



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200
ATLANTA, GEORGIA 30303-1200

January 26, 2023

EN 56161

Mr. Brian Hunt
Plant Manager
Honeywell International, Inc.
P.O. Box 430
Metropolis, IL 62960

SUBJECT: HONEYWELL METROPOLIS WORKS – INTEGRATED INSPECTION REPORT
04003392/2022004

Dear Brian Hunt:

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) inspection activities conducted from October 1, 2022, to December 31, 2022, for the Honeywell Metropolis Works facility. On December 6, 2022, the NRC inspectors discussed the results of this inspection with you. The results of this inspection are documented in the enclosed report.

No violations of more than minor significance were identified during this inspection.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

A handwritten signature in blue ink, appearing to read "ECM".

Signed by Michel, Eric
on 01/27/23

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

Docket No. 04003392
License No. SUB-526

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV

SUBJECT: HONEYWELL METROPOLIS WORKS – INTEGRATED INSPECTION REPORT
04003392/2022004 DATED JANUARY 26, 2023

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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Number: 04003392

License Number: SUB-526

Report Number: 04003392/2022004

Enterprise Identifier: I-2022-004-0060

Licensee: Honeywell International, Inc.

Facility: Honeywell Metropolis Works

Location: Metropolis, IL

Inspection Dates: November 07, 2022 to November 10, 2022
December 06, 2022

Inspectors: G. Goff, Fuel Facility Inspector
N. Peterka, Fuel Facility Inspector
T. Sippel, Sr. Fuel Facility Project Inspector
P. Startz, Fuel Facility Inspector
T. Vukovinsky, Sr. Fuel Facility Project Inspector

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

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Honeywell Metropolis Works, in accordance with the fuel cycle facility inspection program. This is the NRC's program for overseeing the safe operation of licensed fuel cycle facilities. Refer to <https://www.nrc.gov/materials/fuel-cycle-fac.html> for more information.

List of Violations

No violations of more than minor significance were identified.

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
WER	2022-001	EN 56161	88050	Closed

PLANT STATUS

The Honeywell Metropolis Works (MTW) uranium conversion facility located near Metropolis, IL. The licensee is authorized to possess 150 million pounds of natural uranium ore and to convert the uranium ore into uranium hexafluoride (UF₆). During this inspection period, all uranium conversion processing remained shut down, processing equipment emptied, 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.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Inspections were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter 2600, "Fuel Cycle Facility Operational Safety and Safeguards Inspection Program." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

SAFETY OPERATIONS

88020 - Operational Safety

The inspectors evaluated selected aspects of the licensee's operational safety program to verify compliance with selected portions of Chapter 2.4, "Management Measures," and Chapter 3, "Integrated Safety Analysis," of the facility's license application, and applicable licensee procedures.

Identification of Safety Controls and Related Programs (IP Section 02.01)

The inspectors selected specific process areas for inspection based on the safety basis information of the facility, the risk/safety significance of the process areas, the description of plant changes submitted to the NRC, and past plant performance documentation. For the process areas of interest, the inspectors selected a sample of accident sequences in chemical safety based on the information provided in the integrated safety analysis (ISA) summary. The inspectors conducted a general plant tour of each major plant operating area. The process areas and accident sequences selected for review are listed below:

- TF-1, "Rupture of the HF Unloading Hose"
- TF-5, "Failure of Nitrogen Pressure Supply Line"
- EE-EQ-5, "HF Release at HF Rail Car"

Review of Safety Controls and Related Programs (IP Section 02.02)

The inspectors reviewed information related to administrative, engineered, and passive safety controls or plant features and procedures (PFAPs) for the accident sequences selected above, including the identification of the licensee's assumptions and bounding cases as they apply to each of the selected accident sequences, safety controls, or PFAPs.

This review was performed to verify that the controls or PFAPs were available and reliable to perform their intended safety functions and that the design basis assumptions were reflected in the actual conditions in the field. The specific safety controls selected for review are listed below:

- PFAP-1, Pressure Sensors in Hydrofluoric Acid (HF) Unloading Hoses, active engineering control (AEC)
- FPAP-2, Photoelectric Relay, AEC
- PFAP-3, Flow Sensor in HF Unloading Station, AEC
- PFAP-4, Operator Actions, administrative control (AC)
- PFAP-5, Hydrostatic Hose Testing, passive engineering control (PEC)
- PFAP-19, HF Unloading Valve Closure, AC
- FPAP-20, Redundant Check Valves on Nitrogen Supply, AEC
- FPAP-22, Automatic Shutoff of Nitrogen Supply, AEC
- PFAP-35, Flame Failure Sensors, AEC

Implementation of Safety Controls (IP Section 02.03)

For the selected safety controls listed above, the inspectors reviewed management measures to verify proper implementation in accordance with applicable sections of the license application. This review was performed to verify that selected safety controls or PFAPs were present, available, and reliable to perform their safety function and that the design basis assumptions were reflected in the actual conditions in the field. The inspectors conducted the following activities to verify the implementation of selected safety controls:

- performed walkdowns performed to verify implementation of PFAPs listed above
- reviewed MTW-ADM-OPS-0121, "Management of Plant Features and Procedures for PFAPs"
- reviewed installation of incinerator controls associated with PFAP-35, "Incinerator Flame Sensor"

Safety Control Support Programs (IP Section 02.04)

The inspectors assessed additional management measures that support the availability and reliability of the selected safety controls to verify these were implemented in accordance with applicable sections of the license application.

- reviewed work order (WO) 71086763 for EXV-BD9609
 - reviewed WO 101325521 for EXV-BD9609
 - reviewed WO 101325503 for EXV-BD9610
 - reviewed WO 101325522 for EXV-BD9611
 - reviewed WO 101325523 for EXV-BD9612
- reviewed WO 71086765 for XV-BD9616
- reviewed WO 101340424 for BD-96

88055 - Fire Protection

The inspectors evaluated selected aspects of the licensee's fire protection program to determine whether the operational status, material condition, and design of fire protection systems met the

applicable requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 40, "Domestic Licensing of Source Material," Chapter 7, "Fire Safety," of the facility's license application, and applicable licensee procedures.

Selection of Inspection Samples (IP Section 02.01)

The inspectors reviewed licensing documents to select a sample of fire protection features in risk-significant areas/processes, including those fire protection related systems committed to in the license application. The inspectors also selected licensee activities that support the implementation of the fire protection program based on the program description included in the license application. Specifically, the inspectors selected the following fire protection features and licensee activities:

- in-service fire protection systems identified in section 7.2 of the license application including the sprinkler systems in the maintenance storeroom area, fire hydrants, and fire extinguishers
- the licensee's fire water tank
- fire protection audits of transient combustibles, incipient fire training for the emergency response team, and pre-fire plans
- additionally, the inspectors interviewed an offsite fire organization that supports the licensee

Preventative Controls (IP Section 02.02)

The inspectors interviewed licensee staff, reviewed documentation, and conducted plant walkdowns to verify the licensee's controls for combustibles and ignition sources met the license requirements and applicable requirements in 10 CFR 40. Specifically, the inspectors conducted the inspection activities listed below:

- interviewed the licensee fire protection engineer and reviewed records of transient combustible quarterly audits to verify the licensee's compliance with section 7.1.2 of the license application
- walked down a sample of active hot work and reviewed MTW-SAF-LS-0005, "Hot Work Permits," Revision (Rev.) 15, observed the barriers around the hot, the presence of a fire watch, fire extinguisher(s), fire blankets
- reviewed a hot work permit located at the site of the hot work and sample of recently completed hot work permits
- conducted walkdowns in selected areas to verify that transient combustibles were not improperly accumulating

Fire and Gas Detection and Alarm Systems (IP Section 02.03)

The inspectors reviewed selected fire or gas detection devices to verify that detection and alarm systems were able to detect the minimal fire within the required time and initiate the safety function credited in the license application, or the ISA summary. Specifically, the inspectors conducted the inspection activities listed below:

- reviewed log sheet for the daily checks and monthly calibration of explosive gas detectors and interviewed licensee staff about the calibration and use of the detectors

- reviewed inspection certificates for fire alarm systems
- observed smoke detectors and water flow alarm during walkdowns

Suppression Systems and Activities (IP Section 02.04)

The inspectors interviewed license staff, reviewed fire protection program documents, and conducted plant walkdowns to verify that suppression systems were capable of performing the safety function credited in the license application. Specifically, the inspectors:

- reviewed sprinkler and FM-200 certificates (inspection/test records)
- walked down fire water tank, fire pump, portions of the sprinkler system in the maintenance shop area
- interviewed licensee fire protection staff and reviewed monthly and annual fire extinguisher inspection records
- interviewed licensee emergency response and fire protection personnel concerning systems to preclude or limit release of effluents from firefighting water

Passive Fire Protection Features (IP Section 02.05)

The inspectors reviewed selected passive fire protection features to verify these were in a proper material condition to perform the safety function credited in the license application. Specifically, the inspectors performed the following activities:

- reviewed Annual Fire Damper Test Building B-6 dated March 29, 2022
- observed the material of construction while on walkdowns

Fire Protection Program Elements (IP Section 02.06)

The inspectors reviewed selected fire protection program elements to verify compliance with the license requirements. Specifically, the inspectors completed the following activities:

- reviewed MTW-ADM-FPP-0013, "Fire System Impairment Control and Notification," Rev. 3, and fire impairment log entries for the last year
- reviewed incipient fire (fire extinguisher) training records and training material
- interviewed licensee staff about organizational changes to the licensee's fire protection program
- reviewed portions of the pre-fire plan, interviewed licensee staff about site changes that effect fire protection, and walked down recent changes to the site

Identification and Resolution of Problems (IP Section 02.07)

The inspectors reviewed the licensee's identification and resolution of fire protection issues to verify compliance with the license requirements. Specifically, the inspectors reviewed:

- corrective action program entries that occurred over the last year:
ITA20220050-01, ITA20220170-01, ITA20220214-01, ITA20220217-01,
ITA20220229-01, ITA20220236-01, ITA20220237-01, ITA20220238-01

FACILITY SUPPORT

88050 - Emergency Preparedness

The inspectors evaluated selected aspects of the licensee's emergency preparedness program to determine whether the program is maintained as required by the emergency response plan (ERP), the license and license application, and NRC requirements in 10 CFR 40.

Emergency Preparedness Program Review and Implementation (IP Section 02.01)

The inspectors selected the following elements that support the implementation of the licensee's emergency preparedness program to verify compliance with 10 CFR 40.31(j)(3), Chapter 8, "Emergency Management," of the license application, and the emergency plan. Specifically, the inspectors conducted the following inspection activities:

- reviewed the latest revision of the ERP (Rev. 11)
- reviewed revisions to the emergency plan implementing procedures (EPIPs) (see listing in the Documents Reviewed section)
- reviewed a listing of current emergency response team (ERT) members and observed the training/qualification status for specific emergency response areas
- reviewed MTW-FRM-EPIP-0008E, Form E - Incident/Drill After Action Report for the biennial emergency exercise (05/04/2022) and a census drill (09/30/2022)
- reviewed two audits:
 - AUD-2020-0004, A-68 Emergency Response Plan, 10/21/2020 - 11/06/2020
 - AUD-2021-0004, A-68 Emergency Response Plan, 11/29/2021 - 12/13/2021
- reviewed mutual assistance agreements with off-site support agencies
- interviewed the following off-site support agencies:
 - Massac County Fire Department
 - Massac County Emergency Management Agency
 - Massac Memorial Hospital
- interviewed the emergency preparedness coordinator regarding expected changes to the emergency response plan when the licensee returns to fully operational status
- conducted a walkdown of muster locations for ERT members
- conducted a walkdown of "shelter-in-place" muster locations
- walked down muster/assembly locations for badge readers
- walked down the emergency response trailer and observed the emergency response equipment stored there
- walked down the radiological survey instruments dedicated to emergency response

Identification and Resolution of Problems (IP Section 02.02)

The inspectors reviewed the licensee's identification and resolution of emergency preparedness issues to verify compliance with the license requirements. Specifically, the inspectors reviewed the following corrective action program entries:

- reviewed the following corrective action entries from the biennial emergency exercise:
 - opportunities for improvement in training as identified in the exercise critique
 - opportunities for improvement in the emergency preparedness program as identified in the exercise critique

INSPECTION RESULTS

WER (Closed)	EN 56161 WER 2022-001	88050
<p>Description: Description: On 10/13/2022 Honeywell declared a “Plant Emergency” at 1700 CDT and then upgraded to an “Alert” declaration at 1725 in accordance with the Honeywell Emergency Response Plan due to a fire in the laboratory building. This event was reported to the NRC as Event Notice (EN) 56161. The fire was extinguished with the support of the Massac County Fire Department and the “All Clear” was declared at 1851 CDT on 10/13/22. One off-site firefighter was given a precautionary treatment for a potential chemical contact to the hand. Honeywell is currently investigating the cause of the incident.</p> <p>The inspectors reviewed the licensee’s casual analysis, 20220214-01, “Fire in Laboratory Building.” The fire started within a masonry wall of the laboratory building which was undergoing upgrades to add seismic bracing to the walls. Welding and hot work had been performed earlier in the day and the hot work caused a wood sill plate near the job site to smolder when exposed to the welding and hot work activities. A fire watch was in place at the time of the fire who attempted to extinguish the fire within the walls using a fire extinguisher; however, due to the location of the smoldering wood, it was not successful. Once it was determined the fire could not be extinguished locally, Honeywell called the Massac County Fire Department who responded and extinguished the fire shortly thereafter.</p> <p>At the time of the fire, the Honeywell Metropolis Works Facility was in a "ready-idle" state with minimal licensed and material handling activities ongoing. The fire inside the laboratory building did not affect NRC regulated activities or nuclear material. EN 56161 is considered closed.</p>		

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On November 10, 2022, the inspectors presented the Emergency Preparedness and Fire Protection inspection results to Mr. Brian Hunt and other members of the licensee staff.
- On December 6, 2022, the inspectors presented the Operational Safety inspection results to Mr. Brian Hunt and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
88020	Procedures	MTW-ADM_OPS_0121	Management of Plant Features and Procedures	Rev. 24
		SUB-526-ISA-R18	Integrated Safety Analysis Summary	Rev. 18
88050	Miscellaneous		Honeywell Metropolis Works Emergency Response Plan	Rev. 11
			MTW Operations Organization Chart	
		MTW-DOC-EP-0001	Mutual Assistance Agreement with City of Metropolis, Illinois, Fire Department	11/18/2020
		MTW-DOC-EP-0002	Mutual Assistance Agreement with Massac County Fire Dept.	11/18/2020
		MTW-DOC-EP-0003	Mutual Assistance Agreement with Lourdes Hospital	Automatic renewal
		MTW-DOC-EP-0004	Mutual Assistance Agreement with Baptist Health Paducah	11/15/2019
		MTW-DOC-EP-0005	Mutual Assistance Agreement with Massac Memorial Hospital	10/31/2019
		MTW-DOC-EP-0006	Mutual Assistance Agreement with Mayor Of Metropolis	11/17/2020
		MTW-DOC-EP-0007	Mutual Assistance Agreement with Massac County Commissioners	11/17/2020
		MTW-DOC-EP-0008	Mutual Assistance Agreement with Illinois State Police	12/17/2020
		MTW-DOC-EP-0009	Mutual Assistance Agreement with Massac County Sheriff Department	11/18/2020
		MTW-DOC-EP-0010	Memorandum of Understanding Between National Weather Service and MTW	11/15/2019
		MTW-DOC-EP-0011	Mutual Assistance Agreement with Massac County Emergency Management Agency	11/18/2020
MTW-DOC-EP-0012	Mutual Assistance Agreement with Metropolis Police Department	11/18/2020		
MTW-DOC-EP-0013	Mutual Assistance Agreement with Metropolis Office of Emergency Management	11/18/2020		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		MTW-DOC-EP-0014	Mutual Assistance Agreement with Metropolis/Massac County 911	11/18/2020
		MTW-DOC-ERP-0701	Emergency Managers and SME Recall List	Rev. 81
	Procedures	MTW-ADM-EPIP-0001	Identification and Reporting of Emergency Conditions	Rev. 8
		MTW-ADM-EPIP-0002	Emergency Classification and Notification	Rev. 25
		MTW-ADM-EPIP-0003	Crisis Management and Incident Command Staff Responsibilities	Rev. 17
		MTW-ADM-EPIP-0004	Emergency Response Organization Activities	Rev. 6
		MTW-ADM-EPIP-0006	Personnel Evacuation and Accountability	Rev. 17
		MTW-ADM-EPIP-0007	Personnel and Equipment Decontamination under Emergency Conditions	Rev. 3
		MTW-ADM-EPIP-0008	Maintaining Emergency Preparedness	Rev. 20
		Self-Assessments	AUD-2020-0004	A-68 Emergency Response Plan
AUD-2021-0004	A-68 Emergency Response Plan		11/29/2021 - 12/13/2021	
88055	Calibration Records		Log of daily checks and monthly calibration of the explosive gas detectors (November and late October entries)	
	Corrective Action Documents	ITA20220050-01, ITA20220170-01, ITA20220214-01, ITA20220217-01, ITA20220229-01, ITA20220236-01, ITA20220237-01, ITA20220238-01	Fire protection-related corrective action program entries	Reviewed on 11/09/2022
	Drawings	Dwg No. 42897-4A	Water Tank 36' 00 X 33' 1/4" H O.T.	08/30/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date	
		Dwg No. 48311	Det.-Water Storage Tank	08/30/2022	
	Engineering Evaluations	MTW-CALC-FPP-0004	UF6 Cylinder Fire Hazard Analysis	Rev. 1	
		MTW-CALC-UF6-0004	Evaluation of Accident Sequences CM-1 and CM-2: Onsite UF6 Cylinder Transport	Rev. 0	
		MTW-DOC-FPP-0001	Fire Hazards Analysis	05/11/2019	
	Fire Plans		Portions of the Pre-Fire Plan including drawings, documents, and pictures stored on Command Scope		
	Miscellaneous			Fire Impairment Log, Entries from mid-2021 to present	
				Combustible Material Inspection records, various areas	Various June dates
				Combustible Material Inspection records, various areas	Various September dates
				Hydrant Flow Test Results	10/31/2022
				Sprinkler Inspection Certificate for the Maint/Store Room Sprinkler System	09/20/2022
				Fire Suppression Inspection Certificate for the FM-200 in the FMB DCS Room	04/29/2022
				Fire Suppression Inspection Certificate for the FM-200 in the FMB DCS Room	10/31/2022
				List of repairs made to fire water tank	
				Records of replacing/buying new extinguishers	
				Training Attendance Log for "Fire Extinguisher Training"	08/15/2022
				Fire Alarm and Life Safety System Inspection Certificate - NGF2 Control Room	11/01/2022
				5-Year Internal Pipe Inspection for Honeywell International - Maint/Stores Sprinkler System	09/20/2022
			Annual Fire Extinguisher Inspection - 2022	01/25/22	
			Monthly Fire Extinguisher Inspection - 2022	10/28/2022	
		Fire Alarm and Life Safety System Inspection Certificate - Admin Bldg, Fire Alarm and Life Safety System Inspection Certificate -	10/31/2022		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Samp Plant, Fire Alarm and Life Safety System Inspection Certificate - Maint/Stores, Fire Alarm and Life Safety System Inspection Certificate - Const Bldg.	
	NDE Reports		FINAL REPORT API-653 Mechanical Integrity Inspection of the Fire Water Storage Tank U-128	04/28/2022
			U-128 Fire Water Storage Tank, API 653 External Visual Inspection & Ultrasonic Thickness Survey	03/15/2022
	Procedures	MTW-ADM-EPIP- 0014	Natural Gas Leak Response	Rev. 5
		MTW-ADM-FPP- 0001	Control of Transient Combustibles and Ignition Sources	Rev. 9
		MTW-ADM-FPP- 0007	Pre-Fire Plan Guide - Fire Emergency and Prevention	Rev. 4
		MTW-ADM-FPP- 0012	Fire Protection Systems and Maintenance	Rev. 9
		MTW-ADM-FPP- 0013	Fire System Impairment Control and Notification	Rev. 5
		MTW-ADM-FPP- 0014	Placement and Maintenance of Portable Fire Extinguishers	Rev. 3
		MTW-ADM-FPP- 0015	Fire Hazards in the Use of Oxygen and Flammable Gases	Rev. 1
		MTW-ADM-FPP- 0016	Flammable Liquids Fire Hazards	Rev. 1
		MTW-SAF-LS- 0005	Hot Work Permits	Rev. 15