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

April 29, 2024

Brett Suits
Plant Manager
Honeywell Metropolis Works
P.O. Box 430
Metropolis, IL 62960

SUBJECT: HONEYWELL METROPOLIS WORKS – INTEGRATED INSPECTION REPORT 04003392/2024001

Dear Brett Suits:

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) inspection activities conducted from January 1, 2024, to March 31, 2024, for the Honeywell Metropolis Works facility. On February 29, 2024, the NRC inspectors discussed the results of this inspection with you and other members of your staff. 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,

Signed by Michel, Eric
on 04/29/24

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 04003392/2024001 – DATED APRIL 29, 2024

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ADAMS ACCESSION NUMBER: **ML24116A159**

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OFFICE	RII:DFFI	RII:DFFI	RII:DFFI		
NAME	T. Vukovinsky	M. Day	E. Michel		
DATE	4/25/2024	4/25/2024	4/29/2024		

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Number:	04003392
License Number:	SUB-526
Report Number:	04003392/2024001
Enterprise Identifier:	I-2024-001-0063
Licensee:	Honeywell Metropolis Works
Facility:	Honeywell Metropolis Works
Location:	Metropolis, IL
Inspection Dates:	February 26, 2024, to February 29, 2024
Inspectors:	J. Grice, Fuel Facilities Inspector J. Raudabaugh, Fuel Facility Inspector (trainee) P. Startz, Fuel Facilities 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

None.

PLANT STATUS

The Honeywell Metropolis Works (MTW) uranium conversion facility is 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, Honeywell conducted normal conversion 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 (IMC) 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 11, "Management Measures," 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 nuclear criticality safety, radiation safety, fire safety, and/or chemical safety based on the information provided in the integrated safety analysis (ISA) summary, safety basis documentation. 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 HF Unloading Hose
- TF-5, Failure of the Nitrogen Pressure Supply

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 IROFS. This review was performed to verify that the controls or IROFS 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:

- PFAP1, Pressure Senor, Active Engineering Control (AEC)
- PFAP2, Motion Indicator, AEC
- PFAP3, Flow Sensor, AEC
- PFAP4, Operator, Administrative Control (AC)
- PFAP5, Hose Test, PEC
- PFAP19, Manually Closing Supply Valve, AC
- PFAP20, Redundant Check Valves, AEC
- PFAP22, Automatic Remote Shutdown, AEC

Implementation of Safety Controls (IP Section 02.03)

For the selected safety controls listed above, the inspectors reviewed management measures and licensee's measures to verify proper implementation in accordance with applicable chapters of the license application. This review was performed to verify that selected safety controls or IROFS 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 walkdown of the HF rail car direct-to-process feed system to verify implementation of PFAPs listed above
- reviewed MTW-ADM-0121, "Management of Plant Features and Procedures"
- reviewed MTW-MAN-TFO-0010, "Tank Farm System Manual"
- reviewed MTW-SOP-TFO-0210, "HF Unloading Operations"
- observed Tank Farm Mitigation System Test

Safety Control Support Programs (IP Section 02.04)

The inspectors assessed additional management measures and licensee's measures that support the availability and reliability of the selected safety controls to verify these were implemented in accordance with applicable chapters of the license application. Specifically, the inspectors conducted the following:

- reviewed the following PMs for Tank Farm PFAPs
  - WO 71129522
  - WO 71129529
  - WO71130942
  - WO 71130955
  - WO 71130956
  - WO 71131463
  - WO 71143181
- training qualification package for Tank Farm Operator
- interviewed Tank Farm Operator
- interviewed Tank Farm Engineer

RADIOLOGICAL CONTROLS

88045 - Effluent Control and Environmental Protection

The inspectors evaluated selected aspects of the licensee's environmental protection program to verify compliance with selected portions of 10 CFR 20, Part 40, Part 61, and Part 70, and the facility's license application.

Program Implementation (IP Section 02.01)

The inspectors reviewed any significant changes to the effluent control and environmental protection program, discussed with the licensee any new unplanned releases or contamination identified, and screened the corrective action program to verify the environmental protection program was being implemented in compliance with license requirements. Specifically, the inspectors reviewed and/or discussed the followings:

- performed walkdowns of the wastewater controls and treatment systems including process area containment dikes, wastewater treatment equipment, multiple treatment tanks, settling basic, and recent modifications
- performed a full perimeter inspection of the outer facility boundary, including the uranium storage yard to evaluate storm water runoff controls
- reviewed samples of environmental programmatic changes during the previous year including procedures, personnel, and operational functions to verify that the licensee's environmental program and associated procedures remained in compliance with Chapter 4 and 9 of the license application
- reviewed corrective actions associated with wastewater treatment under-performance experienced during the facility re-start, interim corrective actions, and successful resolution

Procedures (IP Section 02.02)

The inspectors selected a samples of environmental protection procedures to verify that the current procedures remained in compliance with license requirements and 10 CFR 20. Specifically, the inspectors completed the followings:

- reviewed a sample of environmental procedures and accompanied radiological technicians performing actual liquid effluent sampling operations described MTW-ADM-HP-0106, "Control of Liquid Effluent" at the final outfall
- reviewed a sample of environmental procedures and accompanied radiological technicians performing exhaust stack sampler system filter-changeouts, located at the ore sampling building exhaust stack, to verify compliance with MTW-SOP-HP-0104, "Control of Gaseous Effluents"
- reviewed field sampling and laboratory activities to verify compliance with MTW-SOP-HP-0209, "Collecting Environmental Samples", and to verify compliance with Chapter 4 and 9 of the license application

Audits and Quality Assurance (IP Section 02.03)

The inspectors reviewed recent environmental protection audits and assessments along with the resulting corrective action entries since the last inspection to verify compliance with license application requirements. Specifically, the inspectors completed the following activities:

- reviewed corrective actions 465329, 489590, 507532, 507729
- reviewed the results of a 2023 internal audit of health physics activities
- evaluated a sample of associated corrective actions and recommendations from the audit
- reviewed internal audit procedure MTW-ADM-QA-0160, Revision 7, to verify the audit fulfilled requirements

Event Review (IP Section 02.04)

The inspectors reviewed the licensee's evaluation of safety-significant events in the area of environmental protection to verify compliance with 10 CFR 20 and license application requirements. Specifically, the inspectors reviewed or performed the following:

- discussed the corrective action program with licensee staff about environmental related programmatic issues experienced during restoration of facility operations to verify compliance with Chapter 9.2 of the license application, and 10 CFR 20 Appendix B requirements
- environmental corrective action items were minor issues associated with gaseous and liquid effluent controls, after initiating the full facility start-up, discharges remained below 10 CFR 20 limits, and corrective actions have stabilized the function of control equipment

Training (IP Section 02.05)

The inspectors reviewed the licensee's training program in the area of environmental protection to verify compliance with license application requirements. Specifically, the inspectors reviewed or performed the following:

- discussed training requirements and annual refresher training with the environmental staff to verify the environmental/radiological technicians and staff were in compliance with Chapter 4 of the license application
- interviewed three recently hired radiological technicians; discussed their experience, training records, and accompanied them during routine environmental sampling activities to verify compliance with procedures and the license application

Radioactive Liquid Effluents (IP Section 02.06)

The inspectors observed operations, reviewed sample collection and analysis procedures, reviewed radiological effluent monitoring reports and monitoring records, and discussed the radioactive liquid effluent results with licensee staff to verify compliance with aspects of 10 CFR 20.2103 and the license application. Specifically, the inspectors completed the following activities:

- accompanied a radiological technician and observed the ISCO automatic samplers/sample collection at settling basin #4 and at the final outfall to verify compliance with MTW-ADM-HP-0106, "Control of Liquid Effluent"
- observed an annual flow meter/water height calibration activity to ensure ISCO flow meter were calibrated and matched actual measurements
- reviewed the latest available 2023 liquid effluent data to verify consistency of the data samples with the related "Semiannual Effluent Report"

Radioactive Airborne Effluents (IP Section 02.08)

The inspectors observed operations, reviewed sample collection and analysis procedures, reviewed radiological effluent monitoring reports and monitoring records, and discussed the radioactive airborne effluent results with licensee staff to verify compliance with aspects of 10 CFR 20.1101, 10 CFR 20.2103, and the license application. Specifically, the inspectors completed the following:

- accompanied radiological technicians to evaluate the functionality of two ambient air monitoring stations and two active exhaust stack samplers to verify they were located and fully operational in accordance with procedures MTW-ADM-HP-0106 and MTW-SOP-HP-0104
- observed multiple shift workstation air monitoring sample change-out in ore sampling building
- reviewed 2023 effluent monitoring data
- reviewed ALARA Committee meeting minutes from January 12, 2024
- reviewed annual dose to public from effluents calculations for 2023

Effluent Monitoring (IP Section 02.09)

The inspectors observed environmental monitoring activities to verify compliance with Chapters 4 and 9 of the license application. Specifically, the inspectors completed the following:

- reviewed most recent available licensee semi-annual effluent reports for 2022 and 2023 to verify compliance with 10 CFR 40.65 requirements

Semiannual Effluent Reports (IP Section 02.10)

The inspectors reviewed the licensee's effluent monitoring reports to verify compliance with the requirements of 10 CFR 40.65.

- reviewed latest available licensee semi-annual effluent reports for 2022 and 2023 to verify compliance with 10 CFR 40.65 requirements

Quality Control of Analytical Measurements (IP Section 02.11)

The inspectors observed calibration documentation on effluent measurement devices to verify compliance with the quality control requirements in procedures and the license application. Specifically, the inspectors completed the following:

- evaluated samples of ambient air and exhaust stack gaseous effluent monitoring equipment to evaluate calibration of the flow meter measurement devices, to verify compliance with operational procedure MTW-SOP-HP-0207, "Calibration of Flowmeters", and Chapter 4 of the license application

Public Dose Analysis (IP Section 02.12)

The inspectors reviewed dose assessment records and associated reports to verify compliance with 10 CFR 20.1301, 10 CFR 20.1302, and the reporting requirements of 10 CFR 20.2107. Specifically, the inspectors completed the following activities:

- reviewed the 2022 calculations of the "Total Annual Dose to the Nearest Resident" to verify compliance with procedure MTW-SOS-P-0009
- reviewed the result from the "Total Annual Dose to the Nearest Resident" calculations to verify compliance with 10 CFR 20.1101(d), 10 CFR 20.1301, and 40 CFR 190
- reviewed the “Total Annual Dose to the Nearest Resident” calculations for 2022, to verify compliance with the 25 mrem limit specified in 40 CFR 190, and 100 mrem limit specified in 10 CFR 20.1101(d)
- reviewed the results from the CAP-88-PC Clean Air Act Assessment program, Version 4, to verify that the 2022 analysis reported dose was accurately utilized in the MTW-SOS-P-0009 calculations

Environmental Sampling (IP Section 02.13)

The inspectors discussed the 2023 environmental sampling records for liquid effluent discharges, ambient air, groundwater, and direct radiation to verify compliance with 10 CFR 20.1501 and the license application. Specifically, the inspectors completed the following activities:

- reviewed the status of environmental sampling operations for 2022 and available 2023 data, to verify that the Feeds Material Building (FMB) stack sampling systems remained operational in accordance with Chapters 4 and 9 of the license application
- verified that liquid effluent monitoring points and ambient air monitoring station sampling points were in accordance with section 2.3.8 "Gaseous and Liquid Waste Confinement and Effluent Controls," of the "Honeywell Environmental Assessment"
- accompanied a radiological technician on daily routine involving change-out of ore-sampling stack sampling filters, to verify that ore-sampling environmental treatment control equipment was being operated in accordance with chapters 4 and 9 of the license application

Minimizing Facility and Environmental Contamination and Facilitating Decommissioning (IP Section 02.14)

The inspectors conducted visual inspections of facility boundaries, uranium ore storage areas, and a construction debris storage area to verify compliance with 10 CFR 20.1406. Specifically, the inspectors conducted the following inspection activities:

- visually inspected the "Controlled Area" perimeter and the uranium ore drum storage yard to verify that there were no visual indications of leaking uranium materials, that drums were being monitored for material condition, and marginal drums were being placed in overpacks as necessary

Radioactive Waste Classification, Characterization, and Storage (IP Section 02.15)

The inspectors reviewed documentation and records of facility activities and observed posting and labeling of storage areas and containers to verify compliance with the requirements of 10 CFR 61.55 and the license application. Specifically, the inspectors reviewed the following records:

- walked down radiological waste collection areas where radiological wastes are classified, stored, inventoried, packaged, or prepared for shipment, to verify that licensee radiological waste management activities were in compliance with procedure MTW-ADM-ENV-0102 "Waste Characterization and Inventory"

Waste Burial (IP Section 02.16)

The inspectors reviewed/discussed documentation and records of facility activities and observed posting and labeling of storage areas and containers to verify compliance with the requirements of 10 CFR 61.55 and the license application. Specifically, the inspectors reviewed the following:

- no buried radiological wastes were identified
- visually inspected drums of radiologically contaminated materials located in the ore storage yard, under a fenced/canopy-covered storage area, and identified a sample of drums that were labeled as radiological materials in accordance with 10 CFR 61.55

Effluent Treatment (IP Section 02.17)

The inspectors conducted walkdowns and observations and reviewed records of onsite waste treatment facilities and airborne effluent scrubbers and filters to verify compliance with the license application. Specifically, the inspectors completed the following activities:

- walked down the restricted-area stormwater collection and settling basins, basin outflow sampling systems, the CaF_2 (Calcium Fluoride) Treatment System, and the Surface Treatment Facility to verify apparent operation condition in accordance with license conditions

- reviewed samples of wastewater treatment systems to verify that the systems were being returned to an operational status in accordance with the following licensee process flow drawing STF Process Flows dated February 24, 2011.

INSPECTION RESULTS

No issues were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On February 29, 2024, the inspectors presented the integrated inspection results to Brett Suits and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
88020	Calculations	MTW-CALC-GEN-0032	Evaluation of Accident Sequence TF-1	Rev. 0
		MTW-CALC-GEN-0033	Evaluation of Accident Sequence TF-5	Rev. 0
	Engineering Evaluations	Integrated Safety Analysis (ISA) Summary	ISA Summary - Source Materials License SUB-526 Docket Number 40-3392 for Honeywell International, INC	Rev. 20
	Miscellaneous	DOT Module 7	Bulk Truck & Rail Inspections	
		MTW-FRM-TRN-0036	SME Interview Form	
		MTW-TRN-COV-0001	Exam Coversheet	Rev. 2
		MTW-TRN-OTQ1-0100	OJT - Tank Farm Operations	Rev. 7
		MTW-TRN-OTQ1-0101	OJT-Tank Farm Operator Panel Alarm Response	Rev. 3
		MTW-TRN-QTQ1-0049	Qualification Summary Card	
		MTW-TRN-TST-TQANL	Yard/Tank Farm Annual Exam Answer Key	
		MTW-TRN-TTQ1-0003	TPE - Tank Farm Operator Panel Alarm	Rev. 4
		MTW-TRN-TTQ1-0004	TPE - Tank Farm Railway Operations	Rev. 1
		MTW-TRN-TTQ1-0001	Tank Farm Unloading Operations	Rev. 7
		MTW-TRN-TTQ1-0002	Tank Farm Emergency Operations	Rev. 5
	Procedures	MTW-ADM-OPS-0121	Management of Plant Features and Procedures	Rev. 28
		MTW-MAN-TFO-0010	Tank Farm System Manual	Rev. 7

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		MTW-MP-RE-0221	MTW Hose Inspection, Testing, and Replacement	Rev. 11
		MTW-SOP-TFO-0210	HF Unloading Operations	Rev. 25
		UN-1052	Tank Farm Operations Anhydrous Hydrogen Floride	
	Work Orders	71129522	EXV-BD9709 West HF UNLD INSTRU PM(1) 1YR	
		71129529	EXV-BD9609 East HF UNLD INSTR PM(1) 1YR	
		71130942	AE-U82721 HF Unload Detectors (1) 7 MO	
		71130955	XV-BD9716 West HF UNLOAD(1) 1YR	
		71130956	XV-BD916 N2 East HF Unload(1) 1YR	
		71131463	Preventative Maintenance (PM) REPL EAST HF UNLOAD HOSE (M)1Y	
		71143181	REPL West HF Unload Hose(M) 1Y	
88045	Corrective Action Documents	IR 465329	EPF compliance sample concentrations	03/27/2024
		IR 489590	Missing sampler filter elements in cassette	10/19/2023
		IR 507532	Elevated stack exit No. 19 sample point	02/03/2024
		IR 507729	HP Stack Sample No. 43 near miss	02/06/2024
	Miscellaneous	AUD-2023-0005	ALARA policy audit	10/11/2023
		MTW-ADM-HP-0100	Radiological Protection Program	Rev 26
	Procedures	MTW-ADM-ENV-0102	Waste Characterizations and Inventory	Rev 2
		MTW-ADM-HP-0106	Control of Liquid Effluent Procedure	Rev 7
		MTW-ADM-QA-0160	Performance of Internal Audits and Inspections	Rev 7
		MTW-ADM-REG-0110	Corrective Action Program	Rev 10
		MTW-ADM_ENV-0100	Waste Management	Rev 7
		MTW-SOP-ENV-0012	NPDES Sampling	Rev 3
		MTW-SOP-HP-0104	Control of Gaseous Effluents	Rev 16

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		MTW-SOP-HP-0209	Collecting Environmental Samples	Rev 13
		MTW-SOP-HP-0213	Kinetic Phosphormetric Determination of Uranium	Rev 17
		MTW-SOP-HP-0220	Calibration of Tennelec	Rev 7
		MTW-SOS-HP-0007	CAP 88-PC Program	Rev 2
		MTW-SOS-HP-0009	Preparation of Total Annual Dose	Rev 1