5.7 **OOA-UB-00004,** Emergency Operations Center Ventilation

5.8 **HPCI 96-0007,** Emergency Response Facility Habitability Guidelines

5.9 **OOA-HD-00001,** EOF Chemical & RW Drain Tank (THD01) Level Indication Panel (HD001) Operation.

5.10 **HTP-ZZ-04101,** Operation of the Ludlum Model 177 Series Alarm Ratemeter.

5.11 **HTP-ZZ-04135,** Operation of the NNC Gamma-10 Portal Monitor.

5.12 **HTP-ZZ-04137,** Operation of the Eberline AMS-3

6 RECORDS

NOTE:	All Facility Logs, SENTRY or MAGNEM screen prints, office memos, notes, etc. should be attached to the Coordinator Checklist and turned in to the Logistics Support Coordinator and/or the EP Department.

6.1 QA RECORDS

6.1.1 Attachment 1, Recovery Manager Checklist (File #K171.0010)

6.1.2 Attachment 2, Off-Site Liaison Coordinator Checklist (File #K171.0010)

6.1.3 Attachment 3, Protective Measures Coordinator (PMC) Checklist (File #K171.0010)

6.1.4 Attachment 4, Plant Assessment Coordinator (PAC) Checklist (File #K171.0010)

6.1.5 Attachment 5, Logistics Support Coordinator (LSC) Checklist (File #K171.0010)

6.1.6 Attachment 6, Dose Assessment Coordinator (DAC) Checklist (File #K171.0010)

6.1.7 Attachment 7, Backup EOF Checklist (File #K171.0010)

RECOVERY MANAGER CHECKLIST

DATE: _____ TIME_____

	INITIATION
☐ 1.	Sign in on Facility Sign-in board. Obtain the RM package and clip on Recovery Manager badge. (If the EOF is uninhabitable, direct the OSL to initiate Attachment 7 and relocate to the BEOF.)
☐ 2.	Initiate Facility Log Sheet.
☐ 3.	Receive briefing by: ☐ Off-Site Liaison Coordinator (facility conditions). ☐ Emergency Coordinator (plant conditions).
☐ 4.	Direct the OSL and DAC to begin turnover from the control room. *NOTE: DO NOT assume responsibility for communications and Dose Assessment until both the OSL & DAC have completed turnover.*
☐ 5.	Notify the Control Room and the EC prior to assuming responsibilities for Communications, Dose Assessment and PARs using the EML phone, if available.
☐ 6.	Make a facility announcement that, "The EOF has accepted emergency responsibilities for Communications, Dose Assessment and PARs from the Control Room."
☐ 7.	Upon arrival of the PMC and PAC, direct the PMC to coordinate Notifications with the PAC and DAC for your review and approval.
☐ 8.	Ensure the following positions have been filled in the EOF ☐ Communicator ☐ PMC ☐ PAC ☐ LSC
☐ 9.	Make a facility announcement; "EOF Coordinators should assess manpower requirements in your respective areas. Request for additional support staff should be addressed to the Logistics Coordinator for callout. All excess personnel should assemble in the Media Area and await further instructions."
☐ 10.	Discuss any additional manpower support or supplies required with the Logistical Support Coordinator. Instruct the Logistical Support Coordinator to inform excess personnel to return home and remain near their phones for further instructions concerning shift relief schedules and report times.

	OPERATIONS (*) *Steps are items that MUST be frequently reviewed*
☐ *1.	Periodically update EOF personnel including priorities, habitability status and Site radiological conditions.
☐ *2	Provide status reports to: ☐ SEMA ☐ NRC ☐ Counties ☐ Corporate Spokesperson
☐ *3	If the EOF becomes uninhabitable, direct the OSL to initiate Attachment 7 and relocate to Backup Emergency Operations Facility.
☐ *4.	Authorize exposure in excess of 10CFR20 limits if required and requested from the HPC.

RECOVERY MANAGER CHECKLIST

	TURNOVER
☐ 1.	Incoming Recovery Manager briefed on EOF status and log reviewed.
☐ 2.	Emergency Coordinator and Shift Supervisor informed.
☐ 3.	Turnover announced to EOF staff.
☐ 4.	Turnover complete _____ Time.
☐ 5.	Turnover logged.
☐ 6.	Initiate a new checklist CA#732.

	RECOVERY
☐ 1.	EOF personnel continue activities per procedures until Recovery Organization established.
☐ 2.	Discuss the expected response of State and Federal agencies.
☐ 3.	Discuss availability of and provisions for State and Federal agencies with the Off-Site Liaison Coordinator and the Logistics Support Coordinator.
☐ 4.	Declare Recovery per **EIP-ZZ-00260**, Event Closeout/Recovery. ☐ Emergency Coordinator contacted. ☐ Shift Supervisor contacted. ☐ NRC contacted.
☐ 5.	Recovery organization established.
☐ 6.	Make a site wide announcement of Recovery Declaration.

	TERMINATION and SHUTDOWN
☐ 1.	Operations shutdown or transferred to the TSC, as applicable. ☐ Notifications ☐ Protective Action Recommendations ☐ Requests for Outside Assistance ☐ Authorizing exposure in excess of 10CFR20 limits
☐ 2.	Coordinators directed to shutdown EOF _____ Time.
☐ 3.	Make site wide announcement.

_____
Recovery Manager Signature

OFF-SITE LIAISON COORDINATOR CHECKLIST

DATE: _____ TIME_____

	INITIATION
☐ 1.	Sign in on Facility Sign-in board. Obtain the OSL and Communicators packages and clip on the Off-Site Liaison badge.
☐ 2.	Inform Recovery Manager of your presence.
☐ 3.	Adjust Gai-tronics to an acceptable level.
☐ 4.	Ensure the EOF has power. ☐ Normal power, (i.e. lights on, power available to computers, etc.). ☐ No Power-Start the EOF diesel per **OOA-UB-EPG50** or call for Equipment Operator if available.
☐ 5.	Shift/verify the PC power supplies to the UPS position. ☐ Communicator (2). ☐ Phone room (134) bridge. ☐ Telecommunications room (130) bridge located inside the ERFIS cabinet (not locked).
☐ 6.	Check fax machine for any communications.
☐ 7.	Initiate Facility Log sheet.
☐ 8.	Ensure modems are energized (red indicating light is on in the modem box).
☐ 9.	Turn on, or reboot (WINDOWS key or CTRL-ALT-DELETE), the SENTRY Computer and synchronize the time with the Plant Computer.
☐ 10.	Check OSL and Communicator phone lines for dial tone.
☐ 11.	Turn on projected statusboard.
☐ 12.	Upon direction of the RM, using **EIP-ZZ-00201**Attachment 3 (CA#234), contact the Control Room Communicator to get a brief on the status of Communications (prepare to transfer communications to EOF). (If the EOF is uninhabitable, communications should remain in the Control Room until the BEOF is staffed.)
☐ 13.	Notify the RM when you are ready to assume your duties. TIME: _____
☐ 14.	Obtain RM approval to transfer communications to the EOF, then relieve the control room communicator of communications and notifications. Ensure SENTRY is TERMINATED in the Control Room. (Communications and Dose Assessment should be transferred to the EOF at the same time.)
☐ 15.	Communicator: (as assigned) ☐ _____ Name
☐ 16.	Contact County EMDs and assess the need for County Technical Representatives and dispatch Technical Representatives as needed. (Use list of JPIC Technical Representatives.)

	OPERATIONS (*) *Steps are items that MUST be frequently reviewed.*
☐ *1.	Using the flowchart from Attachment 3, **EIP-ZZ-00201**, Notifications, notify the required authorities and agencies. *NOTE: Notifications of a new classification or Protective Action Recommendations must be made in 15 minutes. Follow up notifications are made approximately every 30 minutes.*

OFF-SITE LIAISON COORDINATOR CHECKLIST

☐ *2.	Provide support to Federal, State, and Local personnel in the EOF, as appropriate, including provisions for office space and communications.
☐ *3.	Ensure the Emergency Classification status board is properly updated.

TURNOVER	
☐ 1.	Brief the oncoming Off-Site Liaison Coordinator on the status of the facility and on-site and off-site emergency response activities. Review log.
☐ 2.	Brief the oncoming Communicator on the status, information transmitted and the frequency of updates.
☐ 3.	Inform the Recovery Manager.
☐ 4.	Turnover complete _____ Time.
☐ 5.	Turnover logged.
☐ 6.	Initiate a new checklist CA#733.

RECOVERY	
☐ 1.	Continue providing requested information.
☐ 2.	Continue activities per procedures and checklist until Recovery Organization is established or until directed otherwise by the Recovery Manager.

EOF SHUTDOWN	
☐ 1.	Ensure area is put into order and logs collected and give to the Logistics Support Coordinator.
☐ 2.	Ensure EOF operations, if any, as specified by the Recovery Manager are transferred to the plant operating staff or the TSC, if operational.
☐ 3.	Ensure that emergency equipment and supplies are returned and/or stored to their normal condition. ☐ Radio ☐ Emergency Equipment Kits ☐ Emergency Diesel Generator ☐ Ventilation System ☐ Portable Monitoring Equipment ☐ Microfiche Reader ☐ Return ALL UPS's to LINE position.
☐ 4.	After completion of the above steps, inform the Emergency Coordinator that the EOF has been shutdown.
☐ 5.	Ensure that all EOF emergency records are collected and given to the Logistics Support Coordinator/Emergency Preparedness Department.
☐ 6.	Ensure that State and Local officials are informed of the EOF shutdown.

_____
Off-Site Liaison Coordinator Signature

PROTECTIVE MEASURES COORDINATOR CHECKLIST

DATE: _____ TIME_____

	INITIATION
☐ 1.	Sign in on Facility Sign-in board. Obtain the PMC package and clip on the Protective Measures Coordinator badge.
☐ 2.	Ensure the EOF has power. ☐ Normal power, (i.e. lights on, power available to computers, etc.). ☐ No Power-Start the EOF diesel per **OOA-UB-EPG50** or call for Equipment Operator if available
☐ 3	Ensure the EOF HVAC system is in recirculation/filter mode per **OOA-UB-00004.** Keys to the HVAC room are in the OSL packet. .
☐ 4	Check computer and printer power supplies have been shifted to the UPS position: ☐ Computer ☐ Color Printer
☐ 5.	Recovery Manager informed of your presence.
☐ 6.	Initiate Facility Log sheet.
☐ 7.	☐ Plant Assessment Coordinator (PAC) _____ Name ☐ Dose Assessment Coordinator (DAC) _____ Name
☐ 8.	Check PMC phone lines for dial tone.
☐ 9	Assist in the transfer of PARs to Plant Assessment Coordinator and dose assessment to the Dose Assessment Coordinator.
☐ 10.	Inform the Recovery Manager when your ready to assume duties.

NOTE: If the Plant Assessment Coordinator is not staffed, it is your responsibility to provide the Recovery Manager with Protective Action Recommendations (PARs) based on Plant Conditions per **EIP-ZZ-00212,** PROTECTIVE ACTION RECOMMENDATIONS. Ensure the Technical Assessment Coordinator in the TSC is aware of your presence in the EOF. Inquire of any PARs already in place.

	OPERATION (* Steps are recurring items that need to be reviewed on a continual bases)
☐ *1.	Evaluate input from plant conditions (PAC), dose assessment (DAC), and **EIP-ZZ-00212,** Protective Action Recommendations. Default to the most conservative recommendation, time is essential.
☐ *2.	Request release duration estimate from the PAC or Tech Assessment Coordinator (TAC) and provide updates to the DAC
☐ *3.	Review all notifications and obtain Recovery Manager approval for all notifications prepared by the EOF Communicator. Notifications to the State and Counties are made within 15 minutes of a classification declaration or a change in Protective Action Recommendations and at approximately 30-minute intervals thereafter.

PROTECTIVE MEASURES COORDINATOR CHECKLIST

	TURNOVER
☐ 1.	Brief the oncoming PMC on the status of the facility and on-site and off-site emergency response activities.
☐ 2.	Review log.
☐ 3.	Inform the Recovery Manager.
☐ 4.	Turnover complete _____ Time.
☐ 5.	Turnover logged.
☐ 6.	Initiate a new checklist CA# 737.

	RECOVERY
☐ 1.	Continue providing requested information.
☐ 2.	Continue activities per procedures and checklist until Recovery Organization established or until directed otherwise by the Recovery Manager.

	TERMINATION and SHUTDOWN
☐ 1.	When directed, assist with the EOF deactivation.
☐ 2.	Ensure area is put into order and logs collected and give to the Logistics Support Coordinator.

_____
Protective Measures Coordinator

PROTECTIVE MEASURES COORDINATOR CHECKLIST

PLANT COMPUTER GUIDE

Color and Description of Computer Point Quality Codes

The Plant Computer System (PCS) assigns a "Data Quality Code" to each field input and calculated variable at the time the point is processed. These quality codes are determined by a series of checks/tests performed during both input-data validation and point processing. A list of the quality codes follows which is ordered by severity:

1. **UNK** (Blue) – Unknown; point not yet processed. If a point is deleted from processing when SAIPMS is first activated, "UNK" quality code will be assigned. This quality code will also be displayed for calculated or derived points which have not yet cycled through their first processing period.
2. **DEL** (Blue) – Point has been deleted from processing. If a point was active when the SAIPMS software was activated, and was subsequently disabled from processing, the quality code "DEL" is assigned and no further engineering unit conversion is attempted.
3. **NCAL** (Blue) – Derived point not calculable. This quality code is assigned when it has been determined that insufficient inputs exist to accurately perform the associated equation or calculation.
4. **INVL** (Blue) – Invalid code is generated when a point's defined hardware channel address has not been selected, does not exist, or cannot be accessed. This usually indicates either an invalid hardware channel address, or a failed hardware component. For example, if a defined card slot address does not contain a card, all points assigned to that card will be tagged as INVL. Also, if a multiplexer has either failed or been taken offline, all points assigned to that multiplexer will be tagged as INVL.
5. **RDER** (Blue) – Sensor Read Error code is generated when no test return/input is received for a point in response to a scan command/output to a valid hardware channel address. This usually indicates a faulty sensor or a multiplexer communication problem. Whenever a quality code of RDER is observed, a hardware error condition exists.
6. **OTC** (Blue) – Open thermocouple.
7. **BAD** (Blue) – The BAD (Bad Scanned Value) code is generated when the "corrected" scanned value (i.e. adjusted for A/D gain and zero-drift error) exceeds the sensor range as defined by a point's "SENSOR LIMIT LOW" and "SENSOR LIMIT HIGH" values in the database.
8. **HRL** (Blue) – Point exceeds high reasonable limits. This condition is tested after engineering unit conversion and if the value exceeds the defined High Reasonable limit, a quality code of "HRL" is assigned.
9. **LRL** (Blue) – Point exceeds low reasonable limits. This condition is tested after engineering unit conversion and if the value exceeds the defined Low Reasonable limit, a quality code of "LRL" is assigned.
10. **REDU** (Cyan) – Point fails redundant point check. If a point has a defined Redundant Point and its current value does not match the defined point within the specified tolerance, it is assigned a quality code of "REDU".

PROTECTIVE MEASURES COORDINATOR CHECKLIST

PLANT COMPUTER GUIDE

11. **HIHI** (Red) – Point above high alarm limit. This condition is met when a point's current value has exceeded the defined High Alarm limit, and is assigned a quality code of "HIHI".

12. **LOLO** (Red) – Point below low alarm limit. This condition is met when a point's current value is less than the defined LOW Alarm limit, and is assigned a quality code of "LOLO".

13. **HALM** (Yellow) – Point above high warning limit. This condition is met when a point's current value has exceeded the defined High Operating limit, and is assigned a quality code of "HALM".

14. **LALM** (Yellow) – Point below low warning limit. This condition is met when a point's current value is below the defined Low Operating limit, and is assigned a quality code of "LALM".

15. **ALM** (Red) – State/Change-of-State alarm. Any logical-value point may be alarm monitored against either a defined logical state (i.e., "TRUE", or "FALSE"), or a defined change-of-state condition (i.e., "TRUE" to "FALSE", "FALSE" to "TRUE", or either state change). A quality code of "ALM" is assigned if the point meets any of the above conditions.

16. **SUB** (Cyan) – Substitute value inserted for point. If a substitute value has been entered for a point, the point is assigned a quality code of "SUB", and no further alarm checks or engineering unit conversions are made.

17. **DALM** (Cyan) – Point is deleted from alarm checks. If a point is currently disabled from alarm processing, it is assigned a quality code of "DALM", and no further alarm checks are made.

18. **INHB** (Green) – Point is inhibited from alarm by cut-out point. If a point has an assigned cut-out point, and the current state of the cut-out point matches the specified alarm inhibit state, the point is assigned a quality code of "INHB", and no alarm transaction is generated. While inhibited, the point value WILL continue to update, only the alarm condition is inhibited.

19. **GOOD** (Green) – Point passed all the above checks. The quality code "GOOD" indicates that all defined alarm conditions, states, or values have not been exceeded or met.

PLANT ASSESSMENT COORDINATOR CHECKLIST

DATE: _____ TIME_____

	INITIATION
☐ 1.	Sign in on Facility Sign-in board. Obtain the PAC package and clip on the Plant Assessment Coordinator badge
☐ 2.	Ensure the EOF has power. ☐ Normal power, (i.e. lights on, power available to computers, etc.). ☐ No Power-Start the EOF diesel per **OOA-UB-EPG50** or call for Equipment Operator if available
☐ 3.	Ensure the EOF HVAC system is in recirculation/filter mode per **OOA-UB-00004.** Keys to the HVAC room are in the OSL packet..
☐ 4	Check computer and printer power supplies have been shifted to the UPS position. ☐ Computer ☐ Color Printer
☐ 5.	Protective Measures Coordinator informed of your presence.
☐ 6.	Initiate Facility Log sheet.
☐ 7.	☐ Plant Assessment Staff _____ Name _____ Name
☐ 8.	Turn on projected statusboards.
☐ 9.	Check PAC phone lines for dial tones.
☐ 10.	Contact the TAC in the TSC and request information on any EALs and PARs already in place, and request that preparations be made to transfer PARs to the EOF.
☐ 11.	Notify the PMC when you are ready to assume your duties, including PARs.
☐ 12.	Evaluate PSB1, PSB2, and PSB3 on the Plant Computer.
☐ 13.	Initiate Free Format Logs as needed.
☐ 14.	Formally accept PARs from the TSC.

	OPERATIONS (*) *Steps are items that MUST be frequently reviewed*
☐ *1.	Evaluate input from plant conditions and **EIP-ZZ-00101** and **EIP-ZZ-00212,** Protective Action Recommendations.
☐ *2.	Provide the Protective Measures Coordinator with plant based Protective Action Recommendations.
☐ *3.	Request release duration from TAC.

PLANT ASSESSMENT COORDINATOR CHECKLIST

	TURNOVER
☐ 1.	Brief the oncoming PAC on the status of the facility and on-site and off-site emergency response activities.
☐ 2.	Review log.
☐ 3.	Inform the Protective Measures Coordinator.
☐ 4.	Turnover complete _____ Time.
☐ 5.	Turnover logged.
☐ 6.	Initiate a new checklist CA#735.

	RECOVERY
☐ 1.	Continue providing requested information.
☐ 2.	Continue activities per procedures and checklist until Recovery Organization established or until directed otherwise by the Protective Measures Coordinator/Recovery Manager.

	TERMINATION and SHUTDOWN
☐ 1.	When directed, assist the OSL with the EOF deactivation.
☐ 2.	Ensure area is put into order and logs collected and give to the Logistics Support Coordinator.

_____
Plant Assessment Coordinator

PLANT ASSESSMENT COORDINATOR CHECKLIST

PLANT COMPUTER GUIDE

Color and Description of Computer Point Quality Codes

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2. **DEL** (Blue) – Point has been deleted from processing. If a point was active when the SAIPMS software was activated, and was subsequently disabled from processing, the quality code "DEL" is assigned and no further engineering unit conversion is attempted.

3. **NCAL** (Blue) – Derived point not calculable. This quality code is assigned when it has been determined that insufficient inputs exist to accurately perform the associated equation or calculation.

4. **INVL** (Blue) – Invalid code is generated when a point's defined hardware channel address has not been selected, does not exist, or cannot be accessed. This usually indicates either an invalid hardware channel address, or a failed hardware component. For example, if a defined card slot address does not contain a card, all points assigned to that card will be tagged as INVL. Also, if a multiplexer has either failed or been taken offline, all points assigned to that multiplexer will be tagged as INVL.

5. **RDER** (Blue) – Sensor Read Error code is generated when no test return/input is received for a point in response to a scan command/output to a valid hardware channel address. This usually indicates a faulty sensor or a multiplexer communication problem. Whenever a quality code of RDER is observed, a hardware error condition exists.

6. **OTC** (Blue) – Open thermocouple.

7. **BAD** (Blue) – The BAD (Bad Scanned Value) code is generated when the "corrected" scanned value (i.e. adjusted for A/D gain and zero-drift error) exceeds the sensor range as defined by a point's "SENSOR LIMIT LOW" and "SENSOR LIMIT HIGH" values in the database.

8. **HRL** (Blue) – Point exceeds high reasonable limits. This condition is tested after engineering unit conversion and if the value exceeds the defined High Reasonable limit, a quality code of "HRL" is assigned.

9. **LRL** (Blue) – Point exceeds low reasonable limits. This condition is tested after engineering unit conversion and if the value exceeds the defined Low Reasonable limit, a quality code of "LRL" is assigned.

10. **REDU** (Cyan) – Point fails redundant point check. If a point has a defined Redundant Point and its current value does not match the defined point within the specified tolerance, it is assigned a quality code of "REDU".

11. **HIHI** (Red) – Point above high alarm limit. This condition is met when a point's current value has exceeded the defined High Alarm limit, and is assigned a quality code of "HIHI".

12. **LOLO** (Red) – Point below low alarm limit. This condition is met when a point's current value is less than the defined LOW Alarm limit, and is assigned a quality code of "LOLO".

13. **HALM** (Yellow) – Point above high warning limit. This condition is met when a point's current value has exceeded the defined High Operating limit, and is assigned a quality code of "HALM".

14. **LALM** (Yellow) – Point below low warning limit. This condition is met when a point's current value is below the defined Low Operating limit, and is assigned a quality code of "LALM".

15. **ALM** (Red) – State/Change-of-State alarm. Any logical-value point may be alarm monitored against either a defined logical state (i.e., "TRUE", or "FALSE"), or a defined change-of-state condition (i.e., "TRUE" to "FALSE", "FALSE" to "TRUE", or either state change). A quality code of "ALM" is assigned if the point meets any of the above conditions.

16. **SUB** (Cyan) – Substitute value inserted for point. If a substitute value has been entered for a point, the point is assigned a quality code of "SUB", and no further alarm checks or engineering unit conversions are made.

17. **DALM** (Cyan) – Point is deleted from alarm checks. If a point is currently disabled from alarm processing, it is assigned a quality code of "DALM", and no further alarm checks are made.

18. **INHB** (Green) – Point is inhibited from alarm by cut-out point. If a point has an assigned cut-out point, and the current state of the cut-out point matches the specified alarm inhibit state, the point is assigned a quality code of "INHB", and no alarm transaction is generated. While inhibited, the point value WILL continue to update, only the alarm condition is inhibited.

19. **GOOD** (Green) – Point passed all the above checks. The quality code "GOOD" indicates that all defined alarm conditions, states, or values have not been exceeded or met.

LOGISTICS SUPPORT COORDINATOR CHECKLIST

DATE: _____ TIME_____

	INITIATION
☐ 1.	Sign in on Facility Sign-in board. Obtain the Logistics Support Coordinator (LSC) package and clip on the Logistics Support Coordinator badge
☐ 2.	Recovery Manager informed of your presence.
☐ 3.	Initiate Facility Log sheet.
☐ 4.	Equipment energized / made ready. ☐ Check and Synchronize clock ☐ Copier ☐ LSC Computers ☐ Microfiche Reader ☐ LSC Telephones ☐ FAX
☐ 5.	Admin Coordinator contacted and administrative operations and responsibilities discussed. Obtain the names of the clerical support staff reporting. Assume the responsibility of requesting outside assistance.
☐ 6.	Personnel Assessment Logistics Support Staff _____ (name) _____ (name) Clerical Support Staff _____ (name) _____ (name) _____ (name)
☐ 7.	When directed by the RM, evaluate extra personnel. ☐ Assemble all extra responders in the Media Area to await further instructions. (Obtain key from the Off Site Liaison Coordinator.) ☐ Establish needs of coordinators. ☐ Inform extra responders of established routes to take when leaving. ☐ Send personnel home, or to a designated Reception and Care Center, with instructions to stand by until they can be contacted with a designated time to return.
☐ 8.	If additional support is needed, contact the Administrative Coordinator for callout.

	OPERATIONS (*) *Steps are items that MUST be frequently reviewed*
☐ *1.	Contact Administrative Coordinator and request additional clerical support as needed.
☐ *2.	Serve as liaison with American Nuclear Insurers and INPO as required. (NOTE: The communicators contact both groups with notifications.)
☐ *3.	Contact QA Corrective Action Group to review notifications required per **APA-ZZ-00520**, Reporting Requirements And Responsibilities.

LOGISTICS SUPPORT COORDINATOR CHECKLIST

☐ *4	Contact area Motels to begin prearranging lodging: ☐ Ensure motels being contacted are outside the Plume Exposure Pathway. ☐ Negotiate best available rates. ☐ Establish a list of motels with number of rooms available for each (the list should be generated for the next several days at a minimum). ☐ Request if some (your best estimate dividing between available motels) rooms may be held for 6:00PM cancellation daily for the next several days.
☐ *5	Meal Arrangements ☐ Contact area restaurants/caterers to determine availability of meals. (This should be coordinated with the Admin Coordinator in the TSC who shares this responsibility.)
☐ *6	Temporary facilities needed.
☐ *7	Contact the Emergency Procurement personnel at the Ameren GOB to establish a working relationship.
☐ *8	Review letters of agreement and the INPO Resources book for resources available from other plants.
☐ *9.	If requests for additional support personnel and services are made: ☐ Keep Recovery Manager informed of request being made for additional support. ☐ Contact vendors and obtain the following information: 1) Name(s) of personnel. 2) Social Security Number(s). 3) Point of Departure. 4) Transportation requirements (airline tickets, land transportation, etc.). 5) Lodging requirements. 6) Anticipated Work Location. 7) Estimated time of arrival. ☐ Contact Admin Coordinator to ensure access requirements are obtained and required training is scheduled.
☐ *10.	Request additional equipment as needed: ☐ Keep Recovery Manager informed of request being made for additional support services/equipment. ☐ Requesting organization should provide: 1) Explicit equipment requirements in writing. 2) Amount needed. 3) Delivery location. 4) Person on site to contact. 5) Justifiable reason for request. ☐ Contact vendor and obtain the following information: 1) Availability. 2) Shipping Mode. 3) Special handling requirements. 4) Estimated arrival time. ☐ Contact the following to coordinate the delivery/arrival: 1) Security Coordinator. 2) OSL for traffic control. 3) Requesting group.

LOGISTICS SUPPORT COORDINATOR CHECKLIST

	TURNOVER
☐ 1.	Brief the oncoming LSC on the status of the facility and on-site and off-site emergency response activities.
☐ 2.	Review log.
☐ 3.	Inform the Recovery Manager, Logistics and Clerical Staff of the turnover.
☐ 4.	Turnover complete _____ Time.
☐ 5.	Turnover logged.
☐ 6.	Initiate a new checklist CA# 736.

	RECOVERY
☐ 1.	Continue providing requested information.
☐ 2.	Continue activities per procedures and checklist until Recovery Organization established or until directed otherwise by the Recovery Manager.

	TERMINATION and SHUTDOWN
☐ 1.	When directed, assist the OSL with the EOF deactivation.
☐ 2.	Ensure area is put into order and all EOF logs collected and forward to the Emergency Preparedness Department.

_____
Logistics Support Coordinator

DOSE ASSESSMENT COORDINATOR CHECKLIST

DATE: _____TIME_____

	INITIATION
☐ 1.	Sign in on Facility Sign-in board. Obtain the DAC package and clip on the Dose Assessment Coordinator badge.
☐ 2.	Inform Recovery Manager/Protective Measures Coordinator of your presence.
☐ 3.	Adjust Gai-tronics in Recovery Center to an acceptable level.
☐ 4.	Switch the DAC's computers (2) power supplies to the UPS position.
☐ 5.	Initiate Facility Log sheet.
☐ 6.	Check DAC phone lines for dial tone and Dose Assessment Equipment available and operable. Report any deficiencies to the Logistics Support Coordinator.
☐ 7.	Turn on overhead projector.
☐ 8.	Upon direction of the RM, Contact the Rad/Chem Technician in the Control Room who is performing dose assessment and request a turnover of dose assessment activities including elevated Radiation Monitor readings and trends (prepare to accept transfer of Dose Assessment to EOF). (If the EOF is uninhabitable, Dose Assessment is maintained in the TSC until the BEOF is staffed.)
☐ 9.	If vital busses NB01 and NB02 are degraded, refer to **KOA-ZZ-00125** to determine effect of degraded condition of Plant computer points.
☐ 10.	Notify the RM when you are ready to assume your duties. TIME: _____
☐ 11.	Obtain RM approval to transfer Dose Assessment to the EOF, then relieve the Rad/Chem Technician in the Control Room of his Dose Assessment responsibility including the NRC telephone line (HPN). (Communications and Dose Assessment should be transferred to the EOF at the same time.)
☐ 12.	Contact the HP Coordinator (HPC) in the TSC and request two (2) Field Monitoring Teams be dispatched and two (2) Dose Assessment Staff personnel to report to the EOF. *NOTE: If release is in progress or imminent, brief the FMTs on the radio.*

	OPERATIONS (*) *Steps are items that MUST be frequently reviewed.*
☐ *1.	Make Facility Announcement that **"All personnel leaving the EOF should check out with the Security Officer prior to leaving the facility."** If a release is in progress or anticipated announce **"an HP brief from the DAC will also be required."** *NOTE: If a release is in progress or anticipated, ensure all personnel dispatched from the EOF have dosimetry. The Security Officer will verify HP briefs prior to exit.*
☐ *2.	Upon determination that the emergency involves an actual or potential release of radioactive material, perform dose projections in accordance with **EIP-ZZ-01211,,** Management Action Guides For Nuclear Emergencies (MAGNEM). **(COMN 42538)** PRINT and SAVE all dose calculations. *NOTE: If release is unmonitored, request on site team from HPC to obtain closed window RO-2 reading at or near Exclusion Area Boundary (EAB). This is to initially quantify the release.*
☐ *3.	Notify the Health Physics Coordinator (HPC) when thyroid dose exceeds 25 REM. Recommend KI for Plant Personnel.
☐ *4.	Wind shifts and changes in meteorological conditions should be announced to the RM, FMTs, and/or PMC and noted on maps. Notification of Offsite Agencies MUST be initiated within approximately 15 minutes of changes to Protective Action Recommendations. When available, coordinate recommendations with the Missouri Department of Health (DOH).

DOSE ASSESSMENT COORDINATOR CHECKLIST

☐ *5.	Obtain weather forecast initially and approximately every 4 hours. Brief the PMC and/or the RM of any anticipated changes in the weather conditions and their effects on PARs. (St. Louis Flight Briefing Service 1-800-992-7433)
☐ *6.	Monitor Radiation Monitor Trends for Group 1 and 2 EALs in accordance with **EIP-ZZ-00101**. Notify the RM and/or PMC of any setpoints that have been exceeded or are being approached. *NOTE: Refer to **KOA-ZZ-00125** during degraded NB01/NB02 conditions to determine validity of plant computer points.*
☐ *7.	When the field monitoring teams are available, brief and dispatch as per **EIP-ZZ-00211**, Field Monitoring Direction and Assessment. *NOTE: If release is in progress or imminent, brief the FMTs on the radio.*
☐ *8.	Evaluate input from the FMT's and monitor Protective Action Recommendations based on radiological conditions per **EIP-ZZ-00212**, Protective Action Recommendations. When available, coordinate recommendations with the Missouri Department of Health (DOH).
☐ *9.	Request update of release duration from the PMC/PAC or the TAC if the PMC/PAC is not available.
☐ *10.	Provide the Protective Measures Coordinator with the radiological based Protective Action Recommendations. *NOTE: If the Protective Measures Coordinator is not staffed, provide the Recovery Manager with the above information.*
☐ *11.	Initiate Free Format Logs as needed.
☐ *12.	Establish Radiological Habitability Controls in the EOF. ☐ Close both vestibule doors ☐ Response check the Portal Monitor (page 5 of 7, this attachment or HTP-ZZ-04135). ☐ AMS 3 energized and source checked (page 6 of 7, this attachment or HTP-ZZ-04137) ☐ Control dosimetry set.
☐ *13.	Set up a frisking station using a model 177 ratemeter, (per page 4 of 7, this attachment or HTP-ZZ-04101).
☐ *14.	Issue TLDs to personnel, as required, in the EOF (Use Page 7 of 7, this attachment for issue).
☐ *15.	Ensure that facility habitability is maintained using portable instrumentation and secondary monitoring devices. Habitability Action Levels: ☐ 600 mrem/hr direct dose rate, inform the RM, and commence monitoring cumulative dose. ☐ 4400 mrem cumulative dose, recommend facility evacuation. ☐ 5000 mrem/hr or greater direct dose rates recommend facility evacuation. ☐ Iodine concentrations of 2.4 E –6 uCi/ml or greater, inform the Recovery Manager and commence air sampling to ensure total intake does not exceed 25 rem CDE. ☐ Iodine concentrations of 1.9 E –5 uCi/ml or greater, recommend evacuation. ☐ Appropriate protective actions, as per Health Physics procedures, should be recommended when experiencing the above radiological conditions and considering how and when to evacuate.
☐ *16.	Ensure decon sinks and shower are directed to the Radioactive Holding Tank when handling radioactive waste. The Waste Holding Tank is to be monitored for level and disposed of properly when full. See **OOA-HD-00001**.
☐ *17.	Set up frisker at entry to Decon Area for use by returning FMTs.

DOSE ASSESSMENT COORDINATOR CHECKLIST

	TURNOVER
☐ 1.	Brief the oncoming DAC and FMTs on radiological release and dose information, field monitoring activities, and in-plant Radiation Monitor trends.
☐ *2.	Arrange for Field Monitoring Team (FMT) turnover by briefing and dispatching relief FMTs. Ensure returning FMTs access the EOF via the Decon Area in back of the Lab.
☐ 3.	Review log.
☐ 4.	Inform the Recovery Manager, Dose Assessment Staff and Field Monitoring Teams of the turnover.
☐ 5.	Notify DOH personnel of turnover.
☐ 6.	Turnover complete _____ Time.
☐ 7.	Turnover logged.
☐ 8.	Initiate a new checklist CA# 734.

	RECOVERY
☐ 1.	Continue providing requested information.
☐ 2.	Ensure that Field Monitoring Teams are informed of the Recovery declaration.
☐ 3.	Continue activities per procedures and checklist until Recovery Organization established or until directed otherwise by the Recovery Manager.

	TERMINATION and SHUTDOWN
☐ 1.	When directed, assist with the EOF deactivation.
☐ 2.	Ensure area is put into order and logs collected and given to the Logistics Support Coordinator.
☐ 3.	Ensure dose assessment equipment is turned off and/or stored and UPS units selected to LINE.
☐ 4	If sinks and showers are no longer needed for decon purposed, survey sinks and showers. If free of contamination, return drains to the sanitary tank.
☐ 5.	Secure friskers and store in locker.
☐ 6.	Secure AMS-3.
☐ 7.	Collect and make preparations to read TLDs issued from the EOF.

_____
Dose Assessment Coordinator

DOSE ASSESSMENT COORDINATOR CHECKLIST

SET-UP AND OPERATION OF THE MODEL 177 RATEMETER

This Startup Sequence augments HTP-ZZ-04101, Operation of the Ludlum Model 177 Series Alarm Ratemeter. It is designed to be used in an Emergency Response Facility when a HP Operations Technician is not immediately available.

1. Remove Model 177 ratemeter, frisker probe, detector cable, power cord, and check source from the E-Kit cabinet.

2. Connect detector and power cords, if not already connected, to the Model 177 ratemeter and verify the following switch settings:

   Front Panel:
   1. On/Off switch in "ON" position.
   2. Volume adjusted to hear audible counts.
   3. Response switch in "slow" position.
   4. Range switch to "X1" scale.

   Rear Panel:
   1. Alarm set at '5'.
   2. Subtract switch in "Off" position if meter has Subtract Switch.

3. Perform response check as follows:

   - ☐ Ensure instrument has a current calibration sticker.
   - ☐ Set the range switch to the appropriate position and place the detector on the check source bracket.
   - ☐ Verify the response is within the acceptable range as specified on the response value determination form/sticker for that check source.
   - ☐ Check the instrument alarm by adjusting the ALARM SET switch so that it is slightly less than the count rate of the source.
   - ☐ Remove the source from the detector.
   - ☐ Depress the RESET button. The alarm condition should clear.
   - ☐ If the pre-operational checks are satisfactory, complete the attached pre-operational check sticker. If either the alarm or the response check failed, notify the Health Physics Coordinator and obtain an operational ratemeter.

4. Return the check source to the E-Kit cabinet.

DOSE ASSESSMENT COORDINATOR CHECKLIST

GAMMA-10 PORTAL MONITOR RESPONSE CHECK

This Startup Sequence augments HTP-ZZ-04135, Operation of the NNC Gamma-10 Portal Monitor. It is designed to be used in an Emergency Response Facility when a HP Operations Technician is not immediately available.

NOTE:	The key for the electronics cabinet is attached to the response source.

1. Verify 110 VAC power to the unit. If it is ON, proceed to Step 2. If the monitor is OFF, perform the following:
   - Supply 110 VAC to the unit through the UPS unit.
   - Set the NIMBIN power supply On-Off switch to ON and ensure the power light is illuminated.
   - Set the HV-2 NIM On-Off switch to on and ensure the Positive LED is illuminated.
2. Verify that a current calibration label is affixed to the Electronics Box and the pot settings, on the box, are the same as identified on the label.
3. Inspect the monitor for physical damage.
4. Verify no alarms are activated. (If an alarm is activated, clear the alarm and depress the RESET on the portal before continuing.)
5. Pass the Gamma-10 Response Source through the central region of the monitor. The Contamination alarm should activate on the box, a light and buzzer, and a red light on the portal should illuminate.
6. Depress the RESET button on the portal. The alarms should clear and the green operational light should remain lit.
7. If the monitor passes this check, initial and date the Pre-Operational Check Sticker affixed to the Electronics Box.

   If the monitor fails the Pre-Operational Checks, tag the unit Out Of Service and notify the Health Physics Coordinator. Set up Frisking Station and have personnel entering the building and those already in the building frisk for contamination, if it is expected.

DOSE ASSESSMENT COORDINATOR CHECKLIST

AMS-3 STARTUP AND OPERATION

This Startup Sequence augments HTP-ZZ-04137, Operation of the Eberline AMS-3. It is designed to be used in an Emergency Response Facility when a HP Operations Technician is not immediately available.

1) Connect AMS-3 (monitor) and air sampler to 110 VAC power.
2) Ensure monitor and air sampler have current calibration label.
3) Inspect the chart paper. Ensure an adequate supply of paper remains. If a RED line appears on the chart paper, notify Health Physics and continue the startup procedure.
4) Set monitor ON-OFF switch (located on back of monitor) to the ON position. Allow monitor to warm-up for 5 minutes.
5) Set BACKGROUND SUBTRACT switch to the ON position.
6) Push in "PUSH TO SET" on bottom left side of monitor and note the alarm setpoint value of 20,000 cpm (this is the first scale mark to the right of the 104 scale value.
7) Set alarm setpoint to 1000 cpm by adjusting the SET knob while holding in "PUSH TO SET" button.
8) Remove sample holder located on the right front side of monitor by loosening the clamp and pulling out on handle.
9) Obtain check source from HP E-Kit Locker. Center source over sample holder opening with the recessed side of the source bracket facing the opening.
10) The audible alarm and the alarm light should energize (activate). If not notify Health Physics. (The startup procedure should not continue until the problem is resolved).
11) Press ACKNOWLEDGE button to silence alarm.
12) Verify count rate on chart recorder is as indicated on the response value listed on back of source bracket or a sticker on the instrument.
13) Remove check source. Ensure alarm light resets and count rate decreases on chart recorder.
14) Remove the filter in the filter holder. (Remove the filter retaining ring on the filter holder, this snaps on the end of the filter holder assembly, and may fit somewhat tight.)
15) Obtain a new filter from the HP Emergency Kit Locker and place it on the sample holder with the "ROUGH SIDE" of filter facing upwards.
16) Replace retaining ring on the sample holder and insert the sample holder into the sample chamber. Lock the filter holder into place.
17) Set the alarm setpoint to 20,000 cpm by adjusting the SET knob while holding in the "PUSH TO SET" button.
18) Place the toggle switch on the power cord to the "ON" position. The air sampler pump should start.
19) Ensure airflow as indicated on flowmeter is within the tolerance listed on the calibration label (read the flow at the center of the rotometer float ball.) If it is not, notify Health Physics.
20) Initial and date the Preoperational Check sticker.

DOSE ASSESSMENT COORDINATOR CHECKLIST

Emergency Operations Facility (EOF) TLD Issue Log							
TLD Label No.	Name (Last, First, MI)	Badge No.(UE) or SSN(nonUE)	Organization	TLD Label No.	Name (Last, First, MI)	Badge No.(UE) or SSN(nonUE)	Organization

BACK-UP EOF CHECKLIST

DATE: _____ TIME_____

	TRANSFER TO BACK-UP EOF
☐ 1.	**OSL**-Contact SEMA and County EOCs and notify them of the decision to activate the Backup EOF due to the EOF being uninhabitable. Inform SEMA of the estimated time of arrival to the Backup EOF. *NOTE: This step can be satisfied by adding this information to a SENTRY Notification Form or by using backup communication lines.*
☐ 2.	**OSL or RM**-Contact the NRC and notify them of the decision to startup the Backup EOF.
☐ 3.	**OSL**-Inform the appropriate EOF emergency personnel to relocate as indicated below. If personnel have not arrived at the facility, inform the Security Officer in the EOF to direct arrivals to the appropriate facility (Backup EOF or TSC). See attached map and layout for the Backup EOF: *NOTE: The BEOF has Emergency Packets for the staff. Personnel reporting to the TSC need to take their packet with them.* ☐ Recovery Manager to the Backup EOF. ☐ Protective Measures Coordinator to the Backup EOF. ☐ Off-Site Liaison Coordinator to the Backup EOF. ☐ Communicator, to the TSC to report to EC. ☐ DACs, one to the Backup EOF and one to the TSC to report to EC. ☐ Dose Assessment Staff, one to the Backup EOF and one to the TSC ☐ Plant Assessment Coordinator to the TSC to report to TAC. ☐ Logistics Support Coordinator to the TSC to work with the Admin. Coord. ☐ JPIC Tech Rep (EOF) to the TSC and communicate with JPIC. ☐ All Others – Contact the Admin Coordinator in the TSC to determine if EC needs additional personnel in the TSC. If not needed, personnel should be instructed to return home and standby their phones.
☐ 4.	**RM**-Direct the EC and TSC to take charge of all ERO operations including the responsibility for the following until the BEOF is activated. Maintain contact, to the extent possible, using Cellular phones while in route to Backup EOF ☐ Protective Action Recommendations in accordance with **EIP-ZZ-00212.** ☐ Dose Assessment/ FMT Coordination in accordance with **EIP-ZZ-01211and EIP-ZZ-00211** ☐ Notifications in accordance with **EIP-ZZ-00201.** *NOTE: Notifications may be sent from the Control Room using SENTRY or be initiated from the TSC using backup communication lines.*

	INTERIM OPERATION WHILE AWAITING BACKUP EOF ACTIVATION
☐ 1.	**Communicator** - (Reporting to TSC) Announce your presence to the EC and coordinate notification completion with the DAC and TAC. ☐ Make Notifications using the backup notification system. or ☐ Relay information to the Control Room communicator to use SENTRY. *NOTE Ensure copies of all notifications are Faxed to the Backup EOF. (See attached drawing for phone #.)*

BACK-UP EOF CHECKLIST

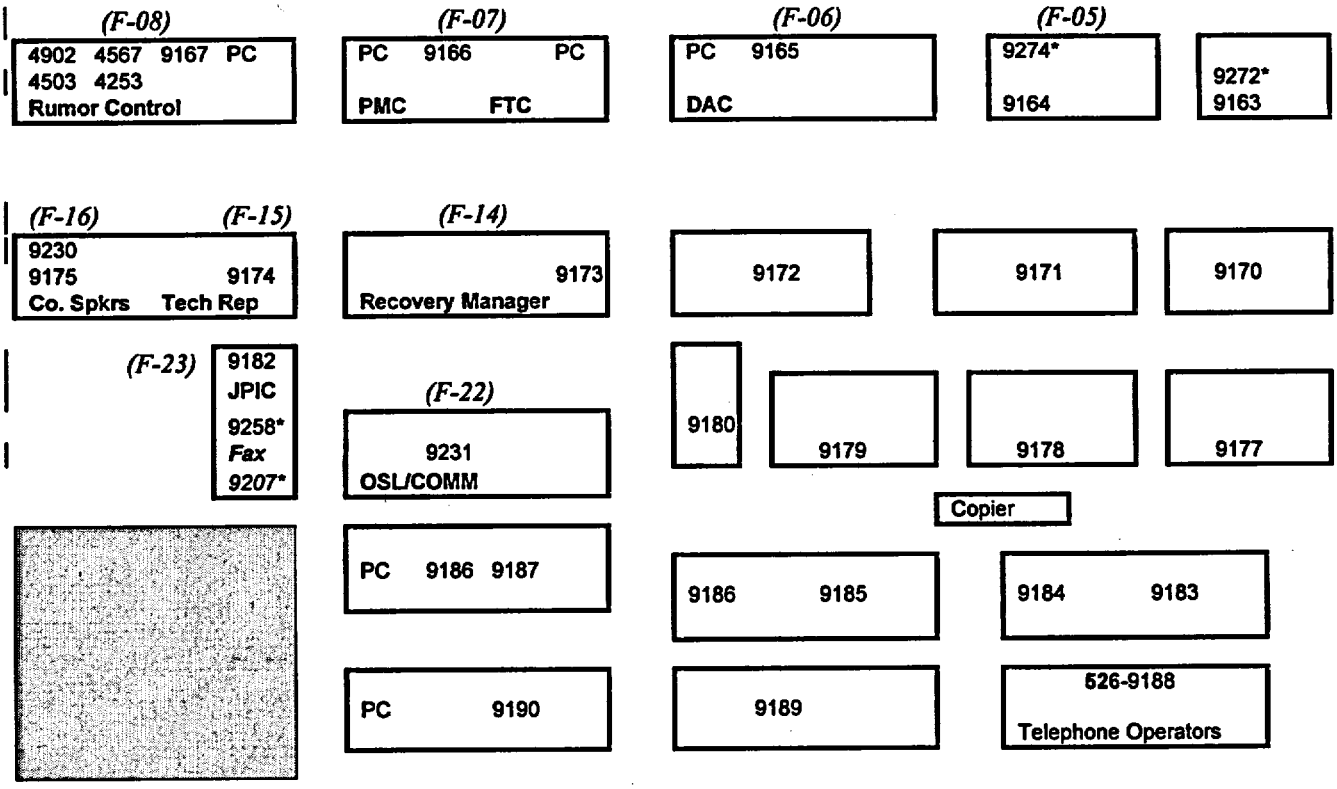
☐ 2.	**DAC** - (Reporting to TSC) Work with the HPC and perform all applicable portions of the DAC Checklist Attachment 6. *NOTE: Field Monitoring Teams (FMTs) should remain under the control of the TSC DAC until the DAC in the Backup EOF is ready to assume control. Primary communications with the FMTs to the Backup EOF will be via cellular phones. Secondary radio communications can be established if necessary.*
☐ 3.	**Dose Assessment Staff** - (Reporting to TSC) Assist the DAC with FMT direction.
☐ 4.	**PAC** - (Reporting to TSC) Report to the TAC and perform applicable portions of Attachment 4.
☐ 5.	**LSC** - (Reporting to TSC) Work with the Admin Coordinator performing the applicable portions of Attachment 5.

	BACKUP EOF ACTIVATION
☐ 1.	**OSL** -Upon arrival at the Backup EOF. ☐ Ensure equipment/materials are setup (Refer to Page 3 of this Attachment). ☐ Ensure the MAGNEM PC is set up and operating including testing the printer. ☐ Phones are removed from the cabinet, plugged in, and operable. ☐ Introduce yourself and the RM to the appropriate State officials.
☐ 2.	**RM** -Recovery Manager contact the Emergency Coordinator, receive update, and request transfer of the following to the Backup EOF: ☐ Protective Action Recommendations in accordance with **EIP-ZZ-00212** . ☐ Dose Assessment/ FMT Coordination in accordance with **EIP-ZZ-01211** and **EIP-ZZ-00211.** *Note: Field Monitoring Teams remain under the control of the TSC DAC.* ☐ Notifications in accordance with **EIP-ZZ-00201.**
☐ 3.	**PMC** - Perform applicable portions of PMC Checklist Attachment 3 using input from the TAC, PAC (in TSC) and DAC (Backup EOF).
☐ 4.	**DAC** - Coordinate with the Missouri Department of Health (DOH) and assume Field Monitoring Team coordination from the TSC, using cellular phones as the primary communication with the Teams. Perform applicable portions of Attachment 6.
☐ 5.	**OSL** - Perform applicable portions of the OSL Checklist Attachment 2 and ensure a comprehensive turnover of offsite notifications with the concurrence of the RM. *NOTE: DO NOT assume responsibility of notifications until PMC and DAC have assumed responsibility.*
☐ 6.	**OSL** - Report the assumption of responsibilities to the Recovery Manager.
☐ 7.	**OSL** - Log the Backup EOF activation time
☐ 8.	**OSL** - Inform the Emergency Coordinator, SEMA, County EOCs and the NRC of the assumption of responsibilities in the Backup EOF.

Off-Site Liaison Coordinator Signature

BACK-UP EOF CHECKLIST

BEOF LAYOUT

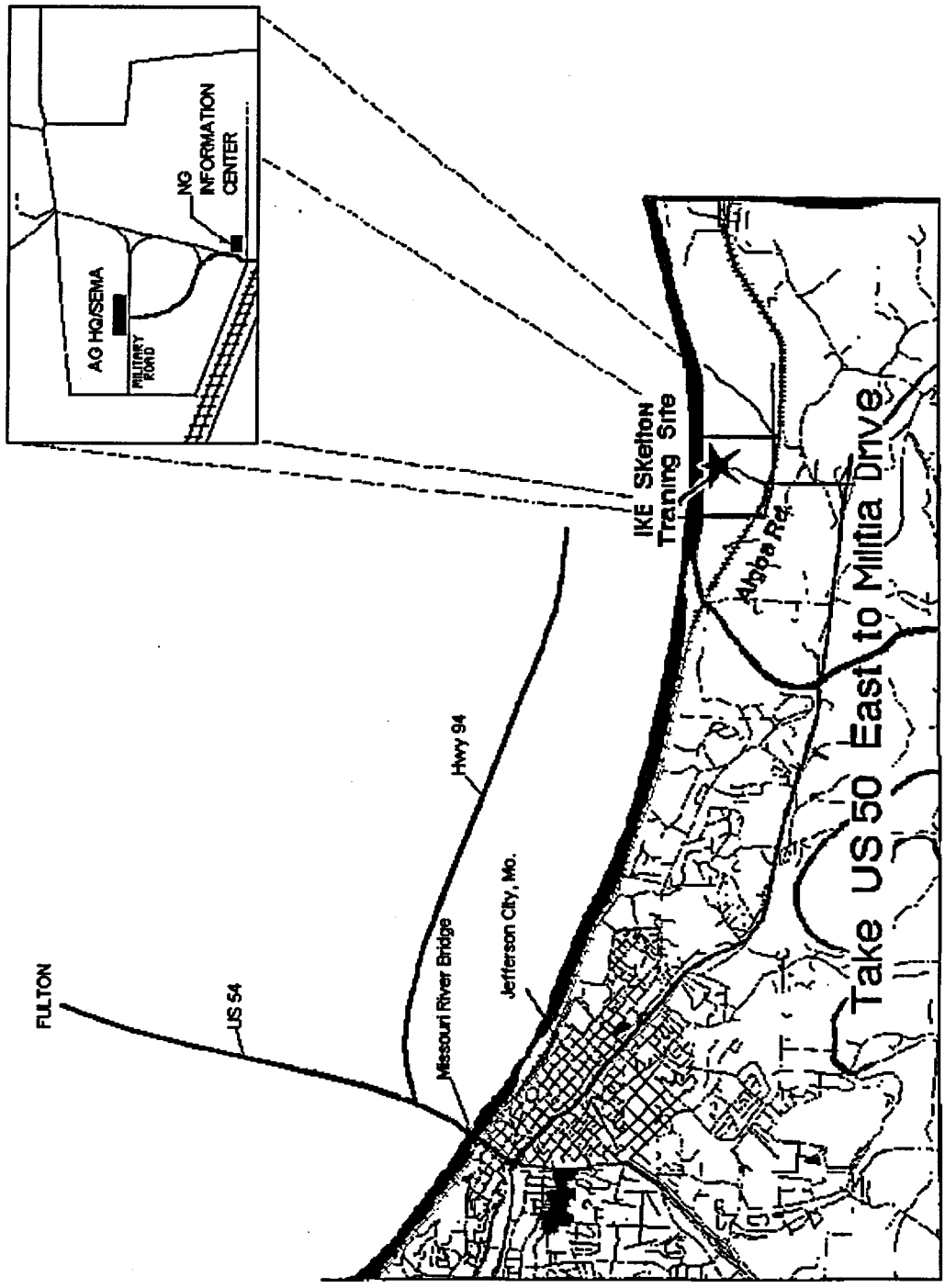


All 9XXX phone numbers are 526-9XXX
All 4XXX phone numbers are 634-4XXX
* Indicates analog phone line
Field Monitoring Team Cellular Phones

Chem Vehicle	(573) 220-0173
HPTS Vehicle	(573) 220-0628
I&C Vehicle	(573) 220-2507

Radio for FMT communications is located in the SEMA Radio Room

When dialing out, use 8 (area code) XXX-XXXX.


NG INFORMATION CENTER
AG HQ/SEMA
MILITARY ROAD
IKE Skelton Training Site
Hubble Rd.
Take US 50 East to Militia Drive
Hwy 94
Missouri River Bridge
Jefferson City, Mo.
US 54
FULTON

CALLAWAY PLANT

EMERGENCY PLAN IMPLEMENTING PROCEDURE

EIP-ZZ-00231

RESPONSE TO SEVERE THUNDERSTORM/HIGH WINDS/TORNADO WATCHES AND WARNINGS

RESPONSIBLE DEPARTMENT **Emergency Preparedness**

PROCEDURE OWNER **L. H. Graessle**

WRITTEN BY **L. H. Graessle**

PREPARED BY **L. H. Graessle**

APPROVED BY Warren A. Witt

DATE ISSUED 11-22-00

This procedure contains the following:

Pages	1	through	9
Attachments	1	through	4
Tables		through	
Figures		through	
Appendices		through	
Checkoff Lists		through	

This procedure has 0 checkoff list(s) maintained in the mainframe

Conversion of commitments to TRS reference/hidden text completed by Revision

ITS Commitments N/A Non-T/S Commitments 05

TABLE OF CONTENTS

RESPONSE TO SEVERE THUNDERSTORM/HIGH WINDS/TORNADO WATCHES AND WARNINGS

1 PURPOSE AND SCOPE

1.1 PURPOSE

This procedure establishes the method for responding to severe thunderstorm watches, thunderstorm warnings, high winds, tornado watches, or tornado warnings.

1.2 SCOPE

1.2.1 Establishes the means of notifying plant workers of severe thunderstorms, high winds, tornado watches, or tornado warnings.

1.2.2 Establishes the response of plant workers during severe thunderstorms, high winds, tornado watches, or tornado warnings.

2 DEFINITIONS

2.1 APPROACHING (severe levels) - A thunderstorm which contains winds of 40 to 57 mph, or hail 1/2 inch or larger but less than 3/4 inch in diameter.

2.2 FUNNEL CLOUD - A condensation funnel extending from the base of a towering Cumulus or Cumulonimbus cloud (Cb), associated with a rotating column of air that is not in contact with the ground (and hence different from a tornado).

2.3 HIGH WINDS - Winds in excess of 40 mph (18 m/s) sustained, or 58 mph (26 m/s) gusting.

2.4 National Oceanic and Atmospheric Administration (NOAA) - An organization of the U.S. Commerce Department. NOAA's National Weather Service keeps a round-the-clock vigil on atmospheric conditions and issues watches and warnings for severe atmospheric conditions. A weather radio which can receive NOAA weather announcements is located in the Control Room, in the Shift Supervisor's office, and is activated when local severe weather conditions exist.

2.5 SEVERE THUNDERSTORM - A thunderstorm which produces tornadoes, hail 0.75 inches or more in diameter, or winds of 58 mph or more. Structural wind damage may imply the occurrence of a severe thunderstorm. See approaching (severe).

2.6 THUNDERSTORM – Rain clouds producing lightning.

2.7 TORNADO WATCH - Identifies an area where conditions are favorable for a tornado formation.

2.8 TORNADO WARNING - A tornado warning means that a tornado has been sighted or indicated by weather radar.

2.9 TORNADO - A violently rotating column of air in contact with the ground and extending from the base of a thunderstorm. A condensation funnel does not need to reach to the ground for a tornado to be present; a debris cloud beneath a thunderstorm is all that is needed to confirm the presence of a tornado, even in the total absence of a condensation funnel.

2.10 WARNING - Issued by NWS local offices indicating that a particular weather hazard is either imminent or has been reported. A warning indicates the need to take action to protect life and property. The type of hazard is reflected in the type of warning (e.g., tornado warning, blizzard warning).

2.11 WATCH - A National Weather Service (NWS) product indicating that a particular hazard is possible, i.e., that conditions are more favorable than usual for its occurrence. A watch is a recommendation for planning, preparation, and increased awareness (i.e., to be alert for changing weather, listen for further information, and think about what to do if the danger materializes).

3 RESPONSIBILITIES

3.1 SHIFT SUPERVISOR

3.1.1 Ensures Attachment 1, Announcements for High Winds/Tornado's, is completed during severe thunderstorm watches, high winds, tornado watches, or tornado warnings.

3.1.2 Ensures precautionary actions (Section 4.1) are taken to the extent possible.

3.1.3 Ensures proper weather monitoring when opening missile shields for operable safety related equipment.

3.2 DEPARTMENT HEADS AND SUPERVISORY PERSONNEL

3.2.1 Department heads and plant supervisory personnel are responsible for ensuring that personnel performing work at locations outside the range of plant announcements are notified of severe thunderstorm watches, thunderstorm warnings, high winds, tornado watches, or tornado warnings, if possible. Areas of concern included:
SOS 00-0566

- Personnel in vehicles.
- Personnel performing work in remote locations.
- Storeroom 2 level 'A' and 'B' Storage.
- Restroom facilities.

3.3 ADMINISTRATION DEPARTMENT

Administration ensures that updated copies of Attachment 2, Tornado's, are posted and remain visible on plant bulletin boards.

3.4 PLANT EMPLOYEES

3.4.1 Plant employees are responsible for following the protective action recommendations made over the plant Gai-tronics.

3.4.2 Plant employees have the responsibility to become familiar with the location of designated shelters, or actions to be taken should these shelters not be readily accessible. Locations and actions are listed in Attachment 2, Tornado's.

4 PROCEDURE

4.1 MISSILE SHIELD REMOVAL RFR 019618B

4.1.1 An initial assessment of current and future (48 hours) weather conditions should be conducted prior to missile shield removal. See Attachment 4 for the list of shields and monitoring distance.

4.1.2 If thunderstorms are in or predicted within the monitoring area moving in the direction of the plant, work should be delayed.

4.1.2.1 If work is urgent and it is desired to proceed, a Tornado translational speed of 70 mph should be considered per Reg. Guide 1.76.

4.1.3 Contact Security, at the Key Issue Station, to perform weather monitoring. Security contacts Surface Systems, Inc. (SSI) of St. Louis, Missouri. SSI is under contract with Ameren Corporation to provide weather monitoring and forecasting. SSI phone numbers are, 800-994-7947 or 314-872-0560.

4.1.3.1 Security calls SSI hourly for updates of weather conditions and if conditions change within the hour SSI contacts Security.

4.1.4 Prior to opening a missile shield verify sufficient resources are available to close the shield.

4.1.5 An informational EOSL should be initiated for the shield to be removed.

4.1.6 Refer to Attachment 4 for monitoring requirements and additional information.

4.1.7 Sea-Land Containers on the D/G Building Roof.

4.1.7.1 The Activity Coordinator responsible for placing a Sea-Land Container on the D/G Roof must notify the Control Room and then Security to initiate weather monitoring for thunderstorms within a 70 mile radius of the plant. All actions required by **RFR 020026A MUST** be followed.

4.2 SEVERE THUNDERSTORM WATCH

4.2.1 Notify plant personnel of a severe thunderstorm watch by using Attachment 1, Announcements for High Winds/Tornado's, Step A.

4.2.2 Doors listed on Attachment 3, High Winds/Tornado Door Closure List, should be closed if possible. Any door that is unattended and cannot be readily closed should be evaluated by the SS/CRS to determine if the door may be left open.

NOTE:	Access through a door is not intended to be restricted by this procedure. Access is a personal judgement depending on conditions.

4.2.2.1 Have Security (CAS/SAS) verify that all monitored doors listed on Attachment 3, Section A, are closed or capable of being closed by personnel at the door.

4.2.2.2 Have watch station equipment operators verify that all doors listed on Attachment 3, Section B, are closed or capable of being closed by personnel at the door.

4.2.3 Inspect the switchyard and other outside areas for loose equipment that should be moved or tied down. **COMN 41813**

4.2.4 Frequent tours should be made to assess any imminent problems.

4.2.5 Direct Maintenance to ensure that both turbine building cranes' tornado parking locks are engaged if not in use or before the storm reaches the plant.

4.2.6 Ensure that missile covers are installed on the emergency diesel engine fuel oil storage tanks.

4.2.7 Ensure in Modes 1, 2 & 3 that missile shields are in place (bolting not required for missile protection) on the MSIV rooms at the plant south end of the 2065' level of the Turbine Building.

4.2.8 Ensure the Reactor Building Equipment Hatch Missile Shield is in place in Modes 1, 2, 3, 4 or Mode 6 with the fuel unprotected (head off and upper internals removed). Installation of the shield bolt/pin is not required for wind loads. **COMN 43386**

4.2.9 Close or check closed the Reactor Building Equipment Hatch with at least 4 bolts installed. This should be completed prior to a storm reaching the plant.

4.2.10 Shutdown the plant if safe operation is in jeopardy or significant damage is imminent.

4.2.11 Assess current and projected plant configurations with respect to plant risk in accordance with **EDP-ZZ-01129** , Callaway Plant Risk Assessment prior to taking equipment out of service and to decide if out of service equipment can be returned to service.

4.3 SEVERE THUNDERSTORM WARNING

4.3.1 When a severe thunderstorm warning for Callaway County is broadcast over the NOAA weather radio, the Shift supervisor should ensure that plant personnel are notified of the severe thunderstorm warning by using Attachment 1, Step B.

4.3.1.1 Log entering into EIP-ZZ-00231 in the Control Room Logs along with the time this warning is in effect.

> *CAUTION*: Personnel should not be sent to ensure both turbine building cranes' tornado locks are engaged if a Severe Storm is present at the site.

4.3.2 All normal outside activities should be suspended until the warning for Callaway County is no longer in effect.

4.3.3 Implement Section 4.1 as conditions allow.

4.3.4 Stop the performance of any surveillance procedure that might make any Engineered Safety Feature inoperable. **COMN 41813**

4.3.5 Verify both emergency diesel generators are aligned for automatic start per **OTN-NE-00001**, Standby Diesel Generation System. **COMN 41813** .

4.3.6 Stop all activities associated with fuel handling and processing of radioactive materials as soon as practical but before the storm reaches the plant.

4.3.7 Update Safety Monitor per **OOA-ZZ-SM001**, Safety Monitor.

4.4 HIGH WINDS

4.4.1 When meteorological (met) data indicates that winds in the area are in excess of 40 mph (18.0 m/s) for a 15 minute period, or 58 mph (26 m/s) instantaneous, the Shift Supervisor ensures the following steps are implemented:

4.4.2 Implement Section 4.1 as conditions allow.

4.4.3 Notify plant personnel of high winds by using Attachment 1, Announcements for High Winds/Tornado's, Step A.

4.5 TORNADO WATCH

4.5.1 When a tornado watch for Callaway County is broadcast over the NOAA weather radio, the Shift Supervisor ensures that plant personnel are notified of the tornado watch by using Attachment 1, Step C.

4.5.2 Implement Section 4.1 as conditions allow.

4.5.3 The outside operator and outside security patrols should be informed to alert the Control Room for changes in weather conditions to include:

- Funnel clouds.
- Dust or debris at the surface below a cloud base.
- Large hail (3/4 inch or greater in diameter).
- Loud roaring noise associated with the storm.

4.5.4 Assess current and project plant configurations with respect to plant risk in accordance with **EDP-ZZ-01129** , Callaway Plant Risk Assessment prior to taking equipment out of service and to decide if out of service equipment can be returned to service.

4.6 TORNADO WARNING

4.6.1 When a tornado warning for Callaway County is broadcast over the NOAA weather radio, the Shift Supervisor should ensure that plant personnel are notified of the tornado warning by using Attachment 1, Step D.

4.6.2 All normal outside activities should be suspended until the tornado warning for Callaway County is no longer in effect.

4.6.3 Implement Section 4.1 as conditions allow.

4.6.4 Stop the performance of any surveillance procedure that might make any Engineered Safety Feature inoperable. **COMN 41813**

4.6.5 Verify both emergency diesel generators are aligned for automatic start per **OTN-NE-00001** , Standby Diesel Generation System. **COMN 41813**

4.6.6 Stop all activities associated with fuel handling and processing of radioactive materials as soon as practical but before the storm reaches the plant.

4.7 TORNADO WARNING FOR CALLAWAY PLANT

NOTE:	Storm front moving toward the plant or actual sighting of a tornado by plant personnel.

4.7.1 When a tornado warning has been issued for Callaway County and the storm front is moving in the direction of the Callaway Plant or, if weather conditions around the site indicate the PRESENCE of a TORNADO:

4.7.2 Sound the plant emergency alarm.

4.7.3 Notify plant personnel of the tornado warning by using Attachment 1, Step E.

4.7.4 Close the Control Room missile door 36042, Control Rm. Foyer to Comm. Corridor.

4.7.4.1 Log entering into EIP-ZZ-00231 in the Control Room Logs along with the time this warning is in effect.

4.7.5 Update Safety Monitor per **OOA-ZZ-SM001**, Safety Monitor.

4.8 ACTIONS SUBSEQUENT TO TORNADO STRIKING CALLAWAY PLANT BUILDINGS

4.8.1 Refer to **EIP-ZZ-00101** , Classification of Emergencies, to determine the appropriate emergency classification.

4.8.2 Accountability should be declared using **EIP-ZZ-00230** , Accountability, to determine missing personnel. Accountability should only be declared when weather conditions become favorable.

4.8.3 Expedite the restoration of important plant systems and components to service. **COMN 41813**

5 FINAL CONDITIONS

5.1 Watches or warnings are no longer in effect for Callaway County and high wind conditions for the area no longer exist.

5.2 Announce over the Gai-tronics that severe storm warnings, high winds, tornado watches, or tornado warnings are no longer in effect, using Attachment 1, Step F.

6 REFERENCES

6.1 U.S. Department of Commerce (USDC), National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS), NOAA/PA 82001 "Tornado Safety - Surviving Nature's Most Violent Storms", January, 1982

6.2 USDC-NOAA-NWS, NOAA/PA 76015 "NOAA Weather Radio", Revision April, 1985

6.3 USDC-NOAA-NWS, NOAA/PA 81011, "Spotter's Guide for Identifying and Reporting Local Storms" Revision April, 1982

6.4 USDC-NOAA-NWS, Technical Memorandum NWS SR-145, A Comprehensive Glossary Of Weather Terms For Storm Spotters

6.5 **EDP-ZZ-01129** , Callaway Risk Assessment

6.6 **EIP-ZZ-00101** , Classification of Emergencies

6.7 **EIP-ZZ-00230** , Accountability

6.8 **OOA-ZZ-SM001** , Safety Monitor

6.9 **OTN-NE-00001** , Standby Diesel Generation System

6.10 FSAR, Section 3.3

6.11 National Weather Service Operations Manual Chapter C.42

6.12 NUMARC 87-00

6.13 RFR 19618B

6.14 RFR 20026A

7 RECORDS

None

ANNOUNCEMENTS FOR SEVERE THUNDERSTORM/HIGH WINDS/TORNADOS

A. SEVERE THUNDERSTORM WATCH/HIGH WINDS

☐ GAI-TRONICS ANNOUNCEMENT

"Attention all personnel. Attention all personnel. Conditions are favorable for the occurrence of (circle one) severe thunderstorms / high winds in the area. Be prepared to act quickly in the event conditions worsen."
(REPEAT ANNOUNCEMENT)

B. SEVERE THUNDERSTORM WARNING

☐ **SOUND THE PLANT EMERGENCY ALARM**

"Attention all personnel. Attention all personnel. A Severe Thunderstorm Warning has been issued. Review the Tornado posting on the bulletin boards and be prepared to act quickly in the event the condition worsens."
(REPEAT ANNOUNCEMENT)

☐ Contact the outside operator and security to alert the Control Room of indications of tornado's around the site.

C. TORNADO WATCH

☐ **SOUND THE PLANT EMERGENCY ALARM**

☐ GAI-TRONICS ANNOUNCEMENT

"Attention all personnel. Attention all personnel. A tornado watch has been issued for Callaway County. Review the Tornado posting on bulletin boards and be prepared to act quickly in the event that conditions worsen."
(REPEAT ANNOUNCEMENT)

☐ Contact the outside operator and security to alert the Control Room of indication of tornado's around the site.

D. TORNADO WARNING IN CALLAWAY COUNTY

☐ **SOUND THE PLANT EMERGENCY ALARM**

☐ GAI-TRONICS ANNOUNCEMENT

"Attention all personnel. Attention all personnel. A tornado warning has been issued for Callaway County. All outside activities should be suspended until further notice. All personnel should be prepared to take cover should the need arise."
(REPEAT ANNOUNCEMENT)

☐ RADIO ANNOUNCEMENT

(Repeat Gai-tronics announcement)

E. TORNADO WARNING FOR CALLAWAY PLANT - Storm front moving toward the plant or actual sighting of a tornado by plant personnel.

☐ **SOUND THE PLANT EMERGENCY ALARM**

☐ GAI-TRONICS ANNOUNCEMENT

"Attention all personnel. Attention all personnel. A tornado warning is in effect for the Callaway Plant. Go directly to a designated tornado shelter area and seek cover."
(REPEAT ANNOUNCEMENT)

☐ RADIO ANNOUNCEMENT

(Repeat Gai-tronics announcement.)

F. ALL CLEAR

☐ GAI-TRONICS ANNOUNCEMENT

"Attention all personnel. Attention all personnel. The (circle one) severe thunderstorm watch / thunderstorm warning / high winds warning / tornado watch / tornado warning is no longer in effect. Continue normal work functions."
(REPEAT ANNOUNCEMENT).

☐ RADIO ANNOUNCEMENT

(Repeat Gai-tronics announcement.)

TORNADOS!!

When an announcement is made over the Gai-tronics seek shelter:
Go to the closest area designated below and take immediate cover. Stay away from windows, go to an inside room, and get under a desk or table if you cannot reach your designated shelter area prior to arrival of dangerous weather.

SERVICE BUILDING	First and second floor personnel: West corridor, Maintenance Office Area, Restrooms & Locker Rooms Room 105, (Reprographics behind the QA vault wall). Third floor personnel: East corridor, NRC office, Telephone rooms.
TRAINING CENTER	Lunch Room, Restrooms, Classrooms 120 and 122
TECHNICAL SUPPORT CENTER	All areas other than near outside doorways
STOREROOM No. 1	QA Non-Conforming Storage Temperature and Humidity Control Room (Note: Building has a metal roof, stay low, and cover head.)
STORES No. 2.	Restrooms in office complex.
ANNEX	Go to ESW Pumphouse
HP CALIBRATION FACILITY	Go to ESW Pumphouse
POWER BLOCK	Auxiliary, Rad Waste, Diesel, and Control Buildings
EMERGENCY OPERATIONS FACILITY	All areas except near outside doorways
CENTRAL PROCESSING FACILITY	Inner hallways, Bathrooms, Mechanical Equip. Room (Note: Building has a metal roof, stay low, and cover head.)
SECURITY OFFICES	Go to the TSC
MAF	Go to MAF basement
OUTAGE MAINTENANCE FACILITY	First floor Restrooms and hallway, tool room
CALLAWAY MULTI-PURPOSE BUILDING	First floor interior hallways, bathrooms, and vault.
ALL OTHER AREAS	Go to nearest shelter area, if one can be reached quickly (30-60 seconds). Otherwise take immediate cover in a concrete structure, below ground level area, a corner, or underneath a heavy object such as a desk or table.
IF CAUGHT OUTSIDE AS A LAST RESORT	Take shelter in the nearest ditch or ground depression. Always cover your head -- Remember, most tornado fatalities are from injuries to the head.

NEVER REMAIN IN TRAILERS OR VEHICLES
DO NOT REMOVE THIS NOTICE FROM THE BULLETIN BOARD.

ATTACHMENT 2
CA-#2022

SEVERE THUNDERSTORM/HIGH WINDS/TORNADOS DOOR CLOSURE LIST

Section A (Monitored Doors)

Door #	Building	Level	Type	Description
11021	Auxiliary	1974'	Pressure	Aux. Bldg. to Radwaste Tunnel
11022	Auxiliary	1974'	Pressure	Aux. Bldg. to Radioactive Tunnel
11194	Auxiliary	2000'	Pressure	Aux. Bldg. to Fuel Bldg.
11195	Auxiliary	2000'	Pressure	Aux. Bldg. Outside Door
11273	Auxiliary	2043'4"	Pressure	Aux. Bldg. to MSIV Room
13011	Auxiliary	2000'	Missile	Aux. Bldg. to Outside Door
13012	Auxiliary	2000'	Pressure	Aux. Bldg. to Outside Door
13291	Auxiliary	2000'	Pressure	Turb. Bldg. to AFWP Rms.
13331	Auxiliary	2000'	Missile	Aux. Bldg. to Laundry/Decon Facility
14032	Auxiliary	2026'	Missile	Aux. Bldg. to Comm. Corridor
14081	Auxiliary	2026'	Pressure	Aux. Bldg. to Fuel Bldg.
15041	Auxiliary	2047'6"	Missile	Aux. Bldg. to RAM Storage Bldg.
15071	Auxiliary	2047'6"	Pressure	Aux. Bldg. to Fuel Bldg.
21011	Auxiliary	1974'	Pressure	Aux. Bldg. to Tendon Access Gallery
31011	Control	1974'	Pressure	Control Bldg. to Comm. Corridor
32013	Control	2000'	Pressure	Control Bldg. Outside Door
33012	Control	2000'	Missile	Control Bldg. to Comm. Corridor
33044	Auxiliary	2000'	Missile	Aux. Bldg. to Comm. Corridor
34021	Control	2016'	Missile	Control Bldg. to Comm. Corridor
35021	Control	2032'	Missile	Control Bldg. to Comm. Corridor
38011	Control	2073'6"	Missile	Control Bldg. to Comm. Corridor
41011	Auxiliary	1974"	Pressure	Aux. Bldg. to Turb. Bldg. Stairs
41015	Auxiliary	2026'	Missile	Aux. Bldg. to Turb. Bldg. Stairs
41017	Auxiliary	2047'6"	Missile	Aux. Bldg. to Turb. Bldg. Stairs
52011	Diesel Gen.	2000'	Missile	DG Bldg. Outside Door
52031	Diesel Gen.	2000'	Missile	DG Bldg. Outside Door
61011	Fuel Bldg.	2000'		South Emergency Exit
61021	Fuel Bldg.	2000'		East Emergency Door
61022	Fuel Bldg.	2000'		Roll-Up Door
U1041	ESW	2000'		ESW Pumphouse Outside Door
U1051	ESW	2000'		ESW Pumphouse Outside Door
U3011	UHS	2000'	Missile	UHS Cooling Tower Outside Door
U3041	UHS	2000'	Missile	UHS Cooling Tower Outside Door
U3061	UHS	2035'	Missile	UHS Cooling Tower Outside Door

Section B (Visually Verified Doors)

Building	Level	Door #	Type	Description
Control	1984'	32201	Pressure	Control Bldg. (HP) to Comm. Corridor
Control	1984'	32282	Pressure	Control Bldg. to Hot Lab
RAM Storage	2047	85011	Pressure	Walk-Out Door to Diesel Gen. Roof
RAM Storage	2047'	85012		Equipment Door to Diesel Gen. Roof
Turbine	2000'	ALL		All Roll-Up and Walk Through Doors
Reactor	2000'		Pressure	Personnel Emergency Hatch

MISSILE SHIELD REQUIREMENTS

MISSILE SHIELD	EST. CLOSURE TIME	WEATHER MONITORING DISTANCE	APPLICABLE MODES	Notes
Rx Building Equipment Hatch MSDSM52	2 hrs	140 mi.	6*	Shield CANNOT be removed in Modes 1, 2, 3, & 4. Bolting not required for closure.
Area 5 (Located in Turb. Bldg.) MSAREA501, 502, 503, 504	1.5 hrs	105 mi.	1, 2, 3	Shields may be opened in Modes 4, 5, & 6. Bolting not required for closure. FPIP required.
D/G Fuel Oil Tanks MSDGA or MSDGB	1 hr	70 mi.	ALL#	Applicable when D/G is operable. Bolting required for closure.
ESW Pumphouse Roof MSESWA or MSESWB	1 hr	70 mi.	1, 2, 3, 4	Shields may be opened in Modes 5, & 6. Bolting required for closure.
ESW Manhole covers MSMH01N or MSMH01S	1 hr	70 mi.	1, 2, 3, 4	Shields may be opened in Modes 5, & 6. Bolting required for closure.
RHR Heat Exchangers MSRHRA or MSRHRB	1 hr	70 mi.	ALL	Applicable when the related RHR train is operable. FPIP Required.

*With Rx Vessel upper internals package removed and fuel assemblies in the Reactor Building.
NOT required for removal of small steel hatch on top of large missile shield.

CLOSURE RESOURCES NEEDED

Rx Building Equipment Hatch	HP Tech., Pedestal Crane Operator, platform rigging, cutting torch, hand tools, Mechanics/Ironworkers, rigging, and shield winches, etc.
Area 5 (Located in Turb. Bldg.)	JLG & rigging if trolley beam is in place, hand tools, cutting torch, chain hoist, "come-a-long", Mechanics/Ironworkers, etc.
D/G Fuel Oil Tanks	>20 ton crane, crane operator, hand tools, rigging, Mechanics. Bolting required for closure.
ESW Pumphouse Roof	>20 ton crane, crane operator, hand tools, rigging, Mechanics. Bolting required for closure.
ESW Manhole covers	>3 ton crane, crane operator, hand tools, rigging, Mechanics. Bolting required for closure.
RHR Heat Exchangers	>12 ton crane, crane operator, hand tools, rigging, Mechanics.