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June 29, 2004

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U.S. Nuclear Regulatory Commission  
Attention: Michael Raddatz,  
Fuel Cycle Licensing Branch, Mail Stop T-8A33  
Two White Flint North, 11545 Rockville Pike  
Rockville, MD 20852-2738

**SUBJECT: Implementation Of Revisions To Honeywell's Metropolis Works  
Emergency Response Plan/ Radiological Response Plan**

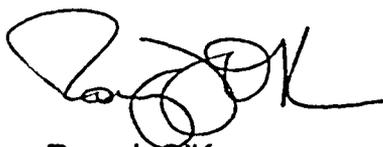
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Dear Mr. Raddatz:

This letter is to communicate the revision to Honeywell's Metropolis Works Emergency Response Plan/ Radiological Response Plan. Minor clarification and enhancement revisions were made to the attached Section 5 of the Honeywell Metropolis Works (MTW) Radiological Contingency Plan. This revision has been developed to address the requirements of 10 CFR 40.31(j)(3)(xi), which requires that the facility emergency plans include a brief description of the means for restoring the facility to a safe condition [following an emergency event]. This revision has been reviewed and approved by MTW technical and management personnel in accordance with our Management of Change process and becomes effective on July 1, 2004.

Should there be any questions on this change or any other portion of the MTW Emergency Response Plan/Radiological Contingency Plan, please contact Mike Ginzel, Health Physics Supervisor, at (618) 524-6349, or me at (618) 524-6220.

Sincerely,



Rory J. O'Kane  
Plant Manager

Attachment

cc: D. Mays  
M. Ginzel  
File

U.S. Nuclear Regulatory Commission (UPS: 301-415-8147)  
Director, Office of Nuclear Material Safety & Safeguards  
Attention: Document Control Desk  
Mail Stop T-8A33, Two White Flint N, 11545 Rockville Pike  
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Regional Administrator (UPS: 404-562-4701)  
Attention: David Hartland, Project Manager  
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## **5.0 RADIOLOGICAL CONTINGENCY MEASURES**

### **5.1. Activation of the Emergency Response Organization**

The ERO will be fully activated for any Site Area Emergency. The ERO may be fully or partially activated for any Plant Emergency or Alert, at the discretion of the Incident Commander.

During normal weekday working hours, Honeywell emergency response personnel are activated through use of a UF<sub>6</sub> release siren, a plant disaster siren, and plant paging system announcements. During off-shifts and weekends, an automated telephone call-in system is utilized to notify responsible officers of a radiological emergency. Should there be a failure of the automated system, a manual telephone call system is in place and can be used as a backup. Emergency Plan Implementing Procedures establish requirements for performing periodic verifications and updates of affected telephone numbers and distributing updated telephone listings to designated locations.

Off-site emergency response personnel are alerted to the emergency condition via a plant telephone notification to the local emergency response office. A radio system provides backup communication capability. Messages can be authenticated via call-back to the plant.

The alerting and call-in processes, including processes for back-up systems, are fully described in the Emergency Plan Implementing Procedures..

### **5.2. Assessment Actions**

The assessment actions to be taken for each class of emergency are described in Section 3.2. In addition, should an actual event occur with off-site consequences, Honeywell's Corporate Engineering Department would be asked to perform dispersion calculations to identify the potential size of the off-site plume for a chemical or radiological release. These data can then be used by plant health physics and environmental personnel to determine potential radiological dose or chemical exposures to the off-site environment. Environmental samples (soil, vegetation, or human bioassays) would then be collected from the path of the plume to measure actual environmental impact and determine what remediation actions are necessary.

Equipment and methods available for performing on-site and off-site sampling include the following:

- Collection of samples from routine effluent pathways;
- Sampling equipment and methodologies for air, soil, groundwater, and vegetation;
- Portable radiological monitoring and sampling equipment, including equipment for direct radiation monitoring and surface and airborne contamination monitoring; and
- Portable chemical monitoring equipment.

These methods and equipment are supplemented by on-site and off-site laboratory analysis capabilities for the expected range of chemical and radioactive contaminants.

### 5.3. Mitigating Actions

Following an event that results in declaration of an emergency, the Emergency Response Organization focuses on a combination of activities necessary to restore the plant to a safe condition and to protect both the plant staff and the public. Experience indicates the entire plant can be shut down immediately, such as during a major power outage, with no release of hazardous materials. The entire plant will be shut down during a "Site Area Emergency." The decision to shut down processes or the entire plant during other emergency events is the responsibility of the Lead Foreperson during off-shifts and weekends and the Crisis Manager during day shift. This decision will be based on the best information available at that time. This individual has the necessary information and authority to determine which processes must be shut down to restore safe conditions.

Procedures provided in the plant's Standard Operating Procedure Manuals, including Abnormal Operating Procedures (AOPs) for specific units, provide instructions for emergency shutdowns, isolating services to plant structures, and actions upon loss of the primary electrical power supply. These procedures are developed and revised in accordance with the MTW Management of Change Process. All actions necessary for systematic securing of all operating units and activation of standby power normally require approximately three (3) hours. Since the flow of all raw materials can be stopped immediately without adverse effects on plant or public safety, the major emphasis during an emergency shutdown is the provision of steam to vessels and lines containing UF<sub>6</sub>. This prevents UF<sub>6</sub> blockage of lines and minimizes the potential of a UF<sub>6</sub> release when the production process resumes operations.

Some of the mitigating actions required by this plan are identified in Section 3.0 and in Emergency Plan Implementing Procedures. A summary of installed accident mitigation systems is provided in Section 2 of the RCP. The combination of the operating instructions provided in the Standard Operating Procedure Manuals, the mitigating actions as described in the ERP/RCP and detailed in the EIPs, and other actions undertaken by the Emergency Response Organization, are sufficient to ensure restoration of safe conditions.

In addition, the following actions would be used for the events described:

- Major Chemical Spill or UF<sub>6</sub> Release:

The plant Emergency Response Team would be activated to limit and control the size of the release, rescue injured personnel, and provide immediate first aid. Team response actions may include use of fire hose fog nozzles to knock down chemical or UF<sub>6</sub> fumes and diking or neutralization to prevent liquid releases to the environment.

- Fire:

A major fire cannot be hypothesized in a radioactive materials usage area because most construction materials are nonflammable. However, a fire could occur in office or storage areas that are generally some distance from chemical usage areas. These areas are provided with sprinkler systems, fire extinguishers, and fire hoses. The plant Emergency Response Team would be activated to control any incipient fire that might occur. Assistance from local fire departments would be required to control major fires.

- Natural Disaster (wind, tornado, earthquake):

The plant Lead Foreperson is provided with a weather warning radio that provides a distinctive alarm to alert the supervisor. The Shift Leader then can monitor the weather warning to determine potential impact on plant operations. These weather warnings are issued from the Paducah, Kentucky National Weather Service (at Barkley Airport) approximately three (3) miles south of the plant. Direct telephone and radio communications to the Metropolis City Police are also available to obtain information on natural phenomena that might affect the plant.

#### **5.4. Protective Actions**

##### **5.4.1. Personnel Evacuation and Accountability**

A radiological emergency that could require evacuation of the entire plant restricted area cannot be hypothesized. The maximum credible accident hypothesized could require evacuation of portions of the site downwind of the release point.

The plant staff is notified of the need to evacuate affected areas and report for accountability via the evacuation alarm and announcements on the plant paging system. These notification systems are essentially instantaneous. Because of the multiple access points and possibility that evacuation routes may be blocked by hazardous conditions, there are no preplanned evacuation routes. The announcements include specific instructions regarding areas to be avoided to maintain employee safety. Experience indicates that evacuation activities can be completed rapidly, generally in about ten (10) minutes.

##### **5.4.2. Use of Protective Equipment and Supplies**

A comprehensive respirator fitting and training program is utilized in the plant. Basic procedures used in implementing and maintaining the program are contained in the Health Physics Procedures Manual. The location and utilization of special protective equipment used in controlling plant emergencies are listed in the Emergency Response Plan.

Because the primary hazard associated with emergency conditions at the plant involves visible releases of  $UF_6$ , most decisions regarding use of protective equipment and supplies can be made based on visual observation of plant conditions. Protective equipment is withdrawn from the designated storage cabinets by the ERT members and used at the direction of the Incident Commander and Emergency Response Officer. Decisions regarding downgrading of protective equipment requirements may be based on a combination of visual observations and the results of chemical and radiological monitoring. EIPs establish requirements for decontamination of emergency equipment and restoration of equipment operability.

##### **5.4.3. Contamination Control Measures**

The spread of  $\text{UO}_2\text{F}_2$  contamination resulting from a  $\text{UF}_6$  release inside the Feed Materials Building is controlled by shutting down the building exhaust ventilation and allowing the particulate  $\text{UO}_2\text{F}_2$  to settle. Standard plant decontamination procedures are utilized to decontaminate the affected area of this water-soluble contaminant.

Fire hose spray may be utilized to control the spread of HF vapors that may occur outside the process building in the event of a major  $\text{UF}_6$  release. However, water should not be sprayed directly on liquid  $\text{UF}_6$ . Rather,  $\text{CO}_2$  fire extinguishers should be used to freeze out small liquid  $\text{UF}_6$  releases.

## **5.5. Exposure Control in Radiological Contingencies**

### **5.5.1. Emergency Exposure Control Program**

The primary exposure of concern during a major UF<sub>6</sub> release is skin and lung burns from HF and inhalation of soluble UO<sub>2</sub>F<sub>2</sub> which, in higher concentrations, is chemically toxic to the kidney. Control of these exposures is provided by requiring appropriate protective equipment for potentially exposed employees in accordance with the Emergency Plan Implementing Procedures. Due to the nature of the material processed, the EPA guidelines for radiation doses to emergency workers are not applicable and no provisions exist for authorizing doses exceeding the occupational dose limits established in 10 CFR 20.

The Radiation Officer is responsible for establishing and maintaining a program that will provide for on-site and off-site radiation monitoring during a major UF<sub>6</sub> release. Personnel exposures to external radiation are monitored by the use of routine plant external monitoring dosimeters, which are provided as part of a NVLAP-accredited program. The dosimeters are available in wall racks and are readily available to each employee at the beginning of the work day. The results obtained from air monitoring may be used in conjunction with bioassay measurements and respiratory protection to assess inhalation exposures.

Individual dose records are maintained consistent with the requirements of 10 CFR 20. Any personnel doses resulting from exposures received under emergency conditions would be recorded and reported in accordance with these requirements.

### **5.5.2. Decontamination**

Should personnel onsite be exposed to significant levels of radioactive airborne or surface contamination, it may be necessary to provide for decontamination activities onsite or, in the event of a contaminated, injured person, in a local medical facility. Individuals are considered to be contaminated when contamination monitoring equipment indicates skin contamination levels equal to or exceeding 1000 disintegrations per minute per detector area.

Personnel and equipment are easily decontaminated of UO<sub>2</sub>F<sub>2</sub> using soap and water. All equipment, protective clothing, and routine work clothing are provided by and stored within the facility. The plant laundry provides cleaning and decontamination of protective equipment and clothing following a UF<sub>6</sub> release.

## **5.6. Medical Transportation**

Injured employees may be transported to the plant dispensary using plant vehicles. Treatment of HF injury is initiated as soon as possible, whether in the field or in the dispensary. The extent of injury is determined by the Plant Nurse during day shift or First Aid personnel during off-shifts. If the injury is more serious than can be treated effectively in the plant dispensary, an ambulance is called from Massac Memorial Hospital, and the patient is transported to a hospital for additional treatment by a physician. In certain cases, the ambulance may be directed to the on-site location of injured personnel.

**5.7. Medical Treatment**

Off-site medical treatment of injured employees is provided by Massac Memorial Hospital, which is approximately one mile from the site. Massac Memorial Hospital utilizes Emergency Medical Technicians (EMT-A) and Paramedics to operate the ambulance service. Massac Memorial Hospital has a "linkage agreement" with Lourdes and Western Baptist hospitals in Paducah, Kentucky. The distance to both Lourdes and Western Baptist Hospitals is approximately 14 miles. Emergency room personnel are knowledgeable of proper treatment for HF injuries. Training in the treatment of HF injuries and appropriate contamination controls is provided to employees of these hospitals by Metropolis Works' personnel and the plant physician.

Should it be necessary to transport a contaminated person offsite for any reason, such as for medical attention, plant Health Physics personnel will accompany the individual and provide contamination control guidance (both chemical and radiological) for the attending medical personnel. The affected areas of the hospital and ambulance and affected personnel will be monitored for residual contamination. Contaminated materials will be collected and returned to the site for proper decontamination or disposal.