UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

September 21, 2007

Mr. David Edwards
Plant Manager
Honeywell Specialty Chemicals
P.O. Box 430
Metropolis, IL 62690

SUBJECT: NRC INSPECTION REPORT NO. 40-3392/2007-005

Dear Mr. Edwards:

This letter refers to the inspection conducted from August 13-17, 2007, at the Honeywell Specialty Chemicals facility in Metropolis, IL. The purpose of the inspection was to determine whether activities authorized under the license were conducted safely and in accordance with NRC requirements. At the conclusion of the inspection on August 17, 2007, the findings were discussed with those members of your staff identified in the enclosed report.

The inspection consisted of an examination of activities conducted under the license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of the license. Areas examined during the inspection are identified in the enclosed report. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities in progress, and interviews with personnel.

Based on the results of this inspection, the NRC did not identify any violations. However, a number of issues were identified regarding the readiness of Honeywell's Integrated Safety Analysis (ISA) and its supporting Plant Features and Procedures (PFAPs) for implementation. The NRC license requires that the PFAPs developed in accordance with the ISA be implemented by no later than November 7, 2007.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," 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 document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

Should you have any questions concerning this inspection, please contact us.

Sincerely,

/RA/
Jay L. Henson, Chief
Fuel Facility Inspection Branch 2
Division of Fuel Facility Inspection

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

Enclosure: (See page 2)

Enclosure: NRC Inspection Report 40-3392/2007-005

cc w/encl:
Gary Wright
Emergency Management Agency
Division of Nuclear Safety
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Distribution w/encl:
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*see previous concurrence

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	40-3392
License No.:	SUB-526
Report No.:	40-3392/2007-005
Licensee:	Honeywell International, Inc.
Facility:	Metropolis Works
Location:	P. O. Box 430 Metropolis, IL 62960
Dates:	August 13 - 17, 2007
Inspectors:	Manuel Crespo, Senior Fuel Facilities Inspector, NRC Region II John Pelchat, Senior Fuel Facilities Inspector, NRC Region II
Approved by:	Jay L. Henson, Chief Fuel Facility Inspection Branch 2 Division of Fuel Facility Inspection

Enclosure

EXECUTIVE SUMMARY

Honeywell International, Inc.
NRC Inspection Report No. 40-3392/2007-005

This routine, announced inspection was conducted in the area of operations. In addition, a regional initiative inspection of operations, management controls, and maintenance/surveillance was conducted. The inspections involved observations of work activities, reviews of selected records and procedures, and interviews with plant personnel. The inspection identified the following aspects of the program as outlined below:

Maintenance and Surveillance

- The inspectors determined that the licensee's preparations to implement its Integrated Safety Analysis (ISA) and its supporting Plant Features and Procedures (PFAPs) were not complete as evidenced by:
    - the lack of management controls to implement either of the sole PFAPs as described in the ISA.
    - Licensee personnel were not able to locate or provide documentation relating to the process hazard analysis used to develop PFAPs that were selected by the inspectors for review. Documentation in the safety analysis also lacked set points for most of the PFAPs reviewed.
    - several PFAPs had the potential to experience a single point failure. FMB control room personnel did not have a clear understanding of what signal various instruments would give should their corresponding systems malfunction.

Operations

- Shift turnover between operators included adequate communication of current issues. Maintenance activities in the FMB were carried out in accordance with appropriate procedures and complied with required postings and instructions. Four newly installed fixed gauging devices were operated and maintained safely. The devices were posted and labeled in accordance with regulatory requirements.

Management Organization and Controls

- The licensee implemented an adequate corrective action program to track corrective actions identified by external inspections and audits, internal audits, and event investigations.

Attachment:
Partial List of Persons Contacted
Inspection Procedures Used
Items Opened
List of Acronyms Used

REPORT DETAILS

1. Summary of Plant Status

The Honeywell Speciality Chemicals (licensee) uranium conversion facility (known as the Metropolis Works or MTW) is located on a 1100 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 Feeds Material Building (FMB).

2. Operations (IP 88020)
Maintenance and Surveillance of Safety Controls (IP 88025)

a. Scope and Observations

NRC License SUB-526 is issued to Honeywell International, Inc. and was most recently renewed on May 11, 2007. License Condition no. 18 required that the licensee shall conduct authorized activities at the Honeywell Metropolis Works Facility in accordance with the statements, representations and conditions (or as revised by change and/or configuration management processes as described therein) in specified licensee-submitted documents including:

- the License Application dated May 12, 2006, and supplemented by a letter dated March 20, 2007;
- the Safety Demonstration Report dated May 12, 2006; and,
- the Integrated Safety Analysis (ISA) Report dated October 26, 2006.

License Condition No. 19 further requires that, within 180 days of the issuance of the renewed license (November 7, 2007), all Plant Features and Procedures, to be designated PFAP, shall be developed and implemented within the ISA. The implementation shall include the Configuration Management Program, and Facility Change Process described in the license application. (Note: The term PFAP refers to Plant Features And Procedures that are designed to either prevent postulated accidents or mitigate their consequences.)

Section 7 of the Safety Demonstration Report dated May 12, 2006 described the licensee's accident analysis process. Section 7.1 stated that "to assess the probabilities and consequences associated with accidents involving licensed materials at MTW, Honeywell performed an Integrated Safety Analysis based on the requirements of 10 CFR 70, 'Domestic Licensing of Special Nuclear Material' and NUREG-1520,

'Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility.' Section 7.2 of the Safety Demonstration Report stated, in part, that the following information will be included in the accident analysis:

- a description of each process analyzed in the ISA, the hazards that were identified in the ISA, and a general description of the types of accident sequences;

- information that demonstrates compliance with applicable performance requirements, including a description of the management measures (to ensure the requirements are satisfied);

- a list describing each Plant Feature and Procedure (PFAP) relied on for safety in sufficient detail to understand their functions;

- a description of the proposed quantitative standards used to assess the consequences to an individual from acute chemical exposure to licensed material or chemicals produced from licensed materials that are on-site, or expected to be on-site;

- a descriptive list that identifies all PFAP relied on for safety that are the sole item preventing or mitigating an accident sequence; and,

- a description of the definitions of unlikely, highly unlikely, and credible as used in the evaluations in the ISA.

Section 1 of the ISA stated that the document identified potential accident sequences, designated Plant Features And Procedures (PFAP) to either prevent such accidents or mitigate their consequences to an acceptable level, and described management measures to provide reasonable assurance of the availability and reliability of the PFAPs. The ISA stated that the analysis focused on high-risk accident sequences with consequences that could exceed the performance criteria that are described in 10 CFR 70.61. Section 4.1 of the ISA described the Hazard Analysis Identification Process that was used to identify the physical, radiological or chemical characteristics that have the potential for causing harm to site workers, the public, or to the environment. Section 4.3.1 of the ISA described the process for characterizing the severity of the consequences for the accident sequences into one of three consequence categories (high, intermediate, or low) based on their forecast radiological, chemical, and/or environmental impacts.

Section 4.5 of the ISA described the management measures as functions applied to PFAPs and any items that may affect the function of PFAPs. The PFAPs management measures ensure that these structures, systems, equipment, components, and activities of personnel within the identified PFAP boundary are designed, implemented, and maintained as necessary to ensure they are available and reliable to perform their function when needed to comply with the performance requirements assumed in the ISA documentation.

The inspectors reviewed the list of proposed PFAPs as it existed at the time of the inspection to assess the progress the licensee had made in preparing to implement the ISA by November 7, 2007. This review identified issues with the implementation of the two sole PFAPs identified in the ISA. A sole PFAP is defined in the licensee's ISA as a single item or feature that is relied upon to prevent or mitigate an accident . The inspectors determined that both of the sole PFAPs described in the ISA lacked the necessary management measures to ensure that the control remained reliable and available to perform their functions.

The use of PFAP55, a multi-port detector system used to warn of the presence of a refigerant, was not found in any operating procedure. Review of the ISA indicated that a refrigerant leak may result in an asphyxiation hazard to licensee personnel working in the vicinity of the refrigeration system located on the first floor of the FMB. Although PFAP55 is not associated with an NRC regulated hazard, it was reviewed because of its identification as a PFAP served as an example of the licensee's application of its ISA. The inspectors determined that operators were unsure of what actions to take should this PFAP alarm, existing procedures did not describe the actions an operator should take, the set points described in the ISA did not match the actual set points for the alarm, and the alarm was reportedly unreliable. The inspectors informed the licensee of these issues for this PFAP.

Similarly, PFAP48 required that vessels be degreased to prevent hydrocarbons from reacting with hydrogen fluoride (HF). When questioned, the operators described the degreasing process as being common knowledge among the plant staff. However, formal procedures or training documents describing this safety precaution did not exist. The lack of procedures or training regarding hydrocarbon removal from vessels indicated that the licensee had not yet established management measures to adequately implement PFAP48 in accordance with the ISA. Inspector Follow-up Item (IFI) 40-3392/2007-005-01 was opened to track the licensee's corrective actions to address the lack of management measures to implement sole PFAPs.

The inspectors reviewed the readiness of other PFAPs associated with the Ore Prep and Green Salt processes. The PFAPs in both areas were verified to be in place and operational. Operators were also knowledgeable of the safety controls present in their area. However, the inspectors were unable to find adequate documentation that supported the safety basis outlined in the ISA. The licensee was unable to locate the documents that dictated which safety controls were PFAPs and which pieces of equipment were part of a particular PFAP. Documentation in the safety analysis also lacked set points for most of the PFAPs associated with the Ore Prep and Green Salt processes. Due to these issues, IFI 40-3392/2007-005-02 was opened to track the licensee's actions to provide appropriate supporting documentation for the ISA that will detail the equipment and set points of a PFAP.

The inspectors also noted several instances of a number of PFAPs that have the potential to experience a single point failure. For example, the ISA described several PFAPs designed to prevent or mitigate an accident resulting from a hydrogen detonation in the vicinity of the reductor or in the vicinity of various ore prep system components. The ISA stated that should one of the hydrogen analyzers in these areas malfunction or fail (PFAP 25, 26, 27, and 28), the operator will shutdown the appropriate systems. The

inspectors discussed with the operators what indications would be displayed to annunciate the loss of a hydrogen analyzer. Based on their responses, the inspectors determined that the operators depended on the hydrogen analyzer's automatic actions to respond to any operational upsets. However, the operators did not have a clear understanding of what type of signal the instruments would give in the event of a hydrogen analyzer system malfunction. It is not clear what specific indications operators would act on to implement those PFAPs that are associated with the hydrogen analyzers. IFI 40-3392/2007-005-03 was opened to track the licensee's evaluation of these PFAPs to determine what indications would be provided to operators to indicate a failure of the hydrogen analyzers.

b. Conclusions

The inspectors determined that the licensee's preparations to implement its Integrated Safety Analysis (ISA) and its supporting Plant Features and Procedures (PFAP) were not complete as evidenced by:

- the lack of management controls to implement either of the sole PFAPs as described in the ISA.

- Licensee personnel were not able to locate or provide documentation relating to the process hazard analysis used to develop PFAPs that were selected by the inspectors for review. Documentation in the safety analysis also lacked set points for most of the PFAPs reviewed.

- several PFAPs had the potential to experience a single point failure. FMB control room personnel did not have a clear understanding of what signal various instruments would give should their corresponding systems malfunction.

No violations of NRC requirements were identified.

3. Operations (IP 88020)

a. Scope and Observations

The inspectors reviewed routine operations in the FMB. The inspectors observed shift turnover between operators and noted adequate communication of current issues. During walk-downs of the FMB, the inspectors observed that maintenance activities were carried out in accordance with appropriate procedures and that licensee personnel complied with required postings and instructions.

The inspectors also reviewed the use of four specifically-licensed fixed level gauges installed on the HF vaporizers on the South Pad adjacent to the FMB. The inspectors determined that the licensee's training, maintenance and operating procedures were adequate. The devices were sufficiently secured to prevent unauthorized operation or removal of the fixed gauges. The devices were being used as intended and properly posted and labeled to warn persons of the presence of radioactive materials.

b. Conclusions

Shift turnover between operators included adequate communication of current issues. Maintenance activities in the FMB were carried out in accordance with appropriate procedures and complied with required postings and instructions. Four newly installed fixed gauging devices were operated and maintained safely. The devices were posted and labeled in accordance with regulatory requirements. No violations of NRC requirements were identified.

4. Management Organization and Controls (Inspection Procedure (IP) 88005

a. Scope and Observations

The inspectors reviewed the root cause investigation of the Distributed Control System issue that caused the process to be shutdown manually. The issue was the result of a problem with an uninterruptible power supply (UPS) provided by an outside vendor. The licensee further noted that when recovering from the event, that some of the valves were not set in the appropriate fail-safe position. The licensee modified DCS programming to ensure that the DCS did not create an unexpected system configuration during recovery from future power failures. The issue with the UPS system was addressed by the manufacturer, and the licensee also installed additional UPS systems for each DCS control panel to provide system redundancy. The inspectors determined that the licensee had conducted an adequate investigation of the issue and implemented adequate corrective actions.

The inspectors reviewed the training records for operators of the DCS. The inspectors verified that operators were training and tested in the use of the new DCS. Through observation of operations and interviews, the inspectors determined that the operators demonstrated an adequate level of knowledge and proficiency in the use of the DCS. It is expected that the remainder of the analog wall panel controls and monitors will be moved to the DCS this fall as Phase II of the project. No significant deficiencies were noted.

The inspectors reviewed the corrective actions program to verify that licensee had a process in place to track corrective actions identified by external inspections and audits, internal audits, and event investigations. The licensee used the “Apollo” investigation process for root cause determination. The results of audits and events along with the status of pending corrective actions are reviewed by senior licensee management during routine meetings. No significant deficiencies were noted.

b. Conclusions

The licensee implemented an adequate corrective action program to track corrective actions identified by external inspections and audits, internal audits, and event investigations. No violations of NRC requirements were identified.

5. Follow-up on Previously Identified Issues

a. (Discussed) VIO 40-3392/2007-002-01: Failure to clean area following completion of work

The inspectors' review of the South Pad did not indicate that the South Pad area was receiving adequate management attention to ensure the area was properly cleaned. A standard of cleanliness for the area had yet to be communicated to the south pad operators. This item will remain open to further evaluate the licensee's long term corrective actions.

b. (Closed) URI 40-3392/2007-004-01: As-found Lengths of Installed Facility Fire Fighting Hoses Shorter Than Required by Licensee Procedures

The inspectors determined that the length of fire hoses satisfied National Fire Protection Association (NFPA) standards and that the fire hoses were long enough to provide coverage in FMB.

c. (Closed) IFI 40-3392/2006-006-01: Internal inspection of a firewater tank

The inspectors examined the firewater storage tank and found that algae and other contaminants to be well controlled. No significant build up of scale was observed on the interior of the tank.

6. Exit Meeting Summary

The inspector presented the inspection results to members of the plant staff and management at the conclusion of the inspection on August 17, 2007. Plant management acknowledged the findings presented. Although proprietary documents may have been reviewed during this inspection, the proprietary nature of these documents is not included in this report. No dissenting comments were received from the licensee.

ATTACHMENT

1. PARTIAL LIST OF PERSONS CONTACTED OR ATTENDED EXIT MEETING

Licensee

D. Edwards, Plant Manager
C. DeLand, Maintenance/Reliability Manager
R. Erickson, Operations Manager
J. Johnson, Safety Supervisor
M. Millman, Engineering Manager
S. Patterson, Health Physics Supervisor
L. Parscale, Nuclear Regulatory Affairs Manager
N. Rodgers, HP Specialist
B. Stokes, Health Physics Specialist
D. Mays, Health, Safety and Environmental Manager
B. Stephenson, Safety Specialist

Other licensee employees contacted included engineers, technicians, and office personnel.

2. INSPECTION PROCEDURES USED

88005	Management Organization and Controls
88020	Operations
88025	Maintenance and Surveillance of Safety Controls

3. ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Status	Description
IFI 40-3392/2007-005-01	Open	Track corrective actions for implementation of PFAP following November 7, 2007 (Paragraph 2.b)
IFI 40-3392/2007-005-02	Open	Providing appropriate documentation for the ISA (Paragraph 2.b)
IFI 40-3392/2007-005-03	Open	Evaluate to determine what indications would be provided to operators to indicate a failure of the hydrogen analyzers (Paragraph 2.b)
VIO 40-3392/2007-002-01	Discussed	Failure to clean area following completion of work (Paragraph 3)

URI 40-3392/2007-004-01	Closed	As-found Lengths of Installed Facility Fire Fighting Hoses Shorter Than Required by Licensee Procedures (Paragraph 3)
IFI 40-3392/2006-006-01	Closed	Internal inspection of a firewater tank (Paragraph 3)

4. LIST OF ACRONYMS USED

ADAMS	Agency Document Access and Management System
FMB	Feed Materials Building
HF	Hydrogen Fluoride
IP	Inspection Procedure
MTW	Metropolis Works
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
PFAP	Plant Features and Procedures
ppm	parts per million
UF_6	Uranium Hexafluoride
URI	Unresolved Item