

## **Identification and Reporting of Emergency Conditions**

### **1. Purpose and Scope**

This procedure provides instructions for Metropolis plant employees to identify and report abnormal conditions to ensure actions are taken to analyze and respond to the condition as necessary to protect plant facilities and the health and safety of plant employees and the public.

### **2. Discussion**

The Metropolis Works Emergency Response Plan establishes requirements for identifying, classifying, and notifying affected personnel and public officials regarding emergencies at the Metropolis Plant. All of these activities rely on the initial identification of the condition by plant employees and subsequent reporting to responsible supervision.

Three levels of emergency exist, in ascending order of severity, as follows:

**Plant Emergency** – A minor incident or situation that deviates from normal operation and that could, under certain conditions, escalate to an Alert, although this is unlikely.

**Alert** – An incident that has led or could lead to a release to the environment of radioactive or other hazardous material, but the release is not expected to require a response by an offsite response organization to protect persons offsite.

**NOTE:** An Alert or Plant Emergency may require offsite support for onsite protective actions, such as fire-fighting or medical support.

**Site Area Emergency** – An incident that has led or could lead to a significant release to the environment of radioactive or other hazardous material and that could require a response by an offsite organization to protect persons offsite.

All employees are required to be alert to unusual or adverse conditions and to report those conditions in accordance with this procedure.

### **3. Precautions and Limitations**

3.1. Due to the nature of the materials and processes used at the Metropolis Plant, extreme caution must be exercised when attempting to respond to adverse conditions. Immediate notification of plant supervision is the key to ensuring effective control of any emergency condition. Do not attempt to control adverse conditions, such as injuries, fires, or leaks, before reporting those conditions to the responsible supervision. Such attempts could result in personal injury, incapacitation, and delayed notification of and response by trained personnel.

3.2. The provisions of this procedure are not intended to compel any individual to take actions that may threaten health and safety.

#### 4. Prerequisites

None.

#### 5. Procedure

##### 5.1. Remain alert for unusual or adverse plant conditions, including:

- Visible indications of problems, such as smoke, clouds, mists, and leaks;
- Unusual noises or smells;
- Abnormal readings on monitored instruments;
- Signs of unplanned power outages, such as darkened areas or non-operating equipment;
- Signs of personnel injury, such as incapacitated or missing personnel.

5.2. IF a serious personnel injury requiring on-scene medical attention is discovered, THEN dial the emergency number (3) on the plant paging system and announce, three times, "CODE ONE" and the location of the injured individual.

5.3. IF a fire is discovered, THEN dial the emergency number (3) on the plant paging system and announce, three times, the existence and location of the fire.

**NOTE:** Many minor spills of UF<sub>6</sub> are readily contained using a vacuum hose and would not provide a significant exposure potential to employees working in other parts of the building.

##### 5.4. IF a minor release of UF<sub>6</sub> is observed, THEN perform the following:

5.4.1. Immediately notify the Feed Materials Building (FMB) Foreperson or Shift Leader (via telephone or plant paging system). The Foreperson will immediately evaluate the condition.

5.4.2. IF the release of UF<sub>6</sub> is sufficient to impair visibility, OR the release should worsen, THEN proceed to Step 5.5.

##### 5.5. Upon discovery of any unusual condition that may threaten health and safety or plant property, perform the following:

5.5.1. IF conditions pose a threat to personal health or safety, THEN move a safe distance away from the affected area.

5.5.2. Contact the Control Room Operator in either the Feed Materials Building, South Fluorine Plant or Powerhouse, and provide the following information:

- Name;

- A brief description of the problem;
- The area affected; and
- IF employee health and safety may be threatened, THEN request that the evacuation alarm be sounded.

5.5.3. Respond to all plant alarms and paging system announcements.

5.5.4. IF trained to respond to the identified condition AND certain that the condition can be addressed without personal risk, THEN initiate immediate mitigating actions.

**EXAMPLE:** Immediate mitigating actions may include extinguishing a smoking waste receptacle or directing a leak to a proper container or drain system.

5.5.5. As conditions change, provide follow-up reports to the responsible Control Room Operator or Incident Commander.

5.5.6. IF present when the Emergency Response Team arrives at the scene, THEN provide information to the Emergency Response Team Leader.

## 6. Records and Reports

None.

## 7. References

- 7.1. 10 CFR 40, Domestic Licensing of Source Material
- 7.2. 40 CFR 264, Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
- 7.3. 29 CFR 1910.120(q), Emergency Response To Hazardous Substance Releases
- 7.4. NRC Regulatory Guide 3.67, Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities
- 7.5. NRC Information Notice 93-60, Reporting Fuel Cycle and Materials Events to the NRC Operations Center
- 7.6. NRC Information Notice 93-60, Supplement 1, Reporting Fuel Cycle and Materials Events to the NRC Operations Center
- 7.7. NRC Information Notice 98-08, Information Likely To Be Requested If An Emergency Is Declared

7.8. Metropolis Works Emergency Response Plan

### Emergency Classification and Notifications

#### 1. Purpose and Scope

This procedure provides the Incident Commander and Crisis Manager a systematic process for properly classifying emergency conditions and making the required onsite and offsite notifications. This procedure also addresses requirements for making Protective Action Recommendations (PARs) and upgrading, downgrading, and terminating the emergency declaration.

#### 2. Discussion

The Metropolis Works Emergency Response Plan establishes requirements for declaring and classifying emergencies, completing required onsite and offsite communications, and terminating the emergency situation in a manner that protects both employee and public health and safety. Three levels of emergency exist, in ascending order of severity, as follows:

Plant Emergency – A minor incident or situation that deviates from normal operation and that could, under certain conditions, escalate to an Alert, although this is unlikely.

Alert – An incident that has led or could lead to a release to the environment of radioactive or other hazardous material, but the release is not expected to require a response by an offsite response organization to protect persons offsite.

**NOTE:** An Alert or Plant Emergency may require offsite support for onsite protective actions, such as fire-fighting or medical support.

Site Area Emergency – An incident that has led or could lead to a significant release to the environment of radioactive or other hazardous material and that could require a response by an offsite organization to protect persons offsite.

The Incident Commander bears responsibility for properly classifying emergencies. Although other members of the Emergency Response Organization may advise the Incident Commander, the responsibility to determine the emergency classification cannot be delegated.

The Crisis Manager bears responsibility for determining Protective Action Recommendations (PARs) and ensuring completion of notifications to offsite authorities (e.g., Massac County Emergency Services, Illinois Emergency Management Agency (IEMA), -NRC Operations Center (NRCOC), and National Response Center). This responsibility can be delegated to an individual who is knowledgeable of the event, the Emergency Response Plan, and plant operations and hazards. However, the responsibility for determining the Protective Action Recommendations provided to offsite emergency response authorities cannot be delegated.

Certain conditions that result in releases of hazardous wastes may result in activation of the RCRA (Resource Conservation and Recovery Act) Contingency Plan rather than, or in addition to, the Emergency Response Plan.

### 3. Precautions and Limitations

3.3.1. This procedure must be used simultaneously with other facility documents and procedures, such as the Metropolis Works Emergency Response Plan and Emergency Plan Implementing Procedures, to ensure effective classification and control of emergency conditions.

3.2. At the initiation of emergency response activities, the Lead Foreperson assumes both Incident Commander and Crisis Manager responsibilities. When the Crisis Manager position is staffed, the Incident Commander relinquishes the Crisis Manager responsibilities. However, it is imperative that the Incident Commander provide all information needed by the Crisis Manager, including the time of the initial emergency classification, any changes to that classification, and the status of offsite notifications, so the Crisis Manager can complete the required offsite notifications in a timely manner. Local emergency response officials must be notified within 15 minutes of an Alert or Site Area Emergency declaration.

### 4. Prerequisites

None

### 5. Procedure

The Incident Commander will perform the following, recording information, as required, on Attachment 2:

- 4.1.5.1. Following recognition or notification of a possible emergency condition, initiate all immediate actions needed to ensure the safety of plant employees and the public.
- 5.2. IF warranted by the nature of the emergency condition, THEN initiate employee evacuation and accountability procedures in accordance with EPIP-006.
- 5.3. Determine the proper emergency classification in accordance with Attachment 1 to this procedure.
- 5.4. IF the situation meets any of the emergency classification criteria provided in Attachment 1, THEN record the proper emergency classification on Attachment 2.

**NOTE:** The following steps may be completed by either the Incident Commander or Crisis Manager, or their designees. However, it is imperative that the Incident Commander and Crisis Manager communicate clearly regarding the turnover and status of their responsibilities.

**4.5.5.5.** Perform emergency notifications as follows, recording information on Attachment 2. IF at any time the emergency classification changes to either a more or less severe classification, THEN return to Step 5.3 and repeat any previously-completed notifications, providing updated information.

**NOTE:** When the Incident Commander and Crisis Manager positions are being filled by two persons, it is acceptable to maintain two separate Attachment 2 forms, one for recording emergency classification by the Incident Commander and one for recording completion of notifications by the Crisis Manager.

**4.1.4.5.5.1.** IF the emergency has been classified as an Alert or Site Area Emergency, THEN activate the plant disaster siren and inform plant personnel of the emergency condition by making three announcements on the plant paging system.

**5.5.2.** IF the emergency has been classified as a Site Area Emergency AND the Emergency Response Organization has NOT been activated, THEN direct the Control Room Operator to activate the Emergency Response Organization in accordance with EPIP-004.

**5.5.3.** IF the emergency has been classified as a Plant Emergency or an Alert AND activation of all or part of the Emergency Response Organization is necessary to provide an effective response, THEN direct the Control Room Operator to activate the desired portions of the Emergency Response Organization in accordance with EPIP-004.

**NOTE:** The initial notification to local Emergency Services (911) and the Illinois Emergency Management Agency (IEMA) of a Site Area Emergency must include Protective Action Recommendations and the affected area. The pre-planned Protective Action Recommendations are to shelter in place all members of the public within a 1.3 mile radius of the plant.

**5.5.2.**

**5.5.3.5.5.4.** IF the emergency has been classified as an Alert or Site Area Emergency, THEN immediately (within 15 minutes of emergency classification) notify local Emergency Services (911), providing the information listed in Attachment 3.

**5.5.3.5.5.5.** IF Protective Action Recommendations are to be issued (required for Site Area Emergency), THEN perform the following:

5.5.3.5.5.5.1. Activate the Community Alert sirens.

5.5.3.5.5.5.2. Notify the designated radio stations and request that they broadcast the pre-recorded Honeywell Protective Action message.

5.5.3.5.5.5.3. IF operable, THEN Notify the Community Alert System and request that they broadcast the community alert message.

5.5.4.3.5.5.5.4. IF at any time it is determined that the local community was alerted inappropriately, THEN contact the local radio stations and Community Alert System and request that they broadcast the False Alarm message.

5.5.5.5.5.6. IF the emergency has been classified as an Alert or Site Area Emergency, THEN notify the Illinois Emergency Management Agency (within one hour of the emergency declaration), providing the information listed in Attachment 3.

5.5.6.5.5.7. IF the emergency has been classified as an Alert or Site Area Emergency, THEN immediately (within one hour of the emergency declaration) notify the USNRC Operations Center, providing the information listed in Attachment 3.

5.5.7.5.5.8. IF requested by the NRC, the event involves a Site Area Emergency involving radiological hazards, THEN assign an individual to maintain open communications with the NRCOC, if requested.

**NOTE:** It may be necessary to implement both the Emergency Response Plan and the RCRA Contingency Plan simultaneously.

4.6.5.6. IF the situation involves a possible uncontrolled spill or release of hazardous wastes, THEN refer to Attachment 4 to determine if the RCRA Contingency Plan must be implemented.

5.6.1. IF the situation involves BOTH an area and a condition listed in Attachment 4, THEN implement the RCRA Contingency Plan.

5.6.2. IF the situation does NOT involve BOTH an area and a condition listed in Attachment 4, THEN DO NOT implement the RCRA Contingency Plan.

5.7. Notify Honeywell Headquarters in accordance with Honeywell Event Reporting Procedures.

**NOTE:** When a Site Area Emergency is declared, the USNRC is likely to establish ongoing communications, via telephone, with the Crisis Manager. The USNRC will solicit information regarding the status of the plant and offsite conditions and will provide input regarding the termination of the Protective Action Recommendations. The decision to terminate PARs may be based on recommendations from Health Physics, Safety, Environmental, and



management personnel, based on results of environmental monitoring and/or professional judgment regarding the status of contaminants in the affected areas.

4.7.5.8. When conditions no longer require protective actions by members of the public, THEN record the termination of Protective Action Recommendations and notify the following, recording completion on Attachment 2:

5.7.1.5.8.1. Local Emergency Services (911).

5.7.2.5.8.2. Local radio broadcasters, requesting that they broadcast the pre-recorded Honeywell All Clear Message.

5.7.3.5.8.3. IF operable, THEN notify the Community Warning System, requesting that they broadcast the All Clear message.

5.7.4.5.8.4. Illinois Emergency Management Agency

5.7.5.5.8.5. NRC Operation Center

**NOTE:** The decision to terminate the emergency condition is based on the criteria provided in Attachment 1. This decision rests with the Incident Commander, with input from the Crisis Manager. The USNRC also may provide input regarding the termination of the emergency condition.

5.8.5.9. WHEN the conditions no longer meet the criteria for classification as an emergency, terminate the emergency condition, recording information on Attachment 2, as follows:

5.8.1.5.9.1. Inform plant personnel of the termination of emergency conditions and any required actions by making three announcements on the plant paging system.

5.8.2.5.9.2. IF the emergency was classified as an Alert or Site Area Emergency, THEN notify local Emergency Services (911), providing the information listed in Attachment 3.

5.8.3.5.9.3. IF the emergency was classified as an Alert or Site Area Emergency, THEN notify the Illinois Emergency Management Agency within one hour, providing the information listed in Attachment 3.

5.8.4.5.9.4. IF the emergency was classified as an Alert or Site Area Emergency, THEN notify the NRCOC as soon as is practical and within one hour of the emergency condition termination, providing the information listed in Attachment 3.

5.9.5. Notify Honeywell Headquarters in accordance with Honeywell Event Reporting Procedures.

~~5.9.5.10.~~ Conduct Recovery Operations in accordance with the requirements of the Emergency Response Plan and Radiological Contingency Plan.

## 6. Records and Reports

- 6.1. Following cessation of emergency operations, review, sign and date completed Attachment 2 forms.
- 6.2. Forward completed forms for retention in accordance with plant policies.

## 7. References

- 7.1. 10 CFR 40, Application for Specific Licenses
- 7.2. 40 CFR 264, Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
- 7.3. 29 CFR 1910.120(q), Emergency Response To Hazardous Substance Releases
- 7.4. NRC Regulatory Guide 3.67, Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities
- 7.5. NRC Information Notice 93-60, Reporting Fuel Cycle and Materials Events to the NRC Operations Center
- 7.6. NRC Information Notice 93-60, Supplement 1, Reporting Fuel Cycle and Materials Events to the NRC Operations Center
- 7.7. NRC Information Notice 98-08, Information Likely To Be Requested If An Emergency Is Declared
- 7.8. Metropolis Works Emergency Response Plan
- 7.9. Metropolis Works Radiological Contingency Plan
- ~~7.9.7.10.~~ Metropolis Works RCRA Contingency Plan
- ~~7.10.7.11.~~ Metropolis Works Risk Management Plan

## Attachment 1, Metropolis Plant Emergency Action Levels

Emergency Classification	Event Description	Examples
<div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>Site Area Emergency</b> </div>	Events have occurred or are in progress that have led, or could lead, to a significant release of UF6 and may require a response by offsite organizations and protective actions by the public OR	A release of a significant quantity of UF6 that is likely to pose some risk to individuals offsite (e.g., the cloud has crossed the fence or its size and density, more significant than those described for an Alert classification, make escape from the plant site likely). Mitigation efforts may be hampered by the nature or location of the release point.
	Significant offsite release of other radioactive or hazardous materials that may require offsite response OR	A significant, unplanned offsite release of radioactive or hazardous process chemicals, such as HF, Ammonia, Fluorine, IF5, SbF5, etc., that may affect individuals offsite.
	Natural disasters or civil disturbances that threaten the operation of safety systems. OR	Tornado sighted approaching or within the fence Flood waters rising within process buildings <u>housing radioactive or other hazardous materials</u> High winds, lightning strike, or earthquake causing major damage to process buildings Intrusion by hostile forces within the fence.
	Other events that result in major damage to safety systems OR	Explosion or uncontrolled fire damaging safety-related systems.
	Events have occurred or are in progress for which the Incident Commander determines that activation of the Emergency Response Organization AND offsite support organizations is necessary to ensure protection of public health and safety.	

## Attachment 1, Metropolis Plant Emergency Action Levels

Emergency Classification	Event Description	Examples
<div style="border: 1px solid black; padding: 10px; text-align: center;"> <b><u>Alert</u></b> </div>	<p>Events have occurred or are in progress that do not meet the criteria for a Site Area Emergency, but could lead to a release of UF6 with the potential for the UF6 release cloud to be visible at the fence line, but no response by offsite organizations is necessary to protect the public.</p> <p><b>OR</b></p>	<p>A UF6 release is occurring, determined to be a significant quantity, and the cloud outside the building is very dense.</p> <p>A UF6 release cloud is visible at the edge of an imaginary circle with a radius that extends to approximately the end of the ore calciner to the north, the tank farm to the east, the liquid fluorine unit to the south, or the forepersons offices to the west.</p> <p>A UF6 release that is determined to be significant and cannot be stopped promptly (e.g., within approximately 15 minutes).</p>
	<p>Significant release of other hazardous chemicals that does not require offsite response</p> <p><b>OR</b></p>	<p>A significant, unplanned release or spill of hazardous process chemicals, such as HF, IF5, SbF5, Ammonia, Fluorine, etc., that is not expected to affect individuals offsite.</p>
	<p>Natural disasters or civil disturbances reported near the plant property</p> <p><b>OR</b></p>	<p>Tornado sighted within one mile of the plant property.</p> <p>Flood waters rising and threatening to enter plant process buildings housing radioactive or other hazardous materials.</p> <p>High winds (e.g., sustained winds greater than 80 mph), lightning strike, or earthquake affecting site, but not causing major damage to process buildings housing radioactive or other hazardous materials.</p> <p>Hostile forces approaching, but outside the fence.</p>
	<p>Other events that result in major equipment damage</p> <p><b>OR</b></p>	<p>Explosion near or uncontrolled fire lasting more than 15 minutes or approaching threatening operability of safety-related systems or equipment</p>
	<p>Events have occurred or are in progress for which the Incident Commander determines that activation of all or part of the Emergency Response Organization is necessary to ensure protection of plant property or employee health and safety.</p>	

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## Attachment 1, Metropolis Plant Emergency Action Levels

Emergency Classification	Event Description	Examples
<b>Plant Emergency</b>	Minor events that do not meet the requirements for a Site Area Emergency or Alert have occurred or are in progress OR	A hazardous material release (e.g., UF <sub>6</sub> , IF <sub>5</sub> , SbF <sub>5</sub> , Ammonia, Fluorine, etc.) that cannot be controlled almost immediately ( <u>e.g., within approximately 15 minutes</u> ). This may involve a visible cloud outside the FMB. For a UF <sub>6</sub> release, vision may be impaired on at least one floor of the FMB.  Minor fires that cannot be immediately extinguished ( <u>e.g., within approximately 15 minutes</u> )  Personnel injuries requiring offsite medical assistance  Loss or primary electrical supply  Hazardous weather ( <u>e.g., high winds, lightning, hail, ice, or snow</u> ), that inhibits safe plant operation)  Minor releases of toxic gases that cannot be stopped almost immediately ( <u>e.g., within approximately 15 minutes</u> )
	The Incident Commander determines that events have occurred or are in progress that require a heightened level of staff awareness and possible support by onsite or offsite response personnel.	

## Attachment 2 - Emergency Classification and Notification Checklist

NOTE: Refer to procedure text for complete instructions and conditions.

Step #	Activity	Date	Time	Initial
<b>Emergency Plan Initiation</b>				
5.2	Sound disaster alarm, initiate evacuation and accountability			
5.3-5.4	Make initial emergency classification: (check one)			
	<input type="checkbox"/> Plant Emergency <input type="checkbox"/> Alert <input type="checkbox"/> Site Area Emergency			
5.5.1	Sound disaster alarm (Alert or Site Area Emergency) and announce emergency classification via paging system (primary) or radio (backup)			
<b>For Alert Classification, perform the following, then proceed to Step 5.6:</b>				
5.5.3	Initiate partial or full Emergency Response Organization activation, if needed			
5.5.4	Notify local Emergency Services via 911 (preferred) or dedicated line or offsite radio (within 15 minutes). Provide information on Attachment 3, as available.	1 <sup>st</sup>		
		2 <sup>nd</sup>		
		3 <sup>rd</sup>		
		4 <sup>th</sup>		
5.5.6	Notify the Illinois Emergency Management Agency via telephone at 217-782-7860 (within 1 hour). Provide information on Attachment 3, as available.	1 <sup>st</sup>		
		2 <sup>nd</sup>		
		3 <sup>rd</sup>		
		4 <sup>th</sup>		
5.5.7	Notify NRC Operations Center via telephone at 301-816-5100 (within 1 hour). Provide information on Attachment 3, as available.	1 <sup>st</sup>		
		2 <sup>nd</sup>		
		3 <sup>rd</sup>		
		4 <sup>th</sup>		
<b>For Site Area Emergency Classification, perform the following, then proceed to Step 5.6:</b>				
5.5.2	Initiate Emergency Response Organization activation			
5.5.4	Notify local Emergency Services of Alert or Site Area Emergency via 911 (preferred) or dedicated line or offsite radio (within 15 minutes). Provide information on Attachment 3, as available.	1 <sup>st</sup>		
		2 <sup>nd</sup>		
		3 <sup>rd</sup>		
		4 <sup>th</sup>		
5.5.5.1	Activate the Community Alert siren system			
5.5.5.2	Notify local radio stations (Site Area Emergency only): WKYQ at 270-444-6397 (24 hours), WMOK at 618-524-9209 (0800-1500 weekdays only) and WDDD at 618-997-8121.			
5.5.5.3	Activate the Community Alert telephone alert system			

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Step #	Activity	Date	Time	Initial
5.5.6	Notify the Illinois Emergency Management Agency via telephone at 217-782-7860 (within 1 hour). Provide information on Attachment 3, as available.	1 <sup>st</sup>		
		2 <sup>nd</sup>		
		3 <sup>rd</sup>		
		4 <sup>th</sup>		
5.5.7	Notify NRC Operations Center via telephone at 301-816-5100 (within 1 hour). Provide information on Attachment 3, as available.	1 <sup>st</sup>		
		2 <sup>nd</sup>		
		3 <sup>rd</sup>		
		4 <sup>th</sup>		
<b>Follow-up activities</b>				
5.6	RCRA Contingency Plan activated, if needed			
5.7	Notify Honeywell Headquarters in accordance with Honeywell Event Reporting Procedures.			
<b>Emergency Classification Escalation/De-escalation (record notifications above)</b>				
5.5	Follow-up emergency classification: (check one)			
	<input type="checkbox"/> Plant Emergency <input type="checkbox"/> Alert <input type="checkbox"/> Site Area Emergency			
5.5	Follow-up emergency classification: (check one)			
	<input type="checkbox"/> Plant Emergency <input type="checkbox"/> Alert <input type="checkbox"/> Site Area Emergency			
5.5	Follow-up emergency classification: (check one)			
	<input type="checkbox"/> Plant Emergency <input type="checkbox"/> Alert <input type="checkbox"/> Site Area Emergency			
<b>Protective Action Recommendation Termination</b>				
5.8	Time Protective Action Recommendations terminated.			
5.8.1	Notify local Emergency Services via dedicated line (preferred) or 911 or offsite radio			
5.8.2	Notify local radio stations (Site Area Emergency only): WKYQ at 270-444-6397 (24 hours), WMOK at 618-524-9209 (0800-1500 weekdays only) and WDDD at 618-997-8121			
5.8.3	Activate the Community Alert telephone system to broadcast the Protective Action Recommendation termination message			
5.8.4	Notify the Illinois Emergency Management Agency via telephone at 217-782-7860			
5.8.5	Notify NRC Operations Center via telephone at 301-816-5100			
<b>Emergency Plan Deactivation</b>				
5.9	Time emergency condition terminated.			
5.9.1	Notify plant employees via plant paging system (preferred) or radios			



<u>Step #</u>	<u>Activity</u>	<u>Date</u>	<u>Time</u>	<u>Initial</u>
<u>5.9.2</u>	<u>Notify local Emergency Services via dedicated line (preferred) or dialing 911 or offsite radio (15 minutes)</u>			
<u>5.9.3</u>	<u>Notify the Illinois Emergency Management Agency via telephone at 217-782-7860 (1 hour)</u>			
<u>5.9.4</u>	<u>Notify NRC Operations Center via telephone at 301-816-5100 (1 hour)</u>			
<u>5.9.5</u>	<u>Notify Honeywell Headquarters in accordance with Honeywell Event Reporting Procedures.</u>			
<u>Incident Commander Signature:</u>				
<u>Crisis Manager Signature:</u>				

Mark any steps that are not required as "NA"

**Attachment 3 – Guidelines for Content of Emergency Notifications**

The following information must be provided when making emergency notifications to offsite emergency response authorities and when making notification of termination of emergency conditions:

- Facility identification
- Name of person reporting
- Classification of emergency
- Description of event and facility conditions
- Status and magnitude of any radioactive or hazardous material releases
- Status and nature of any injuries
- Recommended protective actions for members of the public, including affected area  
(Protective Action Recommendations are required for the initial notification of a Site Area Emergency)
- Any offsite support requested

In addition to the required information, the Incident Commander/Crisis Manager must be prepared to answer questions posed by offsite authorities, particularly from the NRCOC. Typical questions include the following:

- Type of facility and operation involved
- Chemical or physical process involved
- Chemical and physical form of material involved
- Point in process where event occurred
- Safety significance of event
- Current and possible future releases
- Likely health effects/consequences to exposed personnel both on and off site
- Safety systems and safeguards affected
- Corrective actions being taken
- Status of state and local authorities' actions
- Status of public/media information

**Example Emergency Declaration or Upgrade/Downgrade Message:**

This is Name at the Honeywell Metropolis Works in Metropolis, Illinois. We have declared a(n) Emergency Classification at Time due to Describe Problem. Current conditions are Describe Conditions, Including Any Injuries, Hazardous Material Releases, and Wind Speed And Direction.

IF offsite assistance is required, THEN deliver the following:

We are requesting offsite support for Describe Support, Such As Ambulance, Firefighting, or Law Enforcement.

IF Protective Action Recommendations are to be instituted (required for Site Area Emergency), THEN also deliver the following:

Protective Action Recommendations are Shelter in Place Throughout A 1.3 Mile Radius Surrounding The Plant. The public is being notified via offsite sirens, broadcast radio messages, and the offsite telephone notification system.

**Example Protective Action Recommendation Termination Message:**

This is Name at the Honeywell Metropolis Works in Metropolis, Illinois. We have terminated the previously-declared Protective Action Recommendations at Time based on our evaluation of offsite conditions. Describe The Nature And Results Of The Evaluation. Current conditions are Describe Conditions, Including Any Injuries And Hazardous Material Releases. This decision has been made following discussions with affected State and local officials and the USNRC. The public is being notified via broadcast radio messages and the offsite telephone notification system.

**Example Emergency Termination Message:**

This is Name at the Honeywell Metropolis Works in Metropolis, Illinois. We have terminated the previously-declared Emergency Classification at Time. Current conditions are Describe Conditions, Including Any Injuries And Hazardous Material Releases.

IF Protective Action Recommendations are being terminated concurrently with the termination of the emergency condition, THEN refer to the Protective Action Recommendation termination message above.

**Attachment 4 – Conditions Requiring Activation of the RCRA Contingency Plan****1. Areas Affected**

The potential areas where hazardous waste release can occur are:

- EPF Area – Waste storage tanks U-801, U-804, U-807 and U-915.
- F<sub>2</sub> Plant, UF<sub>6</sub> Area, Roadways, F<sub>2</sub> Products, SF<sub>6</sub>.
- Laboratory Waste Storage.
- Wastewater Treatment Plant.
- Ponds B, C, D or E.

**2. Initiating Conditions**

The RCRA Contingency Plan will be implemented in the following situations:

1. Fire and/or Explosion Involving Hazardous Waste.
  - a. A fire which could cause the release of toxic fumes from hazardous waste.
  - b. The fire spreads and could possibly ignite hazardous waste at other locations on site or could cause heat-induced reactions.
  - c. Use of water or water and chemical fire suppressant could result in hazardous waste contaminated runoff.
  - d. An explosion involving hazardous waste has occurred or has a potential to occur.
  - e. An imminent danger exists that an explosion could ignite other hazardous waste at the facility.
  - f. An imminent danger exists that an explosion could result in release of toxic material from hazardous waste.
2. Spills or Material Release Involving Hazardous Waste.
  - a. The spill could result in release of flammable liquids or vapors, thus causing a fire or gas explosion hazard.
  - b. The spill could cause the dangerous release of toxic liquids or fumes.
  - c. The spill can be contained on site, but the potential exists for groundwater contamination.
  - d. The spill cannot be contained on site, resulting in off-site soil contamination and/or ground or surface water pollution.

**Incident Commander and Incident Commander Staff Activities****1. Purpose and Scope**

This procedure provides instructions for the Incident Commander and his staff for discharging their responsibilities during a site emergency. This procedure also establishes requirements for reviewing the plant's response to emergency conditions and for compiling and retaining records of emergency events.

**2. Discussion**

The Metropolis Works Emergency Response Plan establishes requirements for the Incident Commander to exercise control over emergency conditions, including activating the site Emergency Response Organization (ERO) as may be needed to support the plant operating staff during emergency conditions. The plan addresses the ERO organization, staffing levels, and conditions requiring ERO activation.

Three levels of emergency exist, in ascending order of severity, as follows:

Plant Emergency – A minor incident or situation that deviates from normal operation and that could, under certain conditions, escalate to an Alert, although this is unlikely.

Alert – An incident that has led or could lead to a release to the environment of radioactive or other hazardous material, but the release is not expected to require a response by an offsite response organization to protect persons offsite.

**NOTE:** An Alert or Plant Emergency may require offsite support for onsite protective actions, such as fire-fighting or medical support.

Site Area Emergency – An incident that has led or could lead to a significant release to the environment of radioactive or other hazardous material and that could require a response by an offsite organization to protect persons offsite.

Activation of the Emergency Response Organization is required whenever the Incident Commander declares a Site Area Emergency. Activation of all or part of the Emergency Response Organization is optional, subject to the Incident Commander's discretion, for other emergency or off-normal situations.

The Incident Commander is responsible for classifying the emergency in accordance with EPIP-0032, Emergency Classification and Notifications. This responsibility cannot be delegated. The Incident Commander may delegate other responsibilities as established in this procedure and should do so as necessary to ensure effective control and mitigation of emergency conditions.

**3. Precautions and Limitations**

- 3.1. This procedure must be used simultaneously with other facility documents and procedures, such as the Metropolis Work Emergency Response Plan and EIPs, to ensure effective control of emergency conditions.

3.2. Throughout any emergency condition, the Incident Commander must maintain an overview of the entire situation, formulate plans to address the problem, and delegate actions as necessary to ensure he can maintain effective overall control.

3.3. During emergency response activities, multiple employees in remote locations rely on communications via the assigned radio frequencies. To the extent practical, emergency responders in fixed facilities, such as the Control Room or Administration Building, should use telephone communications to avoid jamming of the available radio frequencies.

#### 4. Prerequisites

4.1. The Incident Commander has declared a site emergency in accordance with EPIP-002.

#### 5. Procedure

5.1. The Incident Commander will ensure the following steps are performed:

**NOTE:** Evacuation of all or part of the plant is required when the reported emergency involves a UF6 release resulting in impaired visibility on the floor. Evacuation may also be ordered under other conditions to ensure personnel safety, at the discretion of the Incident Commander.

5.1.1. IF evacuation of all or part of the plant is required, THEN refer to EPIP-006, Employee Evacuation and Accountability.

**WARNING:** Employees should not be placed at personal risk to conduct plant operations.

5.1.2. IF any employees must remain at their posts to conduct plant operations, THEN instruct them to secure all building openings, turn off the heating/air conditioning systems and remain inside until the vapor cloud passes.

5.1.3. IF the event involves a release of airborne radioactive material within the FMB, THEN activate the flashing red lights.

5.1.4. IF Control Room habitability is threatened AND the Control Room is equipped for isolation, THEN initiate Control Room isolation measures.

5.1.5. Continuously monitor and evaluate plant conditions.

5.1.6. Initiate emergency classification and notifications in accordance with EPIP-002, Emergency Classification and Notifications.

**NOTE:** In selecting a location for the Emergency Control Point, the impact of external factors, such as noise, vehicle and pedestrian traffic, weather, and hazardous material releases, must be considered.

- 5.1.7. IF a local Control Point is needed to control activities at the scene of the event, THEN establish the Emergency Control Point in accordance with EPIP-004, Emergency Response Organization Activation and Deactivation. Announce the location of the Emergency Control Point using the plant paging system or radio.
- 5.1.8. IF the emergency involves a hazardous material release, fire, or explosion, THEN perform the following, completing applicable sections of the Attachment 1 checklist:
- 5.1.8.1. Assess the character, exact source, amount, and extent of any released materials.
  - 5.1.8.2. Assess possible hazards to human health or the environment that may result from the release, fire, or explosion. Consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions).
  - 5.1.8.3. Take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility.
  - 5.1.8.4. As needed, consider the need to stop processes and operations, collect and contain released waste, and remove or isolate containers. IF it is necessary to stop operations in response to a fire, explosion, or release, THEN monitor as needed for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment.
- 5.1.9. Until relieved of additional responsibilities by the ERO staff, perform the duties of the Crisis Manager, Environmental Officer, and Control Room Officer as established in EPIP-004, Emergency Response Organization Activation and Deactivation.
- 5.1.10. IF notified that the ERO has been fully staffed, THEN provide appropriate turnover of status information to the Crisis Manager, Environmental Officer, and Control Room Officer. Essential information for turnover to the Crisis Manager includes:
- 5.1.10.1. The status of the emergency and response efforts;
  - 5.1.10.2. The status of any injured personnel;
  - 5.1.10.3. The actual emergency classification and the time the current classification, and any previous classifications, were determined;
  - 5.1.10.4. The status of any offsite notifications that may be required; and
  - 5.1.10.5. The status of any offsite warnings to affected members of the public.

5.1.11. Direct the activities of the Incident Commander's Emergency Response Organization staff from the Emergency Control Point, including the following:

5.1.11.1. Appoint a Recorder/Timekeeper to maintain a chronological log of emergency response activities.

5.1.11.2. Appoint Census-Takers to ensure effective personnel control.

**CAUTION:** In directing the activities of the Emergency Response Teams, care must be taken to ensure that Emergency Response Organization personnel have a thorough understanding of plant conditions and hazards. Failure to maintain such knowledge can lead to worsening of the conditions and adverse effects on public or employee health and safety.

5.1.11.3. Brief the Emergency Response Officer on specific Emergency Response Team assignments needed to stabilize plant conditions and terminate the emergency condition.

5.1.11.4. Establish site work zones based on hazardous materials characteristics and conditions that determine the level or degree of the response effort.

5.1.11.5. Maintain ongoing awareness of Emergency Response Team activities through the Emergency Response Officer.

5.1.11.6. Coordinate with the Safety Officer and Radiation Officer to ensure appropriate safety and radiological precautions are implemented.

5.1.11.7. Coordinate with the Safety Officer and Procurement Officer to obtain required protective equipment and supplies.

5.1.11.8. Establish liaison with any offsite fire or rescue organizations reporting to the site and provide pertinent information regarding facility conditions, layout, and hazards.

5.1.11.9. IF requested by local Emergency Management officials, THEN assign either the Control Room Officer (preferred) or Security personnel at the CAS to maintain contact via the dedicated phone line.

5.2. Incident Commander's Emergency Response Organization Staff Activities

5.2.1. The Emergency Response Officer shall perform the following:

5.2.1.1. Organize Emergency Response Team members into fire, rescue, and HazMat teams.

5.2.1.2. Assign an individual to accept reports and complete Attachment 2, Control Point Record Form, to record completion of personnel



accountability activities and securing of HVAC systems throughout the plant.

- 5.2.1.3. Coordinate with the Safety Officer for movement of injured personnel to the established cold zone for medical evaluation and treatment.
- 5.2.1.4. Ascertain the condition of all operable units and be prepared to take actions to control spills and releases and other operational problems as directed by the Incident Commander.
- 5.2.1.5. Coordinate with the Incident Commander, Safety Officer and Radiation Officer to ensure Emergency Response Teams implement appropriate safety measures.

**CAUTION:** In directing the activities of the Emergency Response Teams, care must be taken to ensure that Emergency Response Organization personnel have a thorough understanding of plant conditions and hazards. Failure to maintain such knowledge can lead to worsening of the conditions and adverse effects on public or employee health and safety.

- 5.2.1.6. Coordinate Emergency Response Team activities as directed by the Incident Commander.
- 5.2.1.7. As Emergency Response Organization members are dispatched from and subsequently return to the assigned ~~ERO~~ locations, complete Attachment 3, ERO Personnel Tracking Form, to facilitate personnel accountability and provide a detailed record of emergency response activities.

5.2.2. The Control Room Officer will perform the following:

- 5.2.2.1. Activate the Emergency Response Organization, as requested by the Incident Commander.
- 5.2.2.2. Direct emergency response activities from the Control Room.
- 5.2.2.3. IF Control Room habitability is threatened AND the Control Room is equipped for isolation, THEN initiate Control Room isolation measures.
- 5.2.2.4. Ensure the Control Room exhaust fans are secured and the emergency blower is activated.

5.2.3. The Safety Officer shall perform the following:

- 5.2.3.1. Monitor onsite hazards and conditions. Based on the results of the monitoring, advise the Incident Commander regarding emergency classifications.

- 5.2.3.2. Consult with the Incident Commander on appropriate protective measures and decontamination methods.
  - 5.2.3.3. Coordinate with the Incident Commander and Procurement Officer to obtain any additional protective equipment that may be required.
  - 5.2.3.4. Coordinate with the Emergency Response Officer and First Aid Officer for movement of any injured personnel to the cold zone for evaluation and treatment.
  - 5.2.3.5. Monitor Emergency Response Team members for sign of stress, fatigue, or other conditions that may hinder their effectiveness.
- 5.2.4. The Radiation Officer will perform the following:
- 5.2.4.1. Advise the Incident Commander potential public exposure and the need to notify off-site residents.
  - 5.2.4.2. Advise the Incident Commander on the classification of emergencies as defined in the Radiological Contingency Plan.
  - 5.2.4.3. Direct activities through the IC to minimize public and employee exposure in the event of a release of radioactive materials.
  - 5.2.4.4. Coordinate hospital and ambulance monitoring and decontamination, if required.
- 5.2.5. The First Aid Officer will perform the following:
- 5.2.5.1. Establish First Aid Operations in the plant dispensary.
  - 5.2.5.2. Designate an aide to secure a plant vehicle and provide the following equipment:
    - (1) Oxygen Therapy Unit
    - (1) Bag Mask Resuscitator
    - (1) Stretcher and Blankets
  - 5.2.5.3. Organize Health Physics and Laboratory personnel into First Aid teams to care for injured personnel.
  - 5.2.5.4. Request support of offsite physicians and/or ambulances through the Crisis Manager, as required. IF the Crisis Manager position is not staffed, THEN coordinate contact with offsite support agencies for physicians and ambulances.
  - 5.2.5.5. Notify the Guard at the Main Gate entrance if an ambulance has been requested.

- 5.2.5.6. IF the dispensary becomes over-crowded or uninhabitable, THEN determine alternate facilities and coordinate relocation of the First Aid facility.

5.2.6. The Emergency Response Specialist will perform the following:

- 5.2.6.1. Be part of the Entry Team in a UF6 release. In a non-UF6 release he may be responsible for all non-emergency activities outside the emergency area.
- 5.2.6.2. Ensure personnel accounting requirements are completed.
- 5.2.6.3. Advise people, record data, and relay information to the Incident Commander.
- 5.2.6.4. On off-shifts, weekends and holidays, act as Maintenance Officer until relieved by that officer.

5.2.7. The Maintenance Officer will perform the following:

- 5.2.7.1. Arrange for emergency shut-off of utilities as necessary and for the procurement of auxiliary equipment required to cope with the emergency.
- 5.2.7.2. Initiate and direct all emergency maintenance work to facilitate control of the emergency situation to prevent injury to personnel and minimize damage to property, product or materials.
- 5.2.7.3. Assist the Emergency Response Team Leaders as requested.
- 5.2.7.4. Assist in restoration of production facilities, utilities, communications and roadways following control of the emergency.

5.2.8. The Emergency Response Team Leader will perform the following:

- 5.2.8.1. On off-shifts, holidays and weekends, assume the role of the Emergency Response Officer.
- 5.2.8.2. Designate an Emergency Response Team member to obtain the emergency response vehicle to be brought to the control point.
- 5.2.8.3. Establish work zones to protect personnel and coordinate containment of the release.
- 5.2.8.4. Supervise activities of entry and back-up teams.
- 5.2.8.5. Record and track entry team work duration and rotation.
- 5.2.8.6. Analyze resources of necessary safety protective equipment.
- 5.2.8.7. Coordinate and supervise activities of the decontamination line.

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5.2.8.5.2.9. The Production Safety Operator will perform the following:

5.2.8.1.5.2.9.1. After reporting in for census purposes, the Production Safety Operator will proceed to the Safety Shack or control point and stand by to service emergency gear as required.

5.2.8.2.5.2.9.2. Maintaining necessary emergency equipment during the emergency response effort.

5.2.9.5.2.10. The Procurement Officer will perform the following:

5.2.9.1.5.2.10.1. Obtain material and equipment necessary to control or contain the emergency situation.

5.2.9.2.5.2.10.2. Arrange for meals and comfort items for plant personnel as required depending on the duration of the emergency.

5.2.10.5.3. When directed by the Incident Commander to terminate Emergency Response Organization activities, as appropriate, perform the following:

5.2.10.1.5.3.1. Return all non-consumable emergency equipment and supplies in good order to their original storage locations.

5.2.10.1.5.3.2. IF any emergency equipment or supplies are not in good working order, THEN notify the assigned Emergency Response Organization officer that repairs or replacements are required.

5.2.10.1.5.3.3. Remove any temporary boundaries, barriers, structures, or contamination control devices that are no longer required.

5.2.10.1.5.3.4. Dispose of all waste materials in the proper receptacles.

5.2.10.1.5.3.5. Complete any records that are required for the Emergency Response Organization position held and forward these records to the responsible ERO officer.

5.2.10.1.5.3.6. Confirm completion of all required activities with the assigned ERO officer prior to terminating Emergency Response Organization activities.

5.3.5.4. Emergency Response Follow-up Activities

5.3.1.5.4.1. Following declaration of an actual emergency and restoration of normal plant operations, conduct a critique of the emergency response activities as follows:

5.3.1.1.5.4.1.1. Gather input from all key personnel involved in responding to the incident.

5.3.1.2.5.4.1.2. Assess the response efforts, identifying strengths and activities requiring improvement.

~~5.3.1.3.~~5.4.1.3. Establish a plan for any required corrective or improvement actions.

~~5.3.1.4.~~5.4.1.4. Assign follow-up actions to the appropriate personnel.

~~5.3.1.5.~~5.4.1.5. Track follow-up actions to completion via the management-approved corrective action tracking system.

## 6. Records and Reports

6.1. Upon cessation of emergency operations, review, sign and date all records of Emergency Response Organization activities, including Attachments 1, 2 and 3 and any other records, such as radiological surveys, records of chemical and environmental monitoring, and chronological logs.

6.2. Return completed records and forms to the assigned ERO-officer for review and retention.

6.3. Collect and retain records of emergency plan activating events as follows:

- Event cause;
- Personnel and equipment involved;
- Extent of injuries and damage, both on- and off-site;
- All locations of radioactive and chemical contamination, including final contamination levels;
- Onsite and offsite support requested and received;
- Actions taken to terminate the emergency;
- Programmatic changes resulting from lessons learned; and
- Actions planned or taken to prevent recurrence.

6.4. Forward all records for retention in accordance with plant policies.

## 7. References

7.1. 10 CFR 40, Application for Specific Licenses

7.2. 40 CFR 264, Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities

7.3. 29 CFR 1910.120(q), Emergency Response To Hazardous Substance Releases

- 7.4. NRC Regulatory Guide 3.67, Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities
- 7.5. NRC Information Notice 93-60, Reporting Fuel Cycle and Materials Events to the NRC Operations Center
- 7.6. NRC Information Notice 93-60, Supplement 1, Reporting Fuel Cycle and Materials Events to the NRC Operations Center
- 7.7. NRC Information Notice 98-08, Information Likely To Be Requested If An Emergency Is Declared
- 7.8. Metropolis Works Emergency Response Plan
- 7.9. Metropolis Works RCRA Contingency Plan
- 7.10. Metropolis Works Risk Management Plan

**ATTACHMENT 1**  
**HAZARDOUS MATERIAL INCIDENT RISK EVALUATION**

**SUBSTANCE INFORMATION**

CHEMICAL NAME: \_\_\_\_\_ UN/NA #: \_\_\_\_\_ EPA WASTE #: \_\_\_\_\_

COMMON or TRADE NAMES: \_\_\_\_\_ MANUFACTURER/SHIPPER: \_\_\_\_\_

CHEMICAL FORM: ☐ SOLID ☐ LIQUID ☐ GAS/VAPOR ☐ POWDER VOL. or WT. INVOLVED: \_\_\_\_\_**IMMEDIATE HAZARDS:**☐ FLAMMABLE ☐ CORROSIVE ☐ REACTIVE (w/ \_\_\_\_\_) ☐ RADIOACTIVE ☐ INFECTIOUS  
RELEASED SUBSTANCES MUST BE CONSIDERED TOXIC UNLESS DETERMINED OTHERWISEFLASH POINT: \_\_\_\_\_ IGNITION POINT: \_\_\_\_\_ BOIL POINT: \_\_\_\_\_ VAPOR  
DENSITY: \_\_\_\_\_FLAMMABLE LIMITS (UPPER) \_\_\_\_\_ WATER SOLUBLE: \_\_\_\_\_ VAPOR PRESSURE: \_\_\_\_\_  
(LOWER) \_\_\_\_\_ SPECIFIC GRAVITY: \_\_\_\_\_**MEASURED RISK PARAMETERS**

AIR-BORNE CONCENTRATION (PPM): \_\_\_\_\_ PERCENT OF LEL: \_\_\_\_\_

pH: \_\_\_\_\_ RADIOACTIVE : \_\_\_\_\_

**SITE INFORMATION**☐ INDOOR ☐ OUTDOOR LOCATION \_\_\_\_\_

ACCESS \_\_\_\_\_

WIND DIRECTION (FROM) ☐ NORTH ☐ SOUTH ☐ EAST ☐ WEST**ENVIRONMENTAL THREATS:**

TYPE LOCATION TO INCIDENT

☐ STORM DRAIN \_\_\_\_\_☐ SOIL \_\_\_\_\_☐ EFFLUENT/RIVER \_\_\_\_\_☐ PROPERTY LINE \_\_\_\_\_

(sketch the incident scene on page 2)

**VICTIMS/PERSONNEL CONTAMINATION**IS ANYONE INJURED OR CONTAMINATED? ☐ YES ☐ NO

IF YES, DESCRIBE \_\_\_\_\_

**BASED ON THE ABOVE INFORMATION, THE RISK IS ESTIMATED AS: ☐ HIGH ☐ LOW****\*\*\* RESPONSE PROCEDURES \*\*\*****PERSONNEL**

PRIMARY \_\_\_\_\_

BACK-UP \_\_\_\_\_

RESOURCES ☐

HEALTH PHYSICS \_\_\_\_\_

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☐  
SAFETY/MEDICAL☐  
ENVIRONMENTAL☐  
INDUSTRIAL HYGIENE**PPE TO USE**GENERAL PROTECTION LEVEL: ☐LEVEL A ☐LEVEL B ☐LEVEL C ☐LEVEL DBODY COVERING: ☐ENCAPSULATING ☐COVERALLS ☐JACKETS ☐TYVEKACID SUITS: ☐PVC ☐NEOPRENE ☐POLYPROPYLENEGLOVES (outer): ☐NEOPRENE ☐NITRILE ☐PVC ☐LATEX ☐BUTYLGLOVES (inner): ☐NITRILE ☐LATEXBREATHING PROTECTION: ☐SCBA ☐AIRLINE ☐AIR PURIFYING/CARTRIDGE \_\_\_\_\_☐NONEHEAD/EYE PROTECTION: ☐HARD HAT ☐FACE SHIELD ☐ACID HOODFOOT PROTECTION: ☐PULL-OVER BOOT COVERS ☐STEEL-TOED RUBBER BOOTS

INCIDENT SCENE SKETCH:

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_



## ATTACHMENT 2 - CONTROL POINT RECORD FORM

Report	Time	Initial
<b>Production Department Reports</b>		
All non-Works personnel reported out of the FM building?		
UF <sub>6</sub> shift operating personnel reported accounted for?		
All HVAC equipment shut down in FMB?		
All other production personnel reported accounted for?		
All HVAC equipment shut down in Power House?		
All HVAC equipment shut down in EPF – CaF <sub>2</sub> ?		
All HVAC equipment shut down in SGF2 Plt., NGF2 Plt. and Production Offices?		
All HVAC equipment shut down in F2 products area?		
All HVAC equipment shut down in Sampling Plt.?		
All HVAC equipment shut down in KOH & Wet Proc.?		
<b>Maintenance Department Reports</b>		
Maintenance Census reported?		
Emergency Response Team Census reported to Control Point team leader		
All HVAC equipment shut down in Maint./Engr., Lunchroom and training room?		
All HVAC equipment shut down in Inst./Elec. Shop?		
<b>Laboratory Reports</b>		
Laboratory, Process Engineers, and Health Physics census reported?		
All HVAC equipment in Lab Building?		
<b>Administration Reports</b>		
Administration census reported?		
All HVAC shut down in Admin Building?		
<b>Stores Reports</b>		
Stores census reported?		
All HVAC equipment shut down in Stores area?		
<b>Plant Security Reports</b>		
Plant security census reported?		
<b>Other Activities</b>		
Additional safety equipment requested?		
Distillation door closed?		
Control Room Officer directed to turn off the evacuation and disaster sirens?		

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

## ATTACHMENT 3 - ERO PERSONNEL TRACKING FORM

Location: \_\_\_\_\_

Name	Destination	Purpose	Departure Time	Return Time

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

## Emergency Response Organization Activation and Deactivation

### 1. Purpose and Scope

This procedure provides the instructions for activating and deactivating the Emergency Response Organization (EROEmergency Response Organization) for a declared emergency. This procedure also provides specific instructions for the responsibilities and activities of the Crisis Manager and his staff.

### 2. Discussion

The Metropolis Works Emergency Response Plan establishes requirements for activating the site Emergency Response Organization as may be needed to support the plant staff during emergency conditions. The plan addresses the Emergency Response Organization, staffing levels, and conditions requiring Emergency Response Organization activation.

Three levels of emergency exist, in ascending order of severity, as follows:

Plant Emergency – A minor incident or situation that deviates from normal operation and that could, under certain conditions, escalate to an Alert, although this is unlikely.

Alert – An incident that has led or could lead to a release to the environment of radioactive or other hazardous material, but the release is not expected to require a response by an offsite response organization to protect persons offsite.

**NOTE:** An Alert or Plant Emergency may require offsite support for onsite protective actions, such as fire-fighting or medical support.

Site Area Emergency – An incident that has led or could lead to a significant release to the environment of radioactive or other hazardous material and that could require a response by an offsite organization to protect persons offsite.

Activation of the EROEmergency Response Organization is required whenever the Incident Commander declares a Site Area Emergency. Activation of all or part of the EROEmergency Response Organization is optional, subject to the Incident Commander's discretion, for other emergency or off-normal situations.

### 3. Precautions and Limitations

4.1.3.1. This procedure must be used simultaneously with other facility procedures, such as the Metropolis Work Emergency Response Plan and other EIPs, to ensure effective control of emergency conditions.

3.2. During emergency response activities, multiple employees in remote locations rely on communications via the assigned radio frequencies. To the extent practical, emergency responders in fixed facilities, such as the Control Room or Administration Building, should use telephone communications to avoid jamming of the available radio frequencies.

#### 4. Prerequisites

- 4.1. The Incident Commander has declared a site emergency in accordance with EPIP-002, Emergency Classification and Notifications, and issued instructions to activate all or part of the ERO Emergency Response Organization.

#### 5. Procedure

##### 5.1. Notify the ERO Emergency Response Organization members as follows:

- 5.1.1. IF the emergency declaration is issued during normal working hours when the full ERO Emergency Response Organization staff is onsite, THEN announce the ERO Emergency Response Organization activation via the plant paging system.
- 5.1.2. IF the emergency declaration is issued outside of normal working hours when the full ERO Emergency Response Organization staff is NOT onsite, THEN activate the automated ERO Emergency Response Organization alert system (if available) or by using the current ERO Emergency Response Organization phone list.

##### 5.2. Emergency Response Organization Actions

- 5.2.1. Upon notification of the ERO Emergency Response Organization activation, the ERO Emergency Response Organization staff members shall report to their assigned primary or alternate ERO Emergency Response Organization locations as listed in Attachment 1 and announced via the plant paging system.
- 5.2.2. Upon arriving at the designated locations, ERO Emergency Response Organization members shall inform the responsible ERO Emergency Response Organization Officer of their presence and ERO Emergency Response Organization position title.
- 5.2.3. ERO Emergency Response Organization members shall obtain all required equipment and supplies, consistent with plant conditions, and perform all checks needed to ensure equipment operability.
- 5.2.4. ERO Emergency Response Organization members shall await instructions from the designated ERO Emergency Response Organization Officer.
- 5.2.5. ERO Emergency Response Organization members shall maintain communications with other ERO Emergency Response Organization members using the assigned ERO Emergency Response Organization phone numbers and radios.
- 5.2.6. Offsite emergency response support may be needed to address plant fires, security breaches, and injuries. IF offsite support is requested, THEN notify Security to open the gate as needed for emergency vehicle entry and exit.

##### 5.3. Crisis Manager and Crisis Manager Staff Activities

5.3.1. The Crisis Manager shall perform the following:

- 5.3.1.1. IF the designated ~~ERO~~Emergency Response Organization location is uninhabitable, THEN designate an alternate location.
- 5.3.1.2. Report to the designated location and establish required crisis management functions.
- 5.3.1.3. Inform the Incident Commander of his presence, determine the status of Crisis Manager responsibilities, and relieve the Incident Commander of Crisis Manager responsibilities. Essential information for turnover to the Crisis Manager includes:
- The status of the emergency and response efforts;
  - The status of any injured personnel;
  - The actual emergency classification and the time the current classification, and any previous classifications, were determined;
  - The status of any offsite notifications that may be required; and
  - The status of any offsite warnings to affected members of the public.
- 5.3.1.4. Initiate any required emergency notifications not previously performed by the Incident Commander in accordance with EPIP-002, Emergency Classification and Notifications.
- 5.3.1.5. Establish and maintain communications with local, State and Federal authorities and corporate personnel.
- 5.3.1.6. Review, approve, and coordinate with the Communications Officer for release of all information required by outside agencies and the media.
- 5.3.1.7. Receive and evaluate reports provided by the Incident Commander and oversee all support efforts required by the Incident Commander.
- 5.3.1.8. IF notified by the Incident Commander of a change in Emergency Classification, THEN perform all required offsite notifications in accordance with EPIP-002, Emergency Classification and Notifications.
- 5.3.1.9. Oversee all operations of the Emergency Response staff under his command.
- 5.3.1.10. IF notified of a change in plant or meteorological conditions that may threaten the habitability of the occupied emergency response facility, THEN identify a suitable alternate facility and oversee relocation of the affected staff.

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5.3.1.11. Provide final approval for termination of the emergency situation and subsequent deactivation of the ~~ERO~~Emergency Response Organization.

5.3.2. The Communications Officer shall perform the following:

5.3.2.1. Establish and maintain communications with offsite authorities and the media under the direction of the Crisis Manager.

5.3.2.2. Arrange for ongoing communications and update appropriate authorities.

5.3.2.3. Release only that information that has been approved by the Crisis Manager.

5.3.3. The Security Officer shall perform the following:

5.3.3.1. Oversee all plant security and traffic control activities during the emergency.

5.3.3.2. Establish and maintain communications with public law enforcement officials as necessary to ensure proper crowd and traffic control.

5.3.3.3. Ensure proper accountability of visitors and contractor personnel during site evacuations in accordance with ~~Procedure XXX~~ EPIP-006, Site Evacuation and Personnel Accountability.

5.3.4. The Environmental Officer shall perform the following:

5.3.4.1. Consult with the Incident Commander regarding the containment of any releases and required spill control measures.

5.3.4.2. Advise the Crisis Manager regarding the proper response and reporting requirements associated with any releases, spills, or other environmental protection issues.

5.3.4.3. IF the event results in activation of the RCRA Contingency Plan, THEN execute the duties of, or provide support for, the Emergency Coordinator.

#### 5.4. ~~ERO~~Emergency Response Organization Deactivation

**NOTE:** ~~ERO~~Emergency Response Organization members are considered released from their ~~ERO~~Emergency Response Organization duties only when specifically released by the Crisis Manager or Incident Commander, as appropriate. ~~ERO~~Emergency Response Organization duties do not automatically end when the emergency declaration is downgraded or terminated.

~~4.1.1.~~5.4.1. When directed by the Crisis Manager or Incident Commander to terminate ~~ERO~~Emergency Response Organization activities, perform the following as appropriate:

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- 5.4.1.1. Return all non-consumable emergency equipment and supplies in good order to their original storage locations.
- 5.4.1.2. IF any emergency equipment or supplies are not in good working order, THEN notify the assigned ERO Emergency Response Organization ~~supervisor-officer~~ that repairs or replacements are required.
- 5.4.1.3. Remove any temporary boundaries, barriers, structures, or contamination control devices that are no longer required.
- 5.4.1.4. Dispose of all waste materials in the proper receptacles.
- 5.4.1.5. Complete any records that are required for the ERO Emergency Response Organization position held and forward these records to the assigned ERO Emergency Response Organization supervisor.
- 5.4.1.6. Confirm completion of all required activities with the assigned ERO Emergency Response Organization supervisor prior to terminating ERO Emergency Response Organization activities.

## 6. Records and Reports

- 6.1. Upon cessation of emergency operations, review, sign and date all records of ERO Emergency Response Organization activities.
- 6.2. Return completed forms to the assigned ERO Emergency Response Organization supervisor-Officer for review and retention.

## 7. References

- 7.1. 10 CFR 40, Application for Specific Licenses
- 7.2. 40 CFR 264, Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
- 7.3. 29 CFR 1910.120(q), Emergency Response To Hazardous Substance Releases
- 7.4. NRC Regulatory Guide 3.67, Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities
- 7.5. NRC Information Notice 93-60, Reporting Fuel Cycle and Materials Events to the NRC Operations Center
- 7.6. NRC Information Notice 93-60, Supplement 1, Reporting Fuel Cycle and Materials Events to the NRC Operations Center
- 7.7. NRC Information Notice 98-08, Information Likely To Be Requested If An Emergency Is Declared



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7.8. Metropolis Works Emergency Response Plan

7.9. Metropolis Works RCRA Contingency Plan

**ATTACHMENT 1 – EMERGENCY RESPONSE ORGANIZATION  
REPORTING LOCATIONS**

<b>Position</b>	<b>Primary Location</b>	<b>Alternate Location</b>
Crisis Manager	Admin Building	At personal discretion
Incident Commander	Control Point	Alternate Control Point
Communications Officer	Admin Building	As directed by Crisis Manager
Environmental Officer	Admin Building	As directed by Crisis Manager
Security Officer	Admin Building	As directed by Crisis Manager
Emergency Response Officer	Control Point or Control Room	Alternate Control Point
Radiation Officer	Control Point	Alternate Control Point
Control Room Officer	Control Room or Control Point	Alternate Control Point
Emergency Response Specialist	Control Room or Control Point	Alternate Control Point
Procurement Officer	Storeroom	As directed by Crisis Manager
Safety Officer	Control Point	Alternate Control Point
Maintenance Officer	Control Point	Alternate Control Point
ER Team Leaders	Control Point	Alternate Control Point
Electricians/Instrument Powerhouse Operator	Redhats - Control Point Others – Assembly Areas	Alternate Control Point
Fire, Rescue, HazMat	Control Point	Alternate Control Point
First Aid Officer	Dispensary	As directed by Incident Commander

Note: The primary Control Point is located at the phone booth south of the distillation door. Alternate locations include the Cylinder Wash Building, Ore Storage Building, or other locations designated by the Incident Commander.

## **1.0 General Description of the Plant/Licensed Activity**

Honeywell operates a privately-owned uranium hexafluoride conversion/deconversion facility at Metropolis, Illinois. At this facility, natural uranium ore concentrates are chemically converted into high purity uranium hexafluoride ( $UF_6$ ), and uranium hexafluoride can be deconverted into uranium oxides. The  $UF_6$  product from the facility is shipped to enrichment facilities for enrichment of the U-235 isotope. Following enrichment, the uranium is converted into fuel for use in nuclear power reactors.

The Metropolis Plant was originally built at this location to supply  $UF_6$  conversion for the U.S. Atomic Energy Commission under a five-year contract (1959-1964). Presently, however, the Metropolis facility supplies conversion services for the nuclear power industry.

### **1.1. Licensed Activity Description**

The Metropolis Plant is currently licensed to produce uranium hexafluoride by processing source material that is received as uranium ore concentrates in accordance with USNRC Source Material License No. SUB-526. The maximum inventory of source material authorized by the license is one hundred and fifty million (150M) pounds of natural uranium. The license also permits Honeywell to possess and use other types and forms of radioactive material as needed to support its uranium conversion operations, including:

- Cesium-137 (sealed sources) – 100 millicuries
- Depleted uranium (Yellowcake,  $U_3O_8$ ) – 150 pounds
- Unirradiated uranium ( $UF_4$ ) – 9,000 pounds
- Any licensed material with atomic numbers 1 – 100 (quality control samples) – 1 microcurie

The present plant is a multi-product chemical manufacturing facility producing sulfur hexafluoride, iodine and antimony pentafluoride, liquid fluorine, synthetic calcium fluoride, uranium oxides, and uranium hexafluoride. The production of uranium hexafluoride and uranium oxides are the only operations requiring licensing by USNRC pursuant to the provisions of 10 CFR 40. The production of uranium oxides from  $UF_6$  has been performed only on an experimental basis. The licensed facility is designed to produce about 14,000 short tons per year of uranium as  $UF_6$  from uranium concentrates. The plant feed usually assays about 80% uranium and the final  $UF_6$  product contains less than 300 parts per million impurities. In the Honeywell process, the ore concentrates feed is carried through the successive steps of feed preparation, reduction, hydro-fluorination, fluorination and distillation. Chemical reactions are carried out in fluid bed reactors. A simplified flow chart of the manufacturing process is presented in Figure 1.1.

### **1.2. Site and Facility Description and Process Description**

The Honeywell Metropolis Plant is located on approximately 1,000 acres of land in Massac County, at the southern tip of Illinois, along the North bank of the Ohio River. A general area map showing a five-mile radius around the plant is provided in Drawing No. MTW 2963. Drawing No. MTW 2963 also illustrates the locations of offsite emergency response facilities and special use facilities, such as hospitals, schools, and nursing homes. The site perimeter is formed by U.S. Highway 45 to the North, the Ohio River to the South, an industrial coal handling plant to the West and privately-owned land to the East. The company also owns approximately 80 acres of land northeast of U.S. 45, some of which is leased for farming operations. Plant operations are conducted in a double-fenced restricted area covering approximately 59 acres in the North Central portion of the site. Most of the land within a few miles of the site is relatively flat and dedicated to agricultural operations.

Most of the uranium processing equipment is housed in a six-story structure called the Feed Materials Building (FMB) where essentially all of the steps in the  $UF_6$  manufacturing process are conducted. Other areas and buildings in which operations are conducted involving the handling or processing of significant quantities of source material include the following:

- a. The Sampling Plant, where ore concentrates are received and sampled for subsequent uranium assay and impurities and moisture analyses.
- b. The Sodium Removal and Uranium Recovery Facilities, where high sodium content ore concentrates are treated to remove this impurity and where recycled materials are processed to recover contained uranium.
- c. The KOH Muds facility, where potassium diuranate solids generated in the fluorination scrubber system are separated from spent KOH liquors. The potassium diuranate is then processed through Sodium Removal and the spent KOH liquors are regenerated at the Calcium Fluoride - Environmental Protection Facility (EPF).
- d. The Calcining Facility, where the incoming ore concentrates and recovered uranium are dried as the first step in ore preparation.
- e. The Laboratory Building, which houses facilities for conducting process control and product and radiological control analyses.
- f. The Cylinder Wash Building, where  $UF_6$  product cylinders are periodically washed and hydrostatically tested prior to reuse.
- g. Outdoor pads, for the storage of ore concentrates and other uranium-bearing materials in drums and  $UF_6$  product cylinders.

Additional plant facilities that are involved directly in the  $UF_6$  manufacturing process, but do not involve the handling of any significant quantities of source material, include: a fluorine manufacturing facility; a fluoride waste treatment facility with five settling ponds; a powerhouse; a reductor off-gas incinerator; and two settling ponds to collect any uranium contained in pad run-off.

The Feed Materials Building is the processing area most likely to be the source of a major radioactive material (uranium hexafluoride) release, which could require activation of the Radiological Contingency Plan. The relationship of this processing area to other plant facilities, near-site facilities, and environmental monitoring stations is shown on Drawing No. MTW 4781.

There are approximately 500,000 people located within a 50-mile radius of the Metropolis Plant. Within a one-mile radius of the facility, the population is concentrated in the NNE and E sectors. About 500 people live within one (1) mile of this facility; in two (2) miles, the population is approximately 5,000. The workforce on-site during day shift is approximately 280 people with approximately 40 employees each on 2nd and 3rd shifts.

A flow chart of the process used for the conversion of uranium ore concentrates into  $UF_6$  is depicted in Figure 1.1, where the sources of effluents and emissions from the various process steps are also shown. The  $UF_6$  conversion and deconversion vessels important to safety were fabricated in accordance with ASME Codes. Special metals and alloys are used in  $UF_6$  service to

minimize the possibility of a  $UF_6$  release. Performance criteria for these systems are discussed in Section 2.

Descriptions of each major processing area and confinement and control systems follow.

#### **1.2.1. Sampling and Storage**

The plant normally receives uranium ore concentrates in 55-gallon drums. Each drum of ore concentrates is weighed, sampled, and then stored on storage pads until accountability procedures and the uranium and impurity analyses are completed.

#### **1.2.2. Pretreatment Facility**

Some ore concentrates and all uranium compounds from the uranium recovery facility contain undesirable amounts of contaminants, principally sodium, that must be removed. This pretreatment consists of a one-stage partial digestion treatment using sulfuric acid and the re-precipitation of dissolved uranium using ammonia. The uranium solids from this facility discharge into the ore calciner in the ore preparation section.

#### **1.2.3. Ore Preparation**

Incoming ore concentrates are charged into the system through a drum dumping station. The concentrates go directly to the ore preparation section via the calciner. Following the calcination, the ore concentrates are blended, agglomerated, dried, crushed, and sized to a uniform particle size. Dusts and fumes from this process are controlled by use of dust collectors.

#### **1.2.4. Reduction**

The sized uranium concentrates enter a fluidized bed reactor called the reductor. In the reductor, the mixed uranium oxides are reduced to the dioxide utilizing hydrogen, which is the reactant, and nitrogen as the fluidizing gases. Both hydrogen and nitrogen are obtained from the dissociation of ammonia. The reductor off-gas (principally hydrogen, nitrogen, water vapor and some hydrogen sulfide) is passed through filters to remove particulate uranium, and the residual gas is incinerated to burn the hydrogen and convert the hydrogen sulfide into sulfur dioxide.

#### **1.2.5. Hydrofluorination**

The uranium dioxide from the reductor is fed into two fluidized bed hydrofluorinators operated in series. A countercurrent flow of anhydrous HF fluidizing gas converts the uranium dioxide into uranium tetrafluoride ( $UF_4$ ). The off-gas is filtered to remove particulate uranium and scrubbed with water and potassium hydroxide solutions to remove HF before being vented to the atmosphere. The HF scrubber liquors are neutralized and treated to remove fluoride in the Environmental Protection Facility before being discharged with the main plant effluent.

#### **1.2.6. Fluorination**

The  $UF_4$  is fed into a fluidized bed fluorinator that also contains an inert bed material. Elemental fluorine, used as the fluidizing gas, converts the  $UF_4$  to  $UF_6$ , which is volatilized from the fluorinators. Residual uranium and nonvolatile uranium daughter products

remain in the bed material, which is recycled and reused until the buildup of contaminant levels prohibits further use. The bed material is then retired for radioactive decay and subsequent recovery of the uranium content. Gases from the fluorinator are passed through primary and secondary filters. After leaving the filters, the gases pass through primary cold traps where the bulk of the  $\text{UF}_6$  desublimates and is collected as a solid. When the fill level is reached, the primary cold traps are taken off line and heated to liquefy the  $\text{UF}_6$ . The  $\text{UF}_6$  is then drained into the distillation feed tanks. The capacity of each primary cold trap is approximately 40,000 pounds liquid at 200°F, but 18,000 pounds is the normal in-plant limit. The gas stream exits the primary cold traps and is then passed through secondary and tertiary cold traps for recovery of any  $\text{UF}_6$  not trapped in the primary system. When a secondary or tertiary trap is full, it is valved off and heated, and the  $\text{UF}_6$  is vaporized back to the primary cold traps.

#### 1.2.7. Distillation and Product Packaging

Crude  $\text{UF}_6$  from the still feed tanks is gravity fed to a vaporizer through a control valve to maintain a constant weight in the vaporizer. The  $\text{UF}_6$  from the vapor phase of the vaporizer is fed to the low boiler distillation column. The  $\text{UF}_6$  that has been stripped of low boiling impurities is then fed through a flow control valve to the high boiler still. The  $\text{UF}_6$  product comes off vapor phase from the high boiler column, is condensed, and flows as a liquid into the product cylinder.

Prior to filling each  $\text{UF}_6$  product cylinder, the cylinder fill line (pigtail) is thoroughly inspected. New gaskets are installed, and the pigtail is leak-tested before flow to the cylinder is initiated. Cylinder overfilling is prevented by strict adherence to weight limitations. Two load cells are utilized at each cylinder fill spot to give continuous readings of the weight of  $\text{UF}_6$  in the cylinder. A totalized weight from an orifice flow meter is also utilized to monitor the amount of  $\text{UF}_6$  in the cylinder during the fill process. Additionally, operating experience indicates product distillation rate can reliably be used to confirm load cell readings. Refer to Honeywell's application for renewal of Source Material License (SUB-526), Section C-1.5.1 for a detailed packaging procedure.

After the product flow is shut off, the pigtail is thoroughly evacuated before breaking connections. The cylinder weight is then verified using a crane scale before the cylinder is moved to the cylinder buggy for a final weighing.

Plant personnel are always present when cylinder connections, leak testing, sampling, and disconnections are made. A  $\text{UF}_6$  leak can be immediately recognized by the visible white vapor that occurs when it reacts with moisture in the air. A small leak may be terminated by "freezing off" the leak using pressurized  $\text{CO}_2$ .

Full product cylinders are moved within the process building by use of equipment specially designed to minimize the probability of damaging a hot product cylinder. Two persons are always in attendance during cylinder moving operations. Production personnel make a visual inspection of cables, lifting eyes, clevises, and strong backs. Proper operation of the cylinder crane is confirmed before each series of lifts involving a hot  $\text{UF}_6$  cylinder. Cylinder movements are performed carefully and slowly while minimizing the required vertical lift. In addition, the cylinder crane is inspected and serviced weekly as part of the plant preventative maintenance program.

After weighing, the filled cylinders are transported on specially-designed cylinder buggies to the product cylinder cooling area. The full cylinders remain on these buggies for a

minimum of four days to allow the liquid  $UF_6$  to cool and solidify before they are located on storage cradles.

All  $UF_6$  product cylinders and valves are manufactured and inspected in accordance with the provisions of ANSI N14.1.

#### **1.2.8. Uranium Recovery**

Different types of uranium-bearing liquors are processed in Wet Process/Uranium Recovery to recover as much uranium as possible. These include FMB and cylinder wash liquors, rainwater from certain storage pads, and Fluorination scrubber liquors. Regardless of the origin of the uranium-bearing liquors, the uranium is precipitated from solution by pH adjustment, separated from the solution using rotary drum vacuum filtration, and returned to the process via Ore Preparation. The liquors in each case are treated in the Environmental Protection Facility (EPF) to remove fluorides and then discharged into the plant effluent.

Fluorination scrubbing liquors, which contain potassium diuranate solids, may also be shipped to a mill for toll reprocessing.

#### **1.2.9. Cylinder Wash Facility**

Periodically,  $UF_6$  product cylinders must be washed and pressure tested to assure integrity and to conform to DOT regulations. The cylinders are washed with sodium carbonate solution to leach the uranium from the residual solids. The leach liquors are then filtered to remove particulates and transferred to the uranium recovery facility. The remaining solids which contain daughter products of uranium, principally Th-234 and Pa-234, are disposed of at a low-level radioactive waste disposal facility.

#### **1.2.10. Fluorine Production**

Fluorine, which is one of the raw materials required for the  $UF_6$  process, is produced on-site by electrolysis of hydrogen fluoride. A portion of this material is consumed in the  $UF_6$  operation, and the remainder is used to produce other fluorine-based chemical products.

### **1.3. Waste Confinement and Effluent Controls**

#### **1.3.1. Gaseous Effluents**

All areas in the  $UF_6$  process that produce dusts, mists, or fumes containing uranium or other toxic hazardous materials are provided with dust collectors, scrubbers, or ventilation equipment to reduce employee and environmental exposures. Refer to the Source Material License SUB-526 for cold traps and off-gas cleanup.

The ventilation system used in the  $UF_6$  process area consists of a series of fresh air intake units and a series of exhaust fans. The total air flow through the process building is sufficient to ensure a complete air changeout approximately once every five minutes.

The main control room has an emergency fresh air blower used to maintain positive pressure. The emergency blower and the heat and air conditioning systems are connected to a common fresh air ventilation duct located outside the  $UF_6$  process building.

An in-line damper is used to take in air from either the East or West side of the UF<sub>6</sub> process building.

There are approximately (52) individual stacks and exhaust fans associated with the operation of the UF<sub>6</sub> facility which could contain significant concentrations of uranium. These exits are sampled continuously at isokinetic flow conditions. Stack samples that could have a high loss potential are collected twice per 24 hours and are counted for alpha radioactivity. If the loss potential is small, the samples are collected once every 24 hours.

In addition to the analysis of air samples, operating personnel provide continuous surveillance of the operation of pollution control equipment. Analytical samples are routinely analyzed to insure that emissions are minimized. Other precautions are taken as necessary to insure optimum performance of pollution control equipment.

Stack discharge alarms have not been found to be feasible for use in the large number of plant stacks that are continuously sampled for natural uranium. Operational and administrative controls are utilized to shut down equipment when the concentration of uranium in the exit stack exceeds the established administrative limit for that stack.

A release of UF<sub>6</sub> could occur when equipment containing this material is opened for inspection or maintenance activities. Normally two or more individuals are present during these activities. They would be able to detect a UF<sub>6</sub> leak immediately, and in most cases, stop the source of the leak at that time. Administrative controls, including Emergency Operating Procedures and Emergency Plan Implementing Procedures, are utilized when the leak cannot be immediately contained.

Accidental spills and releases of other hazardous chemicals such as hydrofluoric acid (HF), fluorine (F<sub>2</sub>), or ammonia (NH<sub>3</sub>) are not expected to have a significant impact on UF<sub>6</sub> operations because the UF<sub>6</sub> operations control room is maintained under a positive pressure. An auxiliary fresh air blower is also available to prevent entry of hazardous gases into the Control Room during an emergency. Additionally, minimal inventories (in process lines) are maintained in the Feed Materials Building. Bulk storage for these hazardous chemicals is provided outdoors away from the Feed Materials Building.

### **1.3.2. Liquid Effluents**

All liquid wastes from the facility are discharged through the main effluent via natural drainage into the Ohio River. The main plant effluent is continuously sampled, and the composite sample is analyzed daily for uranium. Suspended solids, pH, and fluoride are analyzed in accordance with the NPDES permit.

Wastewater that may contain uranium, except the HF water scrubber liquors and the uranium recovery leach liquors, is routed through settling ponds No. 3 and No. 4 which are used as uranium spill control ponds. These ponds receive spent ammonium sulfate solutions from the pretreatment facility and all other uranium-contaminated water that does not contain significant fluoride concentrations. As the effluent leaves the second uranium pond, a flow totalizer records the flow, and a flow proportional 24-hour composite sample is collected. The pH and uranium content of the composite sample is analyzed daily. The effluent from the uranium settling ponds is then mixed with the remainder of the facility effluent before the plant outfall is sampled.



Administrative controls are utilized in conjunction with daily sampling to limit liquid effluent concentrations of uranium. The administrative investigation level is established at 10% of the NRC public dose limit, which is considered ALARA for materials facilities. In the event of a major spill that could significantly increase effluent water concentrations of uranium, additional controls, e.g., diking, neutralization, etc., are utilized to minimize the environmental impact.

### **1.3.3. Solid Materials**

Radioactive solid wastes are generated from routine operation of the  $UF_6$  facility. The routine wastes generated consist primarily of contaminated blotting paper, floor sweepings, cleaning rags, etc. Disposal of this contaminated trash is accomplished through a licensed radioactive waste disposal firm. The solid radioactive materials generated in the uranium recovery facility consist primarily of inorganic fluorides that contain residual natural uranium, natural thorium, and uranium daughter products. These materials are shipped to a licensed disposal site. As an alternative, solid wastes in the form of bed material and filter fines may be shipped off-site for recovery of uranium and subsequent recycle.

### **1.3.4. Contaminated Equipment**

Contaminated pieces of process equipment and piping being discarded are decontaminated when feasible. They are then compacted before disposal at a licensed site. Non-contaminated scrap metal is sold to various scrap metal dealers. Thorough radiation monitoring is performed to assure that the residual radioactivity level is below applicable NRC guidelines.

## **1.4. Process Design and Construction**

All major equipment is of standard chemical plant design and construction. Vessels critical to safe operation are constructed in accordance with ASME Codes. Process flow diagrams, and safety and control instrumentation used in the major process areas are depicted in Drawings MTW 2869, 3392, 3393, 3396, 3401, and 3010 in "Appendix D."

The Feed Materials Building is the only location that contains significant quantities of liquid  $UF_6$ . Process vessels that may contain significant quantities of  $UF_6$  are listed in Table 1.1.

The location of additional significant quantities of radioactive and non-radioactive materials is shown on Figure 1.4, Drawing MTW 4781.

## **1.5. Summary of Site Hazards and Emergency Operations**

Table 1.1 provides a summary of the quantities of  $UF_6$  typically present in specific equipment in the Feed Materials Building.

The Honeywell, Metropolis Works facility complies with the EPA SARA Title III regulations also known as the "Emergency Planning and Community Right-To-Know Act of 1986." These regulations require submission of certain Material Safety Data Sheets (MSDS) to County and State Emergency Planning Agencies (SARA 311), the submission of a hazardous chemical inventory (SARA 312), and the annual emission of certain regulated chemicals (SARA 313). A hazardous chemicals inventory for the Metropolis plant is provided in Section B of the ERP. The list contains the chemical by name, the typical

quantity on site, and the primary locations of use and storage. Typical quantities will vary somewhat, depending on the production requirements. Section B of the ERP also provides a listing of the chemicals used and stored onsite for which Honeywell has submitted MSDS to the Massac County Fire Department and Emergency Planning Commission and to the Illinois Emergency Management Agency.

During an emergency situation, the communications and emergency response activities are coordinated and implemented from multiple response stations. Ongoing plant operations and certain plant communications, such as operation of the site evacuation siren, are directed from the Control Room. Direct assessment and control of the incident are exercised by assigned supervisory and emergency response team personnel from the Control Point. There are three pre-designated Control Points to provide a range of options that are adequate to address a wide range of incident locations, potential release points and meteorological conditions. On-scene personnel are supported by management and technical personnel who respond to the plant Administrative Building or other designated location. These personnel provide technical, administrative, and offsite communications support. Additional personnel staff the Dispensary to provide required first aid services.

**TABLE 1.1**  
**TYPICAL QUANTITIES OF UF<sub>6</sub> IN FEED MATERIALS BUILDING**

<u>Basement Equipment</u>		<u>UF<sub>6</sub></u>	<u>3rd Floor</u>	
UF <sub>6</sub> Vaporizer		10,000 lbs.	#1 Still Feed Tank	20,000 lbs.
UF <sub>6</sub> Vaporizer Flush Pot		100 lbs.	#2 Still Feed Tank	20,000 lbs.
High Boiler Still		1,000 lbs.	#3 Still Feed Tank	20,000 lbs.
**Low Boiler Still		2,000 lbs.		
High Boiler Pot		10,000 lbs.	<u>4th Floor</u>	
Low Boiler Pot		10,000 lbs.	1A Primary Cold Trap	9,000 lbs.
			2A Primary Cold Trap	9,000 lbs.
			3A Primary Cold Trap	9,000 lbs.
			4A Primary Cold Trap	9,000 lbs.
			1B Primary Cold Trap	9,000 lbs.
			2B Primary Cold Trap	9,000 lbs.
			3B Primary Cold Trap	9,000 lbs.
			4B Primary Cold Trap	9,000 lbs.
			Alt. Primary Cold Trap	9,000 lbs.
			Product Condenser	200 lbs.
<u>1st Floor</u>			<u>5th Floor</u>	
UF <sub>6</sub> Cylinder Fill #1	}	Normally one station has 27,000 lbs. Other three are empty.	1A Secondary Cold Trap	1,700 lbs.
UF <sub>6</sub> Cylinder Fill #2			2A Secondary Cold Trap	1,700 lbs.
UF <sub>6</sub> Cylinder Fill #3			3A Secondary Cold Trap	1,700 lbs.
UF <sub>6</sub> Cylinder Fill #4			1B Secondary Cold Trap	1,700 lbs.
Sampling System		100 lbs, 50 lbs.	2B Secondary Cold Trap	1,700 lbs.
Sample Cold Traps		in one. Other empty.	3B Secondary Cold Trap	1,700 lbs.
			1A Tertiary Cold Trap	1200 lbs.
<u>2nd Floor</u>			2A Tertiary Cold Trap	1200 lbs.
"A" Fluorinator	}	Normally two on line containing 20 lbs.	1B Tertiary Cold Trap	1200 lbs.
"B" Fluorinator			2B Tertiary Cold Trap	1200 lbs.
"C" Fluorinator			Sample Cold Trap	1000 lbs.
UF <sub>6</sub> Dump Tank			UF <sub>6</sub> Surge Tank	-0-
		0 lbs.		
<u>6th Floor</u>				
#1 Low Boiler Still Condenser	}	Normally one is on line and contains 200 lbs.		
#2 Low Boiler Still Condenser				
#3 Low Boiler Still Condenser				
#4 Low Boiler Still Condenser				
A1 Primary Fluorination Filter		Normally, two sets of filters on line containing approximately 75 lbs.		
A2 Primary Fluorination Filter				
A-3 Primary Fluorination Filter				
B1 Primary Fluorination Filter				
B2 Primary Fluorination Filter				
B3 Primary Fluorination Filter				
C1 Primary Fluorination Filter				
C2 Primary Fluorination Filter				
C3 Primary Fluorination Filter				
A1 Secondary Fluorination Filter				
A2 Secondary Fluorination Filter				
A3 Secondary Fluorination Filter				
B1 Secondary Fluorination Filter				
B2 Secondary Fluorination Filter				
B3 Secondary Fluorination Filter				
C1 Secondary Fluorination Filter				
C2 Secondary Fluorination Filter				
C3 Secondary Fluorination Filter				

\* Located on Floors Basement through 2nd.

\*\* Located on Floors Basement through 5th.

**Emergency Response Team Activities****1. Purpose and Scope**

This procedure provides the instructions for Emergency Response Team (~~ERT~~Emergency Response Team) activities in response to an emergency conditions, such as a fire, injury, or hazardous materials leak.

**2. Discussion**

The Metropolis Works Emergency Response Plan establishes requirements for activating the site Emergency Response Organization (ERO) as may be needed to support the plant operating staff during emergency conditions. The Emergency Response Team serves as one part of the ERO. The plan addresses ~~ERT~~Emergency Response Team organization, staffing levels, and activities in response to specific emergency conditions.

Three levels of emergency exist, in ascending order of severity, as follows:

Plant Emergency – A minor incident or situation that deviates from normal operation and that could, under certain conditions, escalate to an Alert, although this is unlikely.

Alert – An incident that has led or could lead to a release to the environment of radioactive or other hazardous material, but the release is not expected to require a response by an offsite response organization to protect persons offsite.

**NOTE:** An Alert or Plant Emergency may require offsite support for onsite protective actions, such as fire-fighting or medical support.

Site Area Emergency – An incident that has led or could lead to a significant release to the environment of radioactive or other hazardous material and that could require a response by an offsite organization to protect persons offsite.

The Emergency Response Team may be activated as part of a full Emergency Response Organization activation or by itself as necessary to respond to lower level emergencies or isolated events.

**3. Precautions and Limitations**

This procedure must be used simultaneously with other facility procedures, such as the Emergency Plan Implementing Procedures (EIPs), to ensure effective control of emergency conditions.

**4. Prerequisites**

- 4.1. The Incident Commander has issued instructions to activate ~~the all entire ERO or~~ part of the Emergency Response Organization, including the Emergency Response Team, to respond to an onsite event OR an individual has noted an injury and made the CODE ONE announcement on the plant paging system.

## 5. Procedure

### 5.1. ~~ERT~~Emergency Response Team Activation

- 5.1.1. Upon notification of ~~ERT~~Emergency Response Team activation, quickly restore work area to a safe condition and proceed to the designated ~~ERT~~Emergency Response Team assembly area.
- 5.1.2. Upon arrival at the designated assembly area, report to the ~~ERT~~Emergency Response Team Leader and complete assigned duties.
- 5.1.3. Refer to Attachment 1 of this procedure for guidance on personal protective equipment available at the Metropolis plant.
- 5.1.4. Offsite emergency response support may be needed to address plant fires, security breaches, and injuries. IF offsite support is requested, THEN notify security to open gate for emergency vehicle entry and exit.

### 5.2. ~~ERT~~Emergency Response Team Response to Personnel Injuries

**NOTE:** Triage is the screening and classification of sick, wounded or injured persons to determine priority needs in order to ensure the efficient use of medical manpower, equipment and facilities. Within the scope of the Emergency Response Plan, only competent medical personnel trained to carry out such decisions will perform triage. In the absence of the Plant Physician, the Occupational Health Nurse will perform these duties.

- ~~4.1.4.~~5.2.1. IF the event involves multiple injuries requiring offsite support, THEN coordinate transport and treatment of injured personnel with State and local emergency response personnel, as needed.
- 5.2.2. Conduct rescue operations using the most suitable rescue technique consistent with the immediate hazard and the patient's condition. In all emergency situations, personnel welfare will be the first consideration.
- 5.2.3. The First Aid Officer will request physician and ambulance support through the Crisis Manager, as necessary. IF the Crisis Manager position is not staffed, THEN coordinate contact with offsite support agencies for physicians and ambulances.
- 5.2.4. The Plant Nurse and/or Dispensary Personnel will stand by to assist as necessary.
- 5.2.5. IF the injury or illness is minor (whether work-related or personal), but a physician's examination is advisable or requested, THEN the employee may be transported by taxi, or if not available, in the Security Guard's vehicle. The employee is allowed to drive his/her personal car upon the discretion of the First Aid Responder.

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- 5.2.6. IF a serious injury or illness occurs, THEN call 911 and request an ambulance. Be prepared to give employee's sex, age (approximate), and condition and/or nature of injury or illness.
- 5.2.7. IF the injury is due to exposure to hydrofluoric acid, THEN the First Aid Responder should go in the ambulance with the patient and continue ZEPHIRAN® soaks or application of calcium gluconate gel while en route to the hospital.
- 5.2.8. IF the patient's condition is, or is suspected to be, work-related, THEN the patient should be transported to the hospital and examined by the physician on call.
- 5.2.9. IF the patient's condition is not work-related and the patient is conscious of his actions, THEN he/she may request to be taken directly to Western Baptist or Lourdes Hospital. This decision rests with the ambulance attendant, who will render judgment depending upon the patient's condition.
- 5.2.10. IF there is a severe accident requiring that an employee be sent to the hospital or a hydrofluoric acid exposure requiring injections, THEN call the Company Physician (Refer to Plant Telephone List).
- Identify yourself from Honeywell.
  - Give information regarding the injured personnel and extent of injuries that you observed.
  - Give name of hospital where victim or victims were transported.
- 5.2.11. IF an injured person is transported to the hospital, THEN call the following as soon as possible (Refer to Plant Telephone List):
- Occupational Health Nurse
  - Safety/Medical Leader (or Safety Cell Phone)
  - Appropriate Department Manager
- 5.2.12. IF the ~~employee individual~~ is transported from the plant ~~with potentially contaminated skin or plant clothing without radiological survey~~, THEN call the Health Physics Supervisor, or designated alternate, as soon as possible to initiate follow-up contamination surveys.

### 5.3. ~~ERT~~Emergency Response Team Response to Plant Fires

- 5.3.1. Upon arrival, the Emergency Response Team Leader, under the direction of the Incident Commander, will assume command of the area and all associated personnel.
- 5.3.2. For the purposes of fire fighting, the initial duty assignments are as follows:

Team Leader: Maintenance/Production Foreperson

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1st Man Reporting: Nozzle Man  
2nd Man Reporting: Hydrant Man  
3rd Man Reporting: Assistant Nozzle Man  
Additional Personnel: As Assigned

**NOTE:** Duties of the ERTEmergency Response Team will include incipient interior and all exterior fire fighting, spill and leak control, personnel rescue, and emergency control procedures where their expertise and training may be utilized. The ERTEmergency Response Team's firefighting activities are limited to extinguishing the initial stages of a fire. The ERTEmergency Response Team shall not remain inside buildings/ structures to fight fires that progress beyond incipient stages.

**NOTE:** Turnout gear is stored in #2 and #4 hose houses and the Emergency Response Vehicle. Turnout gear is to be used only for fire fighting purposes.

4.1.3.5.3.3. Turnout gear for personnel responding to the fire includes:

- Fireman's Helmet with face shield
- Nomex Head Cover
- Turnout Coat
- Turnout Pants
- Fireman's Gloves
- Boots-knee length – insulated

4.1.4.5.3.4. ERTEmergency Response Team personnel may use firewater hoses to suppress incipient fires; however, outside fire departments must be involved for all internal structural fire fighting.

#### 5.4. ERTEmergency Response Team Response to Hazardous Materials Incidents

**NOTE:** For the following events, the ERTEmergency Response Team may be replaced or assisted by other plant personnel. The RCRA Contingency Plan provides additional details regarding control of events involving hazardous wastes.

4.1.1.5.4.1. Upon arrival at the scene of an emergency involving hazardous materials, the ERTEmergency Response Team will perform the following:

- 5.4.1.1. Clear the area of all personnel not involved in emergency response activities.
- 5.4.1.2. Administer first aid in accordance with this procedure.
- 5.4.1.3. Take appropriate measures to stop and/or contain the release to prevent the material from reaching the plant effluent.

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- 5.4.2. IF the material is acidic or basic, THEN neutralize the spilled material with a neutralizing agent.
- 5.4.3. IF the material is basic, THEN neutralize spilled basic material with sodium bicarbonate.
- 5.4.4. IF the release involves a discharge, release, spill, overflow or potential failure at the laboratory waste storage area or the used oil storage area, THEN apply absorbent material.
- 5.4.5. IF the release involves a container leak or spill within the container storage area or during transfer/loading operations, THEN use sorbent materials to collect liquids from the sump and floor area.
- 5.4.6. IF the release involves a spill or leak during container transfer/loading operations, THEN use sorbent booms and pads for containment and removal of spilled wastes and washwaters.

#### 5.5. ERTEmergency Response Team Deactivation

**NOTE:** ERTEmergency Response Team members are considered released from their ERTEmergency Response Team duties only when specifically released by the ERTEmergency Response Team Leader and Incident Commander. ERTEmergency Response Team duties do not automatically end when the emergency situation is terminated.

4.1.1.5.5.1. When directed by the ERTEmergency Response Team Leader to terminate ERO activities, as appropriate, perform the following:

- 5.5.1.1. Return all non-consumable emergency equipment and supplies in good order to their original storage locations.
- 5.5.1.2. IF any emergency equipment or supplies are not in good working order, THEN notify the ERTEmergency Response Team Leader that repairs or replacements are required.
- 5.5.1.3. Remove any temporary boundaries, barriers, structures, or contamination control devices that are no longer required.
- 5.5.1.4. Dispose of all waste materials in the proper receptacles.
- 5.5.1.5. Complete any records that are required and forward these records to the assigned ERTEmergency Response Team supervisor.
- 5.5.1.6. Confirm completion of all required activities with the assigned ERTEmergency Response Team Leader prior to terminating ERTEmergency Response Team activities.



## 6. Records and Reports

- 6.1. For all injuries or illnesses, work-related or personal, record the incident on the Medical Log.
- 6.2. Upon cessation of emergency operations, review, sign and date all records of ERT Emergency Response Team activities.
- 6.3. Return completed forms to the ERT Emergency Response Team Leader for review and retention.
- 6.4. If an incident results in an employee death or hospitalization of three (3) employees within thirty (30) days after the incident occurs, notify the Safety Leader to perform the OSHA notification within eight (8) hours after receiving the information.

## 7. References

- 7.1. 10 CFR 40, Application for Specific Licenses
- 7.2. 40 CFR 264, Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
- 7.3. 29 CFR 1910.120(q), Emergency Response To Hazardous Substance Releases
- 7.4. NRC Regulatory Guide 3.67, Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities
- 7.5. NRC Information Notice 93-60, Reporting Fuel Cycle and Materials Events to the NRC Operations Center
- 7.6. NRC Information Notice 93-60, Supplement 1, Reporting Fuel Cycle and Materials Events to the NRC Operations Center
- 7.7. NRC Information Notice 98-08, Information Likely To Be Requested If An Emergency Is Declared
- 7.8. Metropolis Works Emergency Response Plan
- 7.9. Metropolis Works RCRA Contingency Plan

**Attachment 1 - Levels of Personal Protective Equipment**

The Environmental Protection Agency (EPA) defines four levels of protection based on the degree of protection needed for the emergency.

**Level A** - Provides the highest level of skin, respiratory and eye protection. MTW personal protective equipment worn for Level A consists of:

- Fully encapsulated chemical suit with integral boots and gloves
- Positive pressure, full-face piece, Self-Contained Breathing Apparatus (SCBA), pressure demand or positive-pressure supplied-air respirator with SCBA for escape
- Inner chemical-resistant gloves (nitrile or Silver Shield®)
- Inner pull-over boots
- Hard hat

**Level B** - Provides the highest level of respiratory protection, but a lower level of skin protection. MTW personal protective equipment worn for Level B consists of:

- Hooded chemical-resistant clothing or acid suit (neoprene or polyvinyl chloride)
- Positive pressure, full-face piece, Self-Contained Breathing Apparatus (SCBA), pressure demand or positive-pressure supplied-air respirator with SCBA for escape
- Outer, chemical-resistant boots with steel-toed shank
- Inner chemical-resistant gloves (nitrile or Silver Shield®)
- Outer, chemical-resistant gloves
- Hard hat

**Level C** - Provides a lower level of skin, respiratory and eye protection; used only with specific known substances at acceptable concentrations. MTW personal protective equipment for Level C consists of:

- Chemical resistant clothing or acid suit (neoprene, polyvinyl chloride, or polypropylene)
- Full-face or half-mask air purifying respirator (NIOSH approved)
- Inner chemical-resistant gloves (nitrile or Silver Shield®)
- Outer, chemical-resistant gloves
- Outer, chemical-resistant boots with steel-toed shank
- Hard hat
- Safety glasses

**Level D** - Provides minimal protection from chemical exposure. MTW personal protective equipment for Level D consists of:

- Coveralls
- Chemical-resistant boots or shoes with steel-toed shank
- Hard hat
- Safety glasses

### **Employee Evacuation and Accountability**

#### **1. Purpose and Scope**

This procedure provides instructions for initiating, completing, and recording facility evacuations and accountability actions in response to emergency conditions at the Metropolis Plant.

#### **2. Discussion**

The Metropolis Works Emergency Response Plan establishes requirements for evacuating site employees and ensuring accountability under specified emergency conditions. These measures may be necessary to protect employees from hazardous conditions in the plant, ensure proper staffing of the Emergency Response Organization, and maintain the security of the facility.

Three levels of emergency exist, in ascending order of severity, as follows:

Plant Emergency – A minor incident or situation that deviates from normal operation and that could, under certain conditions, escalate to an Alert, although this is unlikely.

Alert – An incident that has led or could lead to a release to the environment of radioactive or other hazardous material, but the release is not expected to require a response by an offsite response organization to protect persons offsite.

**NOTE:** An Alert or Plant Emergency may require offsite support for onsite protective actions, such as fire-fighting or medical support.

Site Area Emergency – An incident that has led or could lead to a significant release to the environment of radioactive or other hazardous material and that could require a response by an offsite organization to protect persons offsite.

Evacuation and accountability are required for any hazardous material release that poses a hazard to employee health and safety or at the discretion of the Incident Commander or Crisis Manager.

#### **3. Precautions and Limitations**

- 3.1. This procedure must be used simultaneously with other facility procedures, such as the other Emergency Plan Implementing Procedures, to ensure effective control of emergency conditions.
- 3.2. Extreme caution must be used during employee evacuation activities to ensure employee protection from hazards, such as falls and hazardous material releases.

#### 4. Prerequisites

- 4.1. The Incident Commander has declared an emergency in accordance with EPIP-002, Emergency Classification and Notifications, and issued instructions to initiate evacuation and accountability procedures.

#### 5. Procedure

- 5.1. When notified of a condition requiring employee evacuation and accountability, the operator will:

- 5.1.1. Using the plant paging system, announce the condition, evacuation, and any precautions, three (3) consecutive times as follows:

**EXAMPLE**

**"Evacuate the Feed Materials Building; there has been a UF6 release.."**

- ~~4.1.2.~~5.1.2. Sound the building evacuation alarm and activate the flashing red light system.

- 5.1.3. After approximately three (3) minutes, repeat the announcement on the plant paging system.

- 5.2. When the alarm is sounded, affected personnel will:

- 5.2.1. IF located in, or passing near, the affected area, THEN put on respirator.
- 5.2.2. Complete any required actions to secure the area, as listed in Attachments 3 through 8.
- 5.2.3. Following all prescribed precautions, use the stairways to either leave the building or go to the Control Room.

**WARNING: DO NOT USE THE MAN LIFT.**

- ~~4.3.5.3.~~ All plant personnel not directly involved with controlling the release will report to areas specified on Attachment 1, Emergency Assembly and Notification, for accountability processing. IF unable to access the designated area, THEN go to another designated location and notify the census-taker at the primary location.

- 5.4. All non-MTW personnel must report as instructed to the guard at either the main gate or the construction gate.

- 5.5. Emergency Response Team members shall report directly to the Control Point.

- 5.6. Conduct the personnel census as follows:

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- 5.6.1. The assigned census taker at each assembly location will record personnel reporting to that location on Attachment 2, Emergency Census Record Form, or other appropriate forms.
  - 5.6.2. The Emergency Response T-Team Leader will complete the Emergency Response Team census and provide the census to the census taker at that location.
  - 5.6.3. As the census is completed at each assembly point, report the results to the Incident Commander by phone at 6383 or 6280 (or as announced) or by radio.
- 5.7. Following completion of the census, plant employees will remain at the assigned assembly points until otherwise directed by the responsible Emergency Response Organization RO Officer.
6. Records and Reports
  - 6.1. Attachment 2, Emergency Census Record Forms, or other forms used to record the census, will be completed by the assigned census taker at each assembly location and reviewed by the responsible Emergency Response Organization Officer.
  - 6.2. Attachments 3-8 will be completed by the individuals completing the required actions and reviewed by the responsible Emergency Response Organization Officer. The responsible Emergency Response Organization Officer will review the forms and take steps to resolve any discrepancies.
  - 6.3. Return completed forms to the assigned Emergency Response Organization Officer for review and retention with records of the emergency event.
7. References
  - 7.1. 10 CFR 40.31, Application for Specific Licenses
  - 7.2. 40 CFR 264, Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
  - 7.3. 29 CFR 1910.120(q), Emergency Response To Hazardous Substance Releases
  - 7.4. NRC Regulatory Guide 3.67, Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities
  - 7.5. NRC Information Notice 93-60, Reporting Fuel Cycle and Materials Events to the NRC Operations Center
  - 7.6. NRC Information Notice 93-60, Supplement 1, Reporting Fuel Cycle and Materials Events to the NRC Operations Center

7.7. NRC Information Notice 98-08, Information Likely To Be Requested If An  
Emergency Is Declared

7.8. Metropolis Works Emergency Response Plan

7.9. Metropolis Works Radiological Contingency Plan

**Attachment 1 – Emergency Assembly and Notification**

PERSONS ON SITE	ASSEMBLY AREA	Notify:	Notify:
EMERGENCY RESPONSE PERSONNEL			
All Maintenance and Production Red Hats	Control Point	Emergency Response Team Leader (Days) Emergency Response Officer (shift)	Incident Commander At Control Point
Non-ERT Maintenance Personnel			
Mechanics, Painters, Janitors	Shop Fabrication Area	Non-UF6 Maintenance Supervisor at 6325	Incident Commander At Control Point
Instrument and Electrical	Instrument Shop		
Reliability and Engineering	Offices		
Sampling Plant	Sampling Plant Lunchroom		
Note: All Maintenance Personnel and janitors on Off-Shift, Weekends, and Holidays Report to Control Point.			
Non-ERT Production Personnel			
UF6 Production Personnel	FMB Control Room	FMB Foreperson	Incident Commander At Control Point
Safety Laundry	Area Outside South SGF2	NGF2 Operator at 6367	
Safety Operator			
Lawn			
North Laundry	Work Area or Area Control Rooms		
Sodium Removal, "U" Recovery & KOH Muds			
SGF2			
NGF2			
F2 Products			
Yard			
Waste Handlers	Sampling Plant Lunchroom		
Sampling Plant			
EPF – CaF2			
Powerhouse			
Production Engineers			
Other Personnel			
Administration	Admin. Lunch Room	Communications Officer	Incident Commander At Control Point
Capital Projects Engineers	Offices	Lab Team Leader or	
Health Physics	Health Physics Lab		
Environmental	Health Physics Lab	Lab Tech at 6329	
Laboratory	Lab Lunch Room		
Nurse	Dispensary	Stores Supervisor	
Safety			
Service and Stores	Stores Office		
Plant Security, Visitors &	Guard Station		
Other Non-MTW Personnel	(Main or Construction as Instructed)	Guard	

Phone numbers for most commonly used Control Points – South Distillation Door, Ore Storage, and Cylinder Wash (6383/6280) – FMB Control Room (6290) Radios may also be used to report census.

**Attachment 2 – Emergency Census Record Form**

Location \_\_\_\_\_

Date: \_\_\_\_\_

NAME	NAME

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_



**Attachment 3 - Maintenance Personnel Checklist**

Activity	Time	Initial
Shop personnel assembled near the West vehicle door?		
FM Building and shift maintenance* assembled near the South vehicle door?		
GF <sub>2</sub> personnel assembled near the tool crib door?		
Electrical and instrument personnel assembled in the Electrical and Instrument Shops?		
Fluorine products personnel assembled near the shop band saw?		
Construction personnel assembled in the Fabrication Area East Wall?		
Personnel assigned to the Sampling Plant reported census by phone to ext. 6244?		
Maintenance Foreman, Supv. of Reliability Engineering, and Supv. of Plant Engineering reported census to Maintenance Supv. or Supv. Of Reliability Engineering?		
HVAC (Maint. Engr. – Lunch Room – Training Room) Equipment Shutdown?		
Total Maintenance census and HVAC status reported to Incident Commander (Ext. 6383/6280).		

Personnel assigned to the Emergency Response Team will report to the Control Point. Census will be given to the Census Taker at the Control Point.

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

**Attachment 4 - Production Personnel Accounting**

Activity	Time	Initial
Yard, Cylinder Wash		
Waste Handlers		
Decontamination		
Sodium Removal		
U-Recovery		
KOH Recovery		
Powerhouse		
EPF-C <sub>8</sub> F <sub>2</sub>		
South Fluorine Plant		
North Fluorine Plant		
Fluorine Products		
Sampling Plant		
Janitors		
HVAC Equipment Shutdown?		
Power House		
EPF - CaF <sub>2</sub>		
S. Fluorine Plant		
N. Fluorine Plant		
Production Offices		
SF <sub>6</sub> - IF <sub>5</sub> - SbF <sub>5</sub>		
Sampling Plant		
Wet Process		
KOH Muds		
Cylinder Wash Building		
Total Production census (other than UF <sub>6</sub> shift operating personnel) and HVAC status reported to Incident Commander (Ext. 6383/6280)		

Production personnel assigned to the following areas accounted for. (UF<sub>6</sub> shift operating personnel census is reported directly to the control officer by the shift supervisor.)

Comments: \_\_\_\_\_

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

**Attachment 5 - Laboratory Personnel Accounting**

Activity	Time	Initial
Laboratory personnel reported census by phone to ext. 6329?		
Process Engineers reported census by phone to ext. 6329?		
Health Physics reported census by phone to ext. 6329?		
Environmental reported census by phone to ext. 6329?		
HVAC Equipment Shutdown?		
Census and HVAC status reported to the Incident Commander (Ext. 6383/6280)		

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

**Attachment 6 – Administrative Personnel Accounting**

Activity	Time	Initial
Administration personnel (except Crisis Manager and Maintenance Officer) assembled in the Administration Lunch Room?		
Administration Building HVAC Equipment Shutdown?		
Total census and HVAC status reported to Incident Commander (Ext. 6383/6280)		

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

**Attachment 7 – Storehouse Personnel Accounting**

Activity	Time	Initial
Stores personnel assembled in the Store Office Area?		
Stores HVAC Equipment Shutdown?		
Total census and HVAC status reported to Incident Commander (Ext. 6383/6280)		

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

**Attachment 8 - Plant Security/Visitor Accounting**

Activity	Time	Initial
All Security and non-Metropolis Works personnel (visitors, vendors, contractors, etc.) accounted for?		
Total census and HVAC status reported to Incident Commander (Ext. 6383/6280)		

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

## **Personnel and Equipment Decontamination Under Emergency Conditions**

### **1. Purpose and Scope**

This procedure provides instructions for performing chemical and radiological decontamination during and following a declared emergency involving a release of radioactive or other hazardous materials.

### **2. Discussion**

The Metropolis Works Emergency Response Plan establishes requirements for performing decontamination of personnel and equipment following a significant release of chemicals and/or radioactive materials resulting in an emergency declaration. The plan addresses monitoring for contamination, decontamination methods and procedures, and control and disposal of contaminated materials.

Three levels of emergency exist, in ascending order of severity, as follows:

**Plant Emergency** – A minor incident or situation that deviates from normal operation and that could, under certain conditions, escalate to an Alert, although this is unlikely.

**Alert** – An incident that has led or could lead to a release to the environment of radioactive or other hazardous material, but the release is not expected to require a response by an offsite response organization to protect persons offsite.

**NOTE:** An Alert or Plant Emergency may require offsite support for onsite protective actions, such as fire-fighting or medical support.

**Site Area Emergency** – An incident that has led or could lead to a significant release to the environment of radioactive or other hazardous material and that could require a response by an offsite organization to protect persons offsite.

The role of decontamination is critical in controlling and removing contamination from personal protective equipment, emergency equipment, and personnel while eliminating or reducing the personnel exposures. Decontamination procedures contain and control the spread of hazardous materials to people and the environment through removal and neutralization of harmful contaminants.

### **3. Precautions and Limitations**

- 3.1. This procedure must be used simultaneously with other facility procedures, such as other Emergency Plan Implementing Procedures, to ensure effective control of emergency conditions.
- 3.2. Decontamination activities will involve some degree of exposure to radioactive or hazardous materials. Consult with assigned Health Physics, Environmental, and Safety personnel and the proper MSDS to determine appropriate safety precautions.

3.3. Following decontamination procedures all emergency response team members responding to an emergency incident will receive a medical evaluation.

3.4. Follow-up medical evaluation or attention may be necessary in certain circumstances. In such cases, personnel shall report to the Dispensary for follow-up medical evaluation by the Plant Occupational Nurse or Physician on duty.

#### 4. Prerequisites

The Incident Commander has declared a site emergency in accordance with EPIP-002, Emergency Classification and Notifications, and a release of sufficient magnitude to require personnel or equipment decontamination has occurred.

#### 5. Procedure

##### 5.1. Determining the Need for Decontamination

5.1.1. Determine the methods and extent of decontamination required for emergency personnel and equipment based on:

- Type of contamination present
- Amount of contamination present
- Type of emergency activity performed
- Level of personal protective equipment worn

5.1.2. Consult with Health Physics, Environmental, and Safety personnel as necessary to identify appropriate decontamination and personnel and environmental protection requirements.

5.1.3. Personnel decontamination will be undertaken for radioactive contamination when measurements indicate contamination levels on the skin equal or exceed 1,000 dpm/detector area.

##### 5.2. Setting Up the Decontamination Line

5.2.1. The Emergency Response Officer will determine the best location for the decontamination line based upon consideration of the following criteria:

- Upwind from the Hot Zone or Exclusion Zone
- Levels and types of decontamination needed
- Potential for injury or exposure based on responder activities
- Proximity and movement of personnel and equipment to the work zone
- Lighting and visibility in nighttime or adverse conditions

**NOTE :** Levels of protection worn and the type of decontamination needed will determine the basis for properly setting up the decontamination line. The decontamination line begins with a contaminated equipment drop in the Hot Zone or Exclusion Zone. All other activities are contained in the Warm Zone or Contamination Reduction Zone (CRZ).



- 5.2.2. Establish the decontamination line in an organized sequence. Designate and mark entry and exit pathways, using materials such as yellow barrier tape and/or orange traffic cones).

### 5.3. Preparations for Re-entry

- 5.3.1. IF an Emergency Response Team member is going to exchange SCBA tanks and re-enter the affected area, THEN perform the following:
- 5.3.1.1. While still wearing the facepiece, disconnect air hose from regulator valve and hold hose above waist level.
  - 5.3.1.2. With assistance, remove SCBA backpack and place on contaminated side of decontamination line.
  - 5.3.1.3. Exchange air tanks.
  - 5.3.1.4. Following air tank exchange, the Emergency Response Team member may return to the hot zone.

### 5.4. Personnel Decontamination During Health and Safety Emergencies

- 5.4.1. IF personnel show signs of acute chemical exposure or other medical emergency, THEN initiate emergency decontamination as follows:
- 5.4.1.1. For heat stress emergencies and other cases as deemed necessary by the Safety Officer or medical personnel, remove PPE immediately.
  - 5.4.1.2. IF medical assistance is needed immediately for life support, THEN delay decontamination. Consider wrapping the individual in a blanket, plastic or rubber to reduce cross-contamination to other personnel.
  - 5.4.1.3. IF medical assistance can be delayed until after a quick decontamination, THEN perform a quick wash and rinse, followed by protective clothing removal and another quick wash and rinse.
  - 5.4.1.4. IF off-site medical assistance is used, THEN inform off-site emergency medical personnel of the specific decontamination procedures that are necessary.

### 5.5. Conduct of Personnel Decontamination

**NOTE:** All emergency personnel assisting in decontamination procedures must themselves be decontaminated before entering the cold or Support Zone. The sequence of decontamination follows the basic rule that each individual in the same level of protection will decontaminate each other. The next lowest level of protection will assist until all remaining personnel are decontaminated. For example, Level B personnel decontaminate

Level B personnel until it is safe for Level C personnel to assist. Similarly, Level C personnel decontaminate each other until it is safe for Level D personnel to assist.

- 5.5.1. Where practical, the use of a safety shower located in the decontamination area can be considered a substitute for Stations 1 and 2 in a typical decontamination layout. Measures may be taken to ensure that contamination is contained unless emergency decontamination is required.

**NOTE:** In the process described below, all decontamination is performed in the Warm Zone or Contamination Reduction Zone. Two types of decontamination methods, physical and chemical, are performed on both personnel and emergency equipment. Physical removal of gross contaminants can be accomplished through rinsing, wiping, scrubbing or scraping using brushes and high-pressure spray units. Dust and residual vapors can be removed with water or a liquid rinse. Volatile liquid contaminants can be removed through evaporation followed by a water rinse.

- 5.5.2. Perform chemical decontamination by dissolving contaminants in a liquid solution, usually detergent and water.
- 5.5.3. Neutralize hazardous materials through the use of a neutralizing agent.
- 5.5.4. Disinfect infectious agents using a detergent solution or a 10 percent bleach solution with water.
- 5.5.5. Segregated Equipment Drop (Hot Zone)

Personnel enter the decontamination area and deposit equipment (tools, sampling devices, containers, radios, etc.) on plastic drop cloths or plastic-lined containers on the contaminated side of decontamination line. Personnel then proceed to Station 1.

- 5.5.6. Station 1: Level A, B, or C Suit Wash

The decontamination team members assist the entry team in decontamination procedures. Scrub outer gloves, boots and chemical-protective suit with appropriate decontamination solution in a diked area or wading pool.

**NOTE:** Decontamination solution may vary depending upon the type and concentration of contaminant(s) involved. For most types of contamination likely to occur on-site, low-suds detergent and water is considered adequate decontamination solution. Personnel then proceed to Station 2.

- 5.5.7. Station 2: Level A, B, or C Suit Rinse

Decontamination team members rinse off decontamination solution with adequate amounts of water in a diked area or wading pool. Repeat as needed. Any run-off liquid must be controlled in the decontamination line. At this point a pH check with litmus paper can be performed after each rinse to ensure adequate decontamination. Personnel then proceed to Station 3.

#### 5.5.8. Station 3: Level A, B, or C Suit Removal

With assistance, remove chemical-protective suit and place on contaminated side of the decontamination line on plastic drop cloths or in available plastic-lined containers. Take caution to remove the suit from the inside out so as to avoid skin contact with contaminants on the outside of the suit. Remove inner gloves, pull-over boots and SCBA equipment last. Personnel proceed to Medical Evaluation area.

### 5.6. Decontamination Procedures for Personal Protective Equipment

5.6.1. First decontaminate outer chemical protective clothing and self-contained breathing air equipment.

5.6.2. Remove the protective clothing and SCBA, followed by facepiece, inner boots, and inner gloves.

### 5.7. Assessment of Decontamination Effectiveness

5.7.1. Determine the effectiveness of decontamination by one or more of the following methods, as applicable:

5.7.1.1. Visual inspection by natural light to detect:

- Discoloration, stains, corrosive effects; or
- Visible dirt or alterations in clothing material.

5.7.1.2. pH sampling

- Wiping tools, equipment, PPE (inside and outside) with pH or litmus paper

5.7.1.3. Analyzed by Safety personnel

5.7.1.4. Monitoring with Health Physics survey instruments

## 6. Records and Reports

6.1. Record all decontamination efforts and the results of decontamination assessment efforts in chronological logbooks or other forms as directed by the Emergency Response Team Leader.

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- 6.2. Sign and date all logbooks and other forms on which decontamination records have been maintained.
- 6.3. Submit the records to the Emergency Response Team Leader for review and approval.
- 6.4. The Emergency Response Team Leader will submit the completed records for retention in accordance with plant policies.

7. References

- 7.1. 10 CFR 40, Application for Specific Licenses
- 7.2. 40 CFR 264, Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities
- 7.3. 29 CFR 1910.120(q), Emergency Response To Hazardous Substance Releases
- 7.4. NRC Regulatory Guide 3.67, Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities
- 7.5. Metropolis Works Emergency Response Plan
- 7.6. MTW Bloodborne Pathogens Exposure Control Plan

**Maintaining Emergency Preparedness****1. Purpose and Scope**

This procedure provides instructions for undertaking those activities that are required to maintain an adequate level of emergency preparedness at the Metropolis Plant. Affected activities include:

- Development and distribution of plans and procedures;
- Training for plant employees;
- Training and orientation for offsite emergency response personnel;
- Audits;
- Drills and exercises; and
- Maintenance of emergency equipment and supplies.

**2. Discussion**

The Metropolis Works Emergency Response Plan incorporates emergency preparedness and response requirements established in the Metropolis Plant NRC License and various regulations, including 10 CFR 40.31(j), 29 CFR 1910.120(q), and 40 CFR 264. Additional detailed guidance is provided in NRC Regulatory Guide 3.67, "Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities." Consistent with these requirements and guidance, certain measures are necessary to ensure that an adequate level of emergency preparedness is maintained. These measures include:

- Preparation and implementation of emergency plans, procedures, and support relationships with offsite response organizations;
- Training for employees, including those who prepare and maintain the plans and procedures
- Training and orientation for offsite response organizations;
- Inventory, maintenance and operational testing of emergency supplies and equipment, including communications equipment that may be used under emergency conditions;
- Planning, conduct and assessment of drills and exercises; and
- Program audits.

The Manager, Regulatory Affairs bears overall responsibility for developing effective plans and procedures for responding to emergency conditions at the Metropolis plant.

**3. Precautions and Limitations**

None.

#### 4. Prerequisites

Specific training and qualification requirements established in the Emergency Response Plan and Section 5 of this procedure apply to individuals performing audits of the Emergency Response Program and to those developing and implementing the Emergency Response Plan and procedures. Ensure these training and qualification requirements are satisfied prior to undertaking these activities.

#### 5. Procedure

##### 5.1. Written Plans and Procedures

5.1.1. The Health Physics Supervisor will coordinate efforts to develop and maintain the Emergency Response Plan and Emergency Plan Implementing Procedures (EPIPs) to ensure they contain all material necessary to ensure effective emergency response actions, including:

- Material required by applicable regulations, such as 10 CFR 40.31, 29 CFR 1910.120(q), 40 CFR 264, and the facility license;
- Appropriate material suggested by USNRC Regulatory Guide 3.67 and any other identified regulatory guidance and industry consensus documents;
- Material identified as a result of previous audits and critiques of drills, exercises, and emergency response activities; and
- Any additional material necessary to ensure employees can effectively respond to emergency conditions and restore the plant to normal operating status.

~~4.1.2.~~ 5.1.2. The Health Physics Supervisor will review the Emergency Response Plan and EPIPs as follows:

- At least once each year;
- Whenever warranted by other conditions, such as changes in plant processes, local population distribution, or offsite support capabilities; and
- As needed based on the results of audits and critiques of drills, exercises, and emergencies.

5.1.3. The Health Physics Supervisor will initiate plan and procedure changes as necessary to ensure to their ongoing effectiveness.

5.1.4. Plant document control procedures establish requirements for plan and procedure creation and revision to ensure that the appropriate instructions are provided and that the plan and EPIPs are reviewed and approved by responsible managers and distributed as necessary to provide access during emergency conditions.

5.1.5. The Manager, Regulatory Affairs will review and approve all EPIPs and revisions to the EPIPs and the Plan.

- 5.1.6. The Health Physics Supervisor will oversee maintenance of a current Emergency Response Telephone Directory for all emergency response officers and offsite support organizations. The Safety Supervisor will oversee maintenance of a current list of emergency radio holders.
- 5.1.6.1. Copies of the Emergency Response Telephone Directory and Emergency Radio Listing will be maintained with each controlled copy of the EIPs and at the designated Control Points.
- 5.1.6.2. The Emergency Response Telephone Directory and Emergency Radio Listing shall be verified and updated as needed at least once each calendar quarter.
- 5.1.7. The Plant Manager will review and approve all revisions to the Plan.
- 5.1.8. Following the Plant Manager's review and approval, the Plan will be transmitted to the local Emergency Services and Disaster Agency (ESDA) Coordinator and Illinois Emergency Management Agency (IEMA).
- 5.1.9. Comments received from the local ESDA Coordinator and IEMA within the assigned comment period will be sent with the Plan to the NRC.
- 5.1.10. The Manager, Regulatory Affairs is responsible for:
- Ensuring that any revisions to the plan are distributed to offsite emergency response organizations identified as plan-holders.
  - Ensuring that pre-planned PARs are discussed at least once each year with affected offsite response organizations.
  - Ensuring that letters of agreement with offsite emergency response organizations are developed, reviewed at least once each year, revised as necessary, and renewed at least once every four years.
  - Coordinating with the local Community Action Committee for those portions of the ERP related to classification of emergencies involving non-radioactive hazardous materials.

## 5.2. Training

- 5.2.1. Training for personnel who do not hold Emergency Response Organization (ERO) responsibilities may be limited to actions necessary to recognize alarms and warnings, obey commands and announcements, and report to assigned areas for accountability and further instructions.
- 5.2.2. Emergency Response Organization Initial Training
- 5.2.2.1. Emergency Response Training will be provided to all individuals prior to assignment to a position in the ERO and annually thereafter.

- 5.2.2.2. Training may be presented by any means determined to be appropriate and effective, depending on the subject and audience.
- 5.2.2.3. Acceptable training methods include required reading, computer-based training, classroom training, and practical exercises. Participation in offsite industry meetings and drills and exercises may fulfill some training needs.
- 5.2.2.4. To the extent appropriate, as dictated by the complexity of the material presented, mastery of the subject matter may be demonstrated by classroom interaction, written examinations, and/or practical demonstrations.
- 5.2.2.5. For training courses requiring a practical demonstration or written examination, successful completion of the course will be demonstrated by achieving a score of not less than 80% on the written examination or practical demonstration. Failure to achieve a passing score requires remediation in accordance with Plant Policies procedures or elimination from ERO responsibilities.
- 5.2.2.6. Training for onsite personnel holding ERO positions will include the following topics, to the degree appropriate to the responsibilities of the position held:
- Plant hazards, alarms and other warnings of emergency conditions;
  - Emergency classifications and responses to those classifications;
  - Procedures for activating and deactivating the ERO;
  - Organization and responsibilities of the ERO;
  - Locations of assembly areas and control points;
  - Responsibilities of ERO positions;
  - Procedures related to the ERO positions;
  - Operation of any equipment used under emergency conditions;
  - Use of any appropriate protective equipment, including respiratory protection equipment;
  - First aid and decontamination procedures; and
  - Requirements for records and reports related to emergency and recovery operations.
- ~~4.1.1.7.~~ 5.2.2.7. Members of the Emergency Response Team who respond to a hazardous materials incident will receive an initial 24-hour course of training with an annual refresher training of 24-hours.
- 5.2.2.8. The initial 24-hours of training includes the following requirements of 29 CFR 1910.120(q)(6)(iii):
- Understand hazard and risk assessment techniques;
  - Know how to secure the hazardous materials incident scene;
  - Proper selection and use of personal protective equipment;
  - Physical hazards of chemicals (potential for fire, explosion, etc.);
  - Health hazards associated with exposure to chemicals;



- Procedures to protect against hazards (personal protective equipment required, proper use and maintenance, work practices or methods to assure proper use and handling of chemicals and procedures for emergency response);
- Know how to implement basic decontamination procedures;
- Know how to perform basic confinement and control measures;
- Know the emergency response plan and basic standard operating procedures;
- Recognize information found on Material Safety Data Sheets, labels, and other resources; and
- Understand how to operate air monitoring equipment.

~~4.1.1.9.~~ 5.2.2.9. Each team, with the Team Leader, will be trained in fire safety, spill control, personnel rescue, and emergency control procedures to ensure safe and efficient team operation.

5.2.2.10. Training on response to hazardous material releases will be provided for personnel plant-wide through "B" Council Safety Meetings or other venues, as appropriate, to ensure the effectiveness of the program.

5.2.2.11. The Health Physics Staff will provide appropriate training for radiological monitoring.

5.2.2.12. Training on the use of respiratory protection equipment is conducted in accordance with the plant's Respiratory Protection Program.

5.2.2.13. Medical, Occupational Health, and Environmental support and training will be provided by the Corporate Staff as needed.

### 5.2.3. Refresher Training/Retraining

5.2.3.1. Refresher training will be provided annually and will emphasize those items listed above in addition to the following material:

- Be able to function within an assigned role in the on-site emergency response organizational structure;
- Know how to implement the MTW Emergency Response Plan;
- Identify and understand hazards normally found on-site;
- Know how to select and use site-specific respiratory and personal protective equipment in an emergency response;
- Understand personnel rescue techniques and equipment for both confined spaces and removal out of buildings on-site;
- Know where MSDS are located, how to read and interpret the information on both labels and MSDS and how employees may obtain additional hazard information;
- Certification in first aid and Cardiopulmonary Resuscitation (CPR); and
- A review of critique information from recent drills, exercises, and emergency plan events.

- 5.2.3.2. First Aid personnel will be trained annually in Cardiopulmonary Resuscitation (CPR) and applicable First Aid certification.
- 5.2.3.3. Periodic first aid training will be provided through the Plant Occupational Nurse.
- 5.2.3.4. Retraining will be provided as necessary to address changes to the Plan, EIPs, and plant processes affecting emergency response.

#### 5.2.4. Training for Personnel Who Maintain the Plan

- 5.2.4.1. Training for personnel who prepare and maintain the Emergency Response Plan and EIPs will include the following topics:
  - Regulatory and license requirements and guidance applicable to the Plan and EIPs;
  - Any management commitments related to the Plan and EIPs;
  - Results of recent plan and procedure audits and drill and exercise critiques related to plan and EIP content and effectiveness; and
  - Industry events related to emergency preparedness and Plan and procedure content and execution.

#### ~~4.1.5.~~5.2.5. Training and Orientation for Offsite Response Emergency Personnel

- 5.2.5.1. The plant will offer training and orientation opportunities to off-site support groups (hospitals, fire departments, police, rescue services, public officials, etc.) for initial training of new personnel and retraining of current personnel. The training and orientation may be presented using any appropriate method, including facility tours, discussions of facility hazards, classroom training, practical demonstrations, discussions of lessons learned, communications tests and exercises, and opportunities to attend offsite meetings and seminars.
- 5.2.5.2. The content of the training and orientation provided to offsite emergency response personnel will be sufficient to allow them to effectively discharge their responsibilities during an emergency at the site.
- 5.2.5.3. To the extent appropriate, the training and orientation will address issues such as site layout and processes, site hazards, personnel monitoring requirements, and exposure and contamination control.

#### 5.3. Drills and Exercises

- 5.3.1. Drills and exercises will be conducted on a periodic basis to test the adequacy, functionality, and effectiveness of the plan and procedures, the ERO, the equipment and supplies, and the communications systems and protocols.

- 5.3.2. Each drill or exercise will use a preplanned scenario that is based on actual facility hazards and will demonstrate one or more objectives as listed in Attachment 1 of this procedure. Drills and exercise scenarios will be developed to test::
- The plant's integrated capability to respond to a radiological accident;
  - The content of selected emergency procedures and methods;
  - Emergency equipment;
  - Communications networks; and
  - The familiarity of emergency response personnel with their assigned duties.
- 5.3.3. Drills and exercises will be planned and conducted such that each of the objectives listed in Attachment 1 of this procedure is demonstrated at the required frequency.
- 5.3.4. Measures will be implemented to make drill and exercise scenarios as realistic as is practical. Sufficient information will be provided to allow the responders to evaluate plant conditions and to take appropriate corrective actions, consistent with the objectives to be tested.
- 5.3.5. Depending on the complexity of the drill or exercise, the scenario will be prepared by one or more persons knowledgeable of the affected plant processes, locations, and hazards.
- 5.3.6. The scenario will include, or make reference to, acceptable response actions as established in plant procedures and other plant documents, applicable regulations and guidance documents, industry safety documents, or other references.
- 5.3.7. The scenarios for evaluated drills and exercises will not be disclosed to most of the participants prior to the event.
- 5.3.8. The objectives and scenario for the annual Site Area Emergency exercise will be submitted for NRC review at least sixty (60) days before the exercise.
- 5.3.9. Prior to the drill or exercise, the observers will be informed of the scenario and the acceptable response to each event. Criteria for acceptable performance may be provided in plant procedures, performance checklists, industry guides, or other appropriate formats.
- 5.3.10. Drills and exercises will be controlled and evaluated as follows:
- 5.3.10.1. Drills and exercises will be controlled and evaluated by one or more observers at each location where emergency response actions are expected to occur.
    - a. An adequate number of controllers and observers will be assigned to ensure that drill and exercise activities can be effectively controlled and evaluated, consistent with the preplanned scenario and objectives.

b. Controllers and evaluators will be provided with sufficient communications methods and equipment to ensure proper control and evaluation of emergency response activities.

5.3.10.1.5.3.10.2. At least one independent outside observer who is familiar with the Plans and procedures will critique each annual drill.

5.3.10.1.5.3.10.3. Non-participating observers from the community and off-site response organizations will be invited to observe and evaluate the Site Area Emergency drill.

5.3.10.1.5.3.10.4. All observers will be informed of the objectives and scenario prior to the drill. The observers will critique the effectiveness of the drill by comparing the scenario and objectives to the actual drill proceedings.

5.3.10.1.5.3.10.5. The critiques from the various observers will be combined to form a composite analysis of the effectiveness of the exercise.

5.3.10.1.5.3.10.6. Corrective action for each deficiency will be identified within one month following the exercise. The appropriate department manager will ensure the identified deficiencies are corrected in a timely manner.

5.3.10.1.5.3.10.7. Records of drill critiques and actual emergency response debriefs may be maintained on Attachment 9 or similar forms.

#### 5.3.5.4. Emergency Plan Audit Program

5.3.9.5.4.1. The plant Quality Assurance Program will incorporate provisions to ensure that the plan is audited on an annual basis to ensure the program is being adequately maintained.

5.3.9.5.4.2. The scope of QA audits will include:

- The Emergency Response Plan and EIPs;
- The training program;
- Emergency response facilities, equipment, and supplies; and
- Records associated with the plant's interface with offsite emergency response organizations.

5.3.9.5.4.3. The audits will be performed by one or more individuals who:

- Are familiar with the plant hazards and processes;
- Are familiar with industry emergency preparedness requirements and guidance; and

- Do not bear direct responsibility for developing or implementing the Emergency Response Program.

5.3.9.5.4.4. Any issues identified by the audit that require corrective actions will be assigned to the responsible manager, assigned a completion date, and tracked to completion via the plant's corrective action program.

5.3.9.5.4.5. Subsequent audits will verify the ongoing effectiveness of previous corrective actions.

#### 5.3.5.5. Maintenance and Inventory of Emergency Equipment, Instrumentation, and Supplies

**NOTE:** In addition to the equipment listed in Attachments 2 – 7, the plant maintains an inventory of radiological monitoring instruments. These instruments are inventoried and operationally tested in accordance with Health Physics Department procedures.

5.3.9.5.5.1. Dedicated emergency equipment and supplies are provided in specified locations as listed in Attachments 2 - 7 of this procedure.

5.3.9.5.5.2. Dedicated emergency equipment and supplies will be inventoried, operationally tested, and calibrated on a periodic basis as established in Attachments 2 - 7.

5.3.9.5.5.3. The individual performing the inventory and operability tests (where applicable) will, to the extent practical, correct any deficiencies noted. IF any deficiencies cannot be immediately corrected, THEN report the deficiencies to the responsible supervisor or manager.

5.3.9.5.5.4. When deficiencies cannot be corrected promptly, the appropriate manager will be notified and repair or purchase of replacement equipment will be expedited.

#### 5.3.6. Records and Reports

5.3.6.1. Records of Emergency Response Plan and EPIP development and revisions will be maintained for at least three years with plant Health Physics records.

5.3.6.2. Records of ERO training and qualification activities, including activities related to off-site response organizations, will be maintained in accordance with Training Organization procedures. This will include objectives, lesson plans, handouts, and completion records,

5.3.6.3. Records of emergency drills and exercises, including scenarios, critique findings, and corrective actions, will be maintained for at least three years with Health Physics Department records.

5.3.6.4. Records of critiques of emergency response activities, including cause analyses, timelines, action items, and completion records, will be maintained for at least three years with Health Physics records.

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5.3.6.5. Records of emergency preparedness program audits, including checklists, findings, and corrective actions, will be maintained in accordance with QA Department procedures.

5.3.6.6. Records of emergency equipment and supply inventories, operational tests, and calibrations will be maintained for at least one year by the organizations performing the activity.

5.3.6.7. Records of health physics instrument calibration activities will be maintained in accordance with Health Physics policies.

### 5.3.7. References

5.3.7.1. 10 CFR 40, Application for Specific Licenses

5.3.7.2. 40 CFR 264, Standards For Owners And Operators Of Hazardous Waste Treatment, Storage, And Disposal Facilities

5.3.7.3. 29 CFR 1910.120(q), Emergency Response To Hazardous Substance Releases

5.3.7.4. Emergency Planning and Community Right to Know Act of 1986

5.3.7.5. NRC Regulatory Guide 3.67, Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities

5.3.7.6. NRC Inspection Procedure 82302, Review of Exercise Objectives and Scenarios for Power Reactors

5.3.7.7. NRC Information Notice 87-54, Emergency Response Exercises

5.3.7.8. NRC Regulatory Guide 8.15, Acceptable Programs for Respiratory Protection

5.3.7.9. Metropolis Works Emergency Response Plan

5.3.7.10. Metropolis Works Radiological Contingency Plan

## Implementing Procedure

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## ATTACHMENT 1 – DRILL AND EXERCISE OBJECTIVES

Objective Number	Objective
<b>Group 1 – Emergency Condition Recognition and Notification</b>	
1.1	Based on conditions presented, employee recognizes abnormal conditions.
1.2	Based on conditions presented, employee completes proper notification of supervisory personnel.
1.3	Based on conditions presented, employee initiates proper immediate actions for emergency condition.
<b>Group 2 – Emergency Classification and Notifications</b>	
2.1	Properly classify the emergency.
2.2	Complete all required notifications to onsite personnel (e.g., alarms and evacuation announcements).
2.3	Complete notification of onsite ERO personnel (normal dayshift). <u>(Annual, except when 2.4 is demonstrated)</u>
2.4	Complete notification of onsite ERO personnel (off-normal hours).
2.5	Complete notifications of offsite authorities within the prescribed time limitations.
2.6	Based on changes in conditions presented, properly upgrade or downgrade emergency classification.
2.7	Based on upgraded or downgraded emergency classification, repeat previously-completed notifications of offsite authorities within the prescribed time limitations.
2.8	Provide appropriate Protective Action Recommendations to local authorities.
2.9	Complete Emergency Classification and notification checklist to reflect emergency classification and notification activities.
2.10	Maintain effective communications with offsite authorities and media.
2.11	Develop, review, approve and issue press release(s) accurately describing conditions and protective and corrective actions.
2.12	Recognize need for and request offsite emergency response support.
2.13	Demonstrate effective communication with Corporate resources for plume tracking.
2.14	Incident Commander and Crisis Manager confer and agree on termination of emergency condition.
2.15	Following termination of emergency classification, complete notifications to onsite and offsite emergency response personnel and authorities.
<b>Group 3 – Emergency Response Organization (ERO) Activities</b>	
3.1	Activate the ERO using the plant paging system.
3.2	Activate the ERO using the automatic call-out system.
3.3	Activate the ERO using manual call-out methods.
3.4	Complete staffing of the primary ERO locations.
3.5	Recognize ERO uninhabitable conditions and transfer ERO to alternate ERO location.
3.6	ERO maintains accurate record of ERT dispatch from and return to the Control Point.
3.7	ERO Officers relieve Incident Commander of supplemental ERO responsibilities.

Objective Number	Objective
3.8	ERO members retrieve required equipment and supplies from storage locations and performed required operability tests.
3.9	ERO Officers demonstrate effective control of the ERO staff.
3.10	ERO members discharge assigned responsibilities.
3.11	Demonstrate effective provision of information to Corporate personnel for plume tracking and effective use of plume tracking information provided by Corporate support personnel.
3.12	Control Room Isolation is properly implemented in response to hazardous material releases.
3.13	ERO members establish decontamination line.
3.14	ERO members complete and route required records.
3.15	ERO members restore equipment to proper storage locations.
<b>Group 4 – Evacuation and Accountability</b>	
4.1	Complete proper activation of evacuation alarms and announcements.
4.2	Personnel follow instructions and evacuate by prescribed routes to assigned locations.
4.3	Complete recording and reporting of site census.
<b>Group 5 – Emergency Response Team Activities</b>	
5.1	ERT assembles, retrieves required equipment and supplies from storage locations, and performed required operability tests.
5.2	Emergency Response Officer demonstrates effective control of ERT.
5.3	Safety, Health Physics, and Environmental personnel provide proper support to ERT.
5.4	ERT performs injured employee rescue and first aid operations.
5.5	ERT performs fire suppression operations.
5.6	ERT performs HazMat control operations.
5.7	ERT coordinates with offsite emergency responders.
5.8	Health Physics provides radiological control support to local hospital.
5.9	Facility medical personnel provide support to ERT for injured personnel.
<b>Group 6 – Facility Safety and Security</b>	
6.1	Personnel receive and respond to sabotage/bomb threat.
6.2	Security personnel maintain control of facility access under emergency conditions.
6.3	Security maintains appropriate control during emergency vehicle access and egress.
6.4	Security maintains proper liaison with offsite response organizations.
6.5	Security personnel respond to sabotage (bomb or civil disturbance) threat.
6.6	Security personnel respond to halide monitor alarms.
6.7	Demonstrate proper plant search for a bomb.
6.8	Demonstrate proper response when a suspected bomb is located in the plant.
6.9	Personnel complete required records and forms for sabotage threats.



Objective Number	Objective
<b>Group 7 – Radiological Control Activities</b>	
7.1	<b>Personnel demonstrate proper self-monitoring techniques.</b>
7.2	Personnel respond properly to skin or clothing contamination.
7.3	Personnel obey posted boundaries and warnings.
7.4	<b>Health Physics personnel perform appropriate area monitoring.</b>
7.5	<b>Health Physics personnel provide appropriate warnings to affected personnel.</b>
7.6	<b>Health Physics personnel perform appropriate surveys and sample collection onsite to assess extent of environmental contamination.</b>
7.7	Health Physics personnel perform appropriate surveys and sample collection offsite to assess extent of environmental contamination.
7.8	Health Physics personnel provide effective contamination control support to local hospital.
7.9	Personnel demonstrate proper disposal of radioactive waste materials.
<b>Group 8 – Other Health and Safety Activities</b>	
8.1	<b>Demonstrate proper assessment of hazards resulting from chemical spills or releases.</b>
8.2	<b>Demonstrate proper assessment of industrial safety hazards resulting from emergency condition.</b>
8.3	<b>Implement appropriate safety precautions based on hazards assessment.</b>
8.4	Demonstrate proper use of protective clothing and equipment under emergency conditions.
8.5	Environmental/safety personnel perform appropriate onsite monitoring to assess extent of environmental contamination.
8.6	Establish decontamination line and demonstrate proper decontamination techniques.
8.7	Environmental/Safety personnel perform appropriate offsite monitoring to assess extent of environmental contamination.
<b>Group 9 – Recordkeeping</b>	
9.1	<b>Demonstrate proper completion of records of ERO activities.</b>
9.2	<b>Demonstrate effective review of records of emergency activities.</b>
9.3	<b>Demonstrate proper collection and turnover of records .</b>

1. Objectives in **boldface** type to be demonstrated at least once per calendar year.
2. Objectives in regular type to be demonstrated at least once every six years.

**ATTACHMENT 2 – EMERGENCY EQUIPMENT AND SUPPLY INVENTORY AND MAINTENANCE**

Operability tests for designated emergency equipment are performed in accordance with the following schedules:

Equipment	Frequency	Responsibility
ESDA Dedicated Number	Monthly	Production Department
Onsite Radios	Quarterly	Safety Department
Offsite Radios	Quarterly	Mgr., Environmental/ Regulatory Affairs
Release Sirens	Monthly	Production Department
Community Alert System	Monthly	Production Department
Control Room and South Stairwell Emergency Blowers	Monthly	Health Physics
FM Building Red Lights	Monthly	Health Physics

Supplies	Inspection Frequency	Responsibility
Health Physics Transportation Kit	Annually*	Health Physics
Hospital Kit	Quarterly	Health Physics
UF <sub>6</sub> Cylinder Patch Kit	Monthly*	Safety
Protective Safety Equipment Cabinet by hoist well	Monthly*	Safety
UF <sub>6</sub> Emergency Release Cabinet (Tools and Material)	Annually*	Safety
Distillation Emergency Cabinet/Ore Storage	Monthly*	Safety
Control Room Safety Cabinet	Monthly*	Safety

\*Or whenever the seal is broken.

**ATTACHMENT 3 - EMERGENCY RESPONSE VEHICLE EQUIPMENT INVENTORY**

Personal Protective Equipment	Correct Quantity	Quantity Present	Condition (Sat/Unsat)	Initial
Self-Contained Breathing Air Packs	4			
Additional Air Pack Cylinders	2			
Full Face Canister Gas Masks	6			
Half Face Respirator Cartridges	6			
Total Encapsulated Suits	4			
Chemical Protective Acid Suits	9 sets			
Confined Space Rescue Kit	2 kits			
Safety Body Harness	2			

First Aid Equipment:	Correct Quantity	Quantity Present	Condition (Sat/Unsat)	Initial
First Aid/Bloodborne Pathogens Kit	1			
Oxygen Therapy Unit	1 unit			
Backboards (Full body and half)	1 each			

Emergency Response Tools:	Correct Quantity	Quantity Present	Condition (Sat/Unsat)	Initial
14" Pipe Wrench	2			
#430 Channel Locks	1			
9/16" - 1 1/4" Combination Wrench	1 set			
10" and 12" Adjustable Wrench	1 each			
6" and 8" Long Standard Blade Screwdriver	1 each			
1 1/2 lb. Ball Pin Hammer	1			
Blade Scraper	1			

Miscellaneous:	Correct Quantity	Quantity Present	Condition (Sat/Unsat)	Initial
Flashlights	6			
-Dry Chemical Fire Extinguishers	2			
-CO <sub>2</sub> Fire Extinguishers	2			
Extension Ladder	1			
Decontamination Equipment ( <u>Pools</u> )	<u>3</u>			

Inventory Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

**ATTACHMENT 4 - DISTILLATION/ORE STORAGE CABINET SAFETY EQUIPMENT INVENTORY**

<b>DISTILLATION/ORE STORAGE CABINET SAFETY EQUIPMENT</b>	<b>Correct Quantity</b>	<b>Quantity Present</b>	<b>Condition (Sat/Unsat)</b>	<b>Initial</b>
Chemical Coats	18 each			
Chemical Pants	18 pair			
Chemical Boots	16 pair			
Chemical Gloves	18 pair			
Gas Masks With Canisters*	6 each			
MSA "Dual Purpose" Air Packs	4 each			
Medium Air Mask Face Pieces (Spare)	4 each			
Air Mask Face Pieces (Spare) (Large)	2 each			
Air Mask Face Piece (Spare) (Small)	1			
Spare Air Cylinders	4 each			
Megaphone	1			
Megaphone Batteries	1 set			
Flashlights	6			
Flashlight Batteries	12			
Oxygen Therapy Units	2 each			
Orange Vest	1			
Tool Bags	2			
Blanket	1			
Nitrile Gloves (Large)	1 box			
Nitrile Gloves (X-Lg.)	1 box			
Radio Holders	2			
Loud-mouth speaker	1			

<b>One (1) Bag marked "Bolt-Up Tool"</b>	<b>Correct Quantity</b>	<b>Quantity Present</b>	<b>Condition (Sat/Unsat)</b>	<b>Initial</b>
3/4" Combination Wrench	1			
7/8" Combination Wrench	1			
15/16" Combination Wrench	1			
1 1/16" Combination Wrench	1			
1 1/8" Combination Wrench	1			
1 1/4" Combination Wrench	1			

Metropolis Works

EPIP - 008

Rev. 3/1024/04

10" Adjustable Wrench	1			
12" Adjustable Wrench	1			

One (1) Bag market "Misc. Tools"	Correct Quantity	Quantity Present	Condition (Sat/Unsat)	Initial
6" Long Standard Blade Screwdriver	1			
8" Long Standard Blade Screwdriver	1			
1 1/2 lb. Ball Pin Hammer	1			
Blade Scraper	1			
Linoleum Knife	1			
14" Pipe Wrench	1			
18" Pipe Wrench	1			
Pinch Bar, 1" Wide Blade, 5/8" stock x 16" long	1			
#430 Channel Lock	1			

Inventory Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

ATTACHMENT 5 - UF<sub>6</sub> EMERGENCY KIT EQUIPMENT

UF <sub>6</sub> EMERGENCY KIT (1 of 4)	Correct Quantity	Quantity Present	Condition (Sat/Unsat)	Initial
Acid Resistant Jacket (XL)	2			
Acid Resistant Pants (XL)	2			
Chemical Gloves Prs.	2			
Chemical Boots X-Ig. Pr.	1			
Chemical Boots Giant PR.	1			
Hardhat with Faceshield	2			
*Canister Gas Masks - Canister Date: _____	2			
MSA Respirators	2			
Lif-O-Gen Oxygen Unit	1			
1½" Box-end Wrench	1			

\*Replace canister(s) if in service over twelve months.

UF <sub>6</sub> EMERGENCY KIT 2 of 4	Correct Quantity	Quantity Present	Condition (Sat/Unsat)	Initial
5 lb. CO <sub>2</sub> Fire Extinguishers	2			
¾" X 12' Welded Chain	2			
¾" Chain Boomers	2			
14" Pipe Wrench	1			
10" Crescent Wrench	1			
6" Pipe Wrench	1			
8" Screw Driver	1			
10" Screw Driver	1			
2 lb. Sledge Hammer	1			
2 Blade Work Knife	1			

UF <sub>6</sub> EMERGENCY KIT 3 of 4	Correct Quantity	Quantity Present	Condition (Sat/Unsat)	Initial
Patch for UF <sub>6</sub> Cylinder	2			

UF <sub>6</sub> EMERGENCY KIT 4 of 4	Correct Quantity	Quantity Present	Condition (Sat/Unsat)	Initial
Patch for UF <sub>6</sub> Cylinder	2			

Inventory Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

## ATTACHMENT 6 – TOTAL ENCAPSULATED SUIT INVENTORY LIST

Suit Number	Date Checked	Location	Condition	Initials
1				
2				
3				
4				
5				
6				

NOTES: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Inventory Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

## ATTACHMENT 7 –SCBA INVENTORY LIST

<u>Mask#</u> _____ :			
	Date Checked	Condition (Sat/Unsat)	Initials
Check Gaskets			
Check Clarity of Lens			
Check whether rubber is hard or distorted			
Check exhalation valve			
Check whether plastic bag is O.K.			
<u>SCBA#</u> _____ :			
Check air pressure in tank (2216 psi minimum)			
Check for leaks (by covering outlet and opening yellow valve)			
Check pressure at which bell starts (520 psi)			
Check pressure at which bell stops (0 psi)			
All valves properly closed			
All harness straps fully extended			
SCBA properly installed in case			
Inspection sticker signed			
All guards in place			

NOTES: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Inventory Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_



**ATTACHMENT 8 – RADIOLOGICAL SURVEY INSTRUMENTS**

Type	Use	Sensitivity	Range	Calibration Frequency
Geiger Counter	General Survey	Beta-Gamma >40 KeV	0-200 mr/hr	Quarterly *
Thin window Radiation Monitor	Surface Con-Tamination	Alpha-Beta-Gamma	0 - 50,000 CPM	Quarterly *
Scintillation Alpha Counter	Surface Con-Tamination, Air Filters	Alpha	0.3 – 1000 CPM	Monthly *
Internal Pro-Portional Counter	Air Filters, Surface Contamination	Alpha-Beta	0.1-1000 CPM	Monthly *

\* Or immediately prior to use.

## ATTACHMENT 9 – INCIDENT/DRILL DEBRIEF

INCIDENT/DRILL DEBRIEF		
Event Type: (Check if drill <input type="checkbox"/> )		Date/Time:
Event Description:		
Emergency Classification and Response		
Emergency Declared? (Y/N)	Highest Emergency Classification?	Offsite Notifications? (Y/N)
Offsite Support to Site? (Type)	Protective Action Recommendations? (Y/N)	ERO Activated? (Y/N)
Personnel Health and Safety Issues		
Affected Personnel:		
Personnel Symptoms:		
Personnel transported Offsite? If so, to which hospital(s)? Were transported personnel potentially contaminated?		
Emergency Response Activities		
Immediate and Continuing Actions Taken:		

**INCIDENT/DRILL DEBRIEF**

**Perceived Strengths In Response:**

**Needs for Improvement:**

**Immediate Actions Completed:**

INCIDENT/DRILL DEBRIEF		
Corrective Actions	Work Order / PO#--Person Responsible	Date Assigned*
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		

Additional Comments:

**\*\*Be sure to include relevant timelines to the event and actions.**

\* Enter all actions that cannot be completed immediately into management action tracking system.

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_  
(Plant Manager)

Date: \_\_\_\_\_

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# **PLANT DRAWINGS**

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**REV. F**

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UNDERGROUND FIRE WATER  
PIPING"**

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DIAGRAM"**

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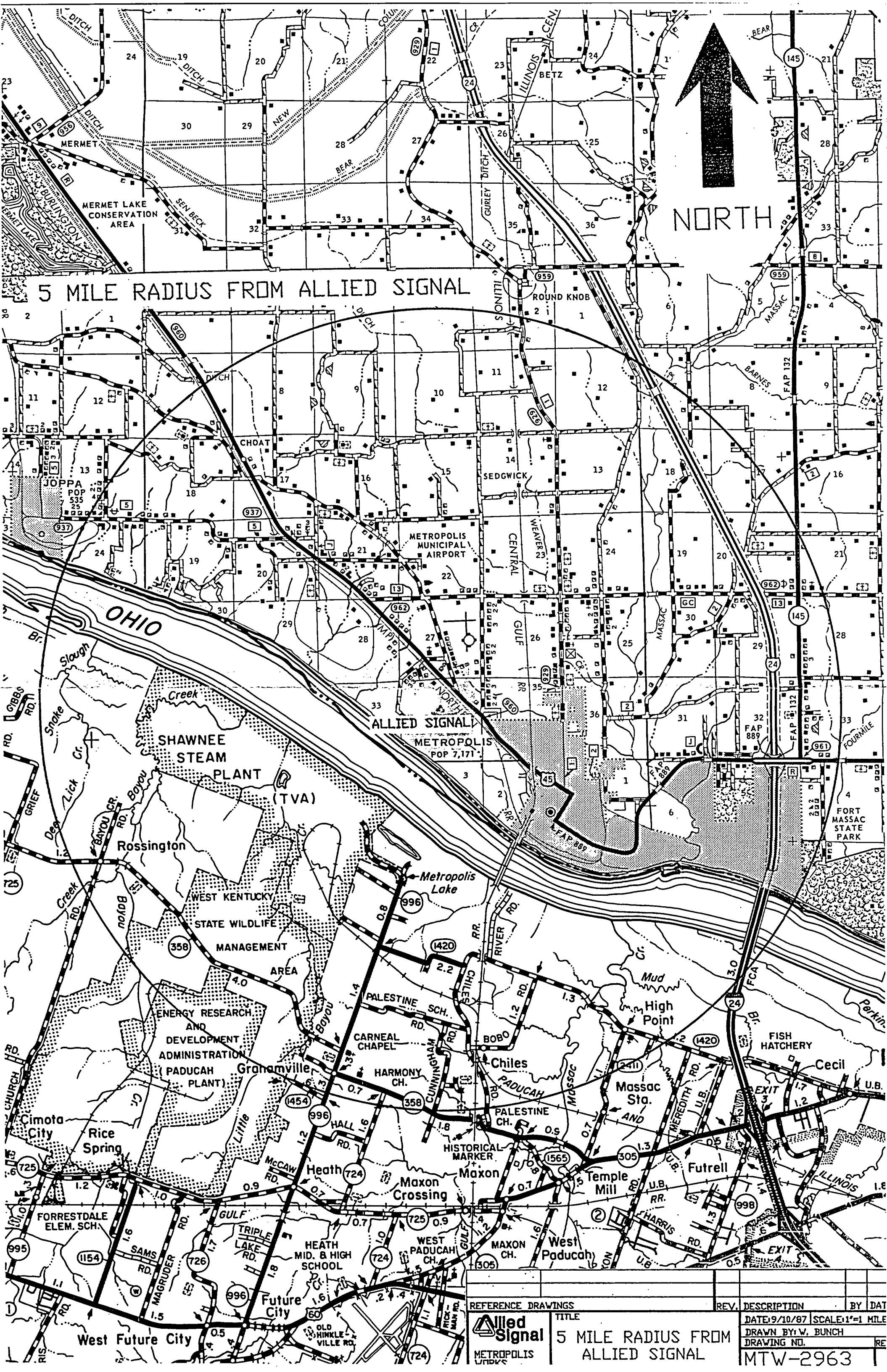
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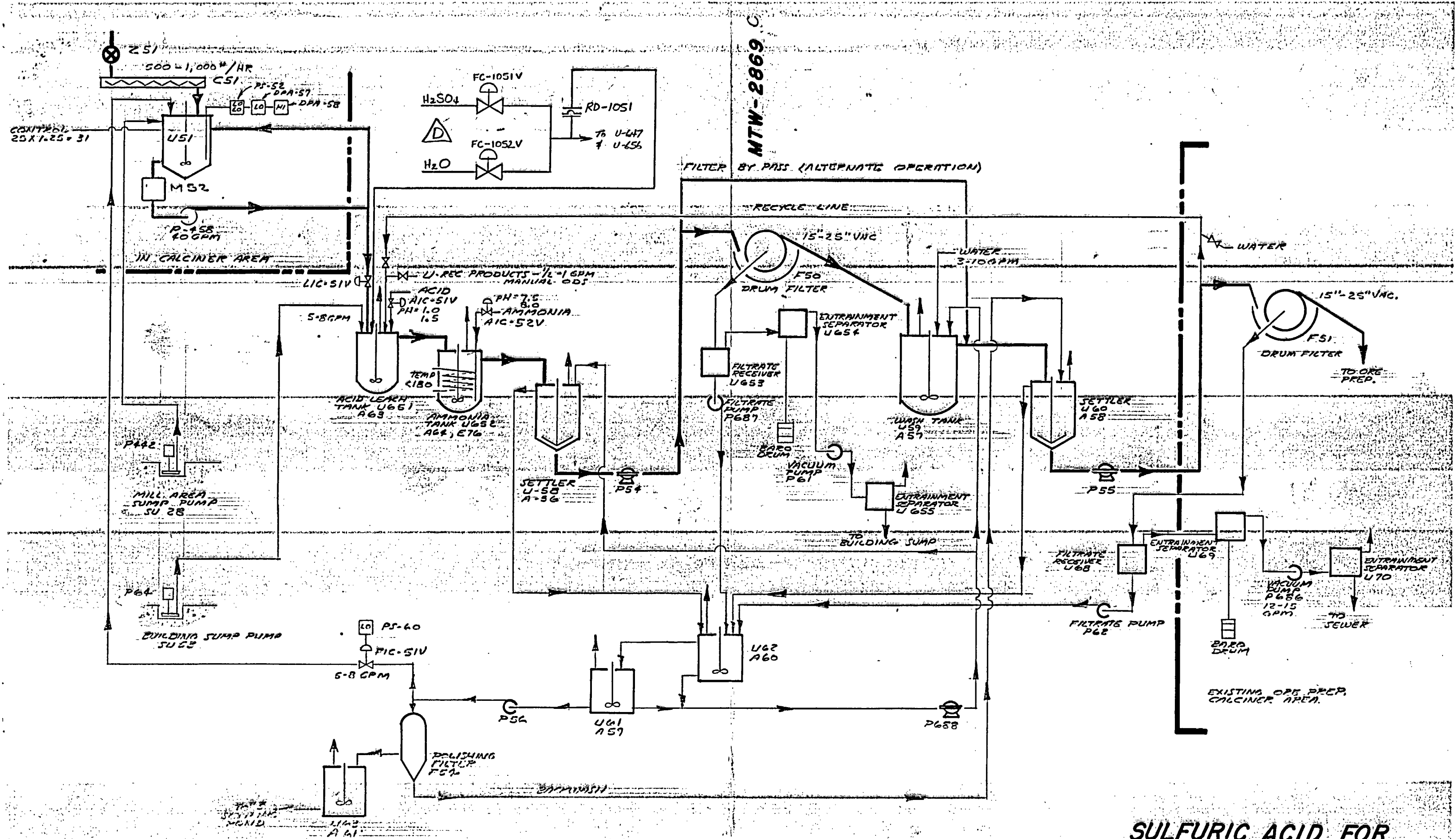
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REV. F  
"PIPING &  
INSTRUMENTATION  
DIAGRAM - "U" RECOVERY  
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**D-04**



5 MILE RADIUS FROM ALLIED SIGNAL

REFERENCE DRAWINGS		REV.	DESCRIPTION	BY	DATE
 METROPOLIS UNION	TITLE				
	5 MILE RADIUS FROM ALLIED SIGNAL				
			DATE 9/10/87	SCALE 1"=1 MILE	
			DRAWN BY: W. BUNCH		
			DRAWING NO.		
			MTW-2963		



REV	DESCRIPTION	DATE	BY	APPROVED	DATE	REV	DESCRIPTION	DATE	BY	APPROVED	DATE
B	REDESIGNED P52 & ITS RECYCLE LINE	1-16-82	DC	Mike Shepherd	3/7/81	D	ADDED SULFURIC MIX STATION	4/17/96		RDD	
A	MISC FLOW LINES ADDED & PRINTED	3-13-84	DC			C	RE-ROUTE P-54 TO OVERFLOW LINE PER PM.1531	3/11/94		WJ	

# **SULFURIC ACID FOR SODIUM REMOVAL FLOW DIAGRAM**

BY: D. CASPAR  
7-12-83

MTW-2869

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"P & 1 DIAGRAM - UF6  
DISTILLATION"**

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"PIPING &  
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REV. H  
"ALLIED CHEMICAL-  
METROPOLIS WORKS PLANT-  
ENVIRONMENTAL SAMPLING  
STATIONS"  
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