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| R    | PROC | EIP-ZZ-A0020 |        | 018 | 017 | C   | 1    |     |      |          |          |
| R    | PROC | EIP-ZZ-03010 |        | 007 | 006 | C   | 1    |     |      |          |          |

ACKNOWLEDGED BY:

DATE:

A045

CALLAWAY PLANT  
EMERGENCY PLAN IMPLEMENTING PROCEDURE  
EIP-ZZ-A0020  
MAINTAINING EMERGENCY PREPAREDNESS

RESPONSIBLE DEPARTMENT Emergency Preparedness

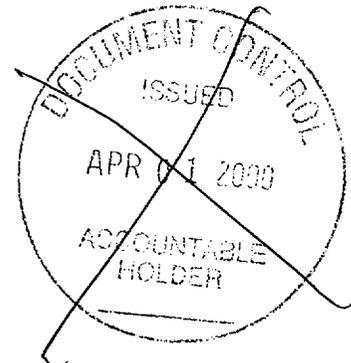
PROCEDURE OWNER S. J. Crawford

WRITTEN BY S. J. Crawford

PREPARED BY S. J. Crawford

APPROVED BY *[Signature]*

DATE ISSUED 4-1-00



This procedure contains the following:

|                |                   |         |                   |
|----------------|-------------------|---------|-------------------|
| Pages          | <u>1</u>          | through | <u>10</u>         |
| Attachments    | <u>1</u>          | through | <u>6</u>          |
| Tables         | <u>          </u> | through | <u>          </u> |
| Figures        | <u>          </u> | through | <u>          </u> |
| Appendices     | <u>          </u> | through | <u>          </u> |
| Checkoff Lists | <u>          </u> | through | <u>          </u> |

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

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

ITS Commitments 018 Non-T/S Commitments           

**ORIGINAL  
for the NRC**

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## MAINTAINING EMERGENCY PREPAREDNESS

### 1 PURPOSE AND SCOPE

This procedure provides guidance for the review and maintenance of the Emergency Preparedness Program. This should include:

- Annual review of the Radiological Emergency Preparedness Plan (RERP);
- Annual review of threerpe Emergency Implementing Procedures;
- Oversight of the RERP Training Program; and
- An independent annual review of the Emergency Preparedness Program.

### 2 RESPONSIBILITIES

#### 2.1 NUCLEAR SAFETY REVIEW BOARD (NSRB) (COMN 2681)

The Nuclear Safety Review Board is responsible for providing an independent annual review of the Radiological Emergency Preparedness Program.

#### 2.2 SUPERINTENDENT, PROTECTIVE SERVICES

2.2.1 The Superintendent, Protective Services is responsible for ensuring an effective integrated program is maintained to provide for protection of the health and safety of the public in the event of a radiological emergency at the Callaway Plant. These responsibilities include:

2.2.1.1 Identification of candidates to become Emergency Response Personnel.

2.2.1.2 Notifying the Training Department of changes to the Emergency Response Organization (ERO), procedures, or equipment that effect RERP training activities.

2.2.1.3 Approval of RERP training objectives and review of substantial content changes to RERP training material.

2.2.1.4 Approval of changes to the RERP Training Program.

2.2.1.5 Development and conduct of Drills and Exercises.

2.3 EMERGENCY PREPAREDNESS (EP)

Emergency Preparedness (EP) is responsible for identifying the Emergency Response Organization and for maintaining the Radiological Emergency Response Plan, Emergency Implementing Procedures, and Emergency Response Facilities for use by the Callaway Plant staff in responding to a radiological emergency. EP is also responsible for supporting State and Local government agencies with technical and training assistance to ensure their plans, procedures, facilities and personnel are prepared for response to a radiological emergency at the Callaway Plant.

2.4 TRAINING DEPARTMENT

The Training Department is responsible for preparation and conduct of periodic training as identified in **EIP-ZZ-A0066**, RERP Training Program, including assisting in the development of radiological emergency response drills.

2.4.1 SUPERINTENDENT, TRAINING

The Superintendent, Training is responsible for the overall administration of the RERP Training Program, as delineated in **EIP-ZZ-A0066**.

3 PROCEDURE

3.1 ANNUAL REVIEW (COMN 2681)

3.1.1 An independent review of the Emergency Preparedness Program SHALL be performed at least once every twelve (12) months under the direction and cognizance of the Nuclear Safety Review Board. Each review SHALL include an evaluation for adequacy of interfaces with State and local governments and of plant emergency drills, exercises, capabilities, and procedures.

3.1.2 Open findings identified SHALL be reviewed, investigated, and resolved in accordance with **APA-ZZ-00500**, Corrective Action Program.

3.1.3 Any portion of the review involving an evaluation for the adequacy of interfaces with State and local governments SHALL be made available to the affected governmental agency.

- 3.1.4 The results of the review of the Emergency Preparedness Program, along with recommendations for improvement, SHALL be documented and reported to Plant and company management, and retained for a period of 5 years.
- 3.2 RADIOLOGICAL EMERGENCY RESPONSE PLAN (RERP) AND EMERGENCY IMPLEMENTING PROCEDURES (EIP)S MODIFICATIONS
- 3.2.1 The RERP and the letters of agreement/purchase orders listed in the RERP SHALL be reviewed annually and periodically updated as needed. (COMN 3924)
- 3.2.1.1 If the RERP is not revised as a result of the annual review, the review should be documented by placing a letter into the EP RERP file stating that the RERP was reviewed and no changes were needed.
- 3.2.1.2 The annual review of the Letters of Agreement/Purchase Orders should be documented by placing a letter in the EP RERP Letters of Agreement file. This letter should describe either how each letter was verified current or that the letter was updated as a result of the review.
- 3.2.1.3 All revisions and change notices to the RERP are prepared, reviewed, and processed in accordance with **KDP-ZZ-00400**, Emergency Preparedness RERP Evaluations, and **KDP-ZZ-00410**, Radiological Emergency Response Plan (RERP) Change Notice/Revision Process.
- 3.2.1.4 All changes to the RERP SHALL be made available to the State and appropriate local government emergency response agencies. (COMN 43392)
- 3.2.2 The EIPs SHALL be reviewed annually. (COMN 42346)
- 3.2.2.1 Modification or revisions to EIPs are reflected in the periodic update of the RERP.
- 3.2.2.2 Any changes or revision to the EIPs that affects the interface with State and/or local government emergency response plans should be made available to the affected governmental agency.
- 3.2.2.3 Telephone numbers listed in the EIPs SHALL be reviewed and updated at least quarterly as per the Plant's Surveillance Program. (COMN 3925)

3.2.3 The RERP and the EIP distribution lists SHALL be reviewed annually to ensure that the proper personnel, departments, and agencies are included on the lists as per the Plant's Surveillance Program. (COMN 20409)

3.3 EMERGENCY RESPONSE FACILITY AND EQUIPMENT MODIFICATION

3.3.1 When necessary changes, repairs, or modifications to Emergency Response Facilities are identified, the work should be accomplished by the appropriate Plant department following the procedures outlined in APA-ZZ-00320, Initiating and Processing Work Requests.

3.3.2 If the change or modification is of such a degree as to require a design change to the Emergency Response Facility, the change or modification MUST be accomplished following the guidance of APA-ZZ-00600, Design Change Control.

3.4 ON-SITE EMERGENCY RESPONSE TRAINING  
(COMN 3907)

On-site emergency response training is conducted in accordance with EIP-ZZ-A0066. It covers the training provided for both Emergency Response Personnel and Non-Emergency Response Personnel.

3.4.1 NON-EMERGENCY RESPONSE PERSONNEL

Non-Emergency Response Personnel are those personnel who are granted unescorted access to the Callaway Plant, but who do not have designated responsibilities in the Emergency Response Organization. Non-Emergency Response Personnel SHALL successfully complete GET training (Callaway Orientation – T8.0030.6/8). This training includes duties and responsibilities of emergency response and non-emergency response personnel, emergency classifications, assembly areas, alarms, emergency response actions and accountability/evacuation. (COMN 3905)

3.4.2 EMERGENCY RESPONSE PERSONNEL (COMN 42658)

Emergency Response Personnel are selected and assigned to a position in the Emergency Response Organization per EIP-ZZ-A0001, Emergency Response Organization. Prior to assuming a position in the Emergency Response Organization (ERO), each individual will complete required initial training.

3.4.2.1 RERP INITIAL TRAINING

RERP Initial Training required for each ERO position is identified in **EIP-ZZ-A0066**. (COMN 3905)

3.4.2.2 RERP CONTINUING TRAINING

RERP Continuing Training should be based, as appropriate, on changes to applicable procedures and processes, Plant and industry experiences, and the results of previous drills and Exercises.

3.4.2.2.1 Drills and Exercises may be utilized as training activities where familiarity with specific RERP duties and/or functions can be demonstrated.

3.4.2.2.2 The applicable provisions of **EIP-ZZ-A0066** MUST be met when utilizing drills and Exercises to meet training requirements.

3.5 OFF-SITE EMERGENCY RESPONSE TRAINING

3.5.1 Callaway Plant coordinates with SEMA in emergency planning and emergency response with four (4) counties which partially lie within the Plume Exposure Pathway (10-mile EPZ) and the city of Fulton. The county jurisdictions are Callaway, Gasconade, Montgomery and Osage Counties. (COMN 42673)

3.5.2 Off-site emergency response training is the responsibility of the Missouri State Emergency Management Agency (SEMA) in conjunction with the Missouri Department of Health (DOH), and local county agencies. Callaway Plant provides support to these agencies as requested.

3.5.3 Training for off-site fire fighting personnel includes radiological hazards, which may be encountered while fighting fires in the Plume Exposure Pathway. (COMN 42508)

3.5.4 For those local support services who may enter the site, Callaway Plant provides training which also includes site access procedures and the identity (by position title) of the individual who requests the services. (COMN 42722)

3.6 DRILLS AND EXERCISES

3.6.1 Emergency Preparedness has overall responsibility for conducting RERP drills and exercises on site. (COMN 3917)

- 3.6.2 Periodic drills SHALL be conducted in accordance with Attachment 1, Drill and Exercise Descriptions and Frequencies, to evaluate emergency response capabilities and to test specific aspects of emergency response plans, implementing procedures, and equipment. These drills may be incorporated with the RERP Continuing Training when the situation allows. (COMN 3916)
- 3.6.3 Proper approval is obtained via the Drill Approval Form (Attachment 4) or is identified on the Training Objectives Approval Form. Due to the confidentiality requirements of Exercises, no prior drill approval is necessary.
- 3.6.4 Drills are not required to be conducted independently and may be conducted as part of an integrated drill or exercise.
- 3.6.5 Actual events that may cause the activation of the Radiological Emergency Response Plan (RERP) may not be substituted for a required drill or exercise.
- 3.6.6 Some drills are scheduled while others are unannounced. (COMN 3916)
- 3.6.7 Periodically arrangements SHALL be made for federal agencies to participate in Exercises. (COMN 3967)
- 3.6.8 Provisions SHALL be made to start an Exercise between 1800 and 0400 once every six (6) years. (COMN 3968)
- 3.7 DRILL AND EXERCISE DEVELOPMENT
- Radiological Emergency Response Drills and Exercises are developed using the guidance in Attachment 2, Exercise Development Items, and the following guidelines:
- 3.7.1 Objectives SHALL be selected to include those listed in Attachment 3, Drill and Exercise Objectives, as necessary to meet the stated frequency requirements for each objective. (COMN 3918)
- 3.7.2 Development of off-site objectives and guidelines should be coordinated with appropriate State and local agencies, if applicable.
- 3.7.3 Exercises should include mobilization of appropriate Callaway Plant, State and local organizations to verify their ability to respond to an accident scenario, which requires implementation of on-site and off-site radiological emergency response plans.

- 3.7.4 Exercise and drill scenarios SHALL be varied to assure that all the major elements of on-site and off-site emergency response plans and organizations are tested within a six-year period. **(COMN 3917)**
- 3.7.5 Exercise objectives, extent of play, and scenarios are submitted to the Nuclear Regulatory Commission (NRC) and Federal Emergency Management Agency (FEMA) in accordance with **KDP-ZZ-00510**, Exercise Submittals to NRC/FEMA.
- 3.7.6 A Lead Controller, as designated by the Superintendent, Protective Services, SHALL be responsible for the overall conduct of Radiological Emergency Response Drills and Exercises. Utility provided controllers and evaluators SHALL be trained and briefed prior to the drill/exercise. **(COMN 3919)**
- 3.7.7 No actions should be performed during a drill or exercise which have the potential for affecting Plant operations.
- 3.7.8 Drill/exercise activities should be placed on hold or suspended, if an actual emergency arises.
- 3.7.9 Upon completion of drills and exercises, critiques SHALL be conducted. The lead facility participant in each Emergency Response Facility (Recovery Manager, Emergency Coordinator, Shift Supervisor, etc.) is normally designated to conduct a critique with the controllers, evaluators, and participants. **(COMN 3920, COMN 42978)**
- 3.7.10 The NRC and, if applicable, FEMA SHALL be invited to evaluate and critique the exercise. **(COMN 3920)**
- 3.7.11 The facility lead controller should record or have recorded any programmatic comments or deficiencies identified.
- 3.7.12 Emergency Preparedness collects all facility critiques and dispositions deficiencies and areas for improvement in accordance with Plant procedures. **(COMN 3920)**
- 3.7.13 Upon completion of a drill or exercise, forward a copy of the Drill Approval Form (if applicable) and Drill/Exercise Objectives to Document Control as QA Records.

3.8 TESTS AND SURVEILLANCES

3.8.1 EMERGENCY EQUIPMENT KITS

3.8.1.1 Emergency equipment kits are located in various Emergency Response Facilities and contain supplies, equipment and procedures that may be utilized during an emergency.

3.8.1.2 Health Physics supplies and equipment contained in the emergency equipment kits are inventoried and maintained by the Health Physics Department, per **HTP-ZZ-05007**, Maintenance and Inventory of HPOPS Emergency Equipment Kits, and **HTP-ZZ-07003**, Maintenance and Inventory of Health Physics Technical Support Emergency Equipment Kits.

3.8.2 EMERGENCY PACKETS

Emergency packets containing copies of procedures, forms, and clerical supplies are maintained in accordance with **KDP-ZZ-00300**, Emergency Packet Maintenance.

3.8.3 EMERGENCY TELEPHONE DIRECTORY (ETD)

The ETD is part of the Callaway Plant Personnel Data Base System. A document copy of the ETD can be printed upon demand. The ETD is printed and distributed quarterly per the Plant's Surveillance Program.

3.8.4 PUBLIC ALERT SYSTEM

A Public Alert System is maintained to provide prompt notification of the public in the event of an emergency at the Callaway Plant. The system is tested monthly in accordance with the Plant's Surveillance Program.

3.8.5 PUBLIC INFORMATION PROGRAM

A Public Information Program, in cooperation with Corporate Communications, is maintained to ensure that the general public and news media in the Plume Exposure Pathway Emergency Planning Zone are provided with information regarding an emergency at the Callaway Plant on an annual basis. The Public Information Program is maintained in accordance with the Plant's Surveillance Program. (**COMN 42507**)

3.8.6 COMMUNICATION TESTS

Communications with Federal, State and local governments will be tested monthly. Once a quarter, this will be done transmitting a simulated emergency notification to ensure the content of the message is understood. Field monitoring team communications is tested annually from the EOF and Backup EOF. These tests are done from different sectors in the field in accordance with the Plant's Surveillance Program and also include the aspect of understanding message content.

3.8.7 EMERGENCY RESPONSE DATA SYSTEM (ERDS) TESTING

ERDS testing, involving actual Plant data transmission to the Nuclear Regulatory Commission, is an evolution that is scheduled with the NRC and performed quarterly in accordance with the Plant's Surveillance Program.

3.8.8 EMERGENCY ACTION LEVELS (EALs)

EALs SHALL be reviewed with State and local agencies on an annual basis and documented using Attachment 5, Annual EAL Review. (COMN 43393)

4 REFERENCES

- 4.1 10CFR50.47
- 4.2 10CFR50.54
- 4.3 10CFR50, Appendix E
- 4.4 NUREG 0654, FEMA-REP-1
- 4.5 **APA-ZZ-00320**, Initiating and Processing Work Requests
- 4.6 **APA-ZZ-00500**, Corrective Action Program
- 4.7 **APA-ZZ-00600**, Design Change Control
- 4.8 **EIP-ZZ-A0001**, Emergency Response Organization
- 4.9 **EIP-ZZ-A0066**, RERP Training Program
- 4.10 **FPP-ZZ-00009**, Fire Protection Training Program

- 4.11 **HTP-ZZ-05007**, Maintenance and Inventory of HPOPS  
Emergency Equipment Kits
- 4.12 **HTP-ZZ-07003**, Maintenance and Inventory of Health Physics  
Technical Support Emergency Equipment Kits
- 4.13 **KDP-ZZ-00300**, Emergency Packet Maintenance
- 4.14 **KDP-ZZ-00400**, Emergency Preparedness RERP Evaluations
- 4.15 **KDP-ZZ-00410**, Radiological Emergency Response Plan (RERP)  
Change/Revision Process
- 4.16 **KDP-ZZ-00510**, Exercise Submittals to NRC/FEMA

5 RECORDS

- 5.1 QA RECORDS
  - 5.1.1 Annual EP Review Records (File G170.0046)
  - 5.1.2 Drills/Annual Exercises and Approval Form (File K235.0001)
  - 5.1.3 Letter documenting annual review of RERP (File A210.0038)
  - 5.1.4 Letter documenting annual review of RERP Letters of Agreement  
(File K190.0011)
  - 5.1.5 Annual EAL Review (File A190.0001)
  - 5.1.6 Callout Tests/Drills (File K231.0024)
  - 5.1.7 Pre-Exercise Drills (File K233.0000)
  - 5.1.8 Medical Emergency Drills (File K234.0001)
  - 5.1.9 Remedial Exercises (File K235.0002)
  - 5.1.10 Other Drills (File K234.0000)

DRILL AND EXERCISE DESCRIPTIONS AND FREQUENCIES

These are minimum frequencies required. Additional drills may be held as determined by the Superintendent, Protective Services.

| COMN  | TYPE                          | DESCRIPTION   | FREQUENCY                           | RESPONSIBLE DEPT.               |
|-------|-------------------------------|---|-------------------------------------|---------------------------------|
| 3917  | Exercise                      | The Exercise tests the integrated capability of the Callaway Plant emergency response organizations to respond to an emergency. (State and local emergency organizations are tested as required by Federal Guidelines.)                                     | Biennial                            | Emergency Preparedness          |
| 3917  |                               | The Exercise SHALL provide for periodic participation by Federal Emergency Response agencies.   | Periodic                            | Emergency Preparedness          |
| 3968  |                               | Provisions SHALL be made to start an exercise between 6:00 p.m. and 4:00 a.m.   | At least once every 6 years.        | Emergency Preparedness          |
| 20602 | Call-Out Test                 | This test verifies the ability of the ERO to be contacted and estimate their arrival at their specific Emergency Response Facility.   | Quarterly (Test)                    | Emergency Preparedness          |
|       | Call-Out Drill                | This drill verifies the ability to actually augment the emergency response organization as specified in the RERP.   | At least once every 6 years (Drill) | Emergency Preparedness          |
| 3921  | Medical Emergency Drill       | This drill involves the response to simulated contaminated injured/ill individuals providing for periodic participation by off-site ambulance services and medical treatment facilities.  | Annually                            | Emergency Preparedness and SEMA |
| 3921  | Medical Emergency MERT Drill  | This drill involves response to simulated medical emergencies providing participation by the onsite Medial Emergency Response Team (MERT). These drills are conducted in accordance with the Fire Protection Training Program, FPP-ZZ-00009 .               | At least annually                   | Fire Protection                 |
| 3923  | Health Physics Drill          | This drill involves the response to, and analyses of, simulated elevated airborne and liquid samples, and direct radiation measurements in the environment.   | Semi-Annually                       | Emergency Preparedness          |
|       |                               | Analysis of in-plant liquid samples with actual elevated radiation levels including use of the post-accident sampling system (PASS).  | Annually                            | Emergency Preparedness          |
| 3922  | Radiological Monitoring Drill | Plant environs and radiological monitoring drills (on and off site) are conducted annually. These drills include collection and analysis of all sample media (e.g., water, vegetation, soil, and air) and provisions for communications and record keeping. | Annually                            | Emergency Preparedness          |
|       | Fire Drills                   | These drills are conducted in accordance with the Fire Protection Program.  | Periodically                        | Fire Protection                 |

## EXERCISE DEVELOPMENT ITEMS

### Lead Controller Responsibilities

1. Drill Approval Form - Attachment 4 (if applicable)
2. Drill/Exercise Scenario Package Contents (**COMN 42506**)
  - a. On-site Objectives
  - b. On-site Guidelines and Extent of Play
  - c. Controllers Instructions
  - d. Controller List
  - e. Participant List
  - f. On-site Evaluation Material
  - g. Narrative Summary
  - h. Logs, Watch Turnover Material, Work Packages and RWPs etc.,
  - i. On-site Sequence of Events
  - j. Simulator Actions
  - k. Initial Conditions
  - l. On-site Messages
  - m. On-site Mini-scenarios
  - n. Plant parameters, Rad Monitor Data, Chemistry Data, and other Simulated Plant Data
  - o. Meteorological Data
  - p. In-Plant Survey, Perimeter, and Field Monitoring Rad Data
  - q. Ingestion Pathway Rad Data
3. Identify On-site Participants, Controllers, and Evaluators
4. Complete On-site Controller/Evaluator Briefings/Training
5. Schedule and Prepare Simulator
6. Scenario Printing and Distribution
7. Prepare and Distribute Accountability Exemption Lists
8. Provide for and Coordinate Controller Communications
9. Initial Condition Briefings

|   |
|---|
| <p><u>NOTE:</u> Not every item listed is applicable for each drill or exercise.</p> |
|---|

## EXERCISE DEVELOPMENT ITEMS

### Emergency Preparedness Department Off-Site Responsibilities

1. Drill/Exercise Scenario Package Contents
  - a. Off-site Objectives
  - b. Off-site Guidelines and Extent of Play
  - c. Off-site Evaluation Material
  - d. Off-site and Public Information Sequence of Events
  - e. Off-site, Public Information, Media Monitor, and Rumor Control Messages
  - f. Off-site Mini-Scenarios
2. Submittal of Objectives and Guidelines and Scenario to the NRC and FEMA.
3. Identify Off-site Controllers and Evaluators
4. Schedule Off-site Controller and Evaluator Briefing/Training
5. Schedule NRC and FEMA Entrance and Exit Meetings
6. Schedule Facilities (Except Simulator)
7. Place Drill/Exercise Meal Orders
8. Drill/Exercise Critiques

|  |
|--|
| <p><u>NOTE:</u> Not every item is applicable for each drill or exercise.</p> |
|--|

DRILL AND EXERCISE OBJECTIVES

- I. Objectives That SHALL Be Met Each Year (COMN 3918)
  - A. Demonstrate the ability to perform accident detection and assessment.
  - B. Demonstrate the ability to classify an emergency.
  - C. Demonstrate the ability to notify on-site and off-site emergency response personnel.
  - D. Demonstrate primary communications between the plant, its various facilities, and other emergency response organizations.
  - E. Demonstrate emergency radiological controls.
  - F. Demonstrate the ability to make Protective Action Recommendations to off-site authorities.
  - G. Demonstrate the ability to augment emergency response organizations.
  - H. Demonstrate the ability to staff the On-Shift Emergency Response Organization.

II. Objectives That SHALL Be Met Over a 6-Year Period

- A. Demonstrate emergency response capabilities during varied conditions. (Off-hours staffing 6 p.m. to 4 a.m.; various weather conditions; unannounced). (COMN 3968)
- B. Demonstrate the activation of the Joint Public Information Center (JPIC) and dissemination of information to the public.
- C. Demonstrate the ability to use the Fire Brigade.
- D. Demonstrate the use of a Medical Emergency Response Team (MERT) and/or search and rescue teams.
- E. Demonstrate the ability to provide Emergency Medical Services (EMS) for contaminated injured individuals. (COMN 3921)
- F. Demonstrate that security can allow for prompt access of emergency equipment and support.
- G. Demonstrate the availability of backup communication capabilities.
- H. Assist the State of Missouri in performing rumor control.
- I. Demonstrate the use of emergency power (where not a part of plant safety systems, e.g. Technical Support Center (TSC)).
- J. Demonstrate the ability to evacuate Emergency Response Facilities (ERFs) and relocate to backup ERFs where applicable.
- K. Demonstrate the ability to provide support to off-site agencies for environmental sampling and analysis, and protective action recommendations for the Ingestion Pathway.
- L. Demonstrate the ability to perform field monitoring, including soil, vegetation, and water samples.
- M. Demonstrate the ability to determine the magnitude and impact of a radiological release.
- N. Demonstrate the capability of post accident coolant sampling and analysis.
- O. Demonstrate the ability to provide for the use of potassium iodide.
- P. Demonstrate the ability to account for site personnel.
- Q. Demonstrate the ability to perform plant recovery and plant re-entry.

DRILL APPROVAL FORM

1. Drill Type \_\_\_\_\_ Drill Date \_\_\_\_\_  
Start Time/Duration \_\_\_\_\_ / \_\_\_\_\_

2. Drill will be announced.  Yes  No

3. Prepared By:  
\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
Name Title Date

4. Approved By Responsible Department Head  
\_\_\_\_\_  
Signature Date

5. Approved By Manager, Callaway Plant  
\_\_\_\_\_  
Signature Date

**Annual EAL Review**

Date

\_\_\_\_ EIP-ZZ-00101, Emergency Action Levels (EALs), have been reviewed with me and I understand this fulfills the annual review requirement.  
(COMN 43393)

Callaway County

\_\_\_\_\_  
County Commissioner/EMD

Gasconade County

\_\_\_\_\_  
County Commissioner/EMD

Montgomery County

\_\_\_\_\_  
County Commissioner/EMD

Osage County

\_\_\_\_\_  
County Commissioner/EMD

State Emergency Management Agency

\_\_\_\_\_  
SEMA Director/State Representative



CALLAWAY PLANT  
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EIP-ZZ-03010

HAZARDOUS CHEMICAL/OIL SPILL RESPONSE/SPILL CLEANUP  
IMPLEMENTING PROCEDURE

RESPONSIBLE DEPARTMENT CHEMISTRY

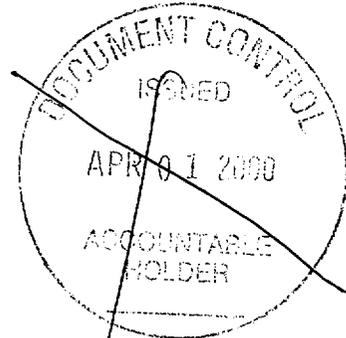
PROCEDURE OWNER CHARLES A. RIGGS

WRITTEN BY CHARLES A. RIGGS

PREPARED BY CHARLES A. RIGGS

APPROVED BY *R. Affolter*

DATE ISSUED 4-1-00



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:

ITS Commitments 007 Non-T/S Commitments 006

**ORIGINAL  
for the NRC**

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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. (SOS 96-1213)

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. (SOS 96-1213)

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 3.6.2 The on call Chemistry Supervisor is responsible for Supervising Spill Cleanup activities per Attachment 6.  
**(SOS 96-1213)**
- 3.6.3 Appendix A MUST be approved by the Superintendent, Chemistry and Radiation Protection.
  - 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 Superintendent, Chemistry and Radiation Protection.
  - 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.
- a) 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. (SOS 96-0744)

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. (SOS 96-1213)

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-00830**, Hazardous Material 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

7        RECORDS

7.1        QA RECORDS

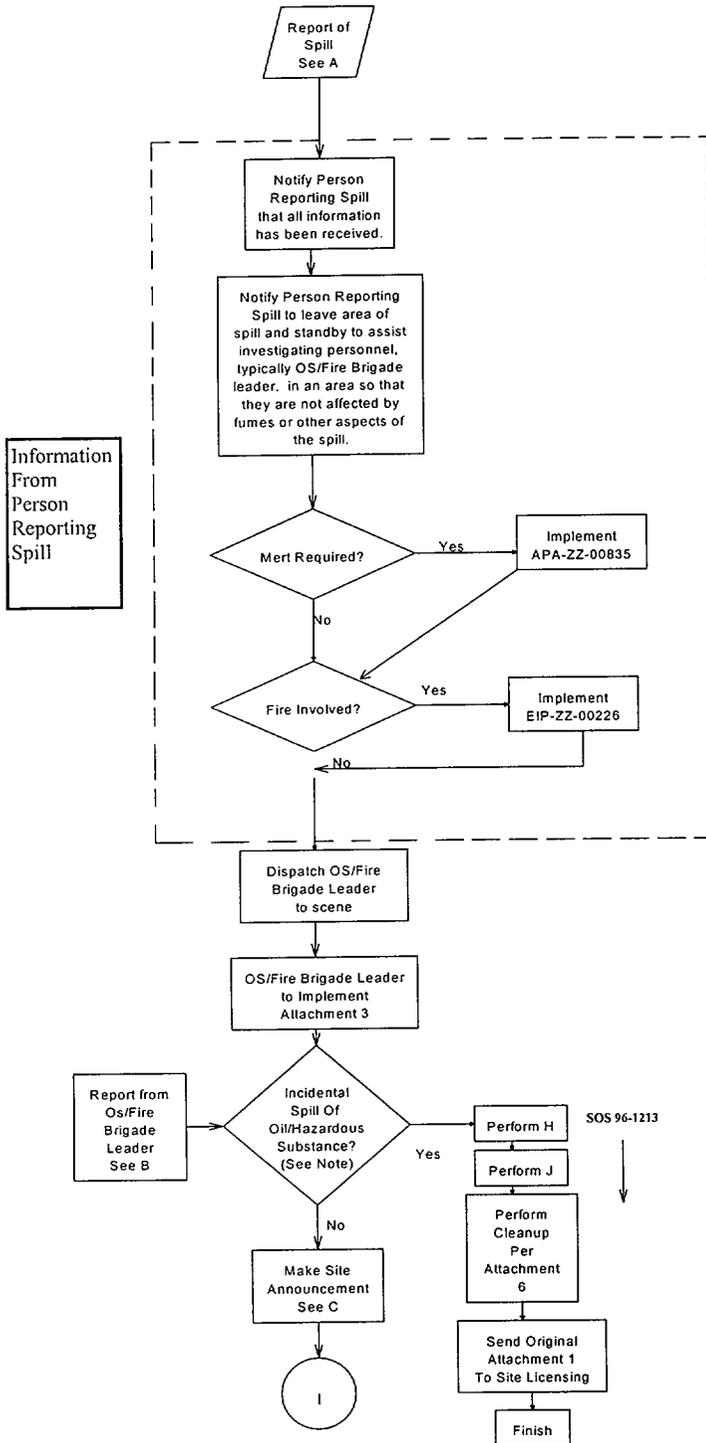
7.1.1        Shift Supervisor Checklist for Hazmat/Oil Response/Cleanup  
CA-#2203 attached to the SOS in QA file number Z170.0007.

7.1.2        Spill Cleanup Crew Checklist CA-#2203b attached to the SOS 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: \_\_\_\_\_
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 Toxics: HIGH/LO
6. IDLH Conditions: YES/NO
7. O<sub>2</sub> 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: \_\_\_\_\_

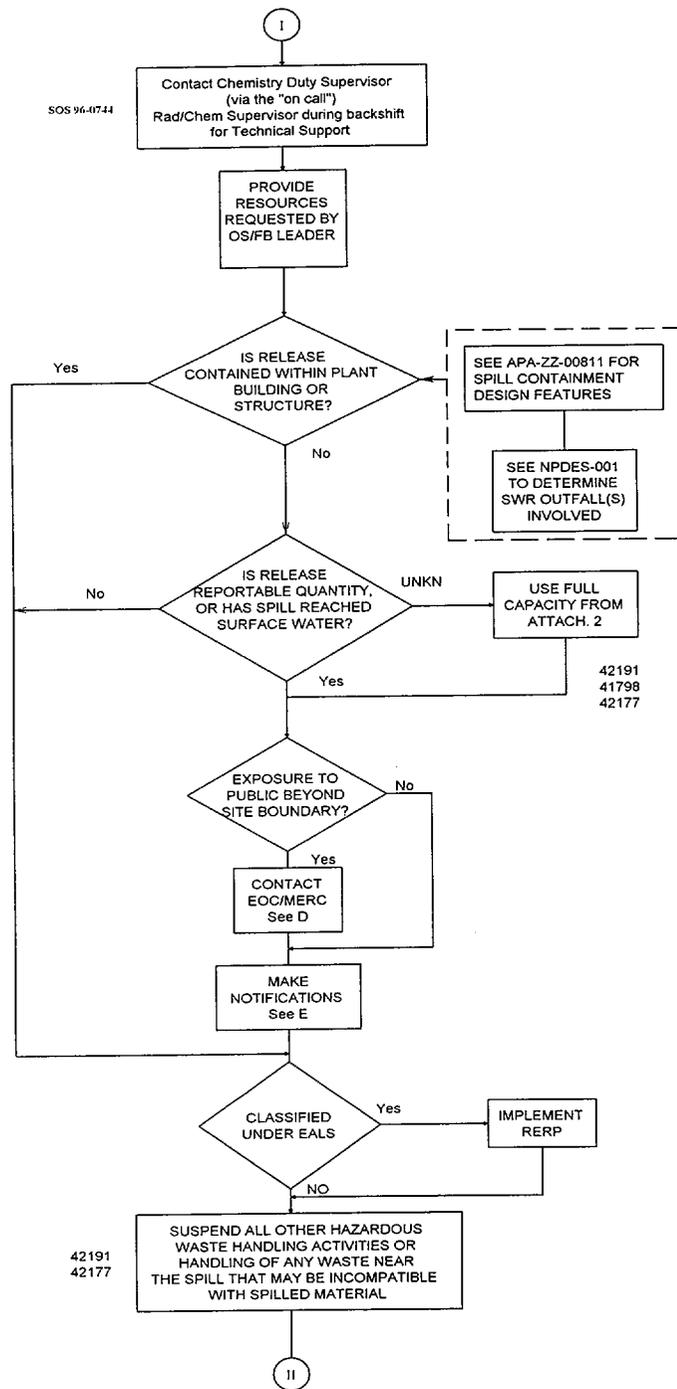
**NOTES:**

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. GAI-TRONICS ANNOUNCEMENT**

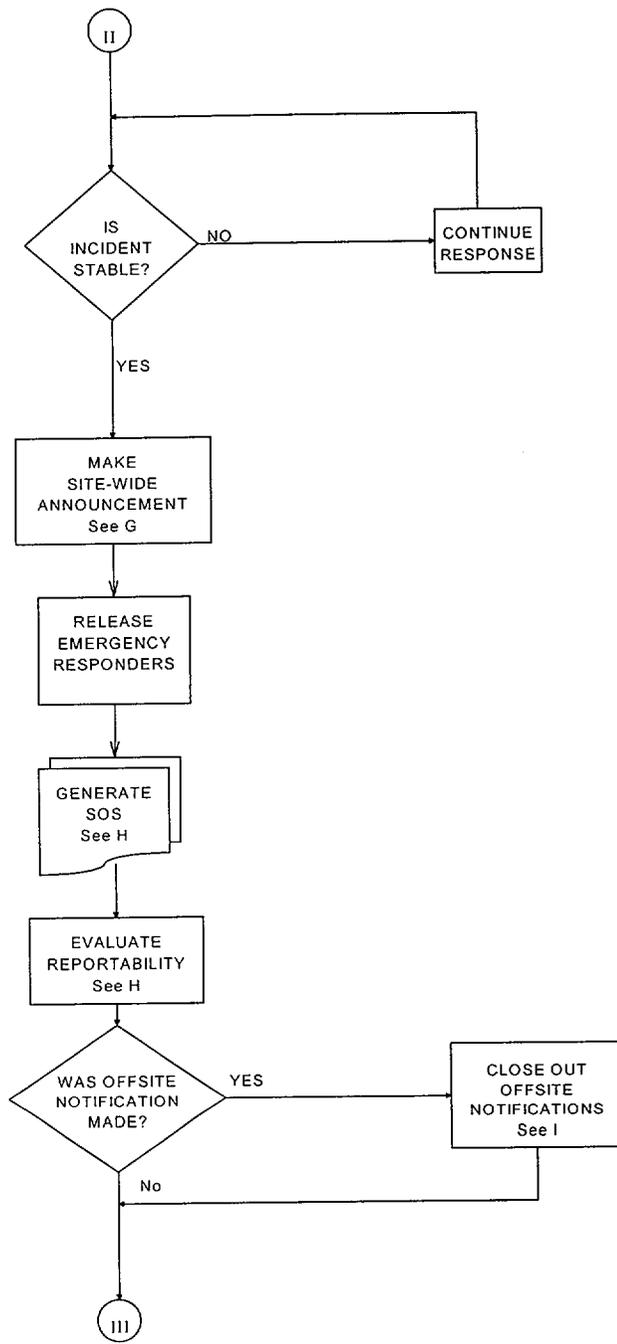
(The plant emergency alarm should be sounded prior to announcement.)  
 "Attention in the Plant!"  
 "Attention in the Plant!"

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 43063/618-344-5998  
Warren Mueller Pager 314/430-1245  
John Pozzo 42280/314-846-1640  
Thomas Siedhoff 42637/314-842-5422  
\*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) (vi) 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

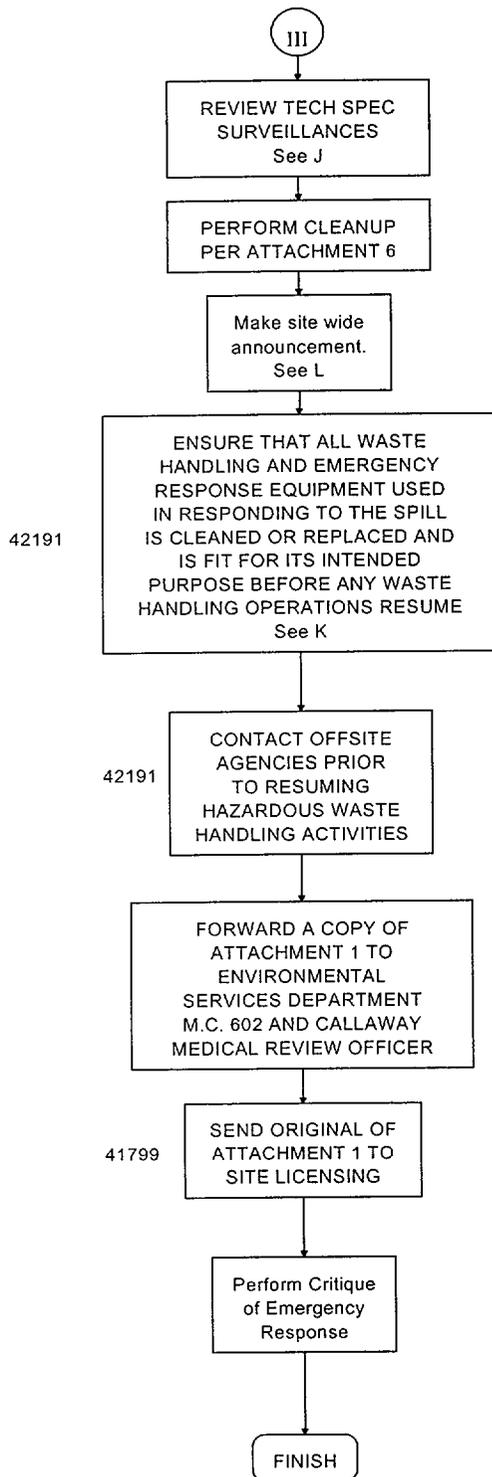
"Attention in the plant. The spill of \_\_\_\_\_ at (location) is under control. However, personnel should avoid the area until cleanup is complete."

H. Generate an SOS per APA-ZZ-00500 and Evaluate reportability under 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)

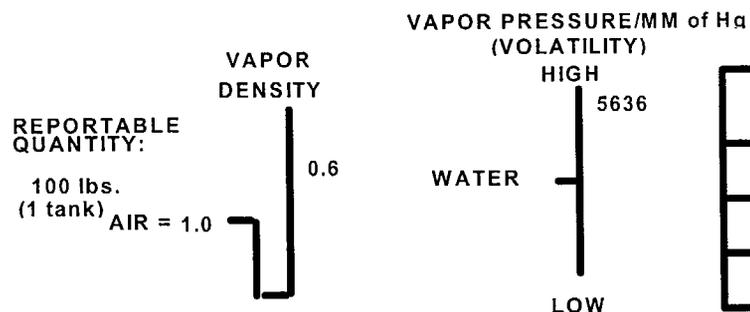
1. EPA/DNR via Ameren Environmental Safety and Health  
NAME \_\_\_\_\_ TIME: \_\_\_\_\_
2. Callaway/Fulton EOC  
NAME \_\_\_\_\_ TIME: \_\_\_\_\_
3. MERC/DNR  
NAME \_\_\_\_\_ TIME: \_\_\_\_\_

L. GAI-TRONICS ANNOUNCEMENT

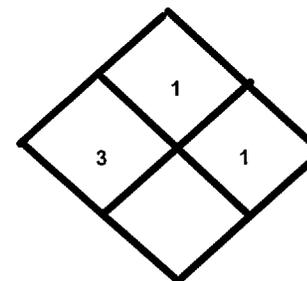
"Attention in the plant. The Cleanup of the spill of \_\_\_\_\_ at (location) is complete. Personnel may now re-enter the area.

# HAZMAT SHEET

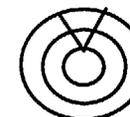
EIP-ZZ-03010  
Rev. 007



|                        |
|------------------------|
| 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 <sub>2</sub> O >30 minutes |
| Skin          | severe burns, irritating     | Chemron suit        | severe irritation, liquid causes burns | flush with H <sub>2</sub> O >30 minutes |
| GI Tract      | burns tissue                 | SCBA                | abdominal pain, nausea, vomiting       | give lots of H <sub>2</sub> O           |

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

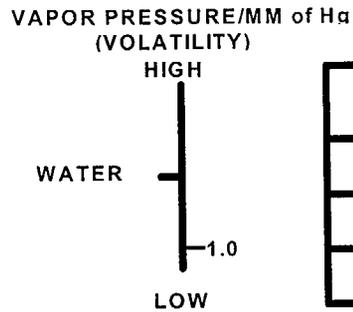
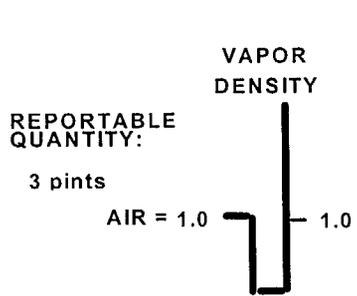
May pose an explosion hazard in confined spaces.

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

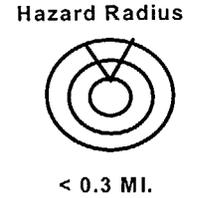
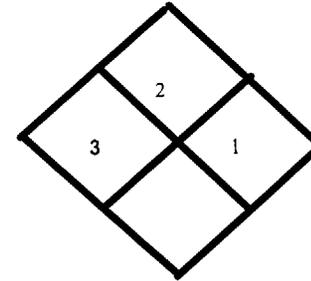
| SPILL HANDLING   |                            |
|--|----------------------------|
| DO   | DO NOT                     |
| Control runoff if water spray is used to absorb gas      | Use water on liquid spills |
| Contact Duty Chemistry Supervisor for technical guidance |                            |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

# HAZMAT SHEET

EIP-ZZ-03010  
Rev. 007



|               |
|---------------|
| 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 <sub>2</sub> O       |
| Skin          | irritation, absorption, toxic | Chemron suit*       | irritation                     | continually flush with H <sub>2</sub> O       |
| GI Tract      | irritation, carcinogen, toxic | SCBA                | dizziness and nausea           | dilute with H <sub>2</sub> O, induce vomiting |

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

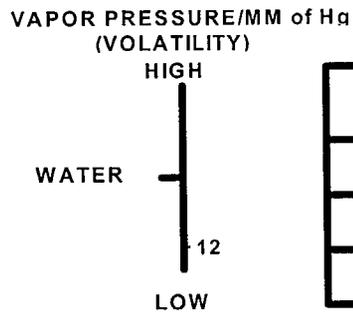
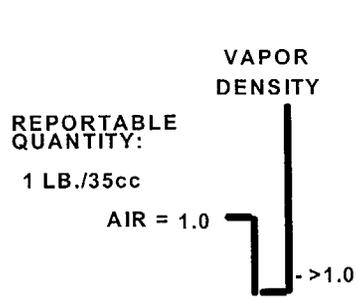
| FIRE AND EXPLOSION HAZARD |                              |                   |         |
|---------------------------|------------------------------|-------------------|---------|
| FLASH POINT               | GAS GENERATION               | SUPPRESSION AGENT | SP. GR. |
| None                      | 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           |

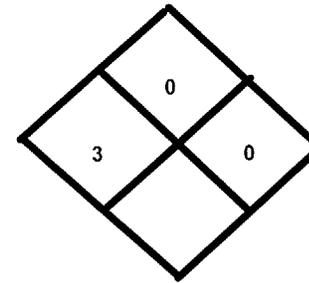
| SPILL HANDLING  |   |
|---|---|
| DO  | DO NOT  |
| If spill drains to Turbine Bldg. sump, secure sump pump                               |   |
| Use inert absorbent to dike/absorb spill  | Use cellulosic material to absorb spill, could cause fire |
| Dilute spills with 10 volumes of water  |   |
|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

# HAZMAT SHEET

EIP-ZZ-03010  
Rev. 007



|                  |
|------------------|
| NAME             |
| MERCURY          |
| Hg               |
| CAS# 007-439-976 |



| HEALTH HAZARD ANATOMY | AFFECTS           | PROTECTIVE CLOTHING | SYMPTOMS                | FIRST AID                     |
|-----------------------|-------------------|---------------------|-------------------------|-------------------------------|
| Respiratory           | Mercury poisoning | SCBA*               | Only long term symptoms | Remove to air                 |
| Eyes                  | Mercury poisoning | goggles             | Only long term symptoms | Continually flush with water  |
| Skin                  | Mercury poisoning | impervious gloves   | Only long term symptoms | Wash with soap & water        |
| GI Tract              | Mercury poisoning | N/A                 | Only long term symptoms | Consult physician immediately |

\*SCBA's need only be worn when Mercury vapors are present (i.e., fire present)

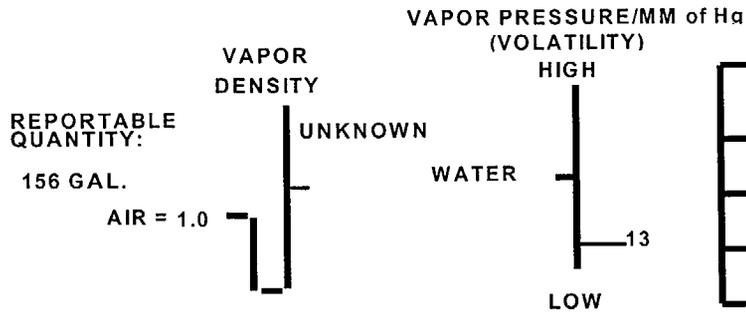
| FIRE AND EXPLOSION HAZARD |                |  |         |
|---------------------------|----------------|--|---------|
| FLASH POINT               | GAS GENERATION | SUPPRESSION AGENT                            | SP. GR. |
| None                      | N/A            | Whatever is appropriate for surrounding fire | 13.35   |

| REACTIVITY SUBSTANCES | WATER | FIRE           | Nitric Acid     | Halogens        | Acetylene, Ammonia |
|-----------------------|-------|----------------|-----------------|-----------------|--------------------|
| RESULTS               | N/A   | Mercury vapors | fire, explosion | fire, explosion | fire, explosion    |

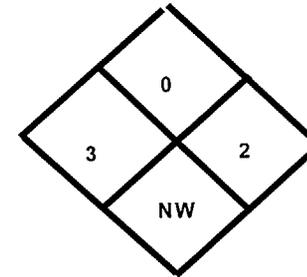
| SPILL HANDLING   |                                     |
|--|-------------------------------------|
| DO   | DO NOT                              |
| Use Mercury spill kit in cold lab  | Allow spill to discharge to a drain |
| Contact Duty Chemistry Supv. for technical guidance in absorbing/neutralizing spills |                                     |

# HAZMAT SHEET

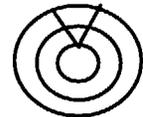
EIP-ZZ-03010  
Rev. 007



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



Hazard Radius



NOT DEFINED

| HEALTH HAZARD | 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 <sub>2</sub> O            |
| Skin          | severe burns | Chemron suit*       | redness, burn, with/without pain      | wash with soap & large amounts of H <sub>2</sub> 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.

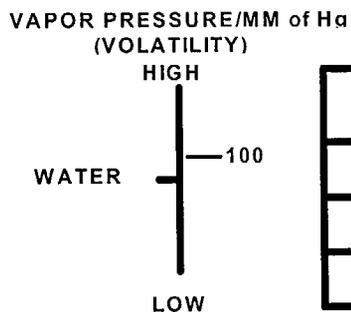
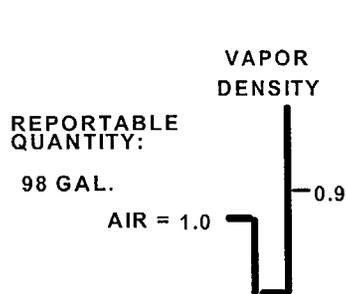
| FIRE AND EXPLOSION HAZARD |                |   |         |
|---------------------------|----------------|---|---------|
| FLASH POINT               | GAS GENERATION | SUPPRESSION AGENT                       | SP. GR. |
| None                      | N/A            | Use agent suitable for surrounding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

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

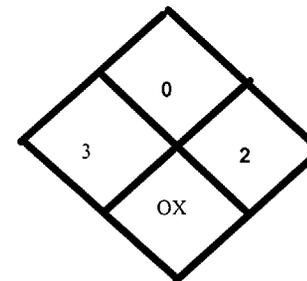
| SPILL HANDLING  |        |
|---|--------|
| DO  | DO NOT |
| Secure Turbine Bldg. sump pump if spill drains to Turbine Bldg. sump. |        |
| Flush chemical into sump with large amounts of water.                 |        |
| Dike outdoor spills with inert absorbent material.                    |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

# HAZMAT SHEET

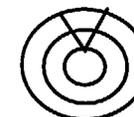
EIP-ZZ-03010  
Rev. 007



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



Hazard Radius



NOT DEFINED

| HEALTH HAZARD | AFFECTS                   | PROTECTIVE CLOTHING | SYMPTOMS                         | FIRST AID                               |
|---------------|---------------------------|---------------------|----------------------------------|---|
| ANATOMY       |                           |                     |                                  |   |
| Respiratory   | irritation                | SCBA                | coughing, general irritation     | fresh air, oxygen                       |
| Eyes          | severe irritation, damage | SCBA                | severe eye irritation, tearing   | continually flush with H <sub>2</sub> 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.

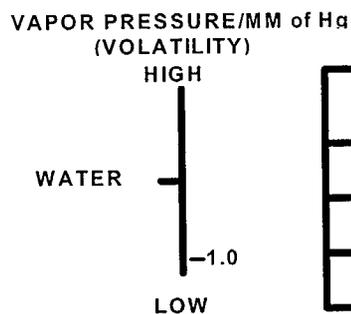
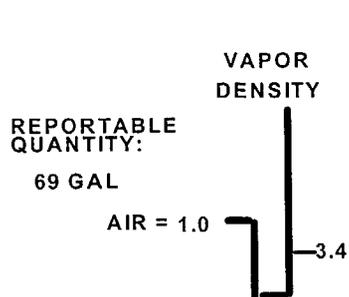
| FIRE AND EXPLOSION HAZARD |                |   |         |
|---------------------------|----------------|---|---------|
| FLASH POINT               | GAS GENERATION | SUPPRESSION AGENT                       | SP. GR. |
| None                      | N/A            | Use agent suitable for surrounding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

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

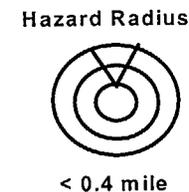
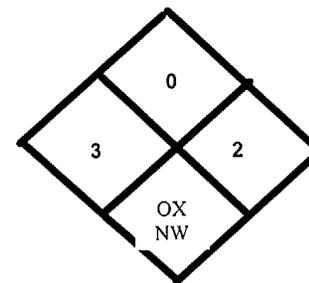
| SPILL HANDLING                                     |  |
|--|--|
| DO   | DO NOT   |
| Dike spill with sand or inert absorbent            |  |
| Dilute with large amounts of water                 | Allow runoff into sewers or waterways. Toxic to marine life. |
| Neutralize with dilute Hydrochloric acid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

# HAZMAT SHEET

EIP-ZZ-03010  
Rev. 007



|                   |
|-------------------|
| NAME              |
| SULFURIC ACID 93% |
| H2S04             |
| CAS# 7664-93-9    |



| 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 <sub>2</sub> O            |
| Skin          | serious burns            | Chemron Suit*       | irritation, burns                   | wash with soap & large amounts of H <sub>2</sub> 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 <sub>2</sub> | 1.84    |

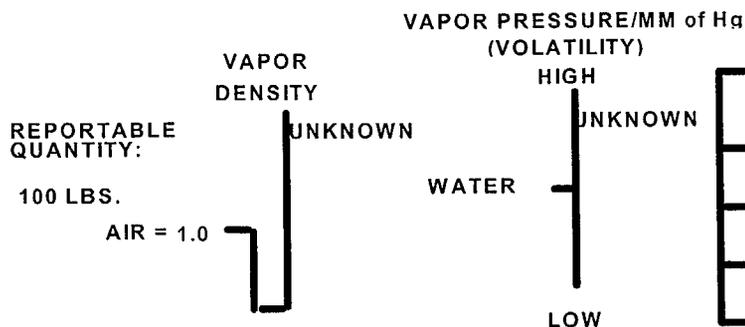
| REACTIVITY |                  |                  |                    |                  |  |
|------------|------------------|------------------|--------------------|------------------|--|
| SUBSTANCES | WATER            | FIRE             | Metals             | Other substances |  |
| RESULTS   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

\* see MSDS

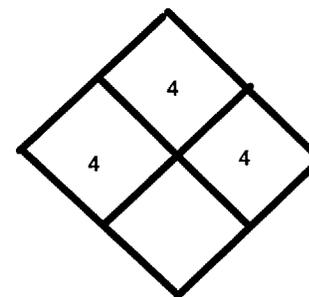
| SPILL HANDLING   |  |
|--|--|
| DO   | DO NOT   |
| Secure Turbine Bldg. sump pump if spill drains to Turbine Bldg. sump | Apply water to sulfuric acid, violent reactions occur. |
| Neutralize with soda ash (stock number 14-04-015)                    |  |
| Contact Duty Chemistry Supv. before neutralizing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

# HAZMAT SHEET

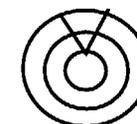
EIP-ZZ-03010  
Rev. 007



|                       |
|-----------------------|
| 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 <sub>2</sub> O |
| Skin          | Unknown | Chemron Suit        | Unknown  | continually flush with H <sub>2</sub> 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. 007

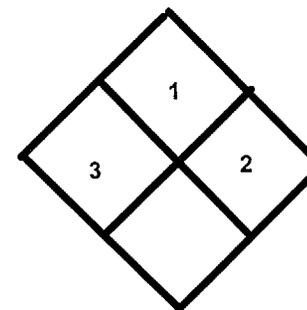
**VAPOR PRESSURE/MM of Hg (VOLATILITY)**

HIGH  
|  
WATER  
|  
LOW  
(Not Tested)

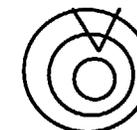
**VAPOR DENSITY**

REPORTABLE QUANTITY:  
506 gal  
AIR = 1.0  
(Not Tested)

|                              |
|------------------------------|
| 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 <sub>2</sub> O           |
| Skin                  | Serious burns            | Chemron Suit        | Irritation burns                          | Wash with soap and large amounts H <sub>2</sub> 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 <sub>2</sub> , Foam, Dry Chemical | 1.58    |

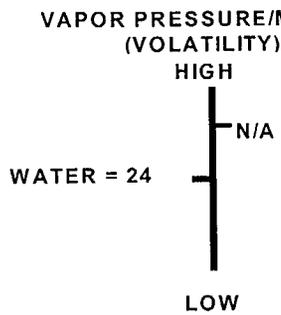
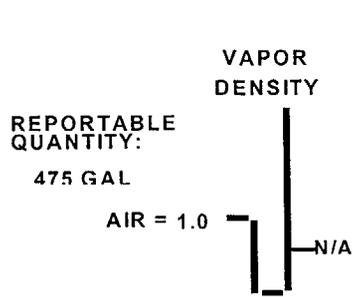
| REACTIVITY |          |                   |                 |                    |                   |
|------------|----------|-------------------|-----------------|--------------------|-------------------|
| SUBSTANCES | WATER    | FIRE              | Strong Caustics | Metals             | Organic 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 |  |

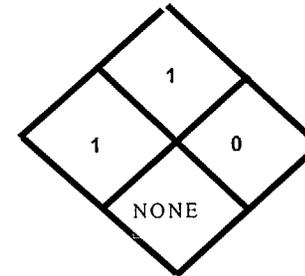
# HAZMAT SHEET

EIP-ZZ-03010

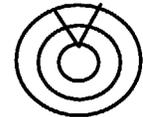
Rev. 007



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



Hazard Radius



< 0.4 mile

| HEALTH HAZARD | 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 <sub>2</sub> O. DO NOT rub eyes. |
| Skin          | irritation especially open wounds | Chemron suit*        | irritation, burns                   | wash with soap & large amounts of H <sub>2</sub> O   |
| GI Tract      | irritation                        | Dust/mist respirator | choking hazard                      | DO NOT induce vomiting. Give cups water.             |

\*Note: Turnout gear is adequate.

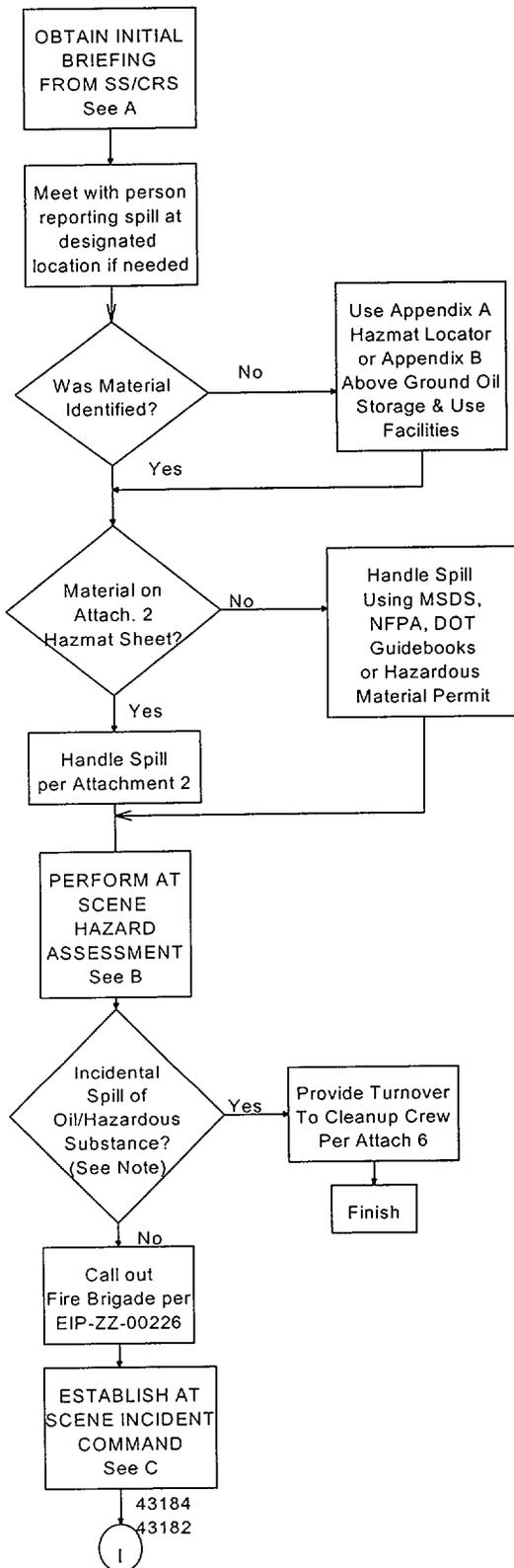
| FIRE AND EXPLOSION HAZARD |  |   |                       |
|---------------------------|--|---|-----------------------|
| FLASH POINT               | GAS GENERATION                           | SUPPRESSION AGENT                             | SP. GR.               |
| None                      | organic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

| 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   |

**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 \_\_\_\_\_

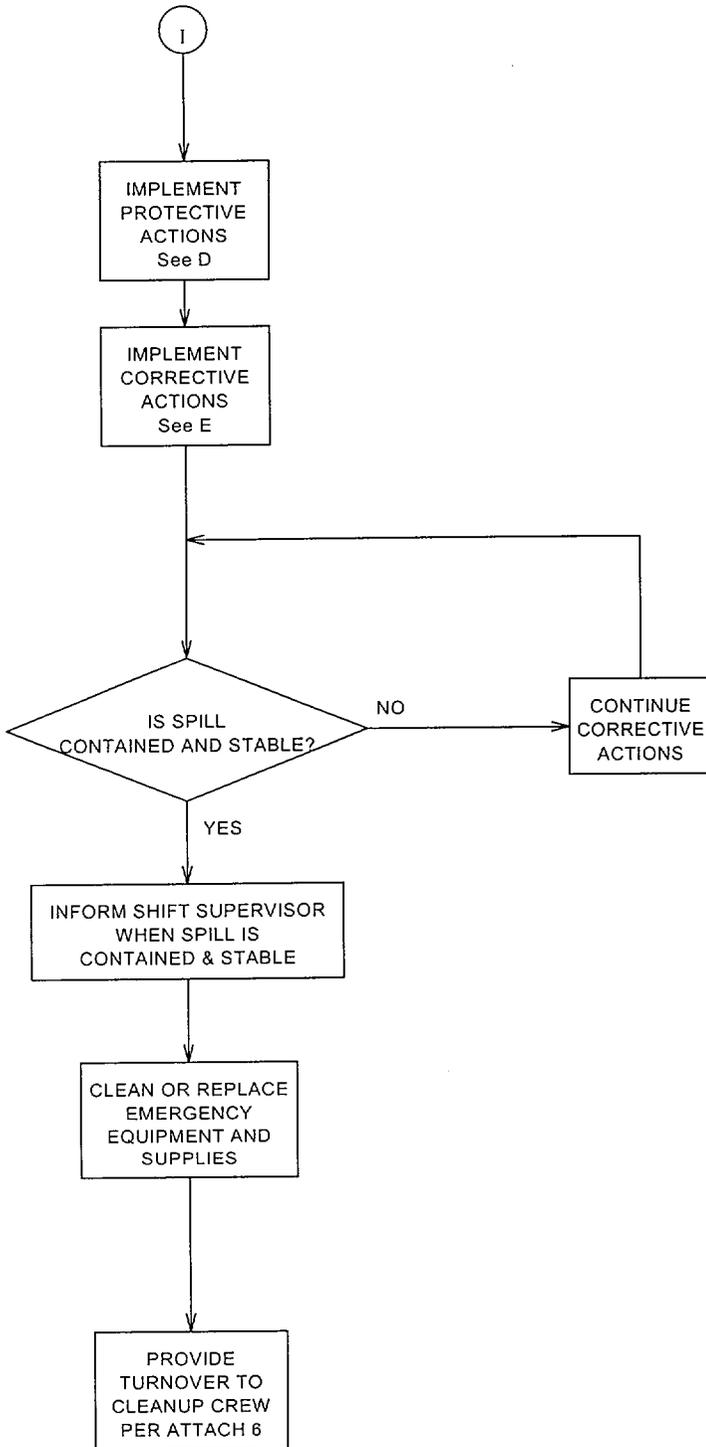
**B. HAZARD ASSESSMENT/NOTIFY CONTROL ROOM**

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. O<sub>2</sub> 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.

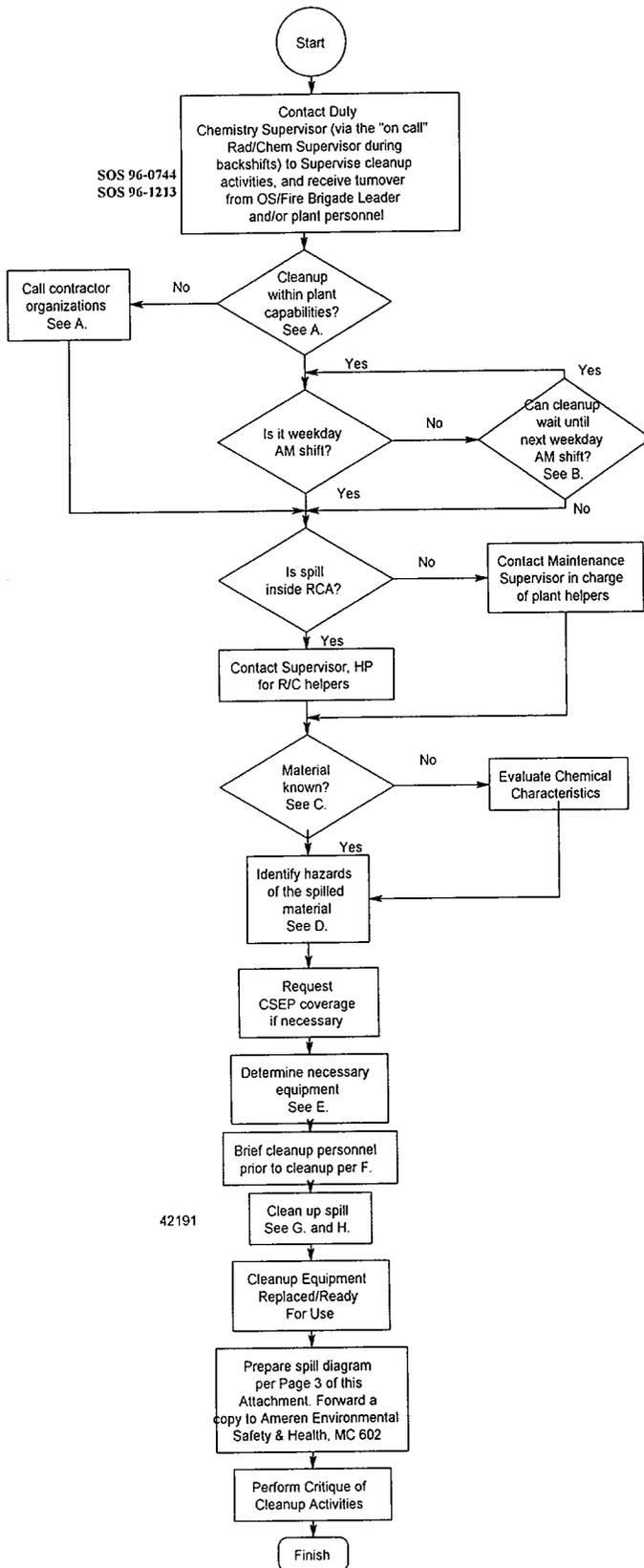
**ACTIONS FOR NOTIFYING THE CONTROL ROOM OF  
CHEMICAL/OIL SPILLS**

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. **(SOS 96-1213)**
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. **(SOS 96-0744)**
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**

| <b>DRAWING NUMBER</b> | <b>-</b> | <b>TITLE</b>   |
|-----------------------|----------|--|
| 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. International Technologies Corp (IT) 1-800-334-0004
- 2. React Environmental Engineers 314-772-2326
- 3. Clean Harbors 1-800-645-8265

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) (SOS 96-1213) (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-00830.**

**SPILL CLEAN-UP CREW CHECKLIST (SOS 96-1213)**

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.

**NOTE:** 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