



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

April 10, 2019

Mr. Jon Price  
Plant Manager  
Honeywell Metropolis Works  
P.O. Box 430  
Metropolis, IL 62960

**SUBJECT: HONEYWELL METROPOLIS WORKS – NUCLEAR REGULATORY COMMISSION  
INTEGRATED INSPECTION REPORT 40-3392/2019-002**

Dear Mr. Price:

This letter refers to the inspections conducted from January 1 to March 31, 2019, at the Honeywell Metropolis Works facility in Metropolis, IL. The purpose of the inspections was to determine whether activities authorized under the facility's license were conducted safely and in accordance with U.S. Nuclear Regulatory Commission (NRC) requirements. The enclosed inspection report presents the results of the inspections.

The inspections examined activities conducted under your license as they relate to public health and safety, the common defense and security, and to confirm compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC has determined that no violations of more than minor significance were identified.

In accordance with Title 10 of the *Code of Federal Regulations*, Section 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>.

J. Price

2

If you have any questions, please contact Tom Vukovinsky of my staff at (404) 997-4622.

Sincerely,

*/RA/*

Eric C. Michel, Chief  
Projects Branch 2  
Division of Fuel Facility Inspection

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

Enclosure:  
NRC Inspection Report No. 40-3392/2019-002  
w/Attachment: Supplemental Information

cc: (See page 3)

cc:

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SUBJECT: HONEYWELL METROPOLIS WORKS – NUCLEAR REGULATORY COMMISSION  
 INTEGRATED INSPECTION REPORT 40-3392/2019-002

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**U.S. NUCLEAR REGULATORY COMMISSION  
REGION II**

Docket No.: 40-3392

License No.: SUB-526

Report No.: 40-3392/2019-002

Licensee: Honeywell International, Inc.

Facility: Metropolis Works

Location: Metropolis, IL 62960

Inspection Dates: January 1 to March 31, 2019

Inspectors: J. Rivera-Ortiz, Senior Fuel Facility Inspector (Sections A.1, B.1)  
P. Startz, Fuel Facility Inspector (Section A.2)

Approved by: E. Michel, Chief  
Projects Branch 2  
Division of Fuel Facility Inspection

Enclosure

## **EXECUTIVE SUMMARY**

Honeywell International, Inc.  
Honeywell Metropolis Works  
Nuclear Regulatory Commission Integrated Inspection Report 40-3392/2019-005  
January 1 – March 31, 2019

The U.S. Nuclear Regulatory Commission (NRC) regional inspectors conducted inspections during normal shifts in the areas of Operational Safety 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. No violations of more than minor significance were identified during the inspection.

### **Operational Safety**

- In the area of Operational Safety, no violations of more than minor significance were identified. (Paragraph A.1)
- In the area of Fire Protection, no violations of more than minor significance were identified. (Section A.2)

### **Facility Support**

- In the area of Maintenance and Surveillance of Safety Controls, no violations of more than minor significance were identified. (Section 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 (MTW) 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 into uranium hexafluoride (UF<sub>6</sub>). During this inspection period, all uranium conversion processing remained shut down, referred to as ready-idle status. The only significant NRC licensed uranium operations being conducted included the receipt, sampling, storage, and shipment of uranium ore; and radiological support staff operations.

#### A. OPERATIONAL SAFETY

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

###### a. Inspection Scope

The inspectors reviewed the implementation of operational safety activities to verify compliance with Materials License SUB-526 (hereinafter referred as “the license”), documents incorporated by reference therein, and the requirements in 10 CFR 40, “Domestic Licensing of Source Material.” Because the facility was in “ready-idle” at the time of the inspection and is expected to remain in that state for an extended period, the inspectors completed the inspection procedure requirements that were applicable to the current operational status of the facility.

The inspectors interviewed licensee staff, reviewed records, and conducted general walk-downs of plant systems that are designed to process licensed material during normal operation. The inspectors focused their review on the actual configuration of plant systems and the applicability of safety controls (i.e., plant features and procedures or PFAPs) for “ready-idle” status. The inspectors relied on the latest version of the Integrated Safety Analysis (ISA) Summary and Safety Demonstration Report (SDR) to identify safety-significant activities for inspection.

The inspectors discussed with licensee staff the technical and regulatory basis for deactivating all PFAPs described in the ISA Summary, except an administrative PFAP for hydrocarbon control in UF<sub>6</sub> systems which would remain active during “ready-idle” (if needed). The inspectors reviewed the accident sequences described in the ISA Summary and the hazards evaluated in the SDR with their corresponding PFAPs and safety features, respectively, to confirm which ones were applicable during the “ready-idle” state. For the PFAPs and safety features that were identified as inactive, the inspectors obtained reasonable assurance that the accident and hazardous conditions associated with those controls were not applicable during “ready-idle” in accordance with the licensing basis of the facility. For the active PFAP, the inspectors confirmed it was available and that the corresponding management measures were implemented as required by the license.

The inspectors conducted a walk-down of the Feed Materials Building (FMB) to assess the condition and configuration of plant systems and components that were out of service due to the “ready-idle” state and verify that they were maintained in a safe

condition. The scope of the walk-down included components within the fluorination and distillation systems, including vessels, cold trapping systems, distillation columns, product condensers, and product cylinder filling equipment.

The inspectors also performed walk-downs of plant areas that support normal plant operations such as the anhydrous hydrofluoric acid and hydrogen storage (currently vacant), tank farm, and product cylinder storage area. The inspectors verified that these areas were maintained in a safe condition and that the applicable safety controls were in place. The inspectors also performed walk-downs of the sampling plant and the drum storage pad, and observed ongoing sampling plant operations, to verify that the applicable safety controls were functional and available in accordance with the licensing basis documents.

The inspectors interviewed personnel from the training organization and reviewed a sample of training material and training completion records for sampling plant operators to verify that the licensee continued to implement the training program for the areas of the facility in operation.

The inspectors also interviewed the Regulatory Affairs Manager and reviewed documentation to verify that: (1) safety-significant changes to procedures in the area of operations safety, (2) changes to the operations safety program organization, and (3) program audits/self-assessments performed since the last NRC inspection in this area were implemented in accordance with the license requirements.

Additionally, the inspectors reviewed a sample of corrective action program entries (i.e., Incident Tracking and Corrective Action (ITCA)) for the past 12 months to verify that safety-significant plant issues were entered in the program for resolution. The review of corrective actions included the implementation of compensatory measures for unavailable PFAPs to verify compliance with procedure MTW-ADM-OPS-0121, "Management of Plant Features and Procedures."

b. Conclusion

No violations of more than minor significance were identified.

2. Fire Protection – Annual (Inspection Procedure 88055)

a. Inspection Scope

The inspectors reviewed elements of the fire protection program that were revised to accommodate the shift to the "ready-idle" state; to evaluate compliance with the license, SDR, MTW MAN FPP-0001, "Fire Protection Program/Top Tier Manual," Fire Hazard Analysis, and other recently revised implementing procedures listed in the attachment.

The inspectors focused on physical inspections of the existing fire protection capability relative to the "idle-ready" status of the UF<sub>6</sub> manufacturing portions of the facility. All UF<sub>6</sub> production operations had been suspended, all natural gas and hydrogen gas supplies to the Feed Materials Building (FMB) were terminated, all chemical supplies to the FMB were removed, and most combustible materials were removed from the buildings. The termination and removal of chemical, flammable, and combustible sources capable of



sustaining a significant fire within the UF<sub>6</sub> production buildings had been completed and maintained in accordance with plant procedures. The electrical system remained energized to provide building lighting, emergency lighting, and to support the distributive control system. The fire protection program at the facility had been revised to align with the low risk fire potential. The inspectors interviewed the Massac County Fire Chief about the preparedness and interaction with the facility staff. The Fire Chief indicated that the Honeywell staff continued to interact with the county fire department and provide up to date emergency preparedness documentation.

The inspectors reviewed samples of recently revised plant procedures to accommodate the termination of production activities and transition into the "idle-ready" status to evaluate compliance with regulatory requirements including the license, SDR, Fire Protection Program/Top Tier Manual, and revised Fire Hazard Analysis. The inspectors reviewed applicable National Fire Protection Association (NFPA) codes that the licensee had committed to in its license and SDR.

The inspectors reviewed samples of pre-fire plans to assess if they contained the required aspects and if they were being properly revised by performing confirmatory field walk-downs. The walk downs included the uranium sampling building, uranium bulk storage areas, FMB and peripheral support equipment pads, waste materials collection and packaging areas, UF<sub>6</sub> cylinder storage areas, maintenance and warehouse areas, laboratories, the waste water treatment facility, groundwater pumps that feed the underground fire water loop, and the fire water loop including hydrants. The inspectors noted that the diesel-electric fire water pump and fire water storage tank were taken out of service.

The inspectors evaluated samples of fire detection systems and suppression equipment located in various parts of the facility for compliance with plant procedures. The material condition of water sprinkler systems including stand pipes, piping, and sprinklers were evaluated to determine operability in accordance with MTW-MAN-FPP-0001. The inspectors reviewed annual fire system inspection reports completed by a licensed fire protection subcontractor located in Paducah, KY. The inspectors reviewed samples of maintenance and repetitive inspection records to determine if the required fire protection and detection systems, emergency lighting, and fire extinguisher periodic status inspections were being performed in accordance with internal operating procedure MTW-ADM-FPP-0012, "Fire Protection Systems and Maintenance."

The inspectors reviewed a corrective action program entry associated with the underground fire water loop pipeline that cracked and began leaking on December 28, 2018. The inspectors evaluated the response of personnel to determine compliance with plant procedures and if the event was identified and evaluated at the proper threshold and corrective actions were being implemented in accordance with procedure MTW-ADM-REG-0110, "Corrective Action Program," and managed using the Incident Tracking and Corrective Action (ITCA) computerized system.

The inspectors reviewed the following fire protection program elements for compliance with MTW MAN-FPP-0001: Control of Combustibles, Hot Work Permits, Compensatory measures for out-of-service fire protection equipment, Emergency Operating Actions required to mitigate adverse effects of a fire, and Management of Change process for maintenance and facility changes.

b. Conclusion

No violations of more than minor significance were identified.

B. Facility Support

1. Maintenance and Surveillance of Safety Controls (Inspection Procedure 88015)

a. Inspection Scope

The inspectors reviewed the implementation of the Maintenance Program to verify compliance with the license and documents incorporated by reference therein. Because the facility was in “ready-idle” at the time of the inspection and is expected to remain in that state for an extended period, the inspectors completed the inspection procedure requirements that were applicable to the current operational status of the facility.

The inspectors reviewed a list of preventive maintenance tasks (PMTs) that remained active during “ready-idle” to verify, on a sampling basis, that maintenance activities for applicable safety controls were included. The inspectors also reviewed lists of PMTs that were deactivated for “ready-idle” to verify that applicable safety-significant PMTs were not excluded from the list of active PMTs and that the licensee had properly identified the maintenance activities that would need reinstatement for normal operations.

There were no safety-significant PMTs taking place during the inspection. However, the inspectors selected a sample of work orders (WOs) for maintenance activities performed since the facility was placed in “ready-idle” state and reviewed, as applicable, work control procedures, pre-job planning, maintenance observations, post-maintenance testing, and completed work package to verify compliance with the license and licensee procedures for maintenance control. The WOs selected were:

- WO 70856488, F-311 Sampling Plant Primary Vacuum D/C (R) 3Y, dated September 14, 2017
- WO 70939843, Quarterly Seismic System Test, dated January 8, 2019
- WO 70939844, Quarterly Seismic System Test, dated January 8, 2019
- WO 70939845, Quarterly Seismic System Test, dated January 8, 2019

The inspectors reviewed a sample of training records for the individuals involved in the WOs listed above and interviewed staff from the training organization to verify that maintenance training was in compliance with license requirements. The inspectors reviewed changes in the maintenance organization as a result of the “ready-idle” status to verify compliance with the position-specific requirements of the license.

Additionally, the inspectors reviewed a sample of corrective action program entries (i.e., incident reports) for the past 12 months to verify that the licensee identified safety-significant maintenance issues at an appropriate threshold and entered them in the program for resolution. The inspectors also interviewed the Regulatory Affairs Manager to verify that the audit requirements in the license were implemented for the area of maintenance and surveillance of safety controls, if applicable.

b. Conclusion

No violations of more than minor 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 February 20, 2019, to Mr. Jon Price, Plant Manager; and on February 26, 2019, to Ernest Robinson, Operations Manager/Technical Lead, and other staff members. Proprietary information was discussed but not included in the report.

## **SUPPLEMENTAL INFORMATION**

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

<u>Name</u>	<u>Title</u>
R. Lindberg	Health Physics Supervisor
S. Patterson	Regulatory Affairs and ESH Manager
J. Price	Plant Manager
E. Robinson	Operations Manager/Technical Area Lead
R. Sanders	Senior Quality Engineer
J. Taylor	Training Lead

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

None

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

88015	Maintenance and Surveillance of Safety Controls
88020	Operational Safety
88055	Fire Protection (Annual)

### **4. DOCUMENTS REVIEWED**

#### Procedures

MTW-ADM-OPS-0121, Management of Plant Features and Procedures, Rev. (Rev.) 23  
MTW-AOP-SMP-0500, Sampling Plant Abnormal Operation, Rev. 1  
MTW-EOP-SMP-0600, Sampling Plant Emergency Operation, Rev. 1  
MTW-SOP-DIS-0200, Distillation Operation, Rev. 39  
MTW-SOP-SMP-0211, Cleaning of Sampler Room, Rev. 3  
MTW-SOP-SMP-0213, Dust Collector Cleanout, Changeout, and Other Work, Rev. 2  
MTW-SOP-SMP-0215, Sampling Plant System Startup and Operation, Rev. 8  
MTW-ADM-FPP-0001, Control of Transient Combustibles and Ignition Sources, Rev. 4  
MTW-ADM-FPP-0007, Fire Pre-Plan Guide Fire Emergency and Prevention, Rev. 4  
MTW-ADM-FPP-0012, Fire Protection Systems and Maintenance, Rev. 7  
MTW-ADM-FPP-0013, Fire System Impairment Control and Notification, Rev. 4  
MTW-ADM-REG-0110, Corrective Action Program, Rev. 7  
MTW-MAN-FPP-001, Metropolis Works Fire Protection Program Top Tier Manual, Rev. 4

#### Corrective Action Program Reports/Incident Tracking and Corrective Action (ITCA)

ITCA-18-0120, Operator Had Two Incidents While Removing the Filter Cloth from F-660, dated February 17, 2018  
ITCA-18-0207, Cylinder received at UUSA reported to have high pressure, dated March 7, 2018  
ITCA-18-0598, Drum Fell Over While Attempting to Exit the Auger, dated April 19, 2018

ITCA-18-0797, Project to Install HVAC Started without an EMOC, dated October 18, 2018

ITCA-18-0802, 5 Drums of Supplier Ore Appear to Contain Pressure, dated October 18, 2018

ITCA-18-0957 Underground Fire Line Leak

Other Documents

List of periodic checks of emergency lights and exit signs

SUB-526-ISA-R16, Integrated Safety Analysis Summary, Rev. 16

Visual Contamination Survey, dated February 15, 2019

Fire Extinguisher Inspection Logs, 2019

Premier Fire and Security, Sprinkler Inspection Certificate for Maintenance and Stores for 2018