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D	PROC	00-0442			007	C	1				EIP-ZZ-03010

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A045

CALLAWAY PLANT
EMERGENCY PLAN IMPLEMENTING PROCEDURE
EIP-ZZ-00212
PROTECTIVE ACTION RECOMMENDATIONS

RESPONSIBLE DEPARTMENT EMERGENCY PREPAREDNESS

PROCEDURE OWNER T. W. PARKER

WRITTEN BY T. W. PARKER

PREPARED BY T. W. PARKER

APPROVED BY Warren A. Witt



DATE ISSUED 6-6-03

This procedure contains the following:

Pages	<u>1</u>	through	<u>7</u>
Attachments	<u>1</u>	through	<u>3</u>
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Appendices	<u> </u>	through	<u> </u>
Checkoff Lists	<u> </u>	through	<u> </u>

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

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PROTECTIVE ACTION RECOMMENDATIONS

1 PURPOSE AND SCOPE

1.1 PURPOSE

This procedure provides guidance in making protective action recommendations to the State and 10 mile Emergency Planning Zone (EPZ) counties for protecting members of the general public.

1.2 SCOPE

This procedure outlines protective action recommendations based on plant conditions and radiological dose projections.

2 DEFINITIONS

2.1 Initial Phase - the early stages of a radiological emergency which is characterized by the actual or possible presence of a plume within 10 miles of the plant. The initial phase is also called the "early phase" or the "plume phase" and is primarily concerned with protecting the public from the direct effects of the plume (i.e., exposure to and inhalation of airborne radioactive materials).

2.2 Ingestion Exposure Phase - similar to the Intermediate Phase of a radiological emergency except that the primary concern is protecting the public from ingestion of radioactive materials which may have been introduced into the food chain or public water supplies by deposition from the passing plume. Because both are based on deposition from the plume, the Intermediate Phase and the Ingestion Exposure Phase can occur concurrently.

2.3 Intermediate Phase - the stage of a radiological emergency which follows the Initial Phase. It is characterized by dissipation of the airborne plume and deposition of radioactive materials and is primarily concerned with protecting the public from the long-term effects of the deposited materials. Because protective actions may involve relocation of some members of the population, this phase is sometimes called the "relocation phase". The Intermediate Phase and the Ingestion Exposure Phase of a radiological emergency can occur concurrently.

- 2.4 **Relocation** - the long-term removal of members of the population from areas where plume deposition results in chronic exposures over a 1, 2, or 50-year period which exceeds the Environmental Protection Agency (EPA) protective action guide (PAG) values. Relocation is a protective action for the public which may be recommended by the state Department of Health (DOH) during the Intermediate Phase of a radiological emergency.

3 **RESPONSIBILITIES**

3.1 **CONTROL ROOM**

3.1.1 **EMERGENCY COORDINATOR**

Prior to the arrival of the Recovery Manager, in the EOF, the Emergency Coordinator has responsibility of evaluating plant conditions and/or dose assessment and making protective action recommendations to the State and local authorities. (COMN 3954)

3.1.2 **RADCHEM TECHNICIAN (TECHNICAL SUPPORT)**

The Radchem Technician (TS) will report to the Control Room and supply dose projection information to the EC, until the Dose Assessment Coordinator arrives in the EOF. (COMN 3412)

3.1.3 **CONTROL ROOM STAFF**

The Control Room Staff will monitor plant conditions and assist in making protective action recommendations, until the Technical Assessment Coordinator (TSC) or the Protective Measures Coordinator (EOF), arrive at their respective facility.

3.2 **TECHNICAL SUPPORT CENTER**

3.2.1 **TECHNICAL ASSESSMENT COORDINATOR**

The Technical Assessment Coordinator will provide the Emergency Coordinator, in the absence of the Recovery Manager, with plant assessment information and assistance for making protective action recommendations until the Protective Measures Coordinator arrives at the EOF.

3.3 EMERGENCY OPERATIONS FACILITY

3.3.1 RECOVERY MANAGER

The Recovery Manager is responsible for approving protective action recommendations to the State and local authorities.
(COMN 3954)

3.3.2 PROTECTIVE MEASURES COORDINATOR

The Protective Measures Coordinator is responsible for evaluating the information received from the Plant Assessment Coordinator and the Dose Assessment Coordinator and making a protective action recommendation to the Recovery Manager.

3.3.3 PLANT ASSESSMENT COORDINATOR

The Plant Assessment Coordinator is responsible for informing the Protective Measures Coordinator of needed protective action recommendations due to plant conditions.

3.3.4 DOSE ASSESSMENT COORDINATOR

The Dose Assessment Coordinator is responsible for informing the Protective Measures Coordinator of needed protective action recommendations due to dose assessment projections.

4 INITIATING CONDITIONS

4.1 A General Emergency has been declared.

5 PROCEDURE

5.1 INITIAL (PLUME) PHASE PROTECTIVE ACTION RECOMMENDATIONS

5.1.1 Evaluate plant parameters and determine the appropriate protective action recommendations based on plant conditions using Attachment 1.

5.1.1.1 Immediate Protective Action Recommendations (COMN 3954)

Upon declaration of a General Emergency the initial protective action recommendation, as a minimum, SHALL be to evacuate a 2 mile radius around the plant and 5 miles downwind of the plant in affected sectors. This recommendation SHALL be made immediately to the offsite authorities in accordance with EIP-ZZ-00201, Notifications.

NOTE: The preferred Protective Action is to Evacuate. Sheltering should only be considered for the following situations:

- Travel conditions that would present an extreme hazard, or
- for controlled releases from containment if there is assurance that the release is short term and the area near the plant cannot be evacuated before the plume arrives.

The initial protective action recommendation ensures that the public receives protection from possible hazards until a more formal assessment and protective action recommendation can be made.

5.1.1.2 Subsequent Protective Action Recommendations

Subsequent protective action recommendations are made based on plant conditions (taking into account core and containment conditions) and/or dose assessment.

NOTE: Protective Action Recommendations should only be upgraded, never downgraded to a lesser Protective Action Recommendation.

5.1.2 If dose calculations project doses beyond 5 miles that exceed protective action guidelines for evacuation (1 Rem TEDE, 5 Rem CDE Thyroid), or if plant conditions dictate, upgrade protective action recommendations to evacuate a 5 mile radius around the plant and 10 miles downwind of the plant in affected sectors.
CARS 200106229

- 5.1.3 If dose calculations project doses beyond 10 miles that exceed protective action guidelines for evacuation (1 Rem TEDE, 5 Rem CDE Thyroid), inform the EC/RM. Additionally, inform the State Emergency Management Agency (SEMA) and the Department of Health (DOH) of recommended protective action recommendations and assist them in actions necessary to protect the public beyond the 10 mile Emergency Planning Zone. **CARS 199900240**
CARS 200303094
- 5.1.4 If affected sectors change based on meteorological conditions and weather forecasts, the protective actions should be modified accordingly and offsite authorities should be properly notified.
- 5.1.5 Weather forecasts **MUST** be updated periodically.
- 5.1.6 For short duration releases, (2 hours or less), sheltering of the public may be recommended for sectors that cannot be evacuated prior to plume arrival.
- 5.1.7 Attachment 2, Plume Arrival Time, may be used to determine plume arrival time.
- 5.1.8 Attachment 3, Evacuation Times and Population Densities, provides population estimates and evacuation time estimates.
- 5.2 **NOTIFICATIONS**
- 5.2.1 The Emergency Coordinator/Recovery Manager **MUST** ensure that appropriate notifications are made regarding protective action recommendations in accordance with **EIP-ZZ-00201**, Notifications.
- 5.2.2 Protective action recommendations should be coordinated with the Department of Health (DOH) and SEMA, if possible, when their Forward Command Post in the EOF is staffed.

NOTE:

Notifications that initiate or change Protective Action Recommendations should be completed with the same urgency as initial notifications (i.e. within 15 minutes of PAR declaration or change).

5.3 **INTERMEDIATE (RELOCATION) AND INGESTION EXPOSURE PHASES**

Additional protective actions may be required during the Intermediate and Ingestion Exposure phases of an event which results in a release of radioactive material into the environment. Recommendations for these relocation and ingestion pathway protective actions are made by the Department of Health (DOH).

6 **FINAL CONDITIONS**

- 6.1 Additional offsite protective action recommendations should no longer be required once the requirements for Plant Recovery have been met and Plant Recovery has been declared in accordance with EIP-ZZ-00260, Event Closeout/Plant Recovery.

NOTE:

Offsite authorities may decide to continue previously implemented offsite protective actions until more information becomes available.

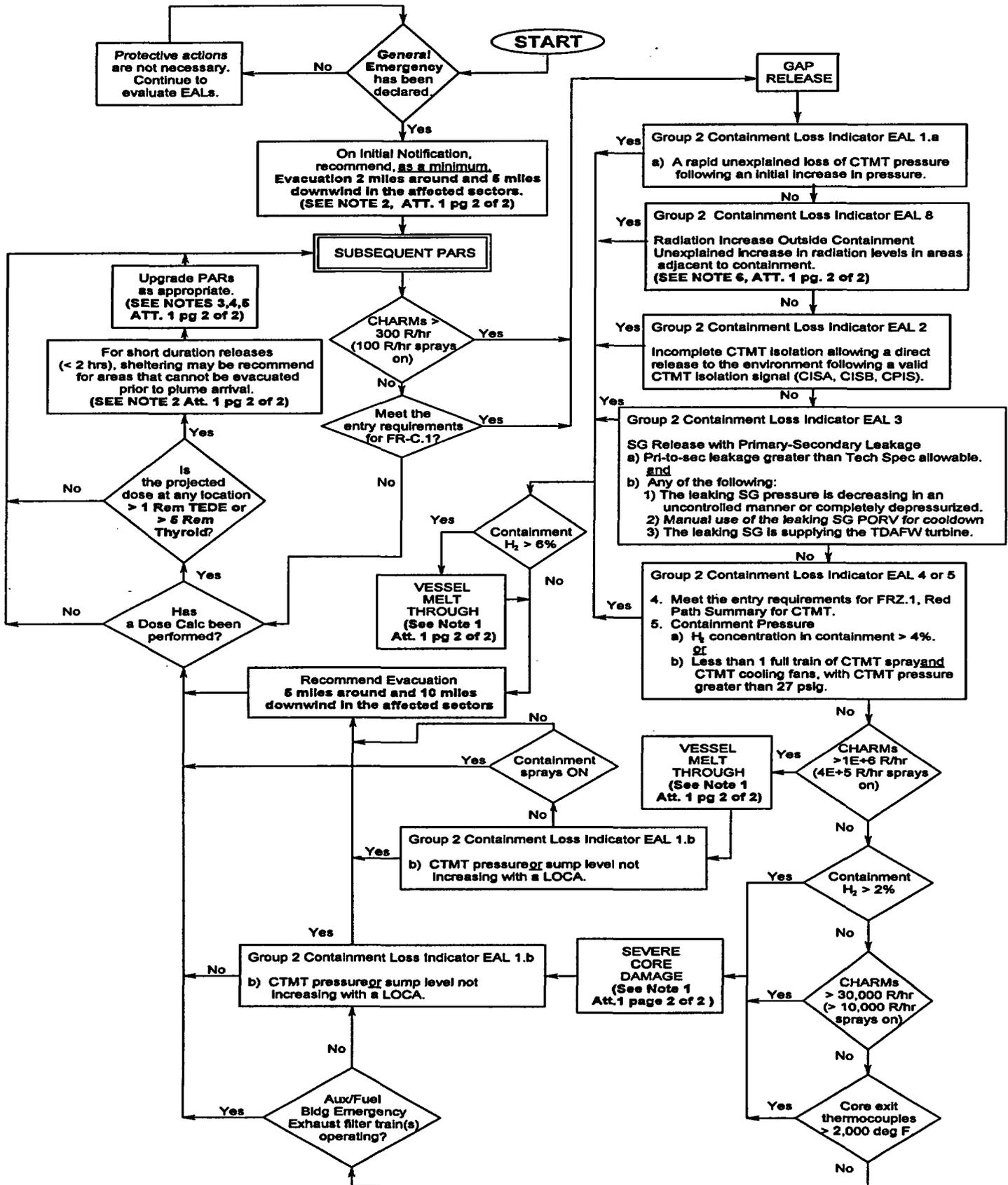
7 **REFERENCES**

- 7.1 EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents
- 7.2 NUREG 0654/FEMA-REP-1, Criteria for Preparation of and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants
- 7.3 NUREG 0654/FEMA-REP-1, Rev.1,Supp.3 Criteria for Preparation of and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants
- 7.4 EIP-ZZ-00101, Classification of Emergencies
- 7.5 EIP-ZZ-00102, Emergency Implementing Actions
- 7.6 EIP-ZZ-00201, Notifications
- 7.7 EIP-ZZ-01211, Management Action Guides For Nuclear Emergencies (MAGNEM)

8 RECORDS

None

PAR FLOWCHART



PAR FLOWCHART NOTES

<u>NOTE</u>	<u>DESCRIPTION</u>
1	Notify Dose Assessment to use "SEVERE CORE DAMAGE" calculations.
2	<p>The preferred Protective Action is to Evacuate.</p> <p>Sheltering should only be considered for the following situations:</p> <ul style="list-style-type: none"> a) Travel conditions that would present an extreme hazard, or b) For controlled releases from containment if there is assurance that the release is short term and the area near the plant cannot be evacuated before the plume arrives.
3	If dose calculation project doses beyond 5 miles that exceed protective action guidelines for evacuation (1 Rem TEDE, 5 Rem CDE Thyroid), upgrade protective action recommendations to evacuate a 5 mile radius around the plant and 10 miles downwind of the plant in affected sectors.
4	If dose calculation project doses beyond 10 miles that exceed protective action guidelines for evacuation (1 Rem TEDE, 5 Rem CDE Thyroid), inform the EC/RM. Additionally, inform the State Emergency Management Agency (SEMA) and the Department of Health (DOH) of recommended protective action recommendations and assist them in action necessary to protect the public beyond the 10 mile Emergency Planning Zone.
5	If affected sectors change based on meteorological conditions and weather forecasts, the protective actions should be modified accordingly and offsite authorities should be properly notified.
6	This potential loss indicator represents a loss of the containment barrier. Increases in Radiation levels by themselves are not indicative of a loss of containment. A loss of containment will be indicated by an increase in radiation levels accompanied by an increase in airborne activity. This indicator should be evaluated to ensure that normal plant response, operator actions and design leakage is taken into consideration.

PLUME ARRIVAL TIME

WIND SPEED (m/s)	DISTANCE (Miles)												
	EAB	1	2	3	4	5	6	7	8	9	10	12	15
0.5	0.7	0.9	1.8	2.7	3.6	4.5	5.5	6.4	7.3	8.2	9.1	11.0	13.6
1.0	0.3	0.4	0.9	1.3	1.7	2.2	2.7	3.6	3.6	4.0	4.4	5.3	6.7
2.0	0.2	0.2	0.4	0.7	0.9	1.1	1.3	1.8	1.8	2.0	2.2	2.7	3.3
4.0	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.8	0.9	1.0	1.1	1.3	1.7
6.0	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.9	1.1
8.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.7	0.8
10.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.7
12.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.6
14.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.5
16.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.4
18.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3
20.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3
30.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2

NOTE

Times in above table are in hours and tenths of hours.

EVACUATION TIMES AND POPULATION DENSITIES

SECTOR	0 - 2 MILES		2 - 5 MILES		5 - 10 MILES	
	AFFECTED SUBAREA	EVACUATION (2) TIME	AFFECTED SUBAREA	EVACUATION (2) TIME	AFFECTED SUBAREA	EVACUATION (2) TIME
A	C1	3:30	C3	3:25	C3, C10	3:25
B	C1	3:30	C3	3:25	C3, C10, C11	3:25
C	C1	3:30	C3, C4	3:25	C11, M1	3:15
D	C1	3:30	C3	3:25	C4, C11, M1	3:25
E	C1	3:30	C4, C5	3:25	C4, M1, M2	3:25
F	C1	3:30	C4, C5	3:25	C4, M2, G1	3:25
G	C1	3:30	C4, C5	3:25	C4, 01	3:25
H	C1	3:30	C5	3:15	01	3:09
J	C1	3:30	C5, C6	3:27	01	3:09
K	C1	3:30	C6	3:27	01	3:09
L	C1	3:30	C6	3:27	C7	3:09
M	C1	3:30	C6	3:27	C6, C7	3:27
N	C1	3:30	C2, C6	3:27	C6, C2, C8, C7	3:27
P	C1	3:30	C2	3:25	C8, C9	3:07
Q	C1	3:30	C2	3:25	C2, C8, C9	3:25
R	C1	3:30	C2, C3	3:25	C10, C8	3:13

SUBAREA POPULATION AND EVACUATION ESTIMATE

SUBAREA	(1) POPULATION	(2) EVACUATION ESTIMATE	SUBAREA	(1) POPULATION	(2) EVACUATION ESTIMATE
C1	535	3:30	C9	11501	2:57
C2	557	3:25	C10	453	3:13
C3	686	3:25	C11	378	3:15
C4	520	3:25	M1	171	3:03
C5	216	3:15	M2	556	3:09
C6	414	3:27	G1	123	2:51
C7	1322	3:09	01	943	3:09
C8	2036	3:07			

1. Includes permanent and transient population
2. Maximum Time Estimates (in Hours: Minutes) for evacuation of population during most critical time period. Includes time for; a) Receiving Notification, b) Leaving Place of Work, c) Work to Home Travel, d) Preparing for Evacuating Home, and e) Travel Out of EPZ.

CALLAWAY PLANT
EMERGENCY PLAN IMPLEMENTING PROCEDURE
EIP-ZZ-00240
TECHNICAL SUPPORT CENTER OPERATIONS

RESPONSIBLE DEPARTMENT EMERGENCY PREPAREDNESS

PROCEDURE OWNER T. W. PARKER

WRITTEN BY T. W. PARKER

PREPARED BY T. W. PARKER

APPROVED BY Warren A. Witt



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Attachment 2	Technical Assessment Coordinator (TAC) Checklist	5 Pages
Attachment 3	Operations Support Coordinator (OSC) Checklist	3 Pages
Attachment 4	Administrative (Admin.) Coordinator Checklist.....	3 Pages
Attachment 5	Health Physics (HP) Coordinator Checklist	8 Pages
Attachment 6	TSC (ENS) Communicator Checklist.....	1 Page
Attachment 7	Chemistry Coordinator Checklist	2 Pages
Attachment 8	Security Coordinator (SC) Checklist.....	2 Pages
Attachment 9	Emergency Team Coordinator (ETC) Checklist	3 Pages

TECHNICAL SUPPORT CENTER OPERATIONS

1 PURPOSE AND SCOPE

- 1.1 Establishes responsibilities for the Emergency Response Organization, provides guidance and checklists for each coordinator in the Technical Support Center (TSC) during emergency operation of the TSC, including the Operations Support Area (SA).

2 RESPONSIBILITIES

2.1 EMERGENCY COORDINATOR (EC)

- 2.1.1 The Emergency Coordinator has overall responsibility for TSC operations.

2.2 TECHNICAL ASSESSMENT COORDINATOR (TAC)

- 2.2.1 The TAC reports to the EC. The TAC is responsible for directing technical analysis of plant conditions to formulate EAL'S and emergency mitigating recommendations to the EC. Responsible for coordinating Protective Action Recommendations (PAR'S) consistent with plant conditions with the Recovery Manager and Dose Assessment Coordinator in the EOF prior to the arrival of the Protective Measures Coordinator (PMC) and Plant Assessment Coordinator (PAC). The TAC also evaluates Severe Accident Management Guidelines (SAMG's). (COMN 3333)

2.3 ADMINISTRATIVE COORDINATOR (AC)

- 2.3.1 The AC reports to the Emergency Coordinator in the TSC. The AC is responsible for ensuring the completion of the Admin Coordinator checklists. The AC is also responsible for ensuring that technical documents are available, providing food and beverage needs, and ensuring continuity of resources for the On-Site Emergency Response Organization. (COMN 3341)

2.4 TSC (ENS) COMMUNICATOR (TC)

- 2.4.1 The TSC Communicator reports to the EC. He is responsible for manning the ENS Communication Line and relaying technical information to the NRC.

- 2.5 HEALTH PHYSICS COORDINATOR (HPC)
 - 2.5.1 The HPC reports to the Emergency Coordinator in the TSC. The HPC is responsible for assessing on-site radiological conditions, reviewing radiological EAL's, and directing in-plant radiation protection activities. (COMN 3331)
- 2.6 OPERATIONS SUPPORT COORDINATOR (OSC)
 - 2.6.1 The OSC reports to the Emergency Coordinator in the TSC. The OSC assesses plant information from the control room and technical support staff to establish emergency team priorities and direct operation support activities. (COMN 3336)
- 2.7 SECURITY COORDINATOR (SC)
 - 2.7.1 The SC reports to the Emergency Coordinator in the TSC. The SC establishes communications with the Shift Security Supervisor (SSS), assumes overall plant security responsibility, and directs the security force through the SSS. These responsibilities include access control, personnel evacuation and accountability, coordination of any off-site law enforcement agency involvement, and normal and emergency security activities in accordance with the security plan. (COMN 3347)
- 2.8 CHEMISTRY COORDINATOR (CC)
 - 2.8.1 The CC reports to the Technical Assessment Coordinator, and assumes responsibility for plant chemistry operations from the shift supervisor. The Chemistry Coordinator directs primary and secondary chemistry operations, (including post-accident chemistry) and non-radiological environmental monitoring. The CC ensures that the TAC is aware of chemistry activities and provides input to the TSC engineering staff in assessing plant chemistry problems. The CC directs the Rad/Chem Technicians - Chemistry. (COMN 3349)
- 2.9 EMERGENCY TEAM COORDINATOR (ETC)
 - 2.9.1 The ETCs report to the OSC and assist in formation, briefing, direction, and tracking of emergency teams. The Fire Brigade and MERT continue to report to the Shift Supervisor in the Control Room.

2.10 STORES PERSONNEL

2.10.1 A member of the Materials Department reports to the OSC and is responsible for obtaining parts, supplies, and materials when needed.

2.11 OTHER TSC STAFF MEMBERS

2.11.1 Each TSC coordinator that arrives at the TSC is responsible for starting their Checklist. If the TSC is without power, they should start the TSC diesel per OOA-UB-EPG70 if it is within their capability.

2.11.2 All personnel are responsible for walking through the portal monitor and carding in on the accountability reader as they enter the TSC during a radiological emergency or drill.

<p><u>NOTE:</u> The portal monitor should be response checked as soon as possible by the Health Physics group</p>
--

2.11.3 Personnel that leave the Facility should check out with the Security Officer and card out on the accountability reader. If a release above normal operating limits has occurred or is likely to occur a HP brief is required. CARS 199701061

2.11.4 The following TSC coordinators are responsible for their attachment to this procedure.

- a) Emergency Coordinator (EC)
- b) Technical Assessment Coordinator (TAC)
- c) Operations Support Coordinator (OSC)
- d) Administrative (Admin) Coordinator (AC)
- e) Health Physics (HP) Coordinator (HPC)
- f) TSC (ENS) Communicator (TC)
- g) Chemistry Coordinator (CC)
- h) Security Coordinator (SC)
- i) Emergency Team Coordinator (ETC)

3 PROCEDURE

3.1 TSC STARTUP

3.1.1 Each TSC staff member that arrives at the TSC is responsible for carding in on the accountability card reader, assisting in the facility startup and initiating their checklist.

3.2 TSC OPERATION

3.2.1 The Emergency Coordinator ensures that Attachment 1, Emergency Coordinators Checklist, is used as a guide.

3.2.1.1 The EC should periodically discuss priorities, habitability of the facility and Site radiological conditions with the HPC. If evacuation of the TSC becomes necessary refer to Section 3.3.

3.2.1.2 The EC should ensure TSC personnel receive a periodic plant status update, including priorities, any change to facility habitability or Site radiological conditions.

3.2.2 Each TSC coordinator is responsible for completing their Checklist.

3.3 TSC EVACUATION

3.3.1 Evacuation of the facility should be considered:

- a) When direct dose rates reach or exceed 5,000 mrem/hour, or**
- b) When cumulative dose reaches or exceeds 4,400 mrem, or**
- c) When iodine concentration reaches or exceeds 1.9 E-5 μ Ci/ml.**

3.3.2 Evacuation may be required if power is unavailable or the ventilation system fails.

- 3.3.3 Coordinators should go to the facilities as indicated depending on their availability.
- a) Emergency Coordinator (EC) – to Control Room.
 - b) Technical Assessment Coordinator (TAC) – to Field Office if habitable then Control Room.
 - c) Operations Support Coordinator (OSC) – to Field Office if habitable then Control Room.
 - d) Administrative (Admin) Coordinator (AC) – to EOF.
 - e) Health Physics (HP) Coordinator (HPC) – to Field Office if habitable then Control Room.
 - f) TSC (ENS) Communicator (TC) – to Control Room.
 - g) Chemistry Coordinator (CC) – to EOF.
 - h) Security Coordinator (SC) – to EOF.
- 3.3.4 Coordinators reporting to the Control Room should evaluate minimum staff required to go with them and assign others to the EOF.
- 3.3.4.1 The OSC should take the Emergency Team Coordinators and minimum number of team members.
- 3.4 EVENT CLOSEOUT
- 3.4.1 If the emergency conditions allow the initiation of recovery operations or the closeout of the event, the Emergency Coordinator should contact the Recovery Manager (RM) and discuss implementation of EIP-ZZ-00260, Event Closeout/Recovery.
- 3.4.2 TSC personnel continue activities in accordance with this procedure until turned over to the Recovery Organization or closeout is declared.
- 3.5 TSC SHUTDOWN
- 3.5.1 If the TSC is to be shut down, direct the Coordinators to initiate Termination and Shutdown section of their Checklist.
- 3.5.2 The Emergency Coordinator should make preparations with the Shift Supervisor to transfer remaining responsibilities to the Control Room.

- 3.5.3 The Administrative Coordinator assesses the status of the TSC and ensures the following actions have been completed:
 - 3.5.3.1 All functional equipment/supplies have been restored to startup conditions.
 - 3.5.3.2 The entire TSC staff has been relieved of all duties associated with the operation of the TSC.
 - 3.5.3.3 All records generated during the operation of the TSC have been collected.
- 3.5.4 After shifting responsibilities, inform the Shift Supervisor and Recovery Manager that the TSC is shut down.

4 REFERENCES

- 4.1 Callaway Plant Radiological Emergency Response Plan (RERP)
- 4.2 EIP-ZZ-00101, Classification of Emergencies
- 4.3 EIP-ZZ-00102, Emergency Implementing Actions
- 4.4 EIP-ZZ-00212, Protective Action Recommendation
- 4.5 EIP-ZZ-00213, Technical Assessment
- 4.6 EIP-ZZ-00217, Emergency Response Data System Activation
- 4.7 EIP-ZZ-00220, Emergency Team Formation
- 4.8 EIP-ZZ-00230, Accountability
- 4.9 EIP-ZZ-00260, Event Closeout/Recovery
- 4.10 OTN-ZZ-00001, TSC Building HVAC System.
- 4.11 HPCI 96-007, Emergency Response Facility Habitability Guidelines
- 4.12 Severe Accident Management Guidelines

5 RECORDS

<p><u>NOTE:</u> All Facility Logs, SENTRY and MAGNEM screen prints, office memos, notes, etc. should be attached to the Coordinator Checklist and turned in to the Admin Coordinator and/or Emergency Preparedness (EP).</p>

5.1 QA RECORDS

- 5.1.1 Attachment 1, Emergency Coordinator Checklist (File K171.0010)
- 5.1.2 Attachment 2, Technical Assessment Coordinator (TAC) Checklist (File K171.0010)
- 5.1.3 Attachment 3, Operations Support Coordinator (OSC) Checklist (File K171.0010)
- 5.1.4 Attachment 4, Administrative (Admin) Coordinator Checklist (File K171.0010)
- 5.1.5 Attachment 5, Health Physics (HP) Coordinator Checklist (File K171.0010)
- 5.1.6 Attachment 6, TSC (ENS) Communicator Checklist (File K171.0010)
- 5.1.7 Attachment 7, Chemistry Coordinator Checklist (File K171.0010)
- 5.1.8 Attachment 8, Security Coordinator (SC) Checklist (File K171.0010)
- 5.1.9 Attachment 9, Emergency Team Coordinator (ETC) Checklist (File K171.0010)

EMERGENCY COORDINATOR CHECKLIST

Date _____ Time: _____

<u>INITIATION</u>	
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the EC package. <input type="checkbox"/> Clip on Emergency Coordinator badge. <input type="checkbox"/> Adjust Gaitronics Volume <input type="checkbox"/> Review KOA-ZZ- A0002 "COMMAND AND CONTROL GUIDELINES"
<input type="checkbox"/> 2.	Initiate Log Sheet.
<input type="checkbox"/> 3.	Receive briefing by: <input type="checkbox"/> Technical Assessment Coordinator. (EAL Monitoring). <input type="checkbox"/> Shift Supervisor and relieve him as Emergency Coordinator.
<input type="checkbox"/> 4.	Announce assumption of "Emergency Coordinator" duties to TSC staff.
<input type="checkbox"/> 5.	Review plant/group status with TSC Coordinators: <input type="checkbox"/> Administrative. <input type="checkbox"/> TSC (ENS) Communicator. <input type="checkbox"/> Health Physics. <input type="checkbox"/> Operations Support/Support Area. <input type="checkbox"/> Technical Assessment. <input type="checkbox"/> Chemistry. <input type="checkbox"/> Security.
<input type="checkbox"/> 6.	Ensure the following responsibilities have been transferred from Control Room. <input type="checkbox"/> <u>EAL MONITORING</u> . <input type="checkbox"/> <u>ENS COMMUNICATION</u> . <input type="checkbox"/> <u>PAR MONITORING</u> (if the RM position in the EOF is not manned). <input type="checkbox"/> <u>SAMG Implementation</u> (if applicable).
<input type="checkbox"/> 7.	Make a site-wide announcement that, "The TSC has accepted emergency responsibilities from the Control Room."
<input type="checkbox"/> 8.	Announce the following: "TSC Coordinators assess your manpower needs and request additional personnel from the Admin Coordinator as needed. All excess personnel should assemble in the Operations Support Area and await further instructions."
<input type="checkbox"/> 9.	After assessing manpower needs, instruct all excess personnel to return home or return to work (ALERT) and remain near their phones. Personnel sent home should remain fit for duty and will be contacted concerning shift relief and turnover.

<u>OPERATIONS</u>	
(*) Steps are items that MUST be frequently reviewed	
<input type="checkbox"/> *1.	Periodically update TSC personnel including priorities, habitability status and Site radiological conditions. Note: Priorities should be listed on the Priority Status Board
<input type="checkbox"/> *2.	Continue activities per EIP-ZZ-00102, Emergency Implementing Actions.
<input type="checkbox"/> *3.	Perform periodic briefs with the below individuals concerning on-site activities: TSC Coordinators. <input type="checkbox"/> SS. <input type="checkbox"/> On site NRC personnel. <input type="checkbox"/> RM. <input type="checkbox"/> Notify the RM as soon as an emergency is declared to insure Notifications are timely.

EMERGENCY COORDINATOR CHECKLIST

<u>TURNOVER</u>	
<input type="checkbox"/> 1.	Incoming Emergency Coordinator briefed on TSC status and log reviewed.
<input type="checkbox"/> 2.	Recovery Manager and Shift Supervisor informed.
<input type="checkbox"/> 3.	Turnover announced to TSC staff.
<input type="checkbox"/> 4.	Turnover complete _____ Time.
<input type="checkbox"/> 5.	Turnover logged.
<input type="checkbox"/> 6.	Initiate a new checklist CA# 259.

<u>RECOVERY</u>	
<input type="checkbox"/> 1.	Declare Recovery per EIP-ZZ-00260, Event Closeout/Recovery (if applicable). <ul style="list-style-type: none"><input type="checkbox"/> Recovery Manager contacted.<input type="checkbox"/> Shift Supervisor contacted.<input type="checkbox"/> Recovery organization established.<input type="checkbox"/> Make site wide announcement.

<u>TERMINATION and SHUTDOWN</u>	
<input type="checkbox"/> 1.	Shutdown TSC (if required). <ul style="list-style-type: none"><input type="checkbox"/> Coordinators directed to shutdown TSC _____ Time.<input type="checkbox"/> Make site wide announcement.

Emergency Coordinator Signature

TECHNICAL ASSESSMENT COORDINATOR (TAC) CHECKLIST

Date _____ Time: _____

<u>INITIATION</u>	
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the TAC package <input type="checkbox"/> Clip on the Tech. Assessment Coordinators badge. <input type="checkbox"/> Adjust Gaitronics Volume
<input type="checkbox"/> 2.	Ensure the TSC has power. <input type="checkbox"/> Normal power, (i.e. lights on, power available to computers, etc.). <input type="checkbox"/> No Power. Start the TSC diesel per OOA-UB-EPG70. (WCE Supervisors, WCE Planners, Journeyman Electricians and EOs should be used to operate the Manual Transfer Switch MTSUB7001.) CARS 200200182
<input type="checkbox"/> 3.	Shift the following to UPS power: <input type="checkbox"/> Computer link located in the closet near the kitchen. <input type="checkbox"/> PC power supplies CARS 200105972
<input type="checkbox"/> 4.	If outside temperature is approximately 40°F or above, locate panel FIKUB7001 <u>TSC Air Handling Unit Control Panel</u> , just inside the TSC Equipment Room Door and to the left. Place the <u>TSC Air Handling Unit Control Switch CSUB7005</u> in the <u>COOL</u> position. CARS 200002783
<input type="checkbox"/> 5.	Initiate Log Sheet.
<input type="checkbox"/> 6.	Activate Plant Status Boards from the Plant Computer (Cancel, type PSB, Return) or use keyboard commands on the PC. NOTE: In the event of Plant Computer System failure, refer to EIP-ZZ-00213, Technical Assessment, for further guidance.
<input type="checkbox"/> 7.	Turn on the Projected Status Boards using the remote control. They are connected to the PCs. Keyboard controls MUST be used for the PCs.
<input type="checkbox"/> 8.	Obtain brief from the SS, STA or other CR personnel. Contact CR via phone as little as possible until the Control Room TSC Liaison is staffed then use the Tech Assessment Line (dial 211), always provide your name and title.
<input type="checkbox"/> 9.	The following should be logged: <input type="checkbox"/> Plant Status/Event Status <input type="checkbox"/> Current EAL(s) <input type="checkbox"/> Equipment Status (equipment out of service?) <input type="checkbox"/> Protective Action Recommendations (PAR) Issued per EIP-ZZ-00212. <input type="checkbox"/> Dose Assessment contact _____ (name) section Inform Control Room when accepting _____ EAL(s) PAR(s) SAMG(s) responsibilities Additional instructions? _____
<input type="checkbox"/> 10.	Activate Emergency Response Data System ERDS per EIP-ZZ-00217 (if not already activated) from the Plant Computer. (Cancel, type ERDS, return type in password NRCERDS, return, select F2 to activate) When ERDS is activated the system displays "Data Transmission in Progress". To return to PSB's, select Cancel, type PSB, Return; ERDS continues to run unaffected in the background. Inform the ENS Communicator if ERDS cannot be activated (i.e., loss of Plant Computer). CARS 199903613
<input type="checkbox"/> 11.	Assign the Reactor Engineer to: <input type="checkbox"/> Project Shutdown margins for current and anticipated conditions taking into consideration transient Xenon and Boron concentration. <input type="checkbox"/> Perform core damage assessment using EDP-ZZ-00005.
<input type="checkbox"/> 12.	Begin monitoring Emergency Action Levels (EAL) per EIP-ZZ-00101.
<input type="checkbox"/> 13.	Brief the Emergency Coordinator, upon his arrival, on the TSC activities.
<input type="checkbox"/> 14.	Place TSC Ventilation System in the Filter Mode per OOA-UB-00005. (An EO may be used if available.)

TECHNICAL ASSESSMENT COORDINATOR (TAC) CHECKLIST**TURNOVER**

<input type="checkbox"/> 1.	Incoming Technical Assessment Coordinator briefed on TSC status and review log.
<input type="checkbox"/> 2.	Emergency Coordinator informed.
<input type="checkbox"/> 3.	Turnover announced to Technical Assessment staff.
<input type="checkbox"/> 5.	Turnover complete _____ Time.
<input type="checkbox"/> 6.	Turnover logged.
<input type="checkbox"/> 7.	Initiate a new checklist CA# 261.

RECOVERY

<input type="checkbox"/> 1.	Assess the following: <ul style="list-style-type: none"> <input type="checkbox"/> a. Plant equipment status <input type="checkbox"/> b. Accident assessment <input type="checkbox"/> c. Control of radiological releases <input type="checkbox"/> d. Ability to resume normal operations
<input type="checkbox"/> 2.	Continue Technical Assessment activities until directed otherwise by the Emergency Coordinator or RM.

TERMINATION and SHUTDOWN

<input type="checkbox"/> 1.	When directed by the Emergency Coordinator, inform Tech Assessment staff of deactivation.
<input type="checkbox"/> 2.	Ensure equipment and supplies are deactivated and/or stored.
<input type="checkbox"/> 3.	Ensure documents are collected and given to the Admin Coordinator.
<input type="checkbox"/> 4.	Restore PC UPS power supply to LINE.
<input type="checkbox"/> 5.	Contact Operations to return TSC Ventilation to Normal Mode
<input type="checkbox"/> 6.	Restore TSC Air Handling Unit Control Switch to <u>AUTO</u> position.
<input type="checkbox"/> 7.	Secure Free Format Log assignment from *3 under OPERATIONS.

 Technical Assessment Coordinator Signature

TECHNICAL ASSESSMENT COORDINATOR (TAC) 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 is assigned. This quality code is also 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 are tagged as INVL. Also, if a multiplexer has either failed or been taken offline, all points assigned to that multiplexer are 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".

TECHNICAL ASSESSMENT COORDINATOR (TAC) 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.

OPERATIONS SUPPORT COORDINATOR (OSC) CHECKLIST

<input type="checkbox"/> *6.	Ensure Emergency Team Coordinators track Teams as to location and progress of their assignment.
<input type="checkbox"/> *7.	Interface with the Technical Assessment and Health Physics Groups to ensure coordination of activities.
<input type="checkbox"/> 8.	If accountability is declared, provide Security Coordinator with badge numbers of personnel that have been assigned to an emergency team that has left the TSC.
<input type="checkbox"/> *9.	Monitor TSC operating equipment periodically: <ul style="list-style-type: none"> <input type="checkbox"/> TSC Emergency Diesel. <input type="checkbox"/> TSC Emergency Ventilation Filter System. (NOTE: Be aware of rapidly changing radiation levels during periods of releases.)

TURNOVER

<input type="checkbox"/> 1.	Incoming OSC Coordinator briefed on OSC status and review log.
<input type="checkbox"/> 2.	Notify the Emergency Team Coordinators of the turnover.
<input type="checkbox"/> 3.	Notify the Control Room/TSC Liaison of the turnover.
<input type="checkbox"/> 4.	Emergency Coordinator informed.
<input type="checkbox"/> 5.	Turnover complete _____ Time.
<input type="checkbox"/> 6.	Turnover logged.
<input type="checkbox"/> 7.	Initiate a new checklist CA# 262.

RECOVERY

<input type="checkbox"/> 1.	Assess the following: <ul style="list-style-type: none"> <input type="checkbox"/> Plant equipment status. <input type="checkbox"/> Emergency team status. All Emergency Team work needs to be completed, turned over to Recovery or normal maintenance. <input type="checkbox"/> Ability to resume normal operations
<input type="checkbox"/> 2.	Continue Operations Support activities until directed otherwise by the Emergency Coordinator or RM.

TERMINATION and SHUTDOWN

<input type="checkbox"/> 1.	Upon direction of the Emergency Coordinator/Administrative Coordinator, contact the Emergency Team Coordinator and inform of deactivation
<input type="checkbox"/> 2.	Ensure OSC/SA equipment and supplies are deactivated and/or stored.
<input type="checkbox"/> 3.	Ensure documents are collected and given to the Admin Coordinator.

Operations Support Coordinator Signature

OPERATIONS SUPPORT COORDINATOR (OSC) CHECKLIST

OSA SUPPORT REQUEST

Administrative (Admin.) Coordinator,

The Operations Support Area (OSA) requires the following support. This support is needed (circle one)

Immediately

At next Shift, at _____ (enter time)

POSITION

NUMBER NEEDED

Operations Support Coordinator

Electrical Emergency Team Coordinator

Mechanical Emergency Team Coordinator

Storekeeper

Mechanical Supervisor

Electrical Supervisor

I&C Supervisor

Mechanical Planner

Electrical Planner

I&C Planner

Electrician

Machinist

Welder

I & C Technician

Electrical Apprentice

Machinist Apprentice

Welder Apprentice

I&C Apprentice

Insulator

Plant Helper

Nuclear Utility Worker

Tool Room Mechanic

Operating Supervisor (Shift Supervisor concurrence obtained)

Equipment Operator (Shift Supervisor concurrence obtained)

ADMINISTRATIVE (ADMIN) COORDINATOR CHECKLIST

Date _____ Time: _____

<u>INITIATION</u>	
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the Admin Coordinators package. <input type="checkbox"/> Clip on the Admin Coordinators badge <input type="checkbox"/> Adjust Gaitronics Volume
<input type="checkbox"/> 2.	Inform Emergency Coordinator and Technical Assessment Coordinator of your presence.
<input type="checkbox"/> 3.	Shift the SENTRY Computer power supply to UPS position.
<input type="checkbox"/> 4.	Initiate Log Sheet.

<u>OPERATIONS CARS 199903558</u> (* Steps or items that must be frequently reviewed)	
<input type="checkbox"/> 1.	Equipment availability and operation. Check on: <ul style="list-style-type: none"> <input type="checkbox"/> Personal Computers (PC) <input type="checkbox"/> SENTRY Computer (NOTE: Ensure SENTRY is operational) CARS 200105707 <input type="checkbox"/> Telephones <input type="checkbox"/> Copier <input type="checkbox"/> Fax <input type="checkbox"/> Reader/Printer <input type="checkbox"/> Print Plotter
<input type="checkbox"/> 2.	Status TSC Coordinators and keep the EC informed periodically until all positions are filled. <ul style="list-style-type: none"> <input type="checkbox"/> Technical Assessment Coordinator <input type="checkbox"/> Health Physics Coordinator <input type="checkbox"/> Operations Support Coordinator <input type="checkbox"/> TSC (ENS) Communicator <input type="checkbox"/> Chemistry Coordinator <input type="checkbox"/> Security Coordinator
<input type="checkbox"/> *3.	Check status of TSC emergency responders per EIP-ZZ-00200 Attachment 2. DO NOT delete messages until all positions are filled. Distribute copies of Attachment 2 to the coordinators periodically until all positions are filled. Paging or calling using the Emergency phone directory may be required. <ul style="list-style-type: none"> <input type="checkbox"/> Call 64777 to obtain Audix. <input type="checkbox"/> Enter 68400 and the # sign. <input type="checkbox"/> Enter the password which is only the # sign. <input type="checkbox"/> Follow the instructions to listen to the new messages and complete attachment 2. <input type="checkbox"/> Contact SAS (68785) for any positions that was logged due to Audix message transfer.
<input type="checkbox"/> 4.	Personnel Assessment Admin/Clerical Support Personnel (call in as necessary) CARS 199903558 <ul style="list-style-type: none"> <input type="checkbox"/> _____ (name) <u>One NIS Support person should be considered.</u> <input type="checkbox"/> _____ (name) <u>One person to callout/canvass additional support.</u> <input type="checkbox"/> _____ (name) <u>One person for the RM in the EOF.</u> <input type="checkbox"/> _____ (name) <u>One person for the LSC in the EOF.</u> <input type="checkbox"/> _____ (name) <u>One person for the EC in the TSC.</u> <input type="checkbox"/> _____ (name) <input type="checkbox"/> _____ (name) <input type="checkbox"/> _____ (name) <p>As personnel request are made, contact Admin Personnel in the CMB by calling 68369 or by Gaitronics.</p>

ADMINISTRATIVE (ADMIN) COORDINATOR CHECKLIST

<input type="checkbox"/> *5.	<input type="checkbox"/> Monitor the Declaration Status Boards. <input type="checkbox"/> Ensure the Declaration Status Boards are current with the Emergency Classification announcements. CARS 199903558 <input type="checkbox"/> Monitor the receipt of SENTRY Notifications at LAN printer and /or Fax machine and deliver to ENS Communicator.
<input type="checkbox"/> *6.	Personnel that leave the Facility should check out with the Security Officer. If a release above normal operating limits has occurred or is likely to occur a HP brief is required. CARS 199701061
<input type="checkbox"/> *7.	If personnel are dispatched to another facility a follow up call should be initiated in 15-20 minutes to ensure they arrive safely. CARS 199901904
<input type="checkbox"/> *8.	Ensure the availability of the following administrative services: <ul style="list-style-type: none"> <input type="checkbox"/> Typing, Word Processing <input type="checkbox"/> Copying, Reproduction <input type="checkbox"/> Fax <input type="checkbox"/> Document control <input type="checkbox"/> Drawings <input type="checkbox"/> Message and mail Delivery <input type="checkbox"/> Telephone Repair and Installation <input type="checkbox"/> Radio Repair (Ameren Telecom.) <input type="checkbox"/> _____ <input type="checkbox"/> _____
<input type="checkbox"/> *9.	If operations become or have the potential to become long term, coordinate with the Logistics Support Coordinator (LSC) in the EOF to address the following items for site personnel. <ul style="list-style-type: none"> <input type="checkbox"/> Contact Security for number of personnel inside the protected area. CARS 199903558 <input type="checkbox"/> Meals ordered and scheduled for the entire organization; personnel informed of meal times and locations. <input type="checkbox"/> Sleeping space arranged for emergency personnel: personnel informed as to location. <input type="checkbox"/> Shift schedule prepared for emergency personnel: appropriate personnel notified. (Use the sign in board and Emergency Telephone Directory to make up roster.) <input type="checkbox"/> Janitorial/waste disposal services arrangements made.
<input type="checkbox"/> *10.	Requests for additional vendor support personnel are to be coordinated with the Logistics Support Coordinator in the EOF. <p>Obtain the following information from the Logistics Support Coordinator:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Name(s) of personnel <input type="checkbox"/> Social Security Number <input type="checkbox"/> Work space requirements <input type="checkbox"/> Estimated time of arrival <p>Contact:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Supervisor Admin, Access Control and arrange for plant access as required. <input type="checkbox"/> Plant helper group to set up desk etc., as required.
<input type="checkbox"/> *11.	Coordinate requests for additional equipment with the Logistics Support Coordinator in the EOF. <ul style="list-style-type: none"> <input type="checkbox"/> Obtain the information from the requesting organization and supply it to the Logistics Support Coordinator: <input type="checkbox"/> Explicit equipment requirements in writing <input type="checkbox"/> Amount needed <input type="checkbox"/> Delivery location <input type="checkbox"/> Person on site to contact
<input type="checkbox"/> *12.	Contact the Logistical Support Coordinator in the EOF and coordinate to provide Administrative Support to th entire organization.

ADMINISTRATIVE (ADMIN) COORDINATOR CHECKLIST

<input type="checkbox"/> *13.	In the event of an accident or illness perform the following: <i>(Note: DO NOT release the individual's name.)</i> Call the control room (CR/TSC Liaison via OSC) and obtain the following. CARS 199903558 <ul style="list-style-type: none"> <input type="checkbox"/> Nature of injury or illness. <input type="checkbox"/> Contaminated? <input type="checkbox"/> Transported offsite to doctor, hospital etc. <input type="checkbox"/> If the incident may attract media attention call the JPIC Administrator or Coordinator and supply them with the information.
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TURNOVER

<input type="checkbox"/> 1.	Brief the incoming Admin. Coordinator of the status of administrative activities and review log.
<input type="checkbox"/> 2.	Notify the Admin. and clerical staff of the turnover.
<input type="checkbox"/> 3.	Notify the Emergency Coordinator turnover complete.
<input type="checkbox"/> 4.	Turnover complete _____ Time.
<input type="checkbox"/> 5.	Turnover logged.
<input type="checkbox"/> 6.	Initiate a new Checklist CA# 263.

RECOVERY

<input type="checkbox"/> 1.	Continue Administrative activities until directed otherwise by the Emergency Coordinator or RM.
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TERMINATION and SHUTDOWN

<input type="checkbox"/> 1.	Upon direction of the Emergency Coordinator, begin terminating operation as follows <ul style="list-style-type: none"> <input type="checkbox"/> Responsibilities transferred to the Control Room. <input type="checkbox"/> All functional equipment/supplies have been restored to startup conditions. <input type="checkbox"/> Restore SENTRY Computer UPS power supply to Line position. <input type="checkbox"/> Records collected, and forwarded to Emergency Preparedness Department. <input type="checkbox"/> Staff relieved of TSC duties.
<input type="checkbox"/> 2.	Control Room informed of TSC shutdown.
<input type="checkbox"/> 3.	TSC shut down Time _____.

 Administrative Coordinator Signature

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST

Date _____ Time: _____

<u>INITIATION</u>	
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Close front door to vestibule and back hallway door from support area. <input type="checkbox"/> Direct incoming traffic to enter through portal monitor <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the Health Physics Coordinators package. <input type="checkbox"/> Clip on the Health Physics Coordinators badge. <input type="checkbox"/> Adjust Gaitronics Volume
<input type="checkbox"/> 2.	Inform Emergency Coordinator and Admin. Coordinator of your presence.
<input type="checkbox"/> 3.	Initiate Log Sheet.
<input type="checkbox"/> 4.	Shift the HPC Plant Computer power supply to the UPS position.
<input type="checkbox"/> 5.	Personnel Assessment On Shift: <input type="checkbox"/> _____ (name) HP Ops Shift Technician (HPOPS). Obtain Plant status and radiological concerns. Status setup of Control Room / Field Office in accordance with EIP-ZZ-00102, Attachment 2. HPOPS Tech to provide HP coverage for On Shift personnel as directed by Shift Supervisor. <input type="checkbox"/> _____ (name) HP Tech Support Technician (HPTS). Obtain Plant, radiological release, meteorological, and Protective Action Recommendation status from the HPTS Tech performing dose assessment. <input type="checkbox"/> _____ (name) Chemistry Technician. The Chemistry Technician is responsible for sampling and analysis as needed to identify the source and magnitude of the emergency. Chemistry Technicians are qualified as Support Area Personnel in the Health Physics group.
<input type="checkbox"/> 6.	OSA Responders NOTE: Minimum 14 R/C Support Personnel required, (one MUST be a Chemistry Tech.) Assign personnel as they arrive to the TSC based on priorities, <u>not</u> as listed, using the below guidance.
1. _____	<input type="checkbox"/> Contact the DAC and discuss the need to Assign R/C Support Personnel to the Rapid Plume Assessment Tech, (RPAT) position if not already dispatched.
2. _____ 3. _____	<input type="checkbox"/> Assign 2 R/C Support Personnel to FMTs. HPC obtains FMT Driver from OSA, Engineering or Rad Chem Departments. Dispatch the teams and drivers in accordance with EIP-ZZ-00211.
4. _____ 5. _____	<input type="checkbox"/> Assign 2 R/C Support Personnel to the EOF for Dose Assessment Staff and FMT Communicator. Brief with FMTs if personnel are available, but do not delay dispatching.
6. _____	<input type="checkbox"/> Assign R/C Support Personnel to perform Onsite survey of plume if a release above normal operating limits is suspected or in progress, monitor habitability of MAF, Field Office, HPAC, and Control Room as needed.
7. _____	<input type="checkbox"/> Assign R/C Support Personnel to monitor Plant Computer Screens, maintain Facility Log, and answer phones / radio. Initiate FF Logs and update HPC on any changes approx. every 15 minutes. Wind speed and wind direction should be closely monitored along with In Plant radiological conditions.

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST

8. _____	<input type="checkbox"/> Assign HP Brief Tech to report directly to the OSC to support Radiological Briefings and Emergency Teams. All prepared radiological briefings should be reviewed with HPC prior to conducting brief of Emergency Team.
9. _____	<input type="checkbox"/> Have R/C Techs response check portable instruments, prepare equipment and supplies.
10. _____	<input type="checkbox"/> Have R/C Tech set up EDs in Rapid Entry Mode. Request Setpoints from HPC
11. _____	<input type="checkbox"/> Have R/C Tech ensure all OSA personnel read and sign the Emergency RWP. TEDE/CDE Evaluation: mrem gamma X 3 = TEDE mrem gamma X 40 =CDE thy
12. _____	<input type="checkbox"/> Assign Chemistry Support Personnel to the Chemistry Coordinator (if needed).
13. _____	<input type="checkbox"/> Assign R/C Support Personnel to communicate with the NRC via the HPN line (if requested from NRC). See Attachment #5 page 8 of 8.
14. _____	<input type="checkbox"/> Assign R/C Support Personnel to maintain Habitability of TSC per Initiation Step 8 and Operation Step 10 of HPC Checklist. Direct R/C Tech to conduct HP briefs and provide dosimetry for personnel leaving the facility that are not assigned to Emergency Teams (as needed).
<input type="checkbox"/> 7.	Contact Dose Assessment Coordinator (DAC) at EOF (ext. 64999): — Inform DAC of RPAT, FMT, Dose Assessment Staff, and FMT Communicator deployment status.
<input type="checkbox"/> 8.	Establish Radiological Habitability Controls in the TSC: <input type="checkbox"/> Portal Monitor energized and response checked. <input type="checkbox"/> Set up a frisking station using a model 177 Rate Meter, as needed, to backup the portal monitor. <input type="checkbox"/> AMS 3 energized and source checked. <input type="checkbox"/> Control Dosimetry placed at HPC Desk.
<input type="checkbox"/> 9.	Notify Emergency Coordinator that HP is ready for operation and habitability in the TSC is established.
<input type="checkbox"/> 10.	HP Group ready for responsibilities at _____ Time. (Also make log entry)..

OPERATIONS

(*) Steps are items that must be frequently reviewed.

<input type="checkbox"/> *1.	Make Facility Announcement that "All personnel leaving the TSC should check out with the Security Officer prior to leaving the facility." If a release above normal operating limits is in progress or anticipated, announce "an HP brief will also be required." NOTE: If a release above normal operating limits is in progress or anticipated, ensure all personnel dispatched from the TSC are issued Electronic Dosimeters and dose is tracked. The Security Officer will verify HP briefs prior to exit.
<input type="checkbox"/> *2.	If personnel are dispatched to another facility a follow up call should be initiated in 15-20 minutes to ensure they arrive safely. CARS 199901904 .

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST

<input type="checkbox"/> *3.	<p>Review needed protective actions for On Site personnel:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Ensure dosimetry issued to Security personnel and Security Coordinator briefed on radiological conditions, wind speed and direction. <input type="checkbox"/> Inform Security Coordinator if a Release Above Normal Operating Limits occurs. <input type="checkbox"/> Coordinate Assembly and Evacuation actions per EIP-ZZ-00230 with the Security Coordinator. (Assembly and Evacuation are required at a SITE and GENERAL EMERGENCY. When discussing Evacuation routes utilizing MAGNEM, use the 10 Mile projected map.) <ul style="list-style-type: none"> <input type="checkbox"/> If Needed the Hearn Center is the preferred Care and Reception Center. <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>NOTE: If the Hearn Center is not available, the Security Coordinator will provide an alternate based on discussions with SEMA.</p> </div> <ul style="list-style-type: none"> <input type="checkbox"/> Determine need for R/C Support Personnel to monitor Assembly and Evacuation. <input type="checkbox"/> Evaluate restricting access to areas due to release or potential release based on wind direction. <input type="checkbox"/> Evaluate need for Respiratory Protection per HTP-ZZ-01201. <input type="checkbox"/> Evaluate Potassium Iodide (KI) distribution to Emergency Teams, Ops Department and Security personnel per HDP-ZZ-01300 section 7, items 7.1 through 7.1.4..
<input type="checkbox"/> 4.	Obtain Respirator Issue Log and Daily Dose Report from HPACA if LAN and Mainframe Computer are unavailable in the TSC.
<input type="checkbox"/> *5.	Monitor Plant Computer Screens associated with Group 1 & 2 EALs from EIP-ZZ-00101, Classification of Emergencies. Report any changes in readings to the Technical Assessment Coordinator and EC.
<input type="checkbox"/> *6.	<p>Personnel requiring decontamination should be sent to HPACA. If needed, the back entrance of the TSC can be staged to receive contaminated personnel.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Inform Security Coordinator if personnel are entering the TSC via the back entrance.
<input type="checkbox"/> *7.	<p>Verify sufficient inventory of the following (additional quantities are available from HPAC or Cal Facility):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Electronic Dosimeters (ED) <input type="checkbox"/> Portable Instruments <input type="checkbox"/> Respirators <input type="checkbox"/> Protective Clothing (PC) <input type="checkbox"/> Consumables (rope, postings, bags, etc.) <input type="checkbox"/> Plant Radios
<input type="checkbox"/> *8.	Consider preparation of Emergency Dose Extensions for selected Operations Support Area personnel in the event Plant radiological conditions change in accordance with HDP-ZZ-01450.
<input type="checkbox"/> *9.	<p>Monitor Plant conditions and emergency activities to ensure personnel dose is maintained ALARA.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Monitor and trend Plant Area Radiation monitors, including Control Room and HPACA. <input type="checkbox"/> Radiation levels are expected to increase when Safety Injection recirculation is lined up to Containment. <input type="checkbox"/> Monitor the RWST radiation levels when in the recirculation mode. <input type="checkbox"/> Notify the EC and make announcements to the TSC as Radiological Conditions change. <input type="checkbox"/> Establish radiological postings in the Plant as time and resources allow (MUST be performed prior to Re-entry).
<input type="checkbox"/> *10.	<p>Monitor facility habitability radiological conditions and recommended appropriate protective actions:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Direct dose rate ≥ 600 mrem/hr, inform the EC, and commence monitoring cumulative dose. <input type="checkbox"/> Cumulative dose of $\geq 4,400$ mrem, recommend evacuation of the facility. <input type="checkbox"/> Direct dose rate of $\geq 5,000$ mrem/hr, recommend evacuation. <input type="checkbox"/> Iodine concentrations of $\geq 2.4E^{-6}$ $\mu\text{Ci/ml}$, inform the EC, and commence air sampling to ensure total intake does not exceed 25 rem CDE. <input type="checkbox"/> Iodine concentrations of $\geq 1.9E^{-5}$ $\mu\text{Ci/ml}$, recommend evacuation.
<input type="checkbox"/> *11.	Periodically update the Emergency Coordinator on radiological conditions in the Plant and the status of TSC habitability.

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST

- *12. For additional HP support/supplies, coordinate requests through the Admin. Coordinator or Stores person.

TURNOVER

1. Brief the oncoming HP Coordinator on radiological information, and any protective actions, both recommended and implemented.
2. Brief the oncoming HP Coordinator on the status of deployed Emergency Teams.
3. Review HPC Checklist and Log.
4. Contact Dose Assessment Coordinator in EOF
- Arrange for FMT turnover.
 - Obtain weather forecast.
 - Inform DAC of oncoming relief.
5. Notify the Emergency Coordinator of the Turnover
6. Turnover complete _____ Time.
7. Turnover logged.
8. Initiate a new Checklist CA# 264.

RECOVERY

1. Discuss:
- Maintaining of personnel exposure ALARA and preventing spread of contamination.
 - Survey and Posting Status.
 - Need to implement EIP-ZZ-00225, Reentry
 - Decontamination activities.
 - Need for additional assistance, supplies, or equipment.
 - Long term monitoring.
 - Activation of Automated Access Control.
2. Continue HP operations until directed otherwise by the Emergency Coordinator or RM.

TERMINATION and SHUTDOWN

1. Upon direction of the Emergency Coordinator/Admin. Coordinator, notify R/C personnel of shutdown.
2. Turn over any HP support to normal plant staff.
3. Contact DAC in EOF.
4. Ensure HP equipment is de-energized, supplies and materials are stored as required. (Note: Gamma 10 should remain on.)
5. Ensure documents are collected and given to the Admin. Coordinator.
6. Restore HPC Plant Computer UPS power supply to LINE position.

 HP Coordinator Signature

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST**GAMMA-10 PORTAL MONITOR RESPONSE CHECK**

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

1. Verify 110 VAC power to the unit (green operational light is illuminated and no alarms are activated).
2. Set the NIMBIN power supply On-Off switch to ON and ensure the power light is illuminated
3. Set the HV-2 NIM On-Off switch to on and ensure the Positive LED is illuminated.
4. 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.
5. Inspect the monitor for physical damage.
6. Verify no alarms are activated. If alarms are activated clear alarms before continuing.
7. Ensure green operational light is illuminated.
8. 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 por should illuminate.
9. Depress the reset button on the portal. The alarms should clear and the green operational ligh should remain lit.
10. 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.

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST**AMS-3 STARTUP AND OPERATION**

This Startup Sequence augments HTP-ZZ-04137, Operation of the Eberline AMS-III. It is designed to be used in an Emergency Response Facility when an H 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 (located on front of monitor) 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 10^4 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 snap 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.

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST**SET-UP AND OPERATION OF THE MODEL 177 RATEMETER**

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.

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST**HPN COMMUNICATIONS**

The following are examples of specific information that may be requested during communication over the HPN:

1. Is there any change to the classification of the event?
 - If so, what is the reason?
2. Have toxic or radiological releases occurred or been projected (including changes in the release rate)?
 - If so, what are the actual or currently projected on-site and off-site releases, and what is the basis for the assessment?
3. What are the health effects or consequences to on-site and off-site people? How many onsite or offsite people are being or will be affected and to what extent?
4. Is the event under control?
 - When was control established, or what is the planned action to bring the event under control?
 - What mitigative actions are currently underway or planned?
5. What on-site protective measures have been taken or are planned?
6. What off-site protective actions are being considered or have been recommended to state and local officials?
7. What are the current meteorological conditions?
 - Wind Speed
 - Wind Direction
 - Stability Class
8. What are the dose and dose rate readings on-site and off-site?

TSC COMMUNICATOR (ENS) CHECKLIST

Date _____ Time: _____

INITIATION	
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the ENS Communicators package. <input type="checkbox"/> Clip on the Communicators badge. <input type="checkbox"/> Adjust Gaitronics Volume
<input type="checkbox"/> 2.	Ensure the TSC has power. <input type="checkbox"/> Normal power, (i.e. lights on, power available to computers, etc.). <input type="checkbox"/> No Power. Start the TSC diesel per OOA-UB-EPG70. (WCE Supervisors, WCE Planners, Journeyman Electricians and EOs should be used to operate the Manual Transfer Switch MTSUB7001.) CARS 200200182
<input type="checkbox"/> 3.	Shift the PC power supplies to the UPS position.
<input type="checkbox"/> 4.	Emergency Coordinator and Admin Coordinator informed of your presence.
<input type="checkbox"/> 5.	Initiate Log sheet.
<input type="checkbox"/> 6.	Activate Plant Status Boards on the Plant Computer (Cancel, type PSB, Return).
<input type="checkbox"/> 7.	Check dial tone on the ENS line. (If phone is manned in CR the line will not have a dial tone.)
<input type="checkbox"/> 8.	Contact Control Room Communicator and get a brief as to the status of ENS Communications.
<input type="checkbox"/> 9.	Accept responsibility of ENS Communications per EIP-ZZ-00201, CA-#2517B , or as directed by the NRC.
<input type="checkbox"/> 10.	Discuss any additional support or supplies required with the Admin Coordinator.

OPERATIONS	
<i>(*) Steps are items that must be frequently reviewed.</i>	
<input type="checkbox"/> 1.	Call the NRC or accept transfer from the Control Room on the ENS line and inform them of your name and that you are communicating from the Callaway Plant Technical Support Center.
<input type="checkbox"/> *2.	Remain on the phone and gather facts as requested by the NRC from individual positions, plant computer or status boards and relay those facts back to the NRC, per EIP-ZZ-00201 (NRC fax 9-1-301-816-5151). (All notifications transmitted to the State and local agencies should also be given to the NRC Operations Center unless directed otherwise.)
<input type="checkbox"/> *3	Log information requested and relayed to the NRC as deemed appropriate.
<input type="checkbox"/> *4	Personnel that leave the Facility should check out with the Security Officer. If a release above normal operating limits has occurred or is likely to occur a HP brief is required. CARS 199701061
<input type="checkbox"/> *5	If personnel are dispatched to another facility a follow up call should be initiated in 15-20 minutes to ensure they arrive safely. CARS 199901904

TURNOVER	
<input type="checkbox"/> 1.	Brief the incoming ENS Communicator on the status of NRC requests, awaiting information and review log.
<input type="checkbox"/> 2.	Log turnover.
<input type="checkbox"/> 3.	Turnover complete _____ Time.
<input type="checkbox"/> 4.	Inform Emergency Coordinator or Technical Assessment Coordinator turnover complete.
<input type="checkbox"/> 5.	Initiate a new checklist CA# 265.

RECOVERY	
<input type="checkbox"/> 1.	Continue providing the NRC with requested information.

TERMINATION and SHUTDOWN	
<input type="checkbox"/> 1.	When directed, assist with the TSC deactivation.
<input type="checkbox"/> 2.	Ensure area is put into order and logs collected and give to the Admin Coordinator.
<input type="checkbox"/> 3.	Restore PC UPS power supply to LINE.

TSC Communicator (ENS)

CHEMISTRY COORDINATOR CHECKLIST

Date _____ Time: _____

<u>INITIATION</u>	
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the Chemistry Coordinators package. <input type="checkbox"/> Clip on the Chemistry Coordinators badge. <input type="checkbox"/> Adjust Gaitronics Volume
<input type="checkbox"/> 2.	Inform Emergency Coordinator and Admin. Coordinator of arrival and ready to assume duties of Chemistry Coordinator. (Make log entry.)
<input type="checkbox"/> 3.	Initiate Log sheet.
<input type="checkbox"/> 4.	Contact on shift Chemistry Tech and ensure <ul style="list-style-type: none"> <input type="checkbox"/> Remind on-duty Chem tech to card in at the Field Office during accountability. <input type="checkbox"/> RERP vehicle is operational and in the parking lot. <input type="checkbox"/> All sample results are updated immediately on Chemistry Data Management System (CDMS). <input type="checkbox"/> Verify CCW is lined up to the SJ panel.
<input type="checkbox"/> 5.	Personnel Assessment Rad./Chem. Chemistry technicians (2 required) <ul style="list-style-type: none"> <input type="checkbox"/> _____ (name), _____ (responsibilities) <input type="checkbox"/> _____ (name), _____ (responsibilities) <input type="checkbox"/> _____ (name), _____ (responsibilities) Rad./Chem. Technicians available. (Chemistry) _____ (number).
<input type="checkbox"/> 6.	Assign an available Chemistry Supervisor to the Hot Lab as needed.
<input type="checkbox"/> 7.	Discuss plant chemistry status with Emergency Coordinator and Tech Assessment Coordinator.

<u>OPERATIONS</u>	
<i>(*) Steps are items that must be frequently reviewed.</i>	
<input type="checkbox"/> * 1.	Review and distribute updated CDMS data as it becomes available: Give a copy of CDMS Data to the: <ul style="list-style-type: none"> <input type="checkbox"/> Tech Assessment Coordinator. <input type="checkbox"/> HP Coordinator. <input type="checkbox"/> Reactor Engineer.
<input type="checkbox"/> *2.	Personnel that leave the Facility should check out with the Security Officer. If a release above normal operating limits has occurred or is likely to occur a HP brief is required. CARS 199701061
<input type="checkbox"/> *3.	If personnel are dispatched to another facility a follow up call should be initiated in 15-20 minutes to ensure they arrive safely. CARS 199901904
<input type="checkbox"/> * 4.	Compare latest results of Dose Equivalent I-131 and 100/E bar total specific activity to Group 2 & 4 EAL's per EIP-ZZ-00101 , Classification of Emergencies, and report any EAL that is being approached or exceeded to the Technical Assessment Coordinator and Emergency Coordinator.
<input type="checkbox"/> * 5.	If SJRE01 or SJ room radiation levels are elevated, Evaluate if RCS specific activity limit is exceeded and if plant should be Shut down.

CHEMISTRY COORDINATOR CHECKLIST

<input type="checkbox"/> *6.	Evaluate Secondary Chemistry conditions including Primary-to-Secondary Leakage, SEE CTP-ZZ-02590 and APA-ZZ-01023..
<input type="checkbox"/> 7.	If Post Accident Sample is requested, refer to CTP-ZZ-08100 located in CC Packet.
<input type="checkbox"/> *8.	Monitor Post Accident Sampling data and provide recommendations as necessary.
<input type="checkbox"/> *9.	On a SI actuation, SJ sample cooling water will be lost. <ul style="list-style-type: none"> <input type="checkbox"/> Request the Tech to secure high temp samples. <input type="checkbox"/> Request Ops to open EGHV69A & B and EGHV70A & B to restore cooling flow as soon as practical. <input type="checkbox"/> Discuss with HPC and EC the need to make a plant announcement due to the possibility of changing dose rates. <p>CVCS letdown samples will remain representative as long as letdown flow is available.</p>
<input type="checkbox"/> *10.	Identify additional support (e.g. personnel, off-site analysis) and coordinate requests through the Admin Coordinator.

TURNOVER

<input type="checkbox"/> 1.	<input type="checkbox"/> Brief the incoming Chemistry Coordinator of Chemistry activities and review log.
<input type="checkbox"/> 2.	<input type="checkbox"/> Notify the Tech. Assessment Coordinator of the Turnover.
<input type="checkbox"/> 3.	Turnover complete _____ Time.
<input type="checkbox"/> 4.	Turnover logged.
<input type="checkbox"/> 5.	Initiate new checklist.

RECOVERY

<input type="checkbox"/> 1.	Continue Chemistry activities until directed otherwise by the Emergency Coordinator or RM.
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TERMINATION and SHUTDOWN

<input type="checkbox"/> 1.	Upon direction assist with TSC deactivation.
<input type="checkbox"/> 2.	Ensure Chemistry work area is deactivated and/or stored.
<input type="checkbox"/> 3.	Ensure documents are collected and given to the Admin Coordinator.

 Chemistry Coordinator Signature

SECURITY COORDINATOR (SC) CHECKLIST

Date _____ Time: _____

<u>INITIATION</u>	
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the Security Coordinators package. <input type="checkbox"/> Clip on the Security Coordinators badge <input type="checkbox"/> Adjust Gaitronics Volume.
<input type="checkbox"/> 2.	Inform Emergency Coordinator and Admin. Coordinator of arrival.
<input type="checkbox"/> 3.	Initiated Log sheet.
<input type="checkbox"/> 4.	Personnel Assessment (Call in extra personnel as required). <input type="checkbox"/> Contact the Shift Security Supervisor and obtain number and names of security personnel available for assignment.
<input type="checkbox"/> 5	Station security officers at the Emergency Response Facilities entrances to log personnel entrance and egress.
<input type="checkbox"/> 5.1.	Ensure patrol (s) initiate a sweep of OCA/EAB at the ALERT classification per Owner Controlled Area Patrol Post Instruction. Unbadged personnel MUST evacuate the site unless authorized by EC or Security Coordinator. CARS 200201995
<input type="checkbox"/> 6.	Contact Health Physics Coordinator (Health Physics Tech Support on back shift 68496) and request: <ul style="list-style-type: none"> • Is there a Release Above Normal Operating Limits In Progress? YES / NO • What is wind direction? From: _____ TO: _____ • What are the affected sectors? _____, _____, _____, _____ • Ensure SSS and OCA sweeps are briefed on this information.
<input type="checkbox"/> 6.1	<ul style="list-style-type: none"> • If YES, contact SEMA. Normal hours 751-2748, off-hours 17188 (Troop F) and request activation of Hearn's Reception and Care Center.
<input type="checkbox"/> 6.2	If YES, refer to OPERATIONS section #11.
<input type="checkbox"/> 7.	Discuss any additional support or supplies required with the Admin Coordinator.

<u>OPERATIONS</u>	
<i>(*) Steps are items that must be frequently reviewed.</i>	
<input type="checkbox"/> *1.	Conduct normal and emergency security activities in accordance with the Security Plan. If the plan cannot be followed, obtain authorization from the EC to deviate (refer to OTO-SK-00001 Attachment 1), in accordance with 10CFR50.54(x)(y) to deviate. Inform the ENS Communicator (1 hour NRC notification). CARS 199901754
<input type="checkbox"/> *2.	For Security related emergencies, refer to EIP-ZZ-SK001 "Response to Security Events"
<input type="checkbox"/> *3.	Assist the EC in Evacuation and Accountability per EIP-ZZ-00230 .
<input type="checkbox"/> 4	If accountability is declared, obtain badge numbers of personnel assigned to emergency teams that have left the TSC from the OSC, and report these badge numbers to the SSS.
<input type="checkbox"/> *5.	Personnel that leave the Facility should check out with the Security Officer. If a release above normal operating limits has occurred or is likely to occur a HP brief is required. CARS 199701061
<input type="checkbox"/> *6.	If personnel are dispatched to another facility a follow up call should be initiated in 15-20 minutes to ensure they

SECURITY COORDINATOR (SC) CHECKLIST

	arrive safely. CARS 199901904
<input type="checkbox"/> *7.	Contact the HP Coordinator to determine the affected areas in the case of a release above normal operating limits. If Security is to be pulled back from their posts, consider requirements in Step 1, Operations (above).
<input type="checkbox"/> *8.	Ensure that the Security Force has the appropriate dosimetry. Check with the HPC.
<input type="checkbox"/> *9.	Coordinate plant access control.
<input type="checkbox"/> *10.	Contact local law enforcement to coordinate traffic control (i.e. for evacuation routes).
<input type="checkbox"/> 11.	If SITE Evacuation is announced, ensure Patrol(s) initiate sweep of OCA/EAB per Owner Controlled Area Patrol Post Instruction, to ensure all personnel have left areas in question. CARS 200201995 <input type="checkbox"/> Coordinate with HP Coordinator to determine which site evacuation announcement is to be used. Announcements are located in EIP-ZZ-00230, Attachment 3.
<input type="checkbox"/> *12.	Coordinate personnel evacuation and accountability. (NOTE: Accountability is required within 30 minutes of declaring accountability.)
<input type="checkbox"/> *13.	Coordinate any off-site law enforcement agency involvement.

TURNOVER

<input type="checkbox"/> 1.	Brief the incoming Security Coordinator of Security activities and review log.
<input type="checkbox"/> 2.	Notify the Emergency Coordinator of the turnover.
<input type="checkbox"/> 3.	Turnover complete _____ Time.
<input type="checkbox"/> 4.	Turnover logged.
<input type="checkbox"/> 5.	Initiate new checklist.

RECOVERY

<input type="checkbox"/> 1.	Continue Security activities until directed otherwise by the Emergency Coordinator.
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TERMINATION and SHUTDOWN

<input type="checkbox"/> 1.	Upon direction assist with TSC deactivation.
<input type="checkbox"/> 2.	Ensure security equipment is deactivated and/or stored.
<input type="checkbox"/> 3.	Ensure documents are collected and given to the Admin Coordinator.

 Security Coordinator Signature

EMERGENCY TEAM COORDINATOR (ETC) CHECKLIST

<input type="checkbox"/> *6.	Ensure log and status board is maintained.
<input type="checkbox"/> *7	Periodically brief OSA Support personnel on Plant status and job priorities.

TURNOVER

<input type="checkbox"/> 1.	Incoming ETC Coordinator briefed on ETC status and review log.
<input type="checkbox"/> 2.	Notify the Operations Support Coordinator of the turnover.
<input type="checkbox"/> 3.	Notify the OSA Support personnel of the turnover.
<input type="checkbox"/> 4.	Turnover complete _____ Time.
<input type="checkbox"/> 5.	Turnover logged.
<input type="checkbox"/> 6.	Initiate a new checklist CA#0262a.

RECOVERY

<input type="checkbox"/> 1.	Assess the following: <ul style="list-style-type: none"> <input type="checkbox"/> Emergency team status. All Emergency Team work is completed or turned over to the Recovery Organization or normal maintenance. <input type="checkbox"/> Able to resume normal operations.
<input type="checkbox"/> 2.	Continue Emergency Team activities until directed otherwise by the Operations Support Coordinator.

TERMINATION and SHUTDOWN

<input type="checkbox"/> 1.	Ensure OSA equipment and supplies are deactivated and/or stored.
<input type="checkbox"/> 2.	Ensure documents are collected and given to the Admin Coordinator.

 Emergency Team Coordinator Signature

EMERGENCY TEAM COORDINATOR (ETC) CHECKLIST

OSA SUPPORT REQUEST

Administrative (Admin.) Coordinator,

The Operations Support Area (OSA) requires the following support. This support is needed (circle one)

Immediately

At next Shift, at _____ (enter time)

POSITION

NUMBER NEEDED

Operations Support Coordinator

Electrical Emergency Team Coordinator

Mechanical Emergency Team Coordinator

Storekeeper

Mechanical Supervisor

Electrical Supervisor

I&C Supervisor

Mechanical Planner

Electrical Planner

I&C Planner

Electrician

Machinist

Welder

I&C Technician

Electrical Apprentice

Machinist Apprentice

Welder Apprentice

I&C Apprentice

Insulator

Plant Helper

Nuclear Utility Worker

Tool Room Mechanic

Operating Supervisor (Shift Supervisor concurrence obtained)

Equipment Operator (Shift Supervisor concurrence obtained)

CALLAWAY PLANT
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EIP-ZZ-03010

HAZARDOUS CHEMICAL/OIL SPILL RESPONSE/SPILL CLEANUP
IMPLEMENTING PROCEDURE

RESPONSIBLE DEPARTMENT Chemistry

PROCEDURE OWNER Charlie Riggs

WRITTEN BY Charlie Riggs

PREPARED BY Charlie Riggs

APPROVED BY Warren A. Witt

DATE ISSUED 6-6-03



This procedure contains the following:

Pages	<u>1</u>	through	<u>6</u>
Attachments	<u>1</u>	through	<u>6</u>
Tables	<u> </u>	through	<u> </u>
Figures	<u> </u>	through	<u> </u>
Appendices	<u>A</u>	through	<u>B</u>
Checkoff Lists	<u> </u>	through	<u> </u>

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 007

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**HAZARDOUS CHEMICAL/OIL SPILL RESPONSE/SPILL CLEANUP IMPLEMENTING
PROCEDURE**

1 PURPOSE AND SCOPE (COMN 4414, COMN 43181)

1.1 PURPOSE

The purpose of this procedure is to provide guidance and information for response and cleanup of hazardous chemical and/or oil spills.

1.2 SCOPE

1.2.1 This procedure applies to spills/leaks of oil, hazardous or extremely hazardous chemicals and could include fires, explosions, unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents which are available in the Plant.

1.2.1.1 A list of bulk chemical locations, stormwater runoff (SWR) outfalls and applicable reportable quantities is provided in Appendix A.

1.2.1.2 Appendix B lists all above ground equipment filled with oil.

2 DEFINITIONS

2.1 **APA-ZZ-00811, Hazardous Chemical/Oil Spill Prevention Control And Counter Measure Plan, contains definitions of terms used in this procedure to assess spills.**

3 **RESPONSIBILITIES**

3.1 **SHIFT SUPERVISOR (COMN 42190)**

The Shift Supervisor is responsible for:

3.1.1 Ensuring that Attachment 1 is implemented when notified of a spill by plant personnel. CARS 199601213

3.2 **OPERATING SUPERVISOR/FIRE BRIGADE LEADER (FSAR 9.5.1.8)**

The On-Shift Operating Supervisor SHALL serve as Fire Brigade Leader. His responsibilities include the following:

3.2.1 Ensuring that Attachment 3 is implemented when directed by the Shift Supervisor. CARS 199601213

3.3 **COMMUNICATOR**

The Communicator is responsible for:

3.3.1 Performing notifications, as directed by the Shift Supervisor, as listed on Attachment 1.

3.3.2 Performing callouts, making Plant announcements, and handling other tasks as directed by the Shift Supervisor.

3.4 **PLANT EMPLOYEES**

3.4.1 Plant employees have the responsibility to become familiar with the actions necessary to report spills or leaks composed of unknown or potentially hazardous chemicals to the Control Room.

3.4.2 Appropriate actions are listed in Section 5.1.

3.5 **SECURITY DEPARTMENT**

The Security Department is responsible for:

3.5.1 Performing the actions listed in Attachment 1.

3.6 **CHEMISTRY AND HEALTH/PHYSICS DEPARTMENTS**

Chemistry is responsible for:

3.6.1 Performing actions listed in Attachments 1 and 6.

3.6.2 The on call Chemistry Supervisor is responsible for Supervising Spill Cleanup activities per Attachment 6. CARS 199601213

3.6.3 Appendix A MUST be approved by the Supervisor, Chemistry.

3.6.3.1 The Hazardous Material Controller (HMC) will revise Appendix A when new bulk chemical hazardous material permits are approved.

3.6.4 Appendix B MUST be approved by the Supervisor, Chemistry.

3.6.4.1 The HMC will revise Appendix B when made aware of new bulk storage locations for oil.

4 **INITIATING CONDITIONS**

This procedure should be implemented upon recognition of any leak or spill of oil/unknown or potentially hazardous chemicals.

5 PROCEDURE

CAUTION: Any time there is a hazardous material spill or leak, there is potential for creation of a confined space or hazardous atmosphere.

NOTE: Responses to incidental spills of oil/hazardous substances are not considered to be emergency responses. However, notification and/or reporting to offsite agencies may still be required.

5.1 REPORTING THE SPILL

5.1.1 If a spill or leak is noticed which you feel may present a personnel hazard, which is not contained, or which may require a special cleanup technique, or additional personnel, the Control Room should be contacted immediately per Attachment 4.

5.1.2 If a spill or leak does not meet the criteria in 5.1.1:

- a) Clean up the spill.
- b) Contact the Duty Chemistry Supervisor (via the "on call" Rad/Chem Supervisor on backshifts) for direction on disposal of cleanup materials and to assess reportability/notifications required. CARS 199600744

5.2 SHIFT SUPERVISOR

5.2.1 Implement Attachment 1 when notified of a spill by plant personnel. (COMN 4414)

5.3 OPERATING SUPERVISOR/FIRE BRIGADE LEADER

5.3.1 Implement Attachment 3, when directed by the Shift Supervisor. CARS 199601213)

6 REFERENCES

- 6.1 Radiological Emergency Response Plan (RERP)
- 6.2 **T/S SR 3.7.10.2 T/S SR 3.7.13.2 FSAR 16.7.10.1.1.B**
- 6.3 Material Safety Data Sheets (MSDS)
- 6.4 U.S. Department of Transportation (DOT) Emergency Response Guidebook
- 6.5 National Fire Protection Association (NFPA) Fire Protection Guide to Hazardous Materials.
- 6.6 Callaway Training Department Lesson Plan T66.009D.6 (Incident Command).
- 6.7 **Commitments: COMN 4414, COMN 41798, COMN 41799, COMN 42177, COMN 42190, COMN 42191, COMN 43177, COMN 43181, COMN 43182, COMN 43183, COMN 43184 FSAR 9.5.1.8**
- 6.8 **APA-ZZ-00500, Corrective Action Program**
- 6.9 **APA-ZZ-00520, Reporting Requirements and Responsibilities**
- 6.10 **APA-ZZ-00811, Hazardous Chemical/Oil Spill Prevention Control and Countermeasure Plan**
- 6.11 **APA-ZZ-00831, Hazardous Chemical Control Program**
- 6.12 **APA-ZZ-00835, Reporting and Processing of Accidents, Injuries, and Illnesses.**
- 6.13 **EIP-ZZ-00226, Fire Response Procedure for Callaway Plant**
- 6.14 **Callaway Plant Safe Work Practices Manual**

6.15 **APA-ZZ-00832 ,Hazardous and Special Waste Management Program**

7 **RECORDS**

7.1 **QA RECORDS**

7.1.1 **Shift Supervisor Checklist for Hazmat/Oil Response/Cleanup CA-#2203 attached to the CARS in QA file number Z170.0007.**

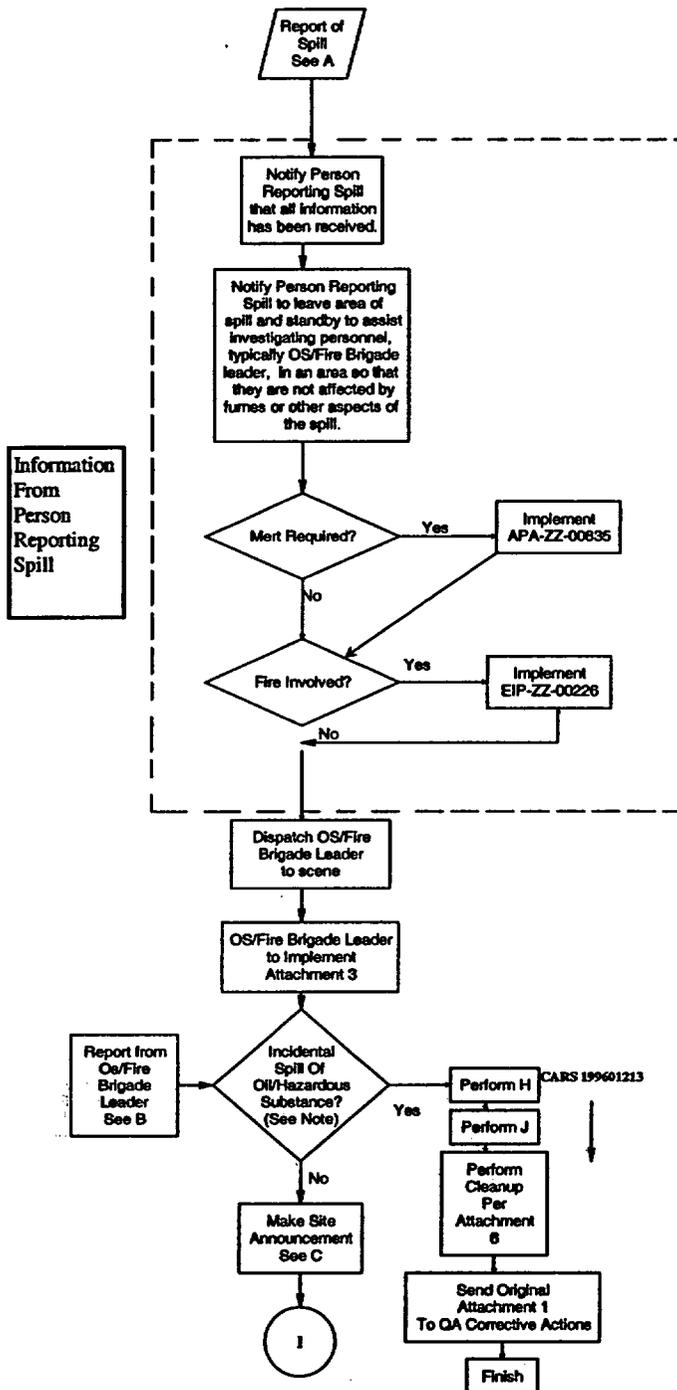
7.1.2 **OS/Fire Brigade Leader Checklist for Hazmat/Oil Response CA-#2203a attached to the CARS in QA file number Z170.0007.**

7.1.3 **Spill Cleanup Crew Checklist CA-#2203b attached to the CARS in QA file number Z170.0007.**

7.2 **COMMERCIAL RECORDS**

7.2.1 **None**

SHIFT SUPERVISOR CHECKLIST FOR HAZMAT/OIL RESPONSE / CLEANUP



A. INITIAL REPORT OF SPILL

1. Name of Caller/Date/Time _____
2. Location of Spill: _____ EL' _____
3. Name or Stock # of Material(s): _____
4. Quantity: _____
5. Type of Injury: _____
6. Hazards in Area: _____
7. Fire or Smoke YES/NO _____
8. Is Spill/Leak Under/Not Under Control _____
9. Environmental Conditions:

Clear	Snow	Fog
Lightning	Ice	Cloudy
Rain	Drizzle	Windy
10. Description of Event _____

Note: Incidental spills are those where the substance can be absorbed, neutralized or otherwise controlled at the time of release by employees without activation of the Fire Brigade.

B. REPORT FROM OS/FIRE BRIGADE LEADER

1. Confirm Material: _____
2. Release Duration: _____
3. Quantity Spilled: _____ gal/lbs
4. Contained within Plant Buildings: YES/NO _____
5. Exposure Level to Toxic: HIGH/LO _____
6. IDLH Conditions: YES/NO _____
7. O₂ Deficient Atmosphere: Present/Possible YES/NO _____
8. Need To Evacuate Plant Site: YES/NO _____
9. Exposure Beyond Site Boundary YES/NO _____
10. Liquid to Ground/Waterway/NA _____
11. Spill under/not under control _____
12. Fire Potential yes/no _____
13. Significant Chemical interactions yes/no _____
14. Additional Manpower Needed: _____
15. Supplies Needed: _____
16. Other Hazards in Area: _____
17. Effects on Plant equipment: _____
18. Systems Need to be Isolated/Energized: _____

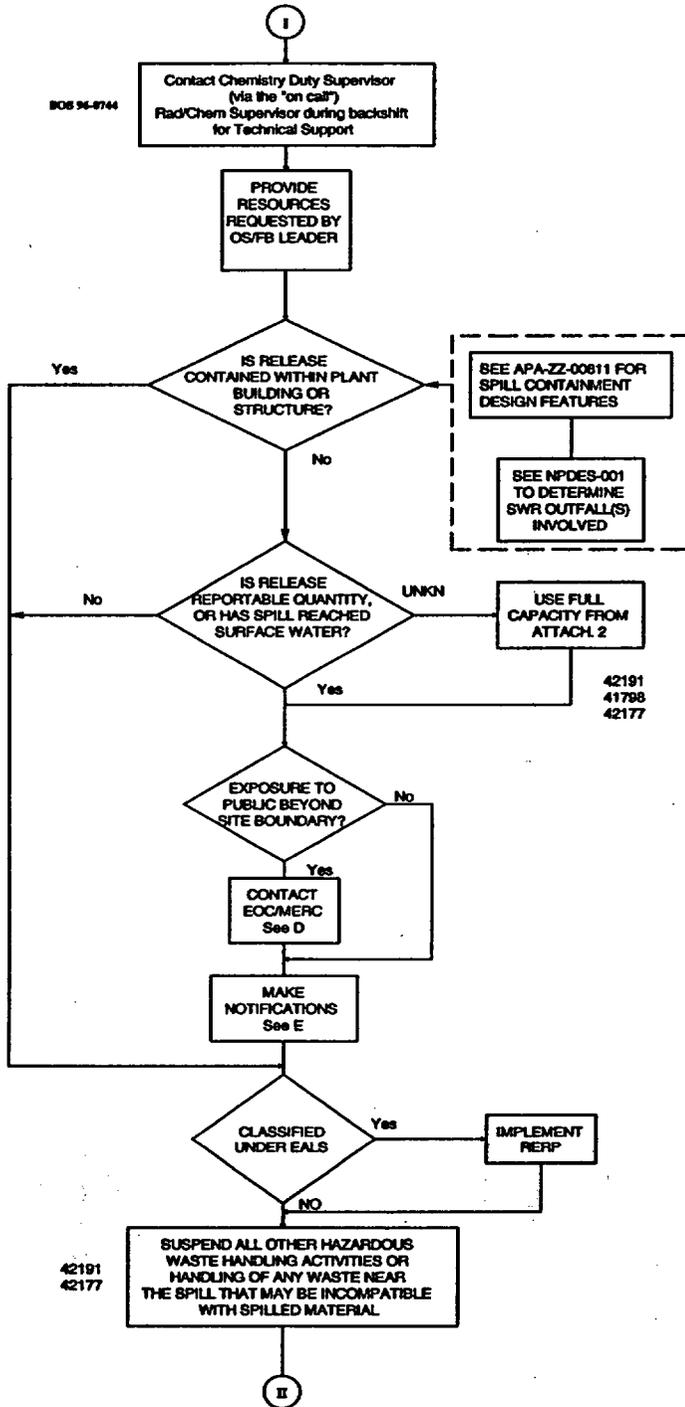
NOTES:

1. If quantity spilled cannot be determined, assume the entire contents have been spilled.
2. Spills at fixed locations on Appendix A will not normally cause off-site hazard.
3. A transportation spill within or near the plant boundary could present public hazard. Use hazard radius on Hazmat sheet.

C. GAL-TRONICS ANNOUNCEMENT

(The plant emergency alarm should be sounded prior to announcement.)
"Attention in the Plant!"
"Attention in the Plant!"

There is a spill of (Material) at (location).
There are/are no reported injuries. All personnel should leave the area immediately.
A Security Officer should report to the Operating Supervisor at (location)".



D. Contact the following agencies if exposure occurs to the general public beyond the Site boundary. (Owner Controlled Area) Use message in F.

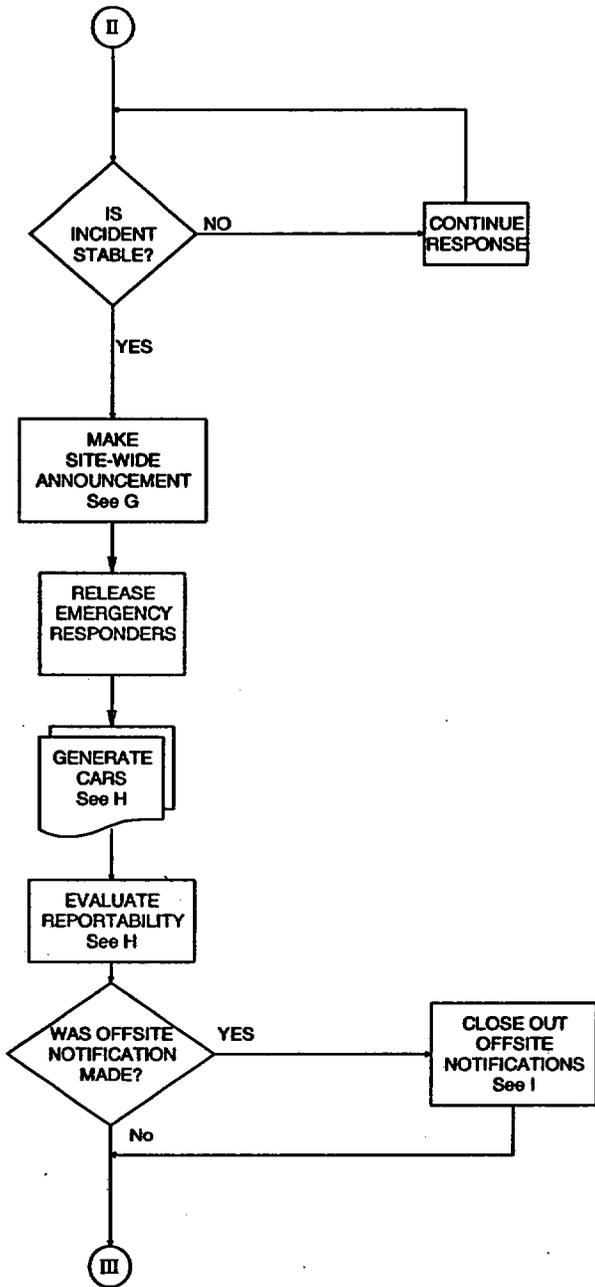
- N/A
1. Callaway/Fulton EOC: 573-642-1090/1031
Name _____ TIME: _____
 2. Mo. Emergency Response Commission (MERC) 573-634-2436
Name _____ TIME: _____

E. Notify the following agencies if release is > reportable quantity in a 24 hour period and is not contained within plant buildings or a spill has reached surface water within 1 hour. Use message in F.

- N/A
1. EDO Name _____ Time: _____
 2. USCGNRC Name _____ Time: _____
 3. EPA/DNR via Ameren Environmental Safety and Health (Contact one individual)
Name _____ Time: _____
Warren Mueller 43063/314-791-9032
Steve Burns 42253/314-303-9457
Don Richardson 44867/314-750-0886
*EPA/USCGNRC U.S. Coast Guard National Response Center
24 hr. Number: 800-424-8802
*DNR 573-634-2436 (24 hour number)
*EPA/USCGNRC Name _____ Time: _____
*DNR Name _____ Time: _____

*NOTE: Contact EPA/USCGNRC/DNR only if Ameren Environmental Safety and Health cannot be reached.

1129 **NOTE:** The Nuclear Regulatory Commission (NRC) is required to be notified per 10CFR50.72 (b) (2) (xi) whenever a notification is made to another government agency. If necessary the Ameren Environmental Safety and Health will notify the EPA. If Ameren Environmental Safety and Health does contact the EPA, a courtesy call to the Missouri DNR WILL also be made. Ameren Environmental Safety and Health should then contact the Control Room to report their notifications.



F. MESSAGE RELEASE

N/A

My name is _____ at the Callaway Plant, Reform Missouri, phone number 573-676-8840. U.S. EPA I.D. No. MOD000687392
 There has been a release of _____ a Hazardous/Extremely Hazardous/Oil material. CAS# _____
 The estimated quantity of the release is _____ lbs/gallons, which began on _____ / _____ (date/time), with a release duration of _____ hrs. The release was a solid/liquid/gas released to the ground/air/waterway. The release was contained/not contained within the site boundary. The general public will/will not be exposed beyond the site boundary. There has/has not been an injury involved with the release.

G. GAI-TRONICS ANNOUNCEMENT

"Attention in the plant. The spill of _____

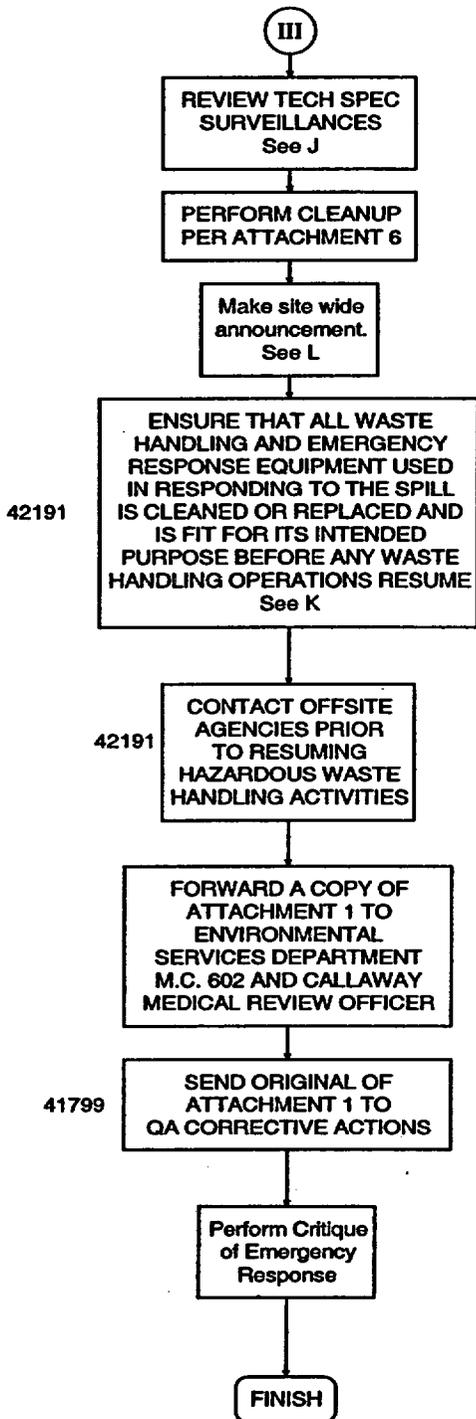
at (location) is under control. However, personnel should avoid the area until cleanup is complete."

H. Generate a CARS per APA-ZZ-00500 and Evaluate reportability using APA-ZZ-00520

I. NOTIFY ALL OFF SITE ORGANIZATIONS THAT INCIDENT IS STABLE

(see section D and E for notification points and telephone #'s)

1. EPA/DNR via Ameren Environmental Safety and Health
NAME: _____ TIME: _____
2. Callaway/Fulton EOC
NAME: _____ TIME: _____
3. MO MERC/DNR
NAME: _____ TIME: _____
4. NRC/ENS
NAME: _____ TIME: _____



J. TECH SPEC REVIEW

For any spill inside the power block, direct Systems Engineering to evaluate the need for performing surveillances T/S SR 3.7.10.2, T/S SR 3.7.13.2, and FSAR 16.7.10.1.1.B.

K. NOTIFY EPA/DNR THAT ALL EMERGENCY EQUIPMENT HAS BEEN CLEANED OR REPLACED AND IS READY FOR REUSE.

(see section D and E for notification points and telephone #'s)

1. EPA/DNR via Ameren Environmental Safety and Health

NAME _____ TIME: _____

2. Callaway/Fulton EOC

NAME _____ TIME: _____

3. MERC/DNR

NAME _____ TIME: _____

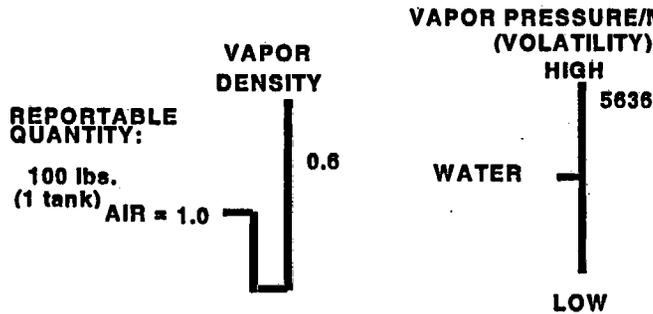
L. GAI-TRONICS ANNOUNCEMENT

"Attention in the plant. The Cleanup of the spill of _____

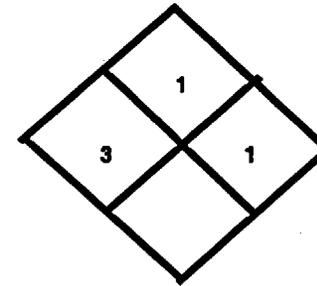
at (location) is complete. Personnel may now re-enter the area.

HAZMAT SHEET

EIP-ZZ-03010
Rev. 008



NAME
ANHYDROUS AMMONIA 100%
NH 3
CAS# 7664-41-7



Hazard Radius

NOT DEFINED

HEALTH HAZARD				
ANATOMY	AFFECTS	PROTECTIVE CLOTHING	SYMPTOMS	FIRST AID
Respiratory	corrosive to nose, throat	SCBA	irritation, coughing, chest pain	fresh air, oxygen
Eyes	corrosive to eyes, blindness	SCBA	irritation; tearing	flush with H ₂ O >30 minutes
Skin	severe burns, irritating	Chemron suit	severe irritation, liquid causes burns	flush with H ₂ O >30 minutes
GI Tract	burns tissue	SCBA	abdominal pain, nausea, vomiting	give lots of H ₂ O

FIRE AND EXPLOSION HAZARD			
FLASH POINT	GAS GENERATION	SUPPRESSION AGENT	SP. GR.
None	Ammonia Gas	water spray, dry chemical or CO ₂	0.69

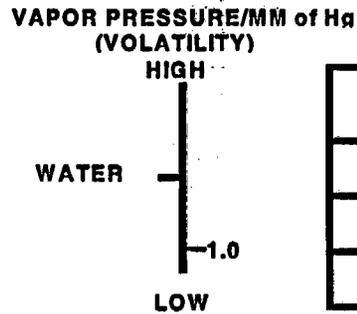
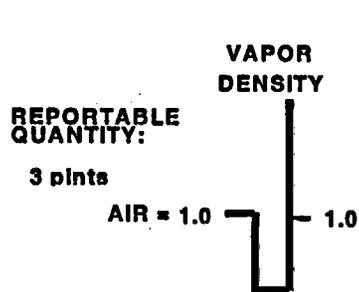
May pose an explosion hazard in confined spaces.

REACTIVITY					
SUBSTANCES	WATER	FIRE	Acids & oxidizers	hypochlorite, halogen	copper, zinc
RESULTS	absorbs, dilutes	oxide of nitrogen	reaction	explosive compounds	corrosion

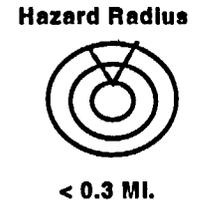
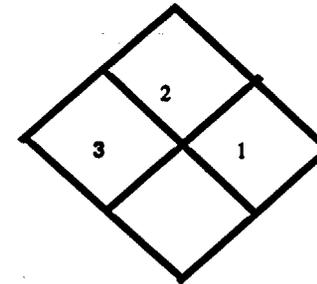
SPILL HANDLING	
DO	DO NOT
Control runoff if water spray is used to absorb gas	Use water on liquid spills
Contact Duty Chemistry Supervisor for technical guidance	
Use water spray to absorb ammonia gas	
Dike liquid spills	

HAZMAT SHEET

EIP-ZZ-03010
Rev. 008



NAME
HYDRAZINE 35%
H2N-NH2
CAS# 302-01-2



HEALTH HAZARD				
ANATOMY	AFFECTS	PROTECTIVE CLOTHING	SYMPTOMS	FIRST AID
Respiratory	irritation, carcinogen	SCBA	coughing, sneezing, irritation	fresh air, oxygen
Eyes	irritation, permanent damage	SCBA	irritation, tearing	continually flush with H ₂ O
Skin	irritation, absorption, toxic	Chemron suit*	irritation	continually flush with H ₂ O
GI Tract	irritation, carcinogen, toxic	SCBA	dizziness and nausea	dilute with H ₂ O, induce vomiting

*Note: Turn-out gear is adequate unless splash or contact hazard exists.

FIRE AND EXPLOSION HAZARD			
FLASH POINT	GAS GENERATION	SUPPRESSION AGENT	SP. GR.
None	Gaseous Hydrazine, explosive	water spray	1.02

REACTIVITY					
SUBSTANCES	WATER	FIRE	Cellulosic Materials	Strong acids, oxidizers	lead, copper, zinc
RESULTS		ammonia, oxides of nitrogen	fire	reaction	reaction

SPILL HANDLING	
DO	DO NOT
If spill drains to Turbine Bldg. sump, secure sump pump	
Use inert absorbent to dike/absorb spill	Use cellulosic material to absorb spill, could cause fire
Dilute spills with 10 volumes of water	
Oxidize small spills with dry sodium Hypochlorite. First consult Duty Chemistry Supv.	

HAZMAT SHEET

EIP-ZZ-03010
Rev. 008

VAPOR PRESSURE/MM of Hg (VOLATILITY)

HIGH
|
WATER
|
LOW

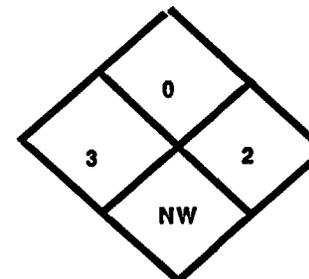
13

VAPOR DENSITY

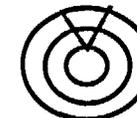
UNKNOWN
|
AIR = 1.0

REPORTABLE QUANTITY:
156 GAL.

NAME
SODIUM HYDROXIDE 50%
Na OH
CAS# 1310-73-2



Hazard Radius



NOT DEFINED

HEALTH HAZARD				
ANATOMY	AFFECTS	PROTECTIVE CLOTHING	SYMPTOMS	FIRST AID
Respiratory	severe burns	SCBA	coughing, sore throat, dyspnea	fresh air, oxygen
Eyes	severe burns	SCBA	observed degradation of tissue	continually flush with H ₂ O
Skin	severe burns	Chemron suit*	redness, burn, with/without pain	wash with soap & large amounts of H ₂ O
GI Tract	severe burns	SCBA	burns to oral pathway, pain, vomiting	give water, then induce vomiting

*Note: Turnout gear is adequate unless splash or contact hazard exists.

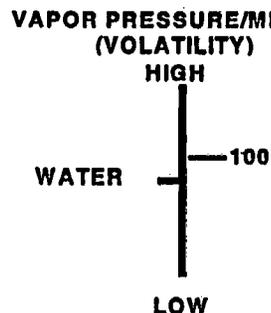
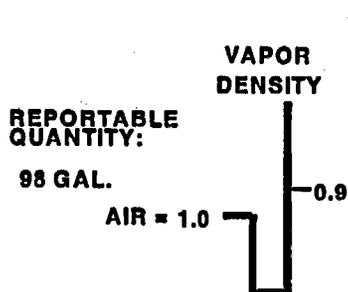
FIRE AND EXPLOSION HAZARD			
FLASH POINT	GAS GENERATION	SUPPRESSION AGENT	SP. GR.
None	N/A	Use agent suitable for surrounding fire	1.54

REACTIVITY				
SUBSTANCES	WATER	FIRE	Most Metals	other chemicals
RESULTS	dilution, heat	N/A	corrosion, H ₂ Gas	see MSDS

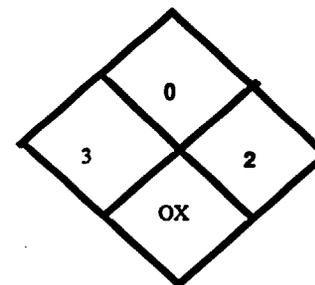
SPILL HANDLING	
DO	DO NOT
Secure Turbine Bldg. sump pump if spill drains to Turbine Bldg. sump.	
Flush chemical into sump with large amounts of water.	
Dike outdoor spills with inert absorbent material.	

HAZMAT SHEET

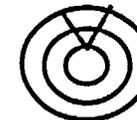
EIP-ZZ-03010
Rev. 008



NAME
SODIUM HYPOCHLORITE 12%
Na OCl
CAS# 007-681-529



Hazard Radius



NOT DEFINED

HEALTH HAZARD				
ANATOMY	AFFECTS	PROTECTIVE CLOTHING	SYMPTOMS	FIRST AID
Respiratory	irritation	SCBA	coughing, general irritation	fresh air, oxygen
Eyes	severe irritation, damage	SCBA	severe eye irritation, tearing	continually flush with H ₂ O
Skin	irritation	Chemron suit*	reddening, irritation	flush for > 15 minutes
GI Tract	burns, death	SCBA	abdominal pain, nausea, vomiting	give lots of water

*Note: Turnout gear is adequate unless splash or contact hazard exists.

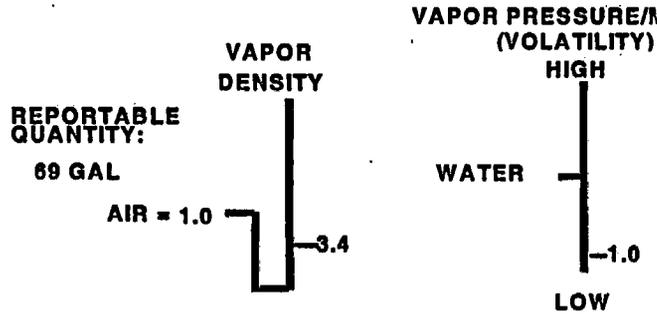
FIRE AND EXPLOSION HAZARD			
FLASH POINT	GAS GENERATION	SUPPRESSION AGENT	SP. GR.
None	N/A	Use agent suitable for surrounding fire	1.3

REACTIVITY					
SUBSTANCES	WATER	FIRE	Acids	Metals	Organic Materials
RESULTS	Dilution	toxic fumes	chlorine gas	oxygen	Reactive

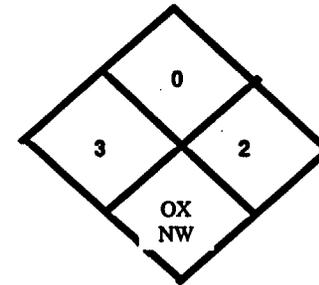
SPILL HANDLING	
DO	DO NOT
Dike spill with sand or inert absorbent	
Dilute with large amounts of water	Allow runoff into sewers or waterways. Toxic to marine life.
Neutralize with dilute Hydrochloric acid	
Contact Duty Chemistry Supv. prior to neutralizing	

HAZMAT SHEET

EIP-ZZ-03010
Rev. 008



NAME
SULFURIC ACID 93%
H2S04
CAS# 7664-93-8



HEALTH HAZARD				
ANATOMY	AFFECTS	PROTECTIVE CLOTHING	SYMPTOMS	FIRST AID
Respiratory	irritation, burns	SCBA	coughing, irritation	fresh air, oxygen
Eyes	serious burns, blindness	SCBA	irritation, tearing, loss of vision	continually flush with H ₂ O
Skin	serious burns	Chemron Suit*	irritation, burns	wash with soap & large amounts of H ₂ O
GI Tract	burns, death	SCBA	burns to mouth, throat, stomach	give lots of water

*Note: Turnout gear is adequate unless splash or contact hazard exists.

FIRE AND EXPLOSION HAZARD			
FLASH POINT	GAS GENERATION	SUPPRESSION AGENT	SP. GR.
None	N/A	Dry chemical or CO ₂	1.84

REACTIVITY					
SUBSTANCES	WATER	FIRE	Metals	Other substances	
RESULTS	violent reaction	oxides of sulfur	corrodes, hydrogen	highly reactive*	

* see MSDS

SPILL HANDLING	
DO	DO NOT
Secure Turbine Bldg. sump pump if spill drains to Turbine Bldg. sump	Apply water to sulfuric acid, violent reactions occur.
Neutralize with soda ash (stock number 14-04-015)	
Contact Duty Chemistry Supv. before neutralizing	

HAZMAT SHEET

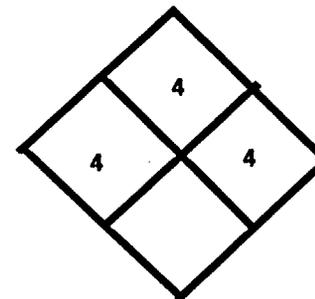
EIP-ZZ-03010
Rev. 008

REPORTABLE QUANTITY:
100 LBS.
AIR = 1.0

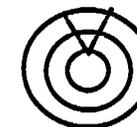
VAPOR DENSITY
UNKNOWN

VAPOR PRESSURE/MM of Hg (VOLATILITY)
HIGH UNKNOWN
WATER
LOW

NAME
WASTE CHEMICALS
(COMPOSITION UNKNOWN)
CAS# UNKNOWN



Hazard Radius



HEALTH HAZARD				
ANATOMY	AFFECTS	PROTECTIVE CLOTHING	SYMPTOMS	FIRST AID
Respiratory	Unknown	SCBA	Unknown	fresh air, oxygen
Eyes	Unknown	SCBA	Unknown	continually flush with H ₂ O
Skin	Unknown	Chemron Suit	Unknown	continually flush with H ₂ O
GI Tract	Unknown	SCBA	Unknown	Gives lots of water

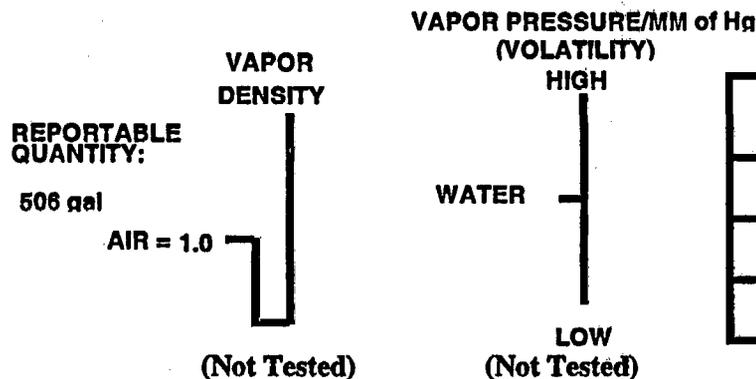
FIRE AND EXPLOSION HAZARD			
FLASH POINT	GAS GENERATION	SUPPRESSION AGENT	SP. GR.
Unknown	Unknown	Do not use solid water stream	Unknown

REACTIVITY					
SUBSTANCES	WATER	FIRE	Other Chemicals	Metals	
RESULTS	Reactive?	Toxic Gases?	Reactive?	Corrosive?	

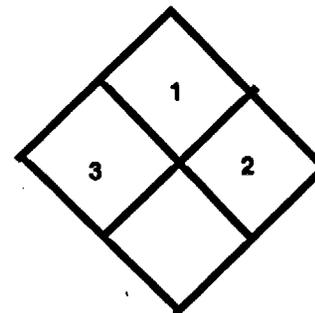
SPILL HANDLING	
DO	DO NOT
Secure sump pumps if materials enter drains	Allow material to enter drains.
Dike outdoor spills. Use inert materials	Flush or dilute with water unless advised by Chemistry.
Contact Duty Chemistry Supv. for guidance in absorbing/neutralizing	

HAZMAT SHEET

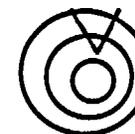
EIP-ZZ-03010
Rev. 008



NAME
PHOSPHORIC ACID (BULAB 9051)
H3PO4 (75%)
CAS# 7664-38-2



Hazard Radius



Not Determined

HEALTH HAZARD				
ANATOMY	AFFECTS	PROTECTIVE CLOTHING	SYMPTOMS	FIRST AID
Respiratory	Irritation, burns	SCBA	Coughing, irritation respiratory distress	Fresh air, oxygen
Eyes	Serious burns, blindness	SCBA	Irritation, tearing, loss of vision	Continually flush with H ₂ O
Skin	Serious burns	Chemron Suit	Irritation burns	Wash with soap and large amounts H ₂ O
GI Tract	Burns, death	SCBA	Burns to mouth, throat, stomach	Give lots of water

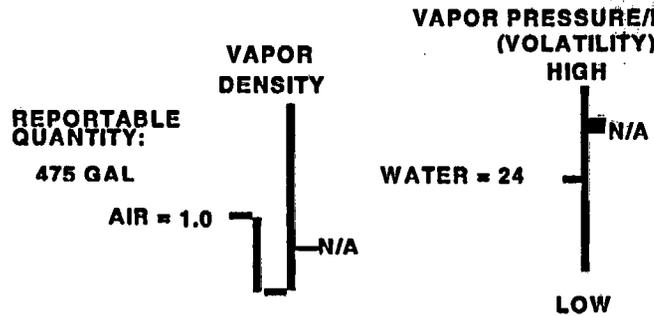
FIRE AND EXPLOSION HAZARD			
FLASH POINT	GAS GENERATION	SUPPRESSION AGENT	SP. GR.
None	N/A	Water Fog, CO ₂ , Foam, Dry Chemical	1.58

REACTIVITY					
SUBSTANCES	WATER	FIRE	Strong Caustics	Metals	Organic Materials
RESULTS	Dilution	Phosphorous Oxide	Reactive	Corrodes, Hydrogen	Not Reactive

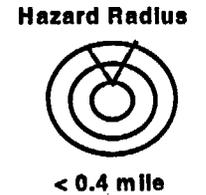
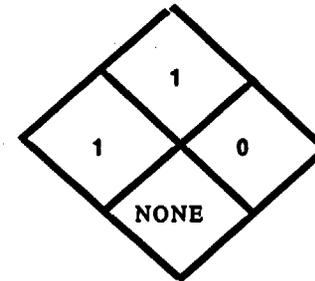
SPILL HANDLING	
DO	DO NOT
Dike Spill with sand or inert absorbent	
Recover as much pure product as possible	Flush with water to Building Drains or Environment
Absorb spill or leak residuals with clay, soil	
Contact Duty Chemistry Supv. to determine if recovered product is useable	

HAZMAT SHEET

EIP-ZZ-03010
Rev. 008



NAME
Cation and Anion Resin
Copolymer styrene and divinylbenzene
CAS# 069011-20-7. 069011-18-3



HEALTH HAZARD				
ANATOMY	AFFECTS	PROTECTIVE CLOTHING	SYMPTOMS	FIRST AID
Respiratory	irritation primarily from fines	Dust/mist respirator	coughing, breathing difficulty	fresh air, oxygen
Eyes	severe irritation, corneal damage	Chemical goggles	irritation, tearing, loss of vision	continually flush H ₂ O. DO NOT rub eyes.
Skin	irritation especially open wounds	Chemron suit	irritation, burns	wash with soap & large amounts of H ₂ O
GI Tract	irritation	Dust/mist respirator	choking hazard	DO NOT induce vomiting. Give cups water.

*Note: Turnout gear is adequate.

FIRE AND EXPLOSION HAZARD			
FLASH POINT	GAS GENERATION	SUPPRESSION AGENT	SP. GR.
None	organic amines, toxic compounds see MSDS	Water spray, dry chemical, or CO ₂	41 lb/ft ³

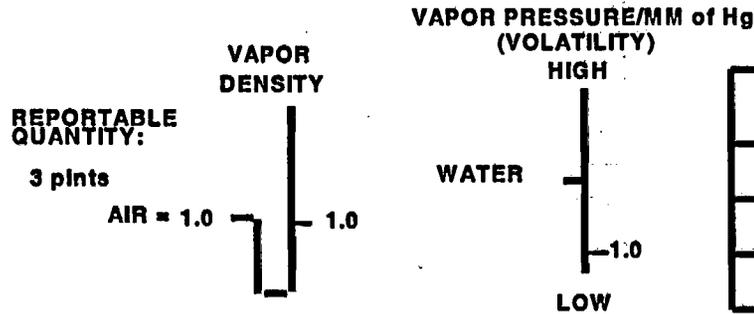
REACTIVITY					
SUBSTANCES	WATER	FIRE	Metals	Other substances	
RESULTS	None	organic amines, toxic compounds -MSDS	none	strong oxidizers*	

* see MSDS

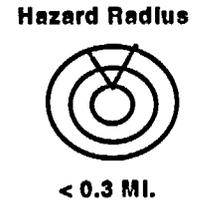
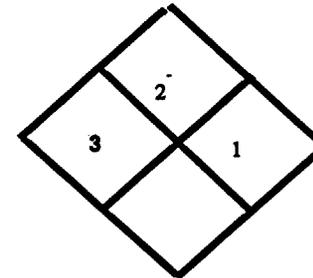
SPILL HANDLING	
DO	DO NOT
Sweep and or wet-dry vacuum spilled material	Dispose of resin in sanitary trash. Contact Chemistry to coordinate disposal of resin.
Wear Chemron suit and chemical goggles	Flush to Storm Water Runoff conveyance
Contact Duty Chemistry Supv. before cleanup of greater than 1 cu. ft.	Flush to Sanitary sewer system

HAZMAT SHEET

EIP-ZZ-03010
Rev. 008



NAME
Monoethanolamine (ETA) 99%
H2N-NH2
CAS# 302-01-2



HEALTH HAZARD				
ANATOMY	AFFECTS	PROTECTIVE CLOTHING	SYMPTOMS	FIRST AID
Respiratory	irritation, carcinogen	SCBA	coughing, sneezing, irritation	fresh air, oxygen
Eyes	irritation, permanent damage	SCBA	irritation, tearing	continually flush with H ₂ O
Skin	irritation, absorption, toxic	Chemron suit*	irritation	continually flush with H ₂ O
GI Tract	irritation, carcinogen, toxic	SCBA	dizziness and nausea	dilute with H ₂ O, induce vomiting

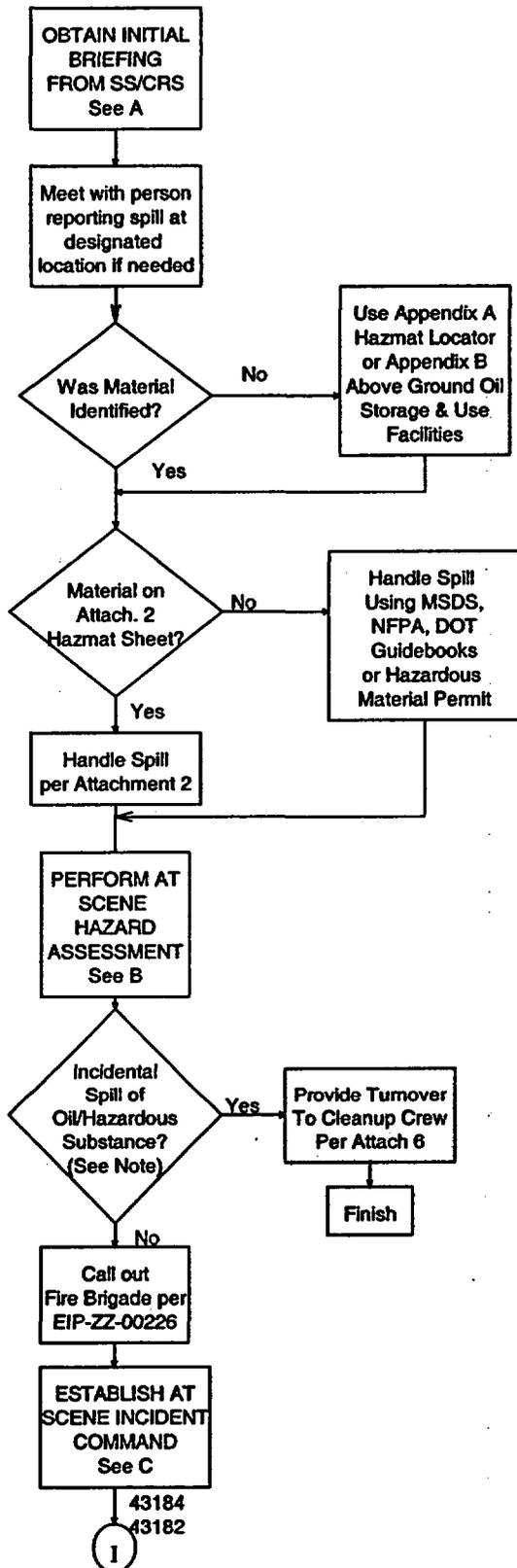
*Note: Turn-out gear is adequate unless splash or contact hazard exists.

FIRE AND EXPLOSION HAZARD			
FLASH POINT	GAS GENERATION	SUPPRESSION AGENT	SP. GR.
None	Gaseous Hydrazine, explosive	water spray	1.02

REACTIVITY					
SUBSTANCES	WATER	FIRE	Cellulosic Materials	Strong acids, oxidizers	lead, copper, zinc
RESULTS		ammonia, oxides of nitrogen	fire	reaction	reaction

SPILL HANDLING	
DO	DO NOT
If spill drains to Turbine Bldg. sump, secure sump pump	
Use inert absorbent to dike/absorb spill	Use cellulosic material to absorb spill, could cause fire
Dilute spills with 10 volumes of water	
Oxidize small spills with dry sodium Hypochlorite. First consult Duty Chemistry Supv.	

OS / FIRE BRIGADE LEADER CHECKLIST FOR HAZMAT/OIL RESPONSE



A. INITIAL BRIEF

1. Location of Spill _____ EL' _____
2. Name of Material(s) _____
3. Quantity: _____
4. Type of Injury: _____
5. Hazards in Area: _____
6. Fire or Smoke YES/NO _____
7. Spill Under/Not Under Control _____
8. Obtain location of person reporting spill _____

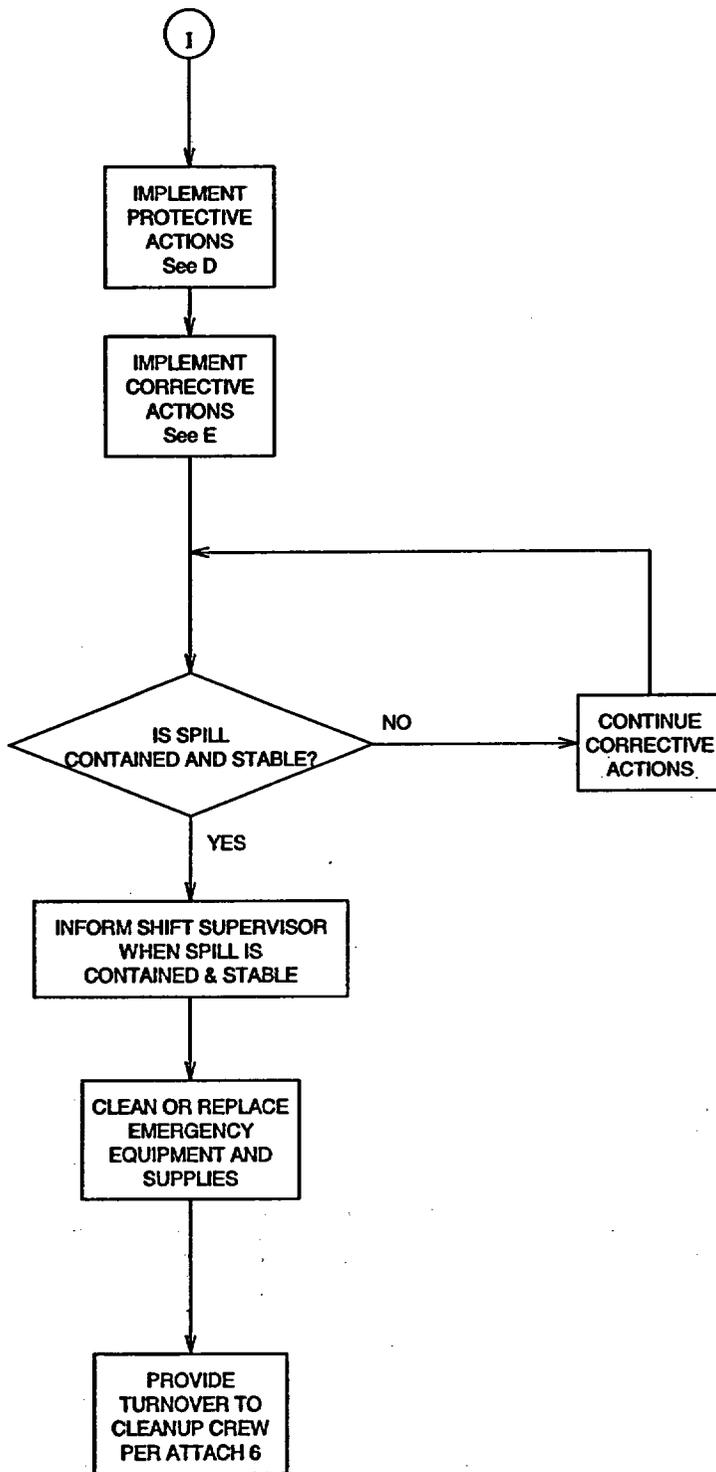
B. HAZARD ASSESSMENT/NOTIFY CONTROL ROOM

1. Confirm Material: _____
2. Release Duration: _____ hrs
3. Quantity Spilled: _____ gal/lbs
4. Contained within plant buildings: YES/NO _____
5. Exposure Level to toxics: HIGH/LOW _____
6. IDLH Conditions: YES/NO _____
7. O₂ deficient atmosphere present/possible YES/NO _____
8. Need to evacuate plant site YES/NO _____
9. Exposure Beyond Site Boundary YES/NO _____
10. Liquid to Ground/Waterway/NA _____
11. Spill under/not under control _____
12. Fire Potential YES/NO _____
13. Significant chemical interactions YES/NO _____
14. Additional Manpower Needed:
 - a) Fire Brigade _____
 - b) MERT _____
 - c) Spill Contractor _____
 - d) Chemistry _____
 - e) HP Support _____
 - f) Air Tank Support (HP) _____
 - g) Ambulance _____
 - h) Nurse _____
 - i) Security _____
15. Supplies Needed: _____
16. Other Hazards in Area: _____
17. Effects on Plant Equipment: _____
18. Systems needed to be ISOLATE/ENERGIZED, etc: _____

Note: Incidental spills are those where the substance can be absorbed, neutralized or otherwise controlled at the time of release by employees without activation of the Fire Brigade.

C. ESTABLISH INCIDENT COMMAND

1. Establish command point upwind if outside.
2. Appoint communicator.
3. Assign/direct personnel.
4. Brief emergency response personnel.
 - a) The materials involved and precautions.
 - b) Health effects.
 - c) Task objectives
 - d) Chemical Protective clothing and equipment.



D. PROTECTIVE ACTIONS (COMN 43177)

1. Remove personnel from affected area (F.B.).
2. Request accountability as necessary (C.R.).
3. Administer first aid (MERT).
4. Establish boundaries/control access (security).
5. Decontaminate affected personnel.
6. Observe personnel closely for symptoms of chemical exposure.
7. Request medical support and follow-up for anyone who becomes contaminated.

E. CORRECTIVE ACTIONS

1. Stop other evolutions in the area that may adversely affect spill.
2. Control sources of heat, spark and flame.
3. Separate equipment, supplies, or substances that could cause adverse chemical reactions.
4. Ventilate areas indoors.
5. Control chemical contamination.
6. Stop spill.
7. Contain spill

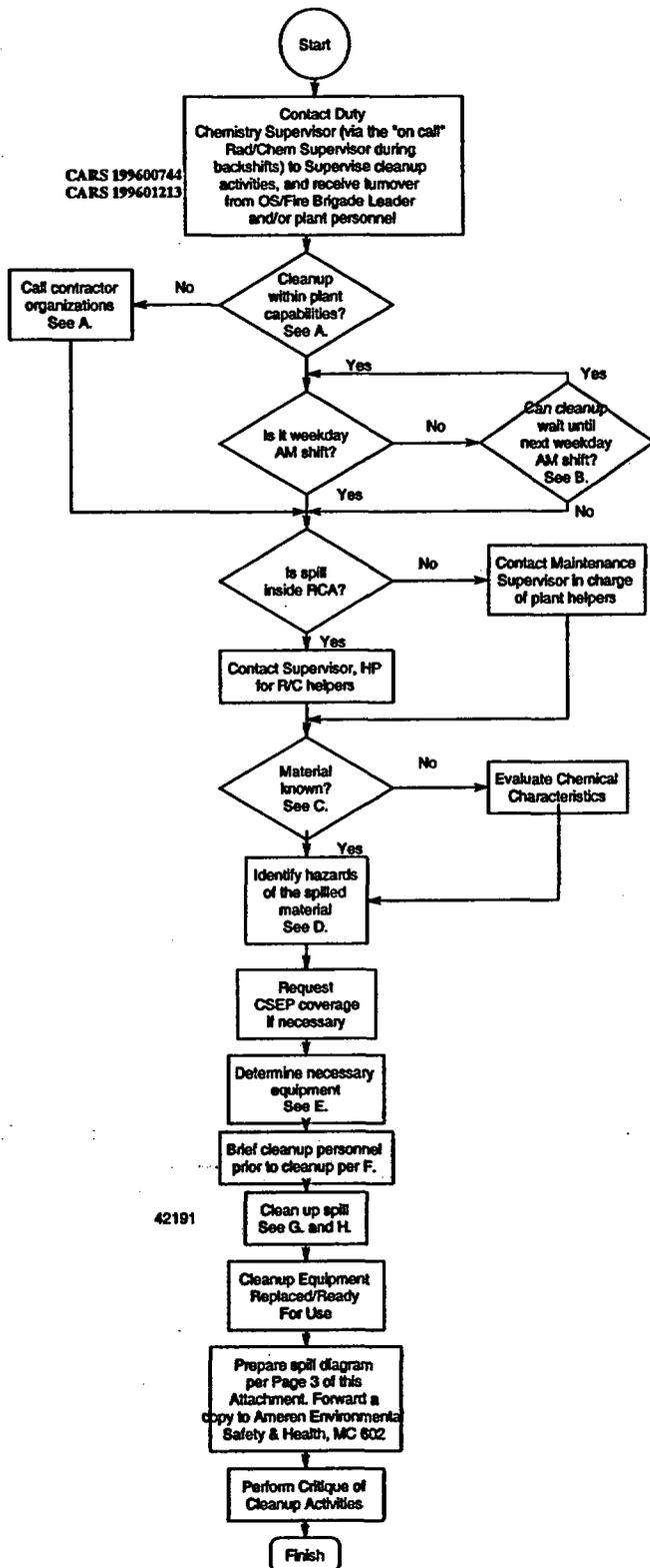
NOTE: Use property grading and drainage drawings in Attachment 5 if necessary.

**ACTIONS FOR NOTIFYING THE CONTROL ROOM OF
CHEMICAL/OIL SPILLS**

1. If a spill or leak is noticed which you feel may present a personnel hazard, which is not contained, or which may require special cleanup techniques or additional personnel, go to 3 of this attachment. CARS 199601213)
2. If a spill or leak does not meet the above criteria:
 - a) Clean up the spill
 - b) Contact the Duty Chemistry Supervisor (on backshifts this is via the "on call" Rad/Chem Supervisor. The Control Room can supply this information if needed) for direction on disposal of cleanup materials and to assess reportability/notifications required. CARS 199600744)
3. Contact the Control Room Shift Supervisor at ext. 9-911/68233/68234 or on Gaitronics Channel 1 request the Control Room Shift Supervisor to pick-up on Gaitronics Channel 2. Standby to be asked information pertaining to the spill by Control Room Personnel.
4. Let the Control Room hang up first to ensure that all required information has been received.
5. Leave the immediate area of the spill.
6. Stand by to provide information and assistance to investigating personnel upon arrival.

INDEX OF PROPERTY GRADING AND DRAINAGE DRAWINGS

DRAWING NUMBER	TITLE
8600-X-88287	- Property-Grading Details, General Notes, Symbols, Summary of Quantities Final Grading and Drainage
8600-X-88290	- Property-Grading Key Plan Final Grading and Drainage
8600-X-88291(Q)(UNO)	- Property-Grading Power Block Area Final Grading and Drainage
8600-X-88292(Q)(UNO)	- Property-Grading Ultimate Heat Sink Area Final Grading and Drainage
8600-X-88293(Q)(UNO)	- Property-Grading Cooling Tower No. 1 Area Final Grading and Drainage
8600-X-88294(Q)(UNO)	- Property-Grading Cooling Tower No. 2 Area Final Grading and Drainage
8600-X-88295(Q)(UNO)	- Property-Grading Switchyard Area - East Final Grading and Drainage
8600-X-88296(Q)(UNO)	- Property-Grading Construction Plant Area Final Grading and Drainage
8600-X-88300(Q)(UNO)	- Property-Grading P.M.P. Drainage Plan Final Grading and Drainage
8600-X-88301	- Property-Grading Downspout and Storm Drain Plan Final Grading and Drainage
8600-X-89719(Q)(UNO)	- Property-Grading Switchyard Area - West Final Grading and Drainage
NPDES-001	- NPDES Storm Water Information Outfalls 010-015

SPILL CLEANUP CREW CHECKLIST**A. CONTRACTOR ASSISTANCE**
(contact one)

1. React Environmental Engineers 314-772-2326
2. Clean Harbors 800-645-8265

Note: Contractor assistance may be required when Level B or above Personnel Protective Equipment is required, the size of the area affected is large, or at the discretion of the on call Chemistry Supervisor.

B. SPILL CLEANUP PRIORITY (Shift Supervisor)

Can the spill wait until the next AM weekday shift to cleanup? If not, then contact the appropriate departments to call out personnel to cleanup the spill. If the spill can wait, place the area in a safe condition and wait until next AM weekday to cleanup.

C. MATERIAL IDENTIFICATION (Duty Chemistry Supvr.)

The material being cleaned must be identified and communicated to the personnel performing the cleanup.

D. IDENTIFY THE HAZARDS OF THE MATERIAL
(Duty Chemistry Supv)

Review the HAZMAT permit and MSDS for the material. If the material cannot be identified, evaluate the chemical characteristics of the material (i.e., pH, flammability, hazardous atmosphere, etc.).

E. DETERMINE NECESSARY EQUIPMENT
(Duty Chemistry Supvr)

Callaway Plant Safe Work Practices Manual provides a list of personal protective equipment and cleanup supplies. Spill response material can be obtained from MCS data base by using the keyword of SPILL.

F. BRIEFING (COMN 43183) CARS 199601213
(Duty Chemistry Supvr)

Performed per page 2 of this attachment.

G. SPILL CLEANUP (Duty Chemistry Supvr)

The HAZMAT permit provides general cleanup guidelines for stock items. If the specific identity is not known, cleanup methods should be based on the characteristics of the material determined in step D.

H. Immediately after emergency, provide for treating, storing and disposing of recovered waste, contaminated soil or surface water or any other material that results from a release per APA-ZZ-00832.

SPILL CLEAN-UP CREW CHECKLIST CARS 199601213)

Name of Chemistry Supervisor Completing Briefing Checklist: _____

Name of Clean-up Crew Supervisor: _____

- Location of spill to be cleaned up _____
- Name of chemical to be cleaned up _____
- Quantity of chemical to be cleaned up _____
- Equipment in cleanup area in safe condition (WPA i.e. de-energized) _____
- Potential health effects
- Eyes _____
- Skin _____
- Ingestion _____
- Inhalation _____
- Carcinogen _____
- Other _____
- Signs and symptoms of exposure _____
- First aid measures _____
- Other safety measures
- Flammability _____
- Incompatibilities _____
- Reactivity _____
- Other _____
- Required personal protective equipment _____
- Method of clean up _____
- Tools and equipment needed _____
- Disposal method _____
- Applicable Hazmat permits/MSDS's attached to this checklist.

<i>NOTE:</i> This spill clean-up crew checklist should be available at the clean-up area.
--

SPILL DIAGRAM

KEY:

Indicate Scale: Equals _____ sq. ft. No. of drums of clean up waste _____

Approximate Total Man-hours: _____ Depth of Excavation _____ inches

Indicate Spill Perimeter with a solid line _____

Indicate Spill Source with (S) symbol

cc: Ameren Environmental Safety & Health
MC 602