NRC FORM 591FF PART 1
(12-2007)
10 CFR 2.201

U.S. NUCLEAR REGULATORY COMMISSION

INSPECTION REPORT

1. LICENSEE OR CERTIFICATE HOLDER/LOCATION INSPECTED:	2. NRC/REGIONAL OFFICE:
Honeywell International, Inc. P. O. Box 430 Metropolis, IL 62960 REPORT NO: 2009-004	U.S. Nuclear Regulatory Commission Region II 61 Forsyth Street, Suite 23T85 Atlanta, GA 30303-8931

3. DOCKET NUMBER:	4. LICENSE OR CERTIFICATE NUMBER:	5. DATE(S) OF INSPECTION:
40-3392	SUB-526	July 20 - 23, 2009

LICENSEE OR CERTIFICATE HOLDER:

The inspection was an examination of the activities conducted under your license or certificate as they relate to safety and/or safeguards and to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your license or certificate. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspectors. The inspection findings are as follows:

☐ 1. Based on the inspection findings, no violations were identified.

☐ 2. Previous violation(s) closed.

☐ 3. Reported events reviewed

☐ 4. The violation(s), specifically described to you by the inspectors as non-cited violations, are not being cited because they were self-identified, non-repetitive, and corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy, to exercise discretion, were satisfied.
Non-Cited Violation(s) was/were discussed involving the following requirement(s) and Corrective Action(s):

☑ 5. During this inspection, certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11.

(Violations)

See attached NOV

LICENSEE OR CERTIFICATE HOLDER STATEMENT OF CORRECTIVE ACTIONS FOR ITEM 5, ABOVE

I hereby state that, within 30 days, the actions described by me to the inspectors will be taken to correct the violation(s) identified. This statement of corrective actions is made in accordance with the requirements of 10 CFR 2.201 (corrective steps already taken, corrective steps which will be taken, date when full compliance will be achieved). I understand that no further written response to the NRC will be required, unless specifically requested.

Title	Printed Name	Signature	Date
LICENSEE/CERTIFICATE HOLDER REPRESENTATIVE			
NRC INSPECTORS	R. Prince, P. Startz	***/RA/***	8/13/09

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6. INSPECTORS(S): Robert Prince, Paul Startz

7. INSPECTION PROCEDURES USED: 88030, 88045

EXECUTIVE SUMMARY

Summary of Plant Status

The Honeywell Metropolis Works (licensee) uranium conversion facility is located on a 1,100 acre site (60 acres within the fence line). The licensee is authorized to possess 150 million pounds of natural uranium ore and to convert this material to uranium hexafluoride (UF_6). The uranium conversion process occurs in the Feed Materials Building (FMB). During the inspection, operations were normal with a planned maintenance outage on one green salt train in progress.

This announced inspection included observations and evaluations of the licensee's radiation protection program and the environmental protection program. The inspection also included an evaluation of the licensee's ongoing investigation of a personnel contamination event that occurred on July 6, 2009. The inspection involved walk downs of the facility, observation of effluent control and environmental monitoring activities, reviews of selected records, and interviews with plant personnel.

Radiation Protection (88030)

- The inspectors reviewed the licensee's ongoing investigation associated with a personnel contamination event that occurred on July 6, 2009, during work activities involving the removal of a restriction in a filter drain line. The inspectors interviewed personnel involved with the work activity and personnel who investigated the event and the radiological consequences of the event. Production personnel were preparing a Primary Fluorination filter for replacement. The filter drain line was plugged and work activities were in progress to drain the filter bowl. Licensee personnel attempted to remove the blockage utilizing approved techniques. When these efforts proved unsuccessful the individual decided to use process air to remove the blockage. This technique involved connecting a compressed air line to a valve in the filter drain line at a location below the blockage and providing short bursts of compressed air into the system. Operation of the compressed air line was performed at a location remote from the filter bowl. A second individual was positioned above the filter bowl, three floors above where the individual operating the compressed air line was positioned. Several short bursts of compressed air were introduced into the drain line. When the blockage cleared, some licensed material was ejected out of the filter bowl into the work area. The second individual stationed adjacent to the open filter bowl was exposed to filter fines, with some of the material entering underneath the employee's respirator in addition to exposing the employee's eyes and facial areas.

Based upon interviews with personnel the inspectors noted that the use of compressed air to clear the blockage in the filter drain line was not a routine practice. Specifically, the use of compressed air for this purpose would not be allowed during maintenance activities with the filter bowl cover removed as was the case in this situation. Licensee procedure SAF-IP-0027, Hazard Recognition, Step 4.2 in part, requires employees to complete a Job Safety Analysis (JSA) for non-routine or new tasks not covered by a procedure. The process utilized to clear the plugged piping is not covered by a procedure. Based upon interviews with licensee personnel the inspectors determined that a JSA should have been completed prior to attempting this task. Completion of a JSA could have prevented the use of compressed air based on the configuration of the system at the time of the incident. Failure to issue a JSA in accordance with procedure SAF-IP-0027 is a violation (VIO 40-3392/2009-04-01).

- The inspectors reviewed radiological survey data and bioassay results for the individual involved in the filter blockage removal contamination event. The inspectors reviewed the licensee's evaluation of the dose assessment and found that the dose estimate was calculated in accordance with accepted industry practices. The inspectors noted that the licensee obtained the services of a third-party consulting firm with expertise in performing dose assessments. The consulting firm's dose assessment concluded that no regulatory dose limits were exceeded as a result of the event. The inspectors also performed an independent dose assessment using bioassay results the licensee obtained for the individual. The inspectors determined that no regulatory exposure limits were exceeded.

- The inspectors reviewed the licensee's efforts to characterize contamination levels in the FMB since the last Radiation Protection inspection performed in May, 2009. The licensee obtains smear samples throughout the FMB and analyzes the smear paper for beta-gamma activity levels. The beta-gamma contamination values are used as surrogates to determine loose surface alpha contamination levels. Though progress has been made in reducing overall contamination levels in various areas of the FMB the inspectors noted that the most recent contamination survey performed in July, 2009, indicated that some areas on the fourth and fifth floor elevations exceeded 75,000 dpm/100 cm^2. This value was subsequently approved by the NRC in a recent license amendment. The NRC found the revised surface contamination level limit for uranium and its daughter products to be consistent with the guidelines contained in Regulatory Guide (RG) 8.30, "Health Physics Surveys in Uranium Recovery Facilities," Revision 1, dated May, 2002. Specifically, the 75,000 dpm/100 cm^2 (alpha), is 34 percent of the limit in RG 8.30, for the Controlled Areas of the facility. The inspectors noted that the licensee has increased the frequency of routine contamination surveys within the FMB and the FMB control room. Based on discussions with licensee personnel, the inspectors noted the licensee is currently evaluating the use of additional contamination analysis equipment capable of directly evaluating alpha contamination levels.

<u>Effluent Control and Environmental Protection (88045)</u>

- The inspectors reviewed the licensee's environmental monitoring program and determined that environmental sampling results for soil, vegetation, process water, and ambient air indicated that uranium and fluoride discharges were under regulatory limits. However, inspectors discovered that calculations used to determine the dose to the public did not include the concentration of licensed materials within storm water discharges from outfalls 003, 004, and 005. The 2005 radiological data made available from the licensee indicated that effluent from outfall 003 was measured as 77 pCi/l gross alpha, outfall 004 was 259 pCi/l, and outfall 005 was 74 pCi/l.

  10 CFR Part 20.1302 (a) requires, in part, that the licensee perform appropriate surveys of radioactive materials in effluents released to unrestricted areas to demonstrate compliance with the annual dose limits for individual members of the public in 10 CFR 20.1301. 10 CFR 1302 (b) further requires that a licensee show compliance with the annual dose limit in 20.1301, in part, by demonstrating that the annual average concentrations of radioactive material released in liquid effluents at the boundary of the unrestricted area do not exceed the values specified in table 2 of appendix B to part 20.

Contrary to the above, as of July 23, 2009, the licensee was not performing appropriate surveys of radioactive materials in all liquid effluents released to unrestricted areas to demonstrate compliance with 10 CFR 20.1301. Specifically, the licensee's collection and analysis of effluent samples from storm water outfalls 003, 004, and 005 on a once every five year basis, was insufficient to demonstrate compliance with the annual dose limit. In addition, the licensee did not use the data from the analysis of samples from outfalls 003, 004, and 005 in any calculation to demonstrate compliance with the limit in 10 CFR 20.1301. Failure to perform appropriate radiological surveys and include liquid effluent discharge data in calculating annual dose to the public in accordance with 10 CFR 20.1302 is a violation (VIO 40-3392/2009-04-02).

- The inspectors reviewed the licensee's environmental sampling equipment and accompanied licensee personnel that were collecting sample media and servicing the equipment. The equipment consisted of onsite and offsite sampling devices. The inspectors noted that all equipment was functional and was serviced in accordance with licensee procedures.

- The inspectors determined the quality control program was adequately maintained for analytical measurements of environmental samples.

- The inspectors reviewed the licensee's environmental audit program and determined the program was consistent with the requirements specified in the license. The inspectors determined that a licensee audit (AUD-2009-0007) identified that licensee staff were not completing all follow up investigations on process stacks that were found to exceed administrative limits. The licensee application states that an investigation of a process stack system is required if three consecutive samples exceeded a 5,000 DPM activity limit. The audit concluded that only three of nine exceedance events were investigated. The audit findings were entered into the licensee's corrective action system. An NRC inspection follow-up item (IFI 40-3392/2009-04-03) was generated to follow-up this issue to determine if the licensee successfully implements programmatic improvements that results in compliance with license requirements.

Exit Meeting Summary

The inspection scope and results were summarized on Thursday, July 23, 2009, with Mr. Tillman, and members of his staff. A follow-up telephone conversation was conducted with Michael Greeno on August 12, 2009 to discuss an additional finding.

Key Points of Contact:

Name	Title
M. Greeno	Regulatory Affairs
T. Barnes	Nuclear Services Leader
T. Dodd	NRC ME License Related Coordinator
K. Dutton	UF6 FMB Coordinator
B. Muiter	Training
S. Johnson	Safety & Environmental Manager
N. Rogers	Health Physics Tech Specialist
R. Stokes	Radiation Safety Program Manager
S. Patterson	Health Physics Supervisor
T. Patterson	Mechanical Planner

List of Items Opened, Closed, Discussed

Item Number	Status	Description
VIO 40-3392/2009-04-01	Open	Failure to complete a JSA as required by procedure resulting in a contamination event.
VIO 40-3392/2009-04-02	Open	Failure to adequately perform surveys on outfalls 003, 004, and 005 and include results in calculations of dose to the public.
IFI 40-3392/2009-04-03	Open	Licensee's audit self-identified the failure to complete and document investigations of process exhaust stacks that exceed 5000 dpm. The license requires an investigation upon experiencing three consecutive exceedences, only three of the nine high-activity investigations had been performed.