



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

January 30, 2017

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 40-3392/2016-005**

Dear Mr. Albritton:

This letter refers to the inspections conducted from October 1 to December 31, 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 December 15, 2016 and January 20, 2017, 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, 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 violations of NRC requirements 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>.

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

Sincerely,

*/RA/*

Brannen J. Adkins, Acting Chief  
Projects Branch 1  
Division of Fuel Facility Inspection

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

Enclosure:  
NRC Inspection Report No. 40-3392/2016-005  
w/Attachment: Supplementary Information

cc: (See page 3)

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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.: 40-3392/2016-005

Licensee: Honeywell International, Inc.

Facility: Metropolis Works

Location: Metropolis, IL 62960

Dates: October 1 to December 31, 2016

Inspectors: R. Gibson, Senior Fuel Facility Project Inspector  
T. Sippel, Fuel Facility Project Inspector  
P. Startz, Fuel Facility Inspector  
G. Goff, Fuel Facility Inspector

Approved by: B. Adkins, Acting Chief  
Projects Branch 1  
Division of Fuel Facility Inspection

Enclosure

## **EXECUTIVE SUMMARY**

Honeywell Metropolis Works  
NRC Integrated Inspection Report 40-3392/2016-005  
October 1 – December 31, 2016

The Nuclear Regulatory Commission (NRC) 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.

### **Radiological Controls**

- No violations of NRC requirements were identified in the Radiation Protection Program. The documents reviewed and activities observed were implemented in accordance with the license and applicable regulatory requirements. (Paragraph A.1)
- No violations of NRC requirements were identified in the Environmental Protection Program. The documents reviewed and activities observed were implemented in accordance with the license and applicable regulatory requirements. (Paragraph A.2)
- No violations of NRC requirements were identified in the Radioactive Waste Management Program. The documents reviewed and activities observed were implemented in accordance with the license and applicable regulatory requirements. (Paragraph A.3)

### **Facility Support**

- No violations of NRC requirements were identified in the Configuration Management System. The plant modifications selected for review were implemented in accordance the license and applicable regulatory requirements. (Paragraph B.1)

### **Other Areas**

- An unresolved item was opened regarding the reliability of the seismically activated isolation valves in the distillation system. (Paragraph C.1.a)
- Event Notification 50858 was closed after NRC inspection of corrective actions regarding certain deficiencies with equipment and demonstration of the reliability of the redundant seal water supplies. (Paragraph C.2)

### **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, the facility was shutdown for scheduled maintenance activities.

#### **A. Radiological Controls**

##### **1. Radiation Protection (Inspection Procedure (IP) 88030)**

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

The inspectors reviewed the Radiation Protection program to verify that its performance was in accordance with the license application and regulatory requirements. This included reviewing recent licensee audits of the health physics (HP) program (listed in Section 4 of the Attachment) to verify that the program performance was being reviewed, at least annually, to comply with Title 10 of the Code of Federal Regulations (10 CFR) Section 20.1101. The inspectors also reviewed HP program procedures (including, MTW-ADM-HP-0100, MTW-ADM-HP-0113, and MTW ADM-HP-0118) and interviewed licensee managers to verify the HP program's responsibilities and independence from operations. The inspectors reviewed recently changed procedures to verify that changes in the HP procedures made since the last inspection were consistent with regulations and license requirements. The procedures the inspectors reviewed are listed in Section 4 of the Attachment.

The inspectors interviewed licensee HP staff and reviewed calibration records (listed in Section 4 of the Attachment) and logs to verify that radiation protection instruments and equipment were maintained and calibrated in accordance with sections 3.2 and 3.2.4 of the license application. The inspectors interviewed licensee managers, walked down selected ventilation and air sampling equipment in control rooms and high airborne areas to verify that the ventilation and air sampling systems were operated as required by sections 3.2.2 and 3.2.3 of the license application.

The inspectors reviewed the respiratory protection procedure MTW-ADM-HP-0113, observed licensee staff using respirators, and interviewed licensee HP staff to verify that: (1) the licensee used respiratory protection equipment that is tested and certified by the National Institute for Occupational Safety and Health, (2) the licensee implemented air sampling and bioassays, and (3) required the testing of respirators as required by 10 CFR 20.1703. The inspectors reviewed procedures and records to verify that the respiratory protection program adequately identified potential hazards and that users were medically certified, fit tested, trained, and qualified in the use of respiratory protection equipment in accordance with 10 CFR 20.1703(c). The inspectors reviewed licensee training records and procedures to verify that the licensee instructed each respirator user that the user may leave the area at any time for relief from respirator use, in accordance with 10 CFR 20.1703(d).

The inspectors reviewed the licensee's bioassay procedure MTW-SOP-HP-0101 and the documentation associated with bioassay exposure calculations. The inspectors interviewed the personnel responsible for the bioassay program to verify that licensee personnel were knowledgeable of the procedures for preparing and processing urine samples for uranium analysis, that routine and special samples were collected as required by procedure, and that the results were used to calculate internal exposure. The inspectors also interviewed licensee personnel and reviewed licensee records (including IR-16-0121, IR 16-0205, IR-16-2411, IR-16-2412, IR-16-2413) to verify that licensee management ensured that bioassay samples were submitted as required, and that high values were investigated as required by procedure. Each investigation was tracked by the licensee's as low as reasonably achievable (ALARA) Committee and the health physics staff and was captured in the licensee's corrective action program (CAP). The inspectors verified that the regulatory limits for personnel exposure were not exceeded.

The inspectors toured the restricted area, radiation areas, and the high radiation area to verify that radiological signs and postings accurately reflected radiological conditions within the posted area. The inspectors toured the change rooms. The inspectors also observed the use of personnel monitoring systems and protective equipment to verify that protective clothing was being used in accordance with licensee procedures, that protective clothing was being removed before exiting the restricted area, and that individuals were monitoring for personal contamination as required by sections 3.2.1.1, 3.2.1.2, and 3.2.1.3 of the license application. The inspectors reviewed licensee procedures for release of personnel and equipment (MTW-SOP-HP-0112), observed HP technicians survey an ore truck and a UF<sub>6</sub> cylinder shipment, and interviewed HP technicians, managers, and security guards to verify that the requirements to decontaminate personnel, survey equipment, and vehicles, prior to release, were implemented in accordance with sections 3.2.1.4 and 3.2.1.5 of the license application and the applicable procedure.

The inspectors verified that the NRC Form 3, Notice to Employees, was posted in a high traffic area in accordance with 10 CFR 19.11.

The inspectors reviewed licensee radiation surveys, the radiation survey procedure (MTW-SOP-HP-0322), interviewed licensee HP technicians, and used a gamma detector to measure dose rates to verify that surveys adequately evaluated the magnitude and extent of radiation levels in accordance with 10 CFR 20.1501 and section 3.2.5.1 of the license application. The inspectors also reviewed the most recent leak test survey records for sealed sources to verify that the licensee ensured the sources were not leaking.

The inspectors reviewed the results of licensee contamination surveys, observed an HP technician collect contamination surveys in control rooms in the restricted area, and interviewed licensee HP staff about contamination surveys to verify that the frequencies and action levels were in accordance with section 3.2.6 of the license application. The inspectors also observed the collection of the smears, the operation of the instrument used to count the smears, and reviewed the training records of the HP technician to verify that the contamination survey was performed in accordance with the procedure (MTW-SOP-HP-0322) by qualified staff.



The inspectors interviewed licensee management about the licensee's ALARA trends and reviewed the 2016 semiannual Health Physics ALARA Report to verify that ALARA goals were developed and implemented in accordance with the section 3.1.1 of the license application. The licensee conducted quarterly ALARA Committee meetings detailing ALARA goals and exposure summaries to identify undesirable trends. The inspectors interviewed licensee managers to verify that the licensee utilized procedures and engineering controls to achieve occupational doses which were ALARA as required by 10 CFR 20.1101.

b. Conclusion

No violations of NRC requirements were identified.

2. Effluent Control and Environmental Protection (IP 88045)

a. Inspection Scope and Observations

The inspectors reviewed the environmental protection program for compliance with the license application and 10 CFR Part 20. The inspectors reviewed program changes and revised procedures, assessments and audits, interviewed pertinent licensee staff, and reviewed organizational charts.

The inspectors reviewed procedures related to the implementation of gaseous, liquid, and sanitary sewer effluent monitoring programs listed in the attachment of this report. Inspectors observed licensee personnel performing sampling of the gaseous and liquid effluent, as per these procedures. Inspectors subsequently reviewed the results of these activities as well as the latest sanitary sewer discharges to verify that action levels in the license application were not exceeded.

The inspectors reviewed procedures for soil, sediment, and vegetation monitoring listed in the attachment of this report. The inspectors reviewed results for soil, sediment, and vegetation radiation levels and/or radioactive material concentrations to confirm that the results were below action levels established in the license application.

The inspectors evaluated a sample of the records of external and internal audits and assessments. The inspectors noted that corrective actions had been taken for deficiencies identified as a result of these activities. The inspectors reviewed a selection of corrective action program entries since the last inspection to determine if the deviations applicable to environmental safety were adequately documented and investigated.

The inspectors walked down a sampling of the gaseous and liquid sampling points and monitoring stations with the licensee personnel as they procured samples. The inspectors observed a collection of samples and the material condition of the air monitoring stations and liquid outfall effluent equipment to determine sample collecting was in accordance with the license requirements. Inspectors reviewed calibration records for the environmental air samplers and liquid out-fall equipment.

In order to determine compliance with requirements in 10 CFR 20.1101(d) and 20.1302, the inspectors reviewed: the two latest semi-annual facility effluent reports (submitted pursuant to 10 CFR 40.65), the dose assessment reports for the public, and the dose

assessment for the nearest resident most likely to receive the highest dose from licensed operations. The inspectors evaluated recent records of airborne effluents discharges and liquid effluent discharges to ensure that the average annual effluent concentrations did not exceed the values specified in Chapter 4 of the license application. The inspectors also reviewed these records to verify compliance with 10 CFR 20.2101 and 20.2106.

b. Conclusion

No violations of NRC requirements were identified.

3. Radioactive Waste Processing, Handling, Storage, and Transportation (IP 88035)

a. Inspection Scope and Observations

The inspectors evaluated whether the licensee had established and maintained adequate procedures and a quality assurance program to ensure compliance with the requirements of 10 CFR Part 20 and 10 CFR Part 61, as applicable to low-level radioactive waste form, classification, stabilization, and shipment manifests/tracking.

The inspectors reviewed procedures and observed performance of tasks related to radioactive waste to verify that the procedures were clearly written and adequately delineated responsibilities related to radioactive waste management. The inspectors observed operators performing radioactive waste activities in order to verify that the operators were familiar with their responsibilities as they performed their tasks in accordance with procedures.

The inspectors reviewed the quality assurance program for radioactive waste management to verify that the licensee was performing the required audits and presenting the annual audit results to the management team. The findings from these audits were entered into the licensee's corrective action program for resolution. The inspectors verified that the licensee continued to implement the radioactive waste management program in accordance with the license and regulations.

The inspectors evaluated the licensee's program for classifying low-level radioactive waste by reviewing procedures for classifying waste, as well as, records relating to waste. The inspectors reviewed the licensee's program for ensuring that waste was properly packaged to ensure that the waste form met the requirements of 10 CFR 61.56. The inspectors performed visual examinations of the waste storage areas located on storage pads and fenced areas outside. The inspectors reviewed inventories and inspected a sample of waste containers stored in the sorting and segregating areas at the facility. The inspectors also inspected the staging areas for radioactive waste staged for loading into the Gondola rail cars. The inspectors verified that the licensee was in compliance with federal regulations and the license.

The inspectors reviewed the licensee's procedures for labeling waste shipments and tracking radioactive waste. The procedures were adequate to ensure that radioactive waste was properly labeled and specified actions to be taken should the shipments not reach the intended destination in the time specified. In addition, the inspectors reviewed procedures for placement, inspection, and repackaging of radioactive waste and found them to be in accordance with the license application.

The inspectors performed walkdowns of selected radioactive material storage areas in order to verify adequate postings and to ensure that the proper storage of materials in the designated areas in accordance with the NRC license requirements. The inspectors observed containers to verify proper labeling and acceptable physical condition. The inspectors walked down the surveying, sorting, and segregating waste for disposal areas with HP technicians as they demonstrated the preparation of radioactive waste for disposal. Also, the inspectors observed the loading of low level radioactive waste containers by material handlers in Gondola rail cars scheduled for shipment to waste disposal sites.

b. Conclusion

No violations of NRC requirements were identified.

B. Facility Support

1. Plant Modifications (IP 88070)

a. Inspection Scope and Observations

To verify compliance with NRC regulations and the license application, the inspectors reviewed significant plant modifications derived from the licensee's 2016 plant configuration summaries, reviewed facility work orders performed in 2016, and physically inspected the FMB. The inspectors selected a sample of process modifications within the FMB to evaluate compliance with licensee procedures MTW-ADM-REG-0120, MTW-ADM-REG-0121, MTW-ADM-REG-0122, MTW-ADM-PRO-0100, and MTW-ADM-PRO-103, as listed in the attachment of this report. The Inspectors also evaluated the above licensee procedures for compliance with the license application, the Integrated Safety Analysis (ISA) Summary, Revision (Rev.) 12, Safety Demonstration Report Sub-526, Rev. 26, and the Safety Basis and Corrective Action Plan/NRC Confirmatory Order, Rev. 3.

The inspectors reviewed samples of modification packages (described below) that included facility changes encompassing the replacement of large pieces of processing equipment and process piping, revisions to electrical power supplies, replacement of natural gas control systems, and other revisions to alarm systems, process set-point changes, automation system modifications, functional testing, and calibrations. The inspectors reviewed samples of project packages to determine if the modifications were authorized and performed in accordance with the project specifications and the applicable procedures and regulations. The inspectors also reviewed samples of operating procedures and technical basis documents to evaluate compliance with the project specifications and compatibility with the revised operating equipment.

The inspectors reviewed a sample of the modifications to ensure that any potential modifications to an accident sequence described in the ISA summary were properly accounted for and addressed. The inspectors performed fire walkdowns of a sample of process modifications to determine if the "as built" drawings agreed with the installed configuration. For the reviewed process modifications, the inspectors evaluated if operating procedures were revised to reflect the modifications and if training on the modifications was provided.

The sample of modification packages selected for review included the licensee's Request-For-Change (RFC) package #151633047, involving the installation of seven hydrofluoric acid vapor detectors in the FMB Green Salt processing areas, for compliance with the change package (#151633047), MTW-ADM-REG-0120, MTW-ADM-REG-0121, and the Safety Demonstration Report Sub-526. New detectors were installed on the first, third, fourth, and fifth floors of the FMB to sense hydrogen fluoride (HF) at three preset levels and to warn personnel with visual and audible local alarms and alarms programmed into the distributed control system. The project to install the new detectors addressed the Green Salt process hazard analysis scenario that involved the slow development of hydrofluoric acid vapor leaks from green salt processing equipment. The inspectors also reviewed Green Salt operations procedure MTW-SOP-GSO-0200, Rev. 34, to determine if revisions specified in RFC #151633047 were completed.

Additionally, the inspectors performed more detailed reviews of the following project packages: (1) #161613460, replacement of the small existing ore prep Rotex screener with a larger double deck Rotex screener that allowed removal of the two associated air classifiers and feed screws, (2) #161803188, reconfiguration of the vent to avoid water uptake into the pneumatic valve actuator (Max-Air MT31SR4) located on process control valves for the liquid and vapor lines that connect to the hydrofluoric acid railcar tankers, (3) #161533047, installation of seven hydrofluoric acid vapor detectors located around the green salt equipment located on several floors of the FMB and the associated visual and audible alarm system, and (4) #161663325, automation system modification involving the electrical power load balancing between an existing output card (SR-R#-9) and a new output card.

The inspectors reviewed the licensee's problem identification and resolution program to verify that issues relating to the preparation and installation of plant modifications were entered into the CAP. The inspectors determined that corrective actions were adequately addressed in accordance with procedure MTW-ADM-REG-0110, Rev. 6.

b. Conclusion

No violations of NRC requirements were identified.

c. Other Areas

1. Follow-up on Previously Identified Issues

a. (Opened) Unresolved Item (URI) 40-3392/2016-005-01, Performance of Seismically Activated Isolation Valves in the Distillation System

Introduction: The inspectors identified an URI associated with the reliability of the seismically activated isolation valves in the distillation system.

Description: In March 2016, the licensee identified that seven seismically activated isolation valves in the distillation system failed to perform their isolation function during a scheduled annual seismic system test. The valves were installed as part of the plant modifications to address NRC Confirmatory Order EA-12-157 for seismic events and were categorized as "asset protection" components. The licensee determined that the valves failed for various reasons. A notable cause of three of the seven valve failures

was due to their ASCO 3-way solenoid valves sticking open during testing. The 3-way solenoid valves support the isolation function of the valves by interrupting the air supply to the valve actuators on a seismically activated signal. The licensee's corrective actions included replacing the failed solenoids and retesting the valves.

Additionally, the inspectors identified that the ambient temperature in the distillation room could exceed the vendor recommendations for the affected solenoid valves. The ASCO specifications for the 3-way solenoid valves, Model EF-8320G184-120V, recommend a nominal ambient temperature range of 32 degrees Fahrenheit (°F) to 125°F for the operation of the solenoids. However, the inspectors were informed that ambient temperature in the distillation room could exceed 125°F at certain times.

The affected valves were not directly credited as Plant Features and Procedures (PFAPs) in the licensee's ISA Summary submitted to the NRC for compliance with the NRC Confirmatory Order; however they were credited as additional layers of protection in the licensee's ISA and NRC's safety evaluation of the revised ISA. Specifically, the licensee's ISA Summary, Section 9.1.6, "Seismic Risk Reduction - Basis for Failure Probability Index Numbers (FPIN)," states that in addition to the PFAPs, several non-PFAP layers of protection are provided that help prevent or mitigate high consequence event impacts to the public. These layers include seismically activated isolation valves on all tanks containing liquid UF<sub>6</sub> and modifications to the distillation area of the building providing confinement of possible releases on the first three floors. The ISA Summary further states that these added layers of protection support the conclusion that a FPIN value of -2 for the credited combined PFAP is sufficiently conservative and provides additional assurance against hazardous material releases from the FMB during a seismic event.

The inspectors determined that more information is required to determine whether the as-found condition of the valves in March 2016 constituted a deviation or violation of regulatory requirements and whether the licensee is implementing adequate corrective actions commensurate with the safety significance of the valves. The licensee entered this issue in the CAP as IR-16-0795. In order to resolve this issue, the inspectors will need to: (a) seek guidance from the Office of Nuclear Material Safety and Safeguards to identify the applicable regulatory requirements for the affected valves, (b) review the licensee's resolution of the inspectors' concern related to the actual operating temperature of the solenoids versus the vendor recommendations, including the technical basis of the original modification to install that type of solenoid valve for the intended application, and (c) review the licensee's final corrective actions, when completed, to determine whether the cause of the failures is well understood and if adequate corrective actions were implemented to maintain the design function of the subject valves. This issue will be tracked as URI 40-3392/2016-005-01.

b. (DISCUSSED) URI 40-3392/2016-003-01, Licensee's Further Evaluation to Determine if Plant Features and Procedures are Required for the Primary Cold Trap Rupture Scenario

NRC Inspection Report 40-3392/2016-003 (ADAMS Accession Number ML16194A196) documented an URI regarding the potential consequences of a postulated accident scenario involving an UF<sub>6</sub> primary cold trap rupture. The licensee performed an evaluation to demonstrate that the postulated scenario was not credible. However, the

inspectors opened this URI pending additional information from the licensee regarding the technical basis for the assumptions used in the analysis for the density of UF<sub>6</sub>, and whether the existing safety controls in place needed to be credited as PFAPs.

The inspectors reviewed licensee's calculation MTW-CALC-F2N-0068, and discussed with the licensee the technical references used to determine the UF<sub>6</sub> density values. The inspectors noted that the licensee had not completed the evaluation to determine whether the existing safety controls preventing the postulated scenario need to be credited as PFAPs. This URI will remain open pending the additional review of the UF<sub>6</sub> density values to confirm whether these are adequate to support the conclusion that the postulated scenario is not credible, and the review of the licensee's evaluation of existing safety controls.

c. (DISCUSSED) Violation (VIO) 40-3392/2015-008-01, Failure to Follow Line Breaking Procedure

NRC Inspection Report 40-3392/2015-008 (ADAMS Accession Number ML15320A149) included a Notice of Violation (NOV) of License Condition 18 for the failure to follow a procedure to control hazards when line breaking or equipment opening was performed. On December 11, 2015, the licensee submitted a response to the NOV which included the completed and the future corrective actions that would be taken to avoid further violations. The inspectors reviewed Incident Report IR-15-2152, which tracked the status of all corrective actions described in the licensee's response to verify their completion status. The inspectors noted that most of the corrective actions had been completed recently, therefore they will be reviewed in future NRC inspection activities. This violation will remain open pending licensee's completion and NRC review of all corrective actions.

2. Event Follow-up

(CLOSED) Event Notification (EN) 50858, 40-3392/2015-01-0, Vacuum Pump Seal Water Supply Failure

NRC Inspection Report 40-3392/2015-005 (ADAMS Accession Number ML16019A334) discussed the NRC's initial review of EN 50858 (dated March 3, 2015) associated with the loss of seal water to two air monitoring vacuum pumps. On April 1, 2015, the licensee submitted a 30-Day written follow-up report for the event in accordance with 10 CFR 40.60(c)(2) (ADAMS Accession Number ML15093A107). This item remained open pending correction of certain deficiencies with equipment and demonstration of the reliability of the redundant seal water supplies that were implemented as part of the corrective actions.

The inspectors interviewed plant personnel involved in the corrective actions for this event and conducted a walk down of the vacuum pumps to verify that the equipment deficiencies had been resolved. The inspectors reviewed pump testing data to verify that the licensee had demonstrated operation of the redundant seal water supplies. The inspectors also noted that the licensee replaced one of the pumps with a new model that does not require seal water. No violations of NRC requirements were identified. This item is considered closed.

D. 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 December 15, 2016, to Mr. John Albritton, and staff. On January 20, 2017, a follow-up exit meeting was conducted Mr. Mark Wolf to discuss URI 40-3392/2016-005-01. 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. Ashford	Internal Control Lab ISO Leader
B. Burgess	Health Physics Specialist
S. Chisek	Senior Environmental Engineer
M. French	Health, Safety and Environmental Manager
J. Fulks	Operations Manager
A. Greenwell	Laboratory Specialist
M. Griesenauer	Material Handler
R. Lindberg	Health Physics Supervisor
L. Litinski	Senior Quality Engineer
M. Mena	Senior Quality Engineer
T. Miller	Production Engineer
S. Patterson	Regulatory Affairs Manager
B. Perriello	Automation Engineer
J. Pippin	Health Physics Specialist
J. Price	Technology Manager
Y. Reed	Senior Environmental Engineer
R. Robertson	Senior Quality Engineer
S. Robinson	Quality Assurance Manager (Chemistry Lab)
B. Sanders	Health Physics Specialist
M. Wolf	Nuclear Compliance Director

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

#### Opened

40-3392/2016-005-01	URI	Performance of Seismically Activated Isolation Valves in the Distillation System (Paragraph C.1.a)
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#### Closed

40-3392/2015-01-0	LER	EN 50858 - Vacuum Pump Seal Water Supply Failure (Paragraph C.2)
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#### Discussed

40-3392/2016-003-01	URI –	Licensee’s Further Evaluation to Determine if PFAPS are Required for the Primary Cold Trap Rupture Scenario (Paragraph C.1.b)
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40-3392/2015-008-01	VIO –	Failure to Follow Line Breaking Procedure (Paragraph C.1.c)
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### 3. **INSPECTION PROCEDURES USED**

88030	Radiation Protection
88035	Radioactive Waste Processing, Handling, Storage, and Transportation
88045	Effluent Control and Environmental Protection
88070	Plant Modifications

### 4. **DOCUMENTS REVIEWED**

#### Drawing:

MTW-4491, Metropolis Works Plant Sewer System, dated July 20, 2016, Rev. AX

#### Records:

AUD-2015-0004, A-50 Respiratory Protection Program, Rev. 0  
 AUD-2016-0001, A-37 ALARA Policy & A-30 Safety Review Committees, Rev. 0  
 AUD-2016-0002, A-25 Possession Limits, Rev. 0  
 AUD-2016-0004, A-50 Respiratory Protection Program, Rev. 0  
 AUD-2016-0006, A-51 Determination of Personnel Dose, Rev. 0  
 AUD-2016-0007, A-52 Surface Contamination, Rev. 0  
 Corporate Health and Safety Audit Report 2016-06 (external audit), dated June 17, 2016  
 Facility Effluent Report representing the period of January 1, 2016, through June 30, 2016  
 Facility Effluent Report representing the period of July 1, 2015, through December 31, 2015  
 First Quarter 2016 RCRA Ponds Groundwater Monitoring Results, dated April 13, 2016  
 Health Physics ALARA Report, dated September 17, 2016  
 Health Physics MTW Radiation Protection Program (RPP) Training for 2016  
 Health and Safety Self-Assessment Tool 2016, dated November 22, 2016  
 Health Physics Technician Training, revised March 27, 2015 (Various records)  
 Metropolis Works B Council, dated October 2016  
 Monthly Gaseous and Liquid Sampling Discharges Concentrations (July 2016 – November 2016)  
 N014-0001-11, IMHOFF Biosolids, dated May 1, 2013  
 Plant Modification Packages: 151633047, 161613460, 161803188, 161533047, and 161663325.  
 Second Quarter 2016 RCRA Ponds Groundwater Monitoring Results, dated July 14, 2016  
 Third Quarter 2016 RCRA Ponds Groundwater Monitoring Results, dated October 14, 2016  
 Tricord Calibration Certificate #222502, dated July 9, 2016  
 Tricord Calibration Certificate #227992, dated January 13, 2016  
 Tricord Calibration Certificate #260079, dated April 18, 2016  
 Tricord Calibration Certificate #285429, dated February 10, 2016  
 Tricord Calibration Certificate #300748, dated August 9, 2016

#### Procedures:

MTW-ADM-HP-0100, Radiological Protection Program, Rev. 18  
 MTW-ADM-HP-0106, Control of Liquid Effluents, Rev. 3  
 MTW-ADM-HP-0113, Respiratory Protection Program, Rev. 11  
 MTW-ADM-HP-0113, Respiratory Protection Program, Rev. 12  
 MTW-ADM-HP-0118, External Radiation Exposure Control, Rev. 4

MTW-ADM-MI-0001, MTW Mechanical Integrity Program, Rev. 8  
 MTW-ADM-MI-0011, Commercial Grade Dedication, Rev. 4

MTW-ADM-MT-0001, Control of Maintenance and Modification Activities Associated with  
 PFAP-Related Equipment (LR-1)

MTW-ADM-OPS-0121, Management of Plant Features and Procedures, Rev. 17

MTW-ADM-PRO-0100, Development and Implementation of Policies and Administrative  
 Procedures, Rev. 7

MTW-ADM-PRO-0103, Development and Implementation of Plant Technical Procedures,  
 Rev. 21

MTW-ADM-QA-0100, UF6 Quality Assurance Program, Rev. 6

MTW-ADM-REG-0110, Corrective Action Program, Rev. 6

MTW-ADM-REG-0120, Management of Change, Rev. 4

MTW-ADM-REG-0122, Right of Approval for Changes Impacting the NRC Licensing  
 Documents, Rev. 7

MTW-CHT-HP-0001, ALARA Committee Charter, Rev. 7

MTW-EOP-F2N-0600, Fluorination Emergency Operation, Rev. 9

MTW-EOP-DIS-0600, Distillation Emergency Operation, Rev. 8

MTW-LAB-CL-0033, Acid Digestion of Sediments, Sludges, and Soils for Analysis by  
 ICP-MS, Rev. 1

MTW-SOP-GSO-0200, Green Salt Operation, Rev. 34

MTW-SOP-HP-0101, Bioassay Sampling, Rev. 3

MTW-SOP-HP-0104, Control of Gaseous Effluents, Rev. 12

MTW-SOP-HP-0112, Release of Personnel, Materials, Equipment, and Transport Vehicles  
 from the Restricted Area, Rev. 7

MTW-SOP-HP-0120, Sealed Sources Leak Testing and Analysis, Rev. 3

MTW-SOP-HP-0201, Determination of Airborne Radioactivity, Rev. 9

MTW-SOP-HP-0207, Calibration of Flowmeters, Rev. 6

MTW-SOP-HP-0209, Collecting Environmental Samples, Rev. 8

MTW-SOP-HP-0214, Determination of Isokinetic Sampling Rate and Uranium Loss Factors,  
 Rev. 5

MTW-SOP-HP-0322, Smear and Radiation Dose Surveys, Rev. 9

Condition Report Written as a Result of the Inspection:

IR-16-2619

Condition Reports Reviewed:

IR-15-0522, IR-16-0002, IR-16-0082, IR-16-0121, IR-16-0205, IR-16-0772, IR-16-1617, IR-  
 16-1628, IR-16-1929, IR-16-1935, IR-16-1949, IR-16-1986, IR-16-1993, IR-16-2016, IR-16-  
 2060, IR-16-2105, IR-16-2140, IR-16-2142, IR-16-2176, IR-16-2194, IR-16-2212, IR-16-  
 2215, IR-16-2247, IR-16-2252, IR-16-2306, IR-16-2333, IR-16-2350, IR-16-2380, IR-16-  
 2411, IR-16-2412, IR-16-2413, IR-16-2423, IR-16-2553, IR-16-2554, IR-16-2608.

Other Documents:

ALARA Committee Meeting March 2016

ALARA Committee Meeting June 2016

ALARA Committee Meeting September 2016

Air Activity Daily 24 Hour Average, dated November 1, 2016

Air Activity Daily 24 Hour Average, dated November 2, 2016

Air Activity Daily 24 Hour Average, dated November 3, 2016

Air Activity Summary Report, From October 15, 2016 to December 14, 2016

MTW-CALC-F2N-0068, Consequence of a Primary Cold Trap Full of Frozen UF<sub>6</sub> Placed on Heat, Rev. 0

Testing Performed on November 17, 2015 per MTW-SOP-ORE-0200, Ore Preparation Operation, Form D – Health Physics Pumps Quarterly Source Water Testing, Rev. 19  
Testing Performed on February 8, 2016 per MTW-SOP-ORE-0200, Ore Preparation Operation, Form D – Health Physics Pumps Quarterly Source Water Testing, Rev. 20  
Organizational Charts