



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

October 20, 2016

Mr. John Albritton  
Plant Manager  
Honeywell Metropolis Works  
P.O. Box 430  
Metropolis, IL 62960

**SUBJECT: HONEYWELL METROPOLIS WORKS – NUCLEAR REGULATORY COMMISSION  
INTEGRATED INSPECTION REPORT 40-3392/2016-004**

Dear Mr. Albritton:

This letter refers to the inspections conducted from July 1 to September 30, 2016, at the Honeywell facility in Metropolis, IL. The purpose of the inspections was to determine whether activities authorized under the license were conducted safely and in accordance with Nuclear Regulatory Commission (NRC) requirements. The enclosed report presents the results of the inspections. The findings were discussed with members of your staff at an exit meeting held on August 18, 2016, for this integrated inspection report.

During the inspections, the NRC staff examined activities conducted under your license as they related to public health and safety and to confirm compliance with the Commission's rules and regulations, and with the conditions of your license. The inspections covered the areas of safety operations and facility support. Within these areas, the inspections consisted of examination of selected procedures and representative records, observations of activities, and interviews with personnel. No findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice and Procedure," a copy of this letter and its enclosure will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Should you have any questions concerning the inspections, please contact us.

Sincerely,

*/RA/*

Marvin D. Sykes, Chief  
Projects Branch 1  
Division of Fuel Facility Inspection

Docket No. 40-3392  
License No. SUB-526

Enclosure:  
NRC Inspection Report No. 40-3392/2016-004  
w/Attachment: Supplementary Information

cc: (See page 3)

Should you have any questions concerning the inspections, please contact us.

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**DISTRIBUTION:**

- T. Grice, NMSS
- M. Sykes, RII
- T. Liu, NMSS
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- J. Gilliam, RII

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OFFICE	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI		
SIGNATURE	/RA/	/RA/	/RA/	/RA/	MDS for		
NAME	KKirchbaum	JGilliam	JRivera-Ortiz	TSippel	PStartz		
DATE	10/19/2016	10/19/2016	10/20/2016	10/21/2016	10/20/2016	10/ /2016	10/ /2016
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

cc:

James Joseph, Director  
Emergency Management Agency  
Division of Nuclear Safety  
2200 South Dirksen Parkway  
Springfield, IL 62704

Brigadier General John W. Heltzel, Director  
Kentucky Emergency Management Agency  
EOC Building  
100 Minuteman Parkway Building 100  
Frankfort, KY 40601-6188

Jerome Mansfield, Director  
McCracken County Emergency Management Agency  
3700 Coleman Road  
Paducah, KY 42001

Keith E. Davis, Director  
Metropolis Emergency Management Agency  
213 West Seven Street  
Metropolis, IL 62960

Matthew McKinley, Manager  
Kentucky Department of Health and Family Services  
Radiation Health Branch  
275 East Main Street  
Mail Stop HS-1CA  
Frankfort, KY 40601-0001

Peter Dessaulles, Director  
Office of Nuclear Materials Integration  
NA-73-GTN  
U. S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-1290

Scott Deming, Director  
Massac County Emergency Management Agency  
1 Superman Square, Room 1B  
P.O. Box 716  
Metropolis, IL 62960-0716

U. S. NUCLEAR REGULATORY COMMISSION  
REGION II

Docket No.: 40-3392

License No.: SUB-526

Report No.: 40-3392/2016-004

Licensee: Honeywell International, Inc.

Facility: Metropolis Works (MTW)

Location: Metropolis, IL 62960

Dates: July 1 to September 30, 2016

Inspectors: T. Sippel, Fuel Facility Project Inspector  
P. Startz, Fuel Facility Inspector  
K. Kirchbaum, Fuel Facility Inspector  
D. Harmon, Fuel Facility Inspector (Training)

Approved by: Marvin Sykes, Chief  
Projects Branch 1  
Division of Fuel Facility Inspection

Enclosure

## **EXECUTIVE SUMMARY**

Honeywell Metropolis Works  
NRC Integrated Inspection Report 40-3392/2016-004  
July 1 – September 30, 2016

Regional inspectors conducted inspections during normal shifts in the areas of safety operations and facility support. The inspectors performed a selective examination of licensee activities that were accomplished by direct observation of safety-significant activities and equipment, tours of the facility, interviews and discussions with licensee personnel, and a review of facility records.

### **Safety Operations**

- The plant features and procedures reviewed were properly implemented and maintained in order to perform their intended safety function. (Paragraph A.1)
- The fire protection systems were adequately maintained in accordance with site procedures. (Paragraph A.2)

### **Facility Support**

- The Emergency Preparedness program was implemented in accordance with the Emergency Plan and regulatory requirements. (Paragraph B.1)

### **Attachment**

Key Points of Contact  
List of Items Opened, Closed, and Discussed  
Inspection Procedures Used  
Documents Reviewed

## REPORT DETAILS

### Summary of Plant Status

The Honeywell Metropolis Works uranium conversion facility is located on a 1,100 acre site (60 acres within the fence line) near Metropolis, IL. The licensee is authorized to possess 150 million pounds of natural uranium ore and to convert this material to uranium hexafluoride (UF<sub>6</sub>). The uranium conversion process occurs in the Feed Materials Building (FMB). During this inspection period, normal conversion activities were ongoing.

#### A. Safety Operations

##### 1. Operational Safety (Inspection Procedure (IP) 88020)

###### a. Inspection Scope and Observations

The inspectors interviewed staff, reviewed records, and observed activities associated with UF<sub>6</sub> cylinder filling and handling, cylinder wash, and preventing the introduction of hydrocarbons. The inspectors verified that the plant features and procedures (PFAPs) reviewed, which included PFAP48, PFAP76, PFAP77, PFAP78, and PFAP79, were being adequately implemented and properly communicated as described in the Integrated Safety Analysis (ISA).

The inspectors verified that the PFAPs reviewed were present and capable of performing their intended safety functions. To complete this confirmation, the inspectors verified the physical presence of active engineered safety controls, observed operators using them during operation, evaluated the safety controls to determine their capability and operability, and verified that potential accident scenarios were covered.

The inspectors reviewed a number of procedures, listed in Supplemental Information section of this report, to verify if actions required by the license application have been implemented in written operating procedures. The inspectors reviewed the procedures' contents with respect to operating limits and operator responses to upset conditions to verify that the limits needed to assure safety are described in the procedures.

The inspectors interviewed three operators and two technicians to verify that operators and technicians understood and were adequately implementing the required safety controls. The inspectors observed operators and technicians' performance to verify that they were adhering to applicable safety procedures, including MTW-SAF-LS-0002, "Lock/Tag/Try (LTT)."

The inspectors observed cylinder handling and performed walkdowns of the UF<sub>6</sub> cylinder storage and cooling areas to determine if they were being handled and stored in accordance with the requirements of Section 1.6.1.3 of the license application.

The inspectors conducted interviews, document reviews, and observations, to verify if the licensee was conducting periodic calibrations, of PFAP76, PFAP77, and PFAP78, to maintain them as required by the ISA Summary, Section 4.6.3. The inspectors also observed scale calibrations performed per MTW-MP-UF6-2004, "UF<sub>6</sub> Cylinder Scale Repair."

The inspectors reviewed a sample of the licensee's corrective action program entries for the past 12 months to verify if deviations from procedures and unforeseen process changes affecting, chemical, radiological, or fire safety were documented and investigated promptly. Also, the inspectors evaluated the corrective actions associated with the incident reports listed in Section 4 of the Attachment to verify that the completed corrective actions were adequate.

b. Conclusion

No violations of NRC requirements were identified.

2. Fire Protection Annual (IP 88055)

a. Inspection Scope and Observations

The inspectors reviewed licensee procedures and toured plant areas containing fire safety controls to assess the material condition of fire protection equipment, systems, and features and evaluate compliance with Paragraphs 5.3.3 and 5.5 of the license application, Paragraph 2.7 of the Safety Determination Report (SDR), and Paragraph 7.3.2 of the ISA Summary. The inspectors performed detailed evaluations of plant areas containing fire suppression systems, fire water storage tank, fire water pump, mitigation towers, fire water distribution system, and reviewed maintenance records to determine if the systems were being maintained in an operable condition and inspected in accordance with Paragraph 2.7.2 of the SDR. The inspectors accompanied licensee personnel while conducting weekly fire protection functional testing and fire system inspections to evaluate compliance with licensee procedure MTW-ADM-FPP-0012, "Fire Protection Systems and Maintenance," Revision (Rev.) 4.

The inspectors evaluated the storage of flammable materials and the program implemented to control combustible materials to determine compliance with Paragraph 2.7.4 of the SDR. The inspectors evaluated maintenance activities and the hot work permit program to determine compliance with licensee procedure MTW-SAF-LS-0005, "Hot Work Permits." The inspectors evaluated the adequacy, location, accessibility, and the material condition of portable extinguishers used throughout the facility to determine compliance with Paragraph 11.0, Fire Protection and Emergency Response, MTW-MAN-FPP-0001, Rev. 3, Metropolis Works Fire Protection Program, Top Tier Manual. The inspectors evaluated the licensee's performance in the control of hydrocarbons in new and recertified UF<sub>6</sub> 48Y cylinders to verify compliance with the requirements of Paragraph 1.6.3 of the ISA Summary; Title 10 Code of Federal Regulations (10 CFR), Part 71, Subpart H; and American National Standard Institute (ANSI) N14.1, Revision 2012. The inspectors reviewed a sample of documentation associated with new 48Y cylinders that were being manufactured and delivered to the licensee. The inspectors reviewed Westerman Inc. manufacturing and certification processes quality control documentation for the UF<sub>6</sub> cylinder shipped to Honeywell, specifically at the post-hydro cleaning and inspection activities prior to shipment to the licensee, and the licensee cylinder receipt checklist MTW-SOP-UF6C-0217, associated with procedure MTW-SOP-UF6C-0217, Rev. 6, "UF<sub>6</sub> Cylinder Shipping and Receiving Inspection."

The inspectors reviewed the licensee corrective action program (CAP) entries for the past 12 months to determine if the licensee was identifying fire safety controls and events in accordance with MTW-ADM-REG-0110, "Corrective Action Program."



b. Conclusion

No violations of NRC requirements were identified.

B. Facility Support

1. Emergency Preparedness (IP 88050)

a. Inspection Scope and Observations

The inspectors reviewed the written agreements with off-site agencies to verify that these agreements were updated annually as required by the Emergency Plan. The inspectors interviewed representatives of the Massac County Emergency Services and the Metropolis Fire Department to determine if they maintained an adequate understanding of the written agreements that are currently in place and if the licensee provided these organizations the opportunity for training as required by the Emergency Plan. The inspectors reviewed records to verify that the licensee performed communication checks with the off-site organizations on a quarterly basis as required by the Emergency Plan. The inspectors reviewed the licensee's emergency call list to verify that the list was current.

The inspectors interviewed staff and reviewed records to determine that changes made to the Emergency Plan had been properly coordinated within the emergency preparedness (EP) program. The inspectors reviewed procedure revisions since the last emergency preparedness inspection to determine if the changes were in compliance with the Emergency Plan.

The inspectors reviewed training records and interviewed licensee staff regarding emergency preparedness training requirements and documentation to determine if the EP training program complied with the Emergency Plan requirements. As part of this review the inspectors verified if the licensee provided training for personnel and emergency equipment as required by the Emergency Plan and that the individuals responsible for utilizing the equipment were qualified. The inspectors also verified if the licensee provided training for emergencies that was effective and consistent with the frequency and performance objectives required in the Emergency Plan.

The inspectors observed the storage of emergency equipment in the Emergency Response Trailer and the Emergency Operations Center (EOC) to verify if the inventory levels were properly maintained as required by the Emergency Plan. The inspectors reviewed the records associated with maintenance and operational checks for emergency equipment to confirm if equipment was properly inspected and verified operable as required by the Emergency Plan. The inspectors toured the EOC in order to verify that the area was readily accessible and communication equipment was maintained ready for use.

The inspectors reviewed documentation of past emergency drills, since the last emergency preparedness inspection, to verify that the drill scenario effectively tested aspects of the Emergency Plan. The inspectors also verified if any problems or deficiencies associated with the implementation of the Emergency Plan or drill scenarios

were corrected. The inspectors reviewed the self-assessments generated since the last inspection to verify that a system was in place for adequately tracking and resolving self-assessment findings.

b. Conclusion

No findings of significance were identified.

C. Exit Meeting

The inspection scope and results were presented to members of the licensee's staff at various meetings throughout the inspection period and were summarized on August 18, 2016, to the plant manager, John Albritton, and staff. No dissenting comments were received from the licensee. Proprietary information was discussed but not included in the report.

## SUPPLEMENTAL INFORMATION

### **1. KEY POINTS OF CONTACT**

<u>Name</u>	<u>Title</u>
J. Albritton	Plant Manager
S. Anderson	Training Coordinator
M. French	Health and Safety Manager
J. Fulks	Operations Manager
T. Howard	HSE Supervisor
R. Lindberg	Health Physics Supervisor
M. Mena	Regulatory Affairs and QA Supervisor
S. Patterson	Regulatory Affairs Manager
E. Robinson	Operations Lead Nuclear
B. Stephenson	Emergency Preparedness Coordinator
J. Taylor	Training Supervisor
M. Wolf	Nuclear Compliance

### **2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

None

### **3. INSPECTION PROCEDURES USED**

88020	Operational Safety
88050	Emergency Preparedness
88055	Fire Protection Annual

### **4. DOCUMENTS REVIEWED**

#### Records:

Fire Alarm and Life Safety System Inspection Certificate, inspection and functional testing documentation, issued by Premier Fire & Security Inc., dated April 22, 2016

Honeywell-Metropolis Works 2016 Emergency Response Exercise (Non-NRC Graded)

MTW-ADM-EPIP-0008, Form A, FMB Control Room Emergency Response Cabinet

Equipment Inventory, records dated June 13, 2016, July 21, 2016 and August 12, 2016

Emergency Response Radio Monthly Check, records dated May 23, 2016, June 29, 2016, and July 21, 2016

MTW-ADM-EPIP-0008, Form B, UF6 Cylinder Emergency Transportation Kit), records dated May 4, 2016; June 28, 2016; and July 21, 2016

MTW-ADM-EPIP-0008, Form D, SCBA & Cylinder Inventory/Inspection Log Sheet, records dated May 6, 2016, June 28, 2016, and July 21, 2016

MTW-ADM-EPIP-0008, Form F, Emergency Response Trailer Equipment Inventory, records dated May 24, 2016; June 17, 2016; and July 21, 2016

MTW-ADM-EPIP-0008, Form G, Automatic External Defibrillators (AED), records dated August 5, 2016; June 7, 2016; and July 21, 2016

MTW-DOC-ERP-0701, Rev. 49, Emergency Managers and SME Recall List

MTW-FRM-TRN-0075, Attendance Record Sheet for Crisis Manager Training, records dated October 2, 2013; March 24, 2014; March 31, 2014; and April 1, 2014

MTW-FRM-TRN-0701C, Attendance Record for 8 Hour HazMat Tech Refresher Training (various)

PM-70737102, AT-EQSS01 Test, Verification ASD 1 YR, dated March 17, 2016  
 PM-70777554, AT-EQSS01 Test Seismic System, dated August 9, 2016  
 PM-70777555, AT-EQSS02 Test Seismic System, dated August 9, 2016  
 PM-70777556, AT-EQSS03 Test Seismic System, dated August 9, 2016  
 Work Order 70712587, T801 TK Farm Mitigation spray tower, annual maintenance,  
 completed June 18, 2015

Procedures:

EPIP-0001, Identification and Reporting Emergency Conditions, Rev. 3  
 EPIP-0002, Classification and Notification, Rev. 14  
 EPIP-0003, Crisis Management and Incident Command Staff Responsibilities, Rev. 9  
 EPIP-0004, Emergency Response Organization Activities, Rev. 4  
 EPIP-0006, Personnel Evacuation and Accountability, Rev. 12  
 EPIP-0007, Personnel Equipment and Decontamination under Emergency Conditions,  
 Rev. 1  
 EPIP-0008, Maintaining Emergency Preparedness, Rev. 9  
 EPIP-0009, Chemical Release Control, Rev. 6  
 EPIP-0010, Loss of Electric Power and Standby Power Action Plan, Rev. 7  
 EPIP-0011, Responding to Credible Airborne Threats, Rev. 2  
 EPIP-0012, Transportation Emergency Response, Rev. 1  
 EPIP-0013, Natural Disaster: Tornado, Thunderstorm, Flood, Earthquake, Rev. 3  
 EPIP-0014, Natural Gas Leak Response, Rev. 3  
 EPIP-0015, Hydrogen Leak Response, Rev. 0  
 Honeywell Metropolis Emergency Response Plan, Rev. 7  
 MTW-ADM-FPP-0001, Control of Transient Combustibles and Ignition Sources, Rev. 0  
 MTW-ADM-MT-0001, Control of Maintenance and Modification Activities Associated with  
 PFAP-Related Equipment (LR-1), Rev. 3, dated January 12, 2016  
 MTW-ADM-REG-0110, Corrective Action Program, Rev. 0  
 MTW-ADM-QA-0160, Performance of Internal Audits, Self-Assessments, and Inspections,  
 Rev. 3  
 MTW-CHK-TFO-0750A, Standard Operating Procedure, Rev. 0  
 MTW-MAN-FPP-001, Metropolis Works Fire Protection Program Top Tier Manual, Rev. 0  
 MTW-MP-GEN-0189, Bolt Torque Procedure, Rev. 13  
 MTW-MP-UF6-2004, UF<sub>6</sub> Cylinder Scale Repair, Rev. 1  
 MTW-POL-PD-0101, Hydrocarbon Control, Rev. 2, dated August 8, 2013  
 MTW-SAF-IP-0018, Housekeeping, Rev. 5  
 MTW-SAF-LP-0008, Fire Protection Systems and Maintenance, Rev. 6  
 MTW-SAF-LP-0010, Fire System Impairment Control and Notification, Rev. 4  
 MTW-SAF-LS-0002, Lock/Tag/Try (LTT), Rev. 5  
 MTW-SAF-LS-0005, Hot Work Permits, Rev. 11  
 MTW-SAF-LS-0007, Line Breaking/Equipment Opening, Rev. 5  
 MTW-SOP-DIS-0200, Distillation Operations, Rev. 29, dated November 11, 2015  
 MTW-SOP-TFO-0705, Testing of HF Mitigation Spray Tower System, Rev. 0  
 MTW-SOP-UF6C-0203, New Cylinder Inspection, Rev. 4, dated January 15, 2015  
 MTW-SOP-UF6C-0209, Used Cylinder Inspection and Disposition, Rev. 1, dated April 23,  
 2013

Condition Reports Written as a Result of the Inspection:

IR-16-1940, Documented Comments Identified by NRC during the inspection

Condition Reports Review:

IR-15-2152, IR-15-2465, IR-15-2674, IR-15-2781, IR-15-2943, IR-16-133, IR 16-272,  
 IR-16-353, IR-16-0519, IR-16-0525, IR-16-0526, IR-16-0529, IR-16-0534, IR-16-0535,  
 IR-16-0542, IR-16-560, IR-16-640, IR-16-0999, IR-16-1024, IR-16-1105, IR-16-1107,  
 IR-16-1108, IR-16-1109, IR-16-1111, IR-16-1237

Other Documents:

AUD-2016-0003, A-68 Emergency Response Plan Audit, dated May 25 – June 3, 2016  
 AUD-2015-0003, A-68 Emergency Response Plan Audit, dated August 24 – December 1,  
 2015

MTW-DOC-ERP-0701, Emergency Managers and SME Recall List

MTW-STG-SUPER101r1, Shift Superintendent, Incident Commander Initial training and  
 Qualification

Emergency Response Refresher Training Briefing Material

Memorandum of Understanding with the Metropolis Fire Department

Mutual Assistance Agreement with the Massac County Fire Department

Letter of Agreement with the Baptist Health Center Paducah

Mutual Assistance Agreement with Lourdes Hospital

Mutual Assistance Agreement with Massac Memorial Hospital

Mutual Assistance Agreement with the City of Metropolis

Mutual Assistance Agreement with the Massac County Commission

Mutual Assistance Agreement with the Massac County Sheriff's Department

Memorandum of Understanding with the Paducah National Weather Service

Mutual Assistance Agreement with Massac County Emergency Services

Mutual Assistance Agreement with the Metropolis Police Department

Mutual Assistance Agreement with the City of Metropolis Office of Emergency Management

Mutual Assistance Agreement with the Metropolis/Massac County 911