



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

July 30, 2012

Mr. Larry Smith  
Plant Manager  
Honeywell Metropolis Works  
P.O. Box 430  
Metropolis, IL 62960

**SUBJECT: NRC INSPECTION REPORT NO. 40-3392/2012-003 AND NOTICE OF VIOLATION**

Dear Mr. Smith:

This letter refers to the inspections conducted from April 1, 2012 through June 30, 2012, at the Honeywell Metropolis Works facility. The purpose of the inspections was to determine whether activities authorized under the license were conducted safely and in accordance with NRC requirements. The enclosed report presents the results of these inspections. On May 3, 2012, May 25, 2012, and July 26, 2012, the findings were discussed with you and other members of your staff.

The inspections consisted of examinations of activities conducted under your license as they relate to public health and safety to confirm compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspections consisted of a selective examination of procedures and representative records, observations of activities in progress at the plant, and interviews with personnel.

Based on the results of the inspections, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. The violation was evaluated in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at (<http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>).

The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it is described in detail in the subject inspection report. The violation is being cited in the Notice because it was identified by the NRC. You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at (<http://www.nrc.gov/reading-rm/adams.html>). To the extent possible, your response should not include any personal privacy or proprietary information so that it can be made available to the Public without redaction.

L. Smith

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Thank you for your cooperation. If you have any questions, please contact me at (404) 997-4418.

Sincerely,

***/RA/***

Joselito O. Calle, Chief  
Fuel Facility Inspection Branch 2  
Division of Fuel Facility Inspection

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

Enclosures:

1. Notice of Violation
2. Inspection Report No. 40-3392/2012-003  
w/Supplementary Information

cc w/encls: (See page 3)

L. Smith

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Sincerely,

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Division of Fuel Facility Inspection

Docket No. 40-3392  
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Enclosures:

- 3. Notice of Violation
- 4. Inspection Report No. 40-3392/2012-003  
w/Supplementary Information

cc w/encls: (See page 3)

Distribution w/encls:

- P. Silva, NMSS
- J. Calle, RII
- J. Sulima, NMSS
- B. Reilly, NMSS
- R. Gibson, RII

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cc w/encls:

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Paducah, KY 42002

## NOTICE OF VIOLATION

Honeywell Specialty Chemicals  
Metropolis, Illinois

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

During NRC inspections conducted from April 1, 2012 through June 30, 2012, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is described below:

License Condition 18 of the License, Amendment 8, dated February 28, 2011, states, in part, that the licensee shall conduct authorized activities in accordance with the statements, representations, and conditions in License Application dated May 12, 2006, and supplements thereto.

Section 2.6.1, Operating Procedures, of the License Application, states, Honeywell shall establish a process to identify those process operations that require procedural guidance to ensure proper execution and require that these process operations be conducted in accordance with approved procedures. The section further states that written procedures shall govern the procedure control process. These procedures shall address operating procedure preparation, review, revision, approval, and implementation.

Section 2.6.2.4, Procedural Adherence, of the License Application, states, in part, that Honeywell shall establish procedures governing use of and adherence to written procedures.

Contrary to the above, on May 14 and on May 30, 2012, the licensee failed to govern the use of and adherence to written procedures. On May 14, an operator failed to adhere to the requirements of written procedure MTW-SOP-CYL-0701, "Washing UF<sub>6</sub> Cylinders," which resulted in a UF<sub>6</sub> release in the area of the cylinder wash facility. On May 30, the licensee failed to adhere to the requirements of written procedure MTW-SOP-DIS-0203, Sampling Suspect Cylinders and Maintaining the Sample Vacuum System," which resulted in a UF<sub>6</sub> release in the distillation area of the Feed Materials Building. Specifically, the licensee failed to ensure that the Secondary Cold Trap was less than 50 degrees Fahrenheit prior to establishing a vacuum at the sample inlet valve using a Kinney pump in distillation.

This is a Severity Level IV violation (Section 6.2.d.).

Pursuant to the provisions of 10 CFR 2.201, Honeywell Specialty Chemicals is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region II, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation"; and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified,

Enclosure 1

suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time. If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 30<sup>th</sup> day of July, 2012

U.S. NUCLEAR REGULATORY COMMISSION  
REGION II

INSPECTION REPORT

Docket No.: 40-3392

License No.: SUB-526

Report No.: 40-3392/2012-003

Licensee: Honeywell International, Inc.

Facility: Metropolis Works (MTW)

Location: Metropolis, IL 62960

Dates: April 1 through June 30, 2012

Inspectors: Richard Gibson, Senior Fuel Facility Inspector  
Manuel Crespo, Senior Fuel Facility Inspector  
Sandra Mendez-Gonzalez, Fuel Facility Inspector  
Mark Chitty, NFS Resident Inspector  
Regina Russell, Paducah Resident Inspector

Approved by: Joselito Calle, Chief  
Fuel Facility Inspection Branch 2  
Division of Fuel Facility Inspection

Enclosure 2

## **Executive Summary**

Honeywell Metropolis Works  
Inspection Report 40-3392/2012-003

Routine, announced inspections were conducted in the areas of radioactive waste management, effluent controls and environmental protection, transportation, and maintenance and surveillance at the Honeywell Metropolis Works facility. Additionally, inspections were conducted following the suspension of production operations; the temporary release of selected plant workers; and a follow-up on UF<sub>6</sub> releases. The inspections involved observation of work activities, review of selected records and procedures, interviews with plant personnel, and review of plant activities. The inspections evaluated the following aspects of the program as outlined below:

### **Radioactive Waste Management**

- Radioactive material shipping manifests correctly reflected the classification, quantity, and labeling requirements for the respective shipment. The licensee's program for the management and shipment of radioactive waste for disposal met the requirements of the regulations. Training and qualification records for individuals authorized to approve radioactive material shipments were current. (Paragraph 2.a)

### **Effluent Control and Environmental Protection**

- The inspectors reviewed the programs and procedures in place for the release of radioactive effluents, liquid and airborne, and the environmental program. The inspectors determined that the licensee has adequate management controls, and was in compliance with the regulation and the license application in ensuring that any release of radioactivity to the environment met regulatory requirements. (Paragraph 3.a)

### **Transportation**

- Shipments of radioactive materials were prepared and conducted in accordance with applicable regulations and plant procedures. Shipping records were properly completed and maintained in accordance with applicable regulations. (Paragraph 4.a)

### **Maintenance and Surveillance**

- The Maintenance and Surveillance of Safety Controls program was implemented in accordance with the license application and regulatory requirements. (Paragraph 5.a)

### **Event Inspection – Suspension of Production Operations**

- The licensee went into an early maintenance outage after identifying plant equipment and systems that were not in the proper configuration. The licensee temporarily released selected employees in order to conduct a detailed self-assessment of the equipment and systems, and to identify non-compliant systems.
- Two examples of a violation were identified with respect to operating procedures. The first example involved an operator failing to adhere to several written requirements of a procedure, which resulted in a UF<sub>6</sub> release at the cylinder wash facility. The second example was the failure to ensure that the Secondary Sample Cold Trap was



less than 50 degrees Fahrenheit prior to establishing a vacuum at the sample inlet valve, which resulted in a UF<sub>6</sub> release in the distillation area of the Feed Materials Building (FMB). (Paragraph 6.a).

Attachment:

Partial Listing of Persons Contacted

Inspection Procedures Used

List of Items Opened, Closed, and Discussed

List of Documents Reviewed

Acronyms and Initialisms

## **REPORT DETAILS**

### **1. Summary of Facility Activities**

The Honeywell Metropolis Works (licensee) 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 the inspection period, the licensee went into an early maintenance outage after identifying plant equipment and systems that were not in the proper configuration for safe operations. The licensee temporarily released selected employees in order to conduct a detailed self-assessment of the equipment and systems to verify the plant's status.

### **2. Radioactive Waste Management [Inspection Procedure (IP) 88035]**

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

The inspectors evaluated whether the licensee has established and maintained adequate procedures and quality assurance programs to ensure compliance with the requirements of 10 CFR Part 20 and 10 CFR Part 61 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. The procedures were clearly written and adequately delineated responsibilities related to radioactive waste management. The operators were familiar with their responsibilities and performed their tasks in accordance with facility procedures.

The inspectors reviewed the quality assurance program for radioactive waste management and determined that the licensee was performing the required audits. The findings from these audits were entered into the licensee's corrective action program for resolution. The licensee continues to implement the radioactive waste management program in accordance with the license and regulations. Changes made to the program to improve efficiency were: 1) an organizational change to remove the radioactive waste program from environmental protection to health physics; 2) revise procedures to reflect the change; and 3) the building of a facility to effectively sort and segregate radioactive waste.

The inspectors reviewed the licensee's program for classifying low-level radioactive waste. The inspectors reviewed the 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 the waste form met the requirements of 10 CFR 61.56.

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. Additionally, the inspectors reviewed the procedures for placement, inspection, and repackaging of radioactive waste.

The inspectors performed walk-downs of selected radioactive material storage areas. The storage areas had adequate postings to ensure that the proper material was being stored in the area and the material was safely stored in accordance with procedural requirements. The containers were properly labeled to reflect their contents and were in good physical condition.

b. Conclusion

No findings of significance were identified.

3. **Effluent Control and Environmental Protection (IP 88045)**

a. Inspection Scope and Observations

The inspectors reviewed several program changes and procedural revisions since the last inspection and verified that the program and procedures were in accordance with license requirements. The inspectors reviewed several self assessments and verified that identified corrective actions were adequately implemented.

The inspectors reviewed the 2010 and 2011 semi-annual effluent reports and determined that the licensee was in compliance with 10 CFR 40.65. The inspectors reviewed records of airborne effluents and observed collection activities and determined that the licensee was in compliance with license application and approved procedures. The inspectors reviewed records of liquid effluents, observed collection activities, and verified compliance with the license application and approved procedures. The inspectors verified that the gaseous effluent monitors were calibrated and functional checks performed in accordance with procedures.

The inspectors followed up on a previous violation for the failure to adequately perform surveys on outfalls 003, 004, and 005 and include the results in the calculations of dose to the public, Violation (VIO) 2009-004-02. The inspectors observed the sample collection of the outfalls and verified that the procedure included the sample collection. The inspectors also reviewed the calculation of the dose to the public to verify that the storm water outfalls samples were added to that calculation. The inspectors also reviewed the procedure used for the calculation. The inspectors concluded that the licensee has an adequate procedure in place for the sample collection of the storm water outfalls and the results were included into the semiannual effluent report. This violation is considered closed.

The inspectors reviewed the public dose assessment and determined that the average annual effluent concentrations released in calendar year (CY) 2011, did not exceed the values specified in Appendix B of 10 CFR Part 20 and the total dose to the individual likely to receive the highest dose from the licensed operation did not exceed the regulatory limit in CY 2011. The inspectors reviewed the airborne portion of the public dose assessment and verified that the result was in compliance with the As Low As Reasonably Achievable (ALARA) constraint required by 10 CFR 20.1101(d). The inspectors reviewed the concentrations of liquid releases discharged to the sanitary sewer, confirmed that it was treated, and then released in outfall 002. As a result, the inspectors determined the licensee was in compliance with 10 CFR 20.2003, license application, and approved procedures.

The inspectors reviewed environmental monitoring stations related to environmental thermoluminescence dosimeters and sampling results for external radiation. The inspectors determined that the sampling points were in compliance with the license requirements.

The inspectors reviewed the corrective action program entries for the past eight months and determined that deviations from procedures and unforeseen process changes affecting environmental safety were documented and investigated promptly. Also, the inspectors evaluated the corrective actions associated with several incident reports related to the wet oxide exit point and determined that the completed corrective actions were adequate.

During the inspection on site, the licensee had a reportable event EN 47898, an unplanned medical treatment for a contaminated worker. The inspectors observed the processes for transporting the individual to the medical facility and the survey performed by Health Physics (HP). The individual was medically cleared to remove his contaminated clothing and was referred to his primary physician. The inspectors reviewed the survey records for the dispensary and determined that no spread of contamination was detected.

b. Conclusion

No findings of significance were identified.

4. **Transportation (IP 86740)**

a. Inspection Scope and Observations

The inspectors evaluated whether the licensee had established and was maintaining an effective management-controlled program to ensure radiological and nuclear safety during the receipt, packaging, delivery, and private carriage of licensed radioactive materials. The inspectors also evaluated whether transportation activities were in compliance with the applicable NRC and Department of Transportation (DOT) transport regulations.

The inspectors reviewed a number of shipping records involving the shipment and receipt of UF<sub>6</sub> cylinders and waste disposal. The licensee ensured that the appropriate documentation accompanied the packages being shipped. The licensee recorded the required information on the packaging and shipping orders including the transportation index, package activity, labeling, and placards.

The inspectors observed the handling, movement, and the preparation and placement of loaded UF<sub>6</sub> cylinders on transport vehicles for outgoing shipments. The personnel loading the UF<sub>6</sub> cylinders followed the appropriate procedures. The inspectors also interviewed the radiation protection and transportation personnel to ensure they were knowledgeable of NRC and DOT requirements. The inspectors reviewed the transportation staff training records to ensure they had received the training required by the license application.

Storage areas containing UF<sub>6</sub> cylinders were properly posted and access controlled in accordance with approved procedures. Cylinders were stored in the proper configuration and cylinder valve covers present as required by approved procedures.

The inspectors verified that the licensee met the 10 CFR 71.21 conditions required to use the general license provision for transport of licensed material. The inspectors reviewed audits of the transportation program and determined the licensee was performing periodic audits of the program as required. The results of the audits were appropriately addressed in the corrective action program.

b. Conclusion:

No findings of significance were identified.

**5. Maintenance and Surveillance of Safety Controls (IP 88025)**

a. Scope and Observations

The inspectors interviewed the senior capital project manager, several capital project supervisors, and maintenance supervisors to verify that maintenance and surveillance program activities for the "A" train Top and Bottom hydrofluorinator, green salt vacuum system, calciner, and green salt hammer mill replacement projects were adequate to assure that the safety controls were available and reliable to perform their safety function when needed.

The inspectors verified that the licensee's work control program had provisions to ensure the adequate pre-job planning and preparation of work packages to support maintenance and surveillance activities. The inspectors reviewed maintenance and surveillance work packages for accuracy. The review also ensured that test packages challenged and verified operability of the safety controls within the required frequency.

The inspectors observed maintenance work activities on the above systems and processes and determined that work activities were conducted in accordance with licensee requirements and approved procedures. The inspectors verified that post-maintenance testing and calibrations as specified by the licensee requirements were adequately performed prior to restoring equipment to operational status. Completed work packages were adequately reviewed prior to returning equipment to service.

The inspectors reviewed the licensee's problem identification and resolution program to verify that performance issues relating to the maintenance and surveillance of safety controls were entered into the corrective action program and evaluated the adequacy of corrective actions taken.

b. Conclusion

No findings of significance were identified.

**6. Event Inspection – Suspension of Production Operations**

a. Inspection Scope and Observations

On May 11 and 12, 2012, the inspectors conducted on-site inspections following the notification from the licensee that production operations were temporarily and immediately suspended following the discovery of what appeared to be equipment

damage. The licensee decided to enter into the annual maintenance outage early to conduct a thorough inspection of the facilities and equipment to determine the extent of the potential damage, the cause of the potential damage, and the status of the equipment and systems going into the outage. The inspectors determined that selected union and salaried employees were temporarily released in order for the licensee to conduct un-inhibited and un-biased inspections. The licensee provided a courtesy notification of the early outage to the local town mayor.

The inspectors met with plant management to determine the status of the plant. The production plant had been shutdown except in one area which was kept in hot standby to process material out of the system and into drums. When the material was drummed off, the area was shutdown. The licensee continued shipping product, operating the powerhouse, and processing liquid waste during the outage. A Honeywell salaried employee was retained in each area around-the-clock to provide coverage even if the system was shut down in the particular area. The inspectors toured the control room to verify staff coverage and inspect the control panels and system indications.

The inspectors conducted a physical walk-down of the potentially damaged equipment. The inspectors evaluated the operational status of the equipment for any deficiencies prior to it being reinstated. The inspectors evaluated the deficient equipment relative to the maintenance activities recently performed on the systems.

The inspectors conducted meetings with plant management and supervisors to determine the licensee methods and schedule for determining the plant's safety status as well as the assessment of the non-compliant equipment and systems thought to be damaged. The inspectors evaluated the comprehensiveness of the licensee planned inspection activities and evaluated the inspection process. The licensee formed six inspection teams, each team with representatives from operations, maintenance, engineering, and health, safety, and Environmental or HP. Each team was given two areas for inspection; most of the areas were inspected twice by two separate teams. The areas inspected were ore preparation, green salt, fluorination, distillation, environmental processing, the tank farm, the powerhouse, electrical sub-stations and motor control centers, and the potassium hydroxide (KOH) process area. The inspectors went with selected teams in the production areas of fluorination, distillation, green salt, fluorine plant, and KOH processing and evaluated the teams conducting their inspections. The inspectors noted the teams used an unstructured process to evaluate the areas and were looking for anything out of the ordinary. The level and detail of the inspections varied amongst the teams.

The inspectors observed a team meeting after the first round of inspections to evaluate the licensee identification process and plans for correction. Each team presented all issues or deficiencies they noted and the issues were added to a list for further evaluation and correction as appropriate. After completion of the inspection process, the licensee formed a list of potentially damaged non-conforming equipment issues for further attention.

On May 14, 2012, the inspectors conducted an on-site inspection following a release of UF<sub>6</sub> during the preparation of a 48Y cylinder (Cylinder AC-123) for washing. The inspectors determined that in preparation for visual inspection of the internal surface, cylinder washing is normally performed by yard workers. At the time the release occurred, a salaried employee was performing the operation in accordance with the

licensee's procedure for washing UF<sub>6</sub> cylinders. While preparing a cylinder for washing, the cylinder wash operator accidentally damaged the valve on the cylinder. The operator continued to prepare the cylinder for washing and while disconnecting the cylinder drain plug to insert a specialized wash adapter on the cylinder, released residual UF<sub>6</sub> from the cylinder. From review of the procedure, the inspectors determined that the operator did not adhere to the written requirements of the procedure.

License Condition 18 of the License, Amendment 8, states, in part, that the licensee shall conduct authorized activities in accordance with the statements, representations, and conditions in License Application dated May 12, 2006, and supplements thereto. Section 2.6.1 states, Honeywell shall establish a process to identify those process operations that require procedural guidance to ensure proper execution and require that these process operations be conducted in accordance with approved procedures. The section further states that written procedures shall govern the procedure control process. These procedures shall address operating procedure preparation, review, revision, approval, and implementation.

Section 2.6.2.4, Procedural Adherence, states, in part, that Honeywell shall establish procedures governing use of and adherence to written procedures.

In order for the cylinder wash operator to install the spray wash adapter for cylinder washing, the cylinder drain plug was disconnected. As a result, UF<sub>6</sub> was released from the cylinder. Prior to disconnecting the drain plug, the operator observed small wisps of smoke emanating from the plug and did not report it until after the plug had been completely removed and the release had occurred.

Section 3.3.2 of procedure MTW-SOP-CYL-0701, "Washing UF<sub>6</sub> Cylinders," requires that system leaks must be reported to supervisor. The operator failed to report to his supervisor the small wisps of smoke emanating from the drain plug prior to disconnecting it. The operator did not adhere to the written procedure for reporting a system leak.

The release of UF<sub>6</sub> was concentrated in the confined areas of the cylinder wash facility which is located next to the tank farm. Hydrogen fluoride (HF) and uranyl fluoride (UO<sub>2</sub>F<sub>2</sub>) contamination were observed by the licensee at the cylinder wash facility.

Section 3.4 of the procedure states, when work is performed in or when work will result in contamination, radiation, or an airborne radioactivity area, work activities must be reviewed by Environmental and HP. There were particles of UO<sub>2</sub>F<sub>2</sub> on the concrete below the location of the release. Environmental and HP were not informed of the contamination resulting from the release. Again, the operator did not adhere to the written procedure for informing Environmental and HP.

Section 5.1.2 of the procedure requires, the operator to place the cylinder in the cradle in the horizontal position with the valve in the 12 o'clock position and facing the door. Section 5.1.6 of the procedure states, with the cylinder valve CLOSED, connect valve "A" to the cylinder valve using the copper flexible connector provided. The cylinder valve had been damaged during preparation of the cylinder for washing and it was impossible for the operator to perform these steps because there was no longer a valve installed in the cylinder. This is yet another example of the operator not adhering to the written procedure, because there was not a cylinder valve present to perform these steps.

Contrary to the above, on May 14, 2012, the licensee failed to govern the use and adherence to a written procedure. Specifically, there were several steps of procedure MTW-SOP-CYL-0701, "Washing UF<sub>6</sub> Cylinders," where an operator failed to adhere to the requirements of a written procedure which resulted in a UF<sub>6</sub> release in the area of the cylinder wash facility. The failure to adhere to the licensee's written procedure in accordance with Section 2.6.2.4 is considered one example of a violation of the NRC license application, VIO 40-3392/2012-003-01.

The inspectors reviewed activities by the licensee that caused a UF<sub>6</sub> release in the distillation area of the FMB. On May 30, 2012, operators were preparing a work site to make a line break to change out a pressure indicator on the auto sampler. The operators were establishing a second vacuum source using a Kinney pump on the first floor in distillation. The operators lined up the vacuum to the auto sampler, through the secondary sample cold trap using the Kinney pump on the first floor. The plant was in an annual shutdown and the cooling system for the cold traps was being serviced. Because the plant was shutdown, the cold traps were at ambient temperature, approximately 109 degrees Fahrenheit. When the operators started the Kinney pump and pulled a vacuum on the cold trap, it caused the UF<sub>6</sub> in the cold trap to sublime releasing UF<sub>6</sub>. Approximately 21 pounds of UF<sub>6</sub> was released exposing five operators who were treated at the dispensary with calcium gluconate and later released to return to work.

License Condition 18 of the License, Amendment 8, states, in part, that the licensee shall conduct authorized activities in accordance with the statements, representations, and conditions in License Application dated May 12, 2006, and supplements thereto. Section 2.6.1 states, Honeywell shall establish a process to identify those process operations that require procedural guidance to ensure proper execution and require that these process operations be conducted in accordance with approved procedures. The section further states that written procedures shall govern the procedure control process. These procedures shall address operating procedure preparation, review, revision, approval, and implementation.

Section 5.1.1 of procedure MTW-SOP-DIS-0203, "Sampling Suspect Cylinders and Maintaining the Sample Vacuum System," states, in part, ensure the following are complete on cylinder being sampled: Secondary Sample Cold Trap less than 50 degrees Fahrenheit and less than 2500 pounds of UF<sub>6</sub>.

Contrary to the above, on May 30, 2012, the licensee failed to ensure that the Secondary Cold Trap was less than 50 degrees Fahrenheit prior to establishing a vacuum at the sample inlet valve using a Kinney pump in distillation which resulted in a UF<sub>6</sub> release in the distillation area of the FMB. The failure to ensure that the cold trap was less than 50 degrees Fahrenheit in accordance with Section 5.1.1 is considered as another example of a violation of NRC license application with regards to procedural adherence, VIO 40-3392/2012-003-01.

b. Conclusion

Two examples of a violation were identified with respect to operating procedures. The first example involved an operator failing to adhere to several written requirements of a procedure which resulted in a UF<sub>6</sub> release at the cylinder wash facility. The second example was the failure to ensure that the Secondary Sample Cold Trap



was less than 50 degrees Fahrenheit prior to establishing a vacuum at the sample inlet valve, which resulted in a UF<sub>6</sub> release in the distillation area of the FMB.

## 7. **Follow-up on Previously Identified Issues**

- a. **(Closed)** VIO 40-3392/2009-004-02 for failure to adequately perform surveys on outfalls 003, 004, and 005 and include the results in calculations of dose to the public.

The inspectors concluded that the licensee has an adequate procedure in place for the sample collection of the storm water outfalls and the inclusion into the semiannual effluent report. This violation is considered closed.

- b. **(Closed)** VIO 40-3392/2011-003-03 for failure to maintain public address (PA) system.

The inspectors reviewed the licensee's corrective actions to address the failure to adequately maintain the PA system. The inspectors reviewed the semi-annual walkthrough records conducted by the contracted vendor. The inspectors noted that deficiencies were documented and corrected. The inspectors confirmed that the PA system was formally placed into a routine preventative maintenance cycle. The inspectors also noted augmented use of push-to-talk phones by site personnel, thus reducing traffic on the PA system. Based on these corrective actions, this violation is considered closed.

- c. **(Closed)** VIO 40-3392/2011-005-02 for failure to implement the management of change (MOC) process for equipment changes made to the administration building uninterruptable power supply (UPS) on October 23, 2003 and on and before March 4, 2011.

The inspectors reviewed the licensee's corrective actions to address the failure to implement the MOC process for the UPS system in the administration building. The inspectors reviewed the modified MOC procedure and reviewed its application with regard to several on-going projects throughout the plant. The inspectors also reviewed the communication for the electronic MOC users that clarified the UPS for the administration building was under the MOC process. The inspectors also verified that the Regulatory Affairs and Radiation Protection organization were consolidated to improve efficiency. No issues were noted with regard to adequacy of the corrective actions. This violation is considered closed.

- d. **(Closed)** Events Notice reviewed for closure (EN 47898) for unplanned medical treatment of a contaminated individual.

The inspectors were on site when the incident happened. The inspectors reported to the scene at the dispensary to observe and assessed the situation. The individual felt dizzy due to irregular sugar levels. He was taken to the dispensary for observation and it was determined that the individual was capable of surveying himself out and walking out to be transported to his private physician. The inspectors reviewed the HP forms for the surveys related to the medical emergency. The spreadable contamination was contained and decontamination was needed. This item is considered closed.

- e. **(Discussed)** VIO 40-3392/2011-003-01 for waste shipment in Gondola Containers free of standing liquid in excess of 1%.

The violation was discussed and will remain open, because the licensee did not complete their corrective steps to revise Standard Operating Procedure, MTW-SOP-ENV-001 and to train material handlers in order to address the corrective actions by December 31, 2011. The licensee entered this finding into the EMOC (configuration control management) program for tracking and completion. The licensee requested an extension to June 30, 2012 to complete corrective actions. This violation will remain open.

**8. 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 May 3 and May 25, and July 26, 2012, with Larry Smith, Plant Manager and other members of the licensee's staff. No dissenting comments were received from the licensee. Proprietary information was discussed but not included in the report.

## SUPPLEMENTAL INFORMATION

### 1. LIST OF PERSONS CONTACTED

B. Abel, Vice President, Integrated Supply Chain  
M. Abel, Health Physics Specialist  
J. Assad, Corrective Action Program Administrator  
K. Babcode, Operation Technical Manager  
T. Barnes, Mechanical Integrity & Reliability Manager  
D. Bilski, Security Manager  
B. Burgess, Health Physics Shift Team Lead  
J. Cybulski, Site Services Manager  
D. Ewers, Training Manager  
M. Greeno, ISA Implementation  
S. Jimenez, Capital Leader  
L. Litinski, Regulatory Affairs  
J. King, Environment Manager  
B. McBee, Safety Manager  
M. Mena, Quality Assurance Supervisor  
T. Noll, ISA Manager  
S. Patterson, Health Physics Supervisor  
J. Pritchett, Plant Operations Superintendent  
J. Smith, Maintenance Manager  
L. Smith, Plant Manager  
B. Stokes, Regulatory Affairs/Radiation Protection Manager  
M. Wolf, Nuclear Compliance Director

Other licensee employees contacted included operations, management staff, engineers, HP-technicians, security, and office personnel.

### 2. INSPECTION PROCEDURES USED

IP 88035	Radioactive Waste Management
IP 88045	Effluent Control & Environmental Protection
IP 86740	Transportation
IP 88025	Maintenance & Surveillance of Safety Controls

### 3. ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Item</u>	<u>Status</u>	<u>Description</u>
40-3392/2009-004-02	Closed	VIO – Failure to adequately perform surveys on outfalls 003, 004, and 005 and include the results in calculations of dose to the public
40-3392/2011-003-03	Closed	VIO – Failure to maintain public address (PA) system

Attachment

40-3392/2011-005-02	Closed	VIO – Failure to implement the MOC process for equipment changes made to the administration building UPS on October 23, 2003, and on and before March 4, 2011.
40-3392/2011-003-01	Discussed	VIO – Waste shipment in Gondola Containers free of standing liquid in excess of 1%.
EN 47898	Closed	Unplanned medical treatment of a contaminated individual (Tracking No. 40-3392/2012-003-00)
40-3392/2012-003-01	Open	VIO – Failure to govern the use and adherence to a written procedure, and failure to ensure that the Secondary Cold Trap was less than 50 degrees Fahrenheit prior to establishing a vacuum at the sample inlet valve using a Kinney pump in distillation.

#### 4. LIST OF DOCUMENTS REVIEWED

- MTW-ADM-HP-0106, Revision (Rev.) 0, Control of Liquid Effluents
- MTW-ADM-HP-0100, Rev. 4, Radiological Protection Program
- MTW-ADM-REG-0120, Rev. 0, Management of Change
- MTW-ADM-ISO-0160, Rev. 0, Preparation of Uranium Hexafluoride Shipments
- MTW-ADM-ISO-0140, Rev. 0, Preparation of Form 741, Bill of Lading, and CQQ
- MTW-ADM-ENV-0100, Rev. 0, Waste Management
- MTW-ADM-TRN-0701, Rev. 7, Conduct of Training
- MTW-ADM-EPIP-0002, Rev. 3, Emergency Classification and Notification
- MTW-HP-DI-0001-R1, NRC Effluent Report
- MTW-DI-HP-005-R3, Preparation of the Total Annual Dose to the Public
- MTW-SOP-ENV-0002, Rev. 1, Documentation and Compliance of Radioactive Waste Shipments
- MTW-SOP-GSO-0200, Rev. 15, Green Salt Operation
- MTW-SOP-ORE-0210, Rev. 1, Drum Shack and North Pad Operations
- MTW-SOP-HP-0104, Rev. 7, Control of Gaseous Effluents
- MTW-SOP-HP-0209, Rev. 4, Collecting Environmental Samples
- MTW-SOP-DIS-0200, Rev. 20, Distillation Operation
- MTW-SOP-CYL-0701, Rev. 2, Washing UF<sub>6</sub> Cylinders
- MTW-SOP-DIS-0200, Rev. 20, Distillation Operation
- MTW-SOP-DIS-0203, Rev. 6, Sampling Suspect Cylinders and Maintaining the Sample Vacuum System
- MTW-SOP-ENV-0001, Rev. 0, Packaging, Labeling, Marking, and Surveying of Radioactive Waste Shipments
- MTW-SOP-UF<sub>6</sub>C-0217, Rev. 2, UF<sub>6</sub> Cylinder Shipping and Receiving Inspection
- MTW-SOP-HP-0240, Rev. 0, Radiological Contamination Control for On-site Treatment and Off-site Treatment of Injuries and Other Medical Issues

**5. ACRONYMS AND INITIALISMS**

ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
CY	Calendar Year
CYL	Cylinder
DOT	Department of Transportation
EN	Event Notice
FMB	Feed Materials Building
HP	Health Physics
HF	Hydrogen Fluoride
IP	Inspection Procedure
KOH	Potassium Hydroxide
MoC	Management of Change
MTW	Metropolis Works
NRC	Nuclear Regulatory Commission
PA	Public Address\
Rev.	Revision
SOP	Standard Operating Procedure
UO <sub>2</sub> F <sub>2</sub>	Uranyl Fluoride
UF <sub>6</sub>	Uranium Hexafluoride
UPS	Uninterruptable Power Supply
VIO	Violation