



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

July 8, 2004

Mr. Rory J. O'Kane
Plant Manager
Honeywell Specialty Chemicals
P.O. Box 430
Metropolis, IL 62690

SUBJECT: NRC INSPECTION REPORT 40-3392/2004-007

Dear Mr. O'Kane:

On June 10, 2004, the NRC completed an inspection at the Honeywell Specialty Chemicals facility. The purpose of the inspection was to perform a routine review of chemical safety program implementation, assess the effectiveness of corrective actions taken following the plant restart in response to the December 22, 2003, Site Area Emergency, and determine whether activities authorized by the license were conducted safely and in accordance with NRC requirements. At the conclusion of the inspection on June 10, 2004, the NRC inspectors discussed the findings with members of your staff.

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.

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>.

Honeywell

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Should you have any questions concerning this letter, 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: NRC Inspection Report 40-3392/2004-007

cc w/encl:
Gary Wright,
Emergency Management Agency
Division of Nuclear Safety
1035 Outer Park Dr., 5th Floor
Springfield, IL 62704

Distribution w/encl:

Docket File
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W. Travers, RII
D. Collins, RII
RII Enf. Coordinator
D. Ayres, RII
J. Lusher, NMSS
B. Nelson, NMSS

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SIGNATURE	/RA/	/RA/	/RA/	/RA/
NAME	D. Hartland	R. Gibson	O. Lopez	D. Seymour
DATE	7/6/04	7/6/04	7/6/04	7/6/04
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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 40-3392

License No.: SUB-526

Report No.: 40-3392/2004-007

Licensee: Honeywell International, Inc.

Facility: Metropolis Works

Location: P. O. Box 430
Metropolis, IL 62960

Dates: June 7 through 10, 2004

Inspectors: David J. Hartland, Senior Fuel Facility Inspector, Region II
Deborah A. Seymour, Senior Fuel Facility Inspector, Region II
Omar R. Lopez, Fuel Facility Inspector, Region II
Richard Gibson, Health Physicist, Region II

Accompanied By: Jay L. Henson, Chief
Fuel Facility Inspection Branch 2
Division of Fuel Facility Inspection

Approved By: Jay L. Henson, Chief,
Fuel Facility Inspection Branch 2
Division of Fuel Facility Inspection
Region II

Enclosure

EXECUTIVE SUMMARY

Honeywell International, Inc.
NRC Inspection Report 40-3392/2004-007 (DFFI)

The purpose of this inspection was to perform a routine review of chemical safety program implementation and assess the effectiveness of corrective actions taken following the plant restart in response to the December 22, 2003, Site Area Emergency. The inspection involved observation of work activities, a review of selected records, and interviews with plant personnel. The inspection identified the following aspects of the program as outlined below:

Chemical Safety

Overall, plant operations were performed safely and in accordance with procedural requirements. However, an operator was observed not clearing an alarm when it was first received and allowing a normal operating limit to be exceeded (Paragraph 2.a).

Process safety information was maintained current for the existing plant configuration and was readily accessible to employees. The licensee's program inventory of hazardous chemicals was adequate to control the chemical hazards (Paragraph 2.b).

Procedures contained adequate safety and operational information. The licensee was making continuing improvements in the implementation of their procedure upgrade program. The licensee's management of change program adequately controlled changes in materials, procedures, and equipment (Paragraph 2.c).

The licensee adequately implemented the preventive maintenance, calibration, and inspection program to ensure the operability and reliability of safety equipment (Paragraph 2.d).

The licensee's chemical safety training for new and experienced plant personnel adequately covered safe work practices and chemical hazards (Paragraph 2.e).

Audits and inspections were of sufficient depth and appropriately targeted, the results were documented and conveyed to management, and audit findings were resolved in a timely manner (Paragraph 2.f).

Radiation Protection

The radiation protection program was implemented in accordance with the license and regulatory requirements. However, poor housekeeping was observed in the Feeds Material Building. (Paragraph 3.a).

An unresolved item was identified regarding how the restricted area of the plant was defined, as well as the licensee's practice of allowing plant personnel to wear their personnel protective clothing outside of the controlled area (Paragraph 3.a).

Based on dosimetry results for calendar year 2003, the maximum assigned external exposure was approximately 34 percent of the limit for occupational exposure in 10 CFR 20.1201. The external exposure monitoring program was implemented in a manner to maintain doses as low as reasonably achievable (Paragraph 3.b).

Internal exposures were significantly less than the limits in 10 CFR Part 20.1201. Administrative controls and procedures were in place to both monitor and assign dose resulting from routine operations or an unplanned release of radioactive material (Paragraph 3.c).

The issuance of respiratory protection equipment met regulatory requirements. No negative observations or findings were noted (Paragraph 3.d).

Radiological safety postings and radiation work permits were properly utilized to communicate potential hazards and protective equipment requirements to workers. However, the inspectors identified a poor radiological work practice by the operators, who opened doors to high airborne radioactivity areas' blocking the posted signs from observation by plant personnel. Health physics staff intended to followup with operations personnel to prevent recurrence (Paragraph 3.e).

The contamination survey program and airborne particulate surveys were appropriately implemented to protect workers and identify potential areas posing an internal or external radiation hazard. The licensee intended to review radiological work practices for individuals entering the control room to minimize introduction of contamination (Paragraph 3.f).

The licensee's "as low as reasonably achievable" program was properly implemented (Paragraph 3.g).

Emergency Preparedness

The independent audits provided an adequate assessment of the licensee's ability to implement the emergency response program (Paragraph 4.a).

The licensee's staff for emergency preparedness was adequately trained and were in sufficient number, and they maintained a state of readiness in the event of an emergency (Paragraph 4.b).

Emergency facilities and emergency response equipment were adequately maintained (Paragraph 4.c).

Corrective Actions and Auditing

There was no tracking mechanism in place to revise the procedure for cleaning low boiler condensers to ensure the required relief protection was provided. There were a large number of overdue actions in the licensee's corrective action system. The licensee intended to take action to address the issues (Paragraph 5).

Strike Contingency

The licensee's strike contingency plans were adequate and met the requirements of the license application (Paragraph 6).

Attachment:

Partial List of Persons Contacted

Inspection Procedures Used

Items Opened, Closed, and Discussed

List of Acronyms Used

REPORT DETAILS

1. Summary of Plant Status

For most of the inspection period, the plant was in a standby mode of operation to perform maintenance on the fluorination system. The plant was returned to service on June 10.

2. Chemical Safety (IP 88056-66)

a. Observation of Plant Operations

(1) Inspection Scope

The inspectors observed plant operations to ensure that activities were performed in accordance with license requirements.

(2) Observations and Findings

The inspectors observed that, overall, plant operations were performed safely and in accordance with procedural requirements and that personnel had procedures “in-hand,” as applicable.

However, on June 10, while observing operations in the Feeds Material Building (FMB) control room, an inspector noted that the high temperature alarm for one of the still feed tanks had been received and acknowledged by the distillation operator. The operator indicated that the alarm came in because the distillation system was in “recirculation” mode and, therefore, new material was not being introduced to remove the heat generated by the process. The operator indicated that the alarm came in at five degrees below the normal operating limit, and that he was monitoring the temperature on the strip chart to ensure that it did not exceed the normal operating limit. A few minutes later, the inspectors noted the temperature had exceeded the operating limit, and that the operator had sent his assistant out in the plant to valve in cooling water to lower the temperature.

Although the operator did not allow a safety limit to be exceeded, the inspectors determined that the operator should have taken action to lower the temperature and clear the alarm when it was first received, as it was not a good practice to routinely exceed a normal operating limit. In addition, with the standing alarm, the operator could have become distracted and the temperature could have continued to increase without being detected. The inspectors discussed the issue with operations management, who intended to brief operators regarding expectations when responding to plant alarms.

(3) Conclusions

The inspectors observed that, overall, plant operations were performed safely and in accordance with procedural requirements. However, the inspectors observed that an operator did not clear an alarm when it was first received and allowed a normal operating limit to be exceeded.

b. Hazard Identification and Assessment (Inspection Procedure (IP) 88057)
Process Safety Information (IP 88056)
Management of Change (IP 88063)

(1) Inspection Scope

The inspectors interviewed licensee staff regarding process safety information (PSI) to ensure that it was maintained current and that employees have access to the information they needed. The inspectors also examined the licensee's inventory of hazardous chemicals.

The inspectors reviewed the process hazard analysis (PHA) for ammonia and uranium hexafluoride (UF₆) to ensure that it was maintained current for the existing plant configuration.

(2) Observations and Findings

Licensee staff stated that PSI was tracked and maintained through the plant process modification procedure. The inspectors reviewed the plant process modification procedure and determined that the process provided for the updating of PSI when additions or plant modifications occurred. The inspectors reviewed process and instrumentation drawings (P&IDs) to verify that safety features mentioned in the license and critical equipment were included. The inspectors reviewed P&IDs for ammonia vaporizers, reductors, and distillation. The drawings contained adequate detail of safety features installed in these systems. No safety problems were identified.

The inspectors interviewed operations staff regarding PSI. Operators were knowledgeable of the chemical hazards related to their area, as well as the location and use of material safety data sheets (MSDSs) for chemicals used in their process area. The inspectors noted that the control room maintained copies of the MSDSs for the chemicals in use in the plant. However, the inspector noted that the list of MSDSs in the hazard communication were outdated. The licensee staff initiated action to update the plan. No safety problems were identified.

The inspectors reviewed the "Tank Farm - Yard Daily Operations Summary" for the past year. The inspectors determined that the licensee had information on the quantities, forms, and storage locations of the most hazardous onsite chemicals. The inspectors also determined that the hazardous chemical inventories were below the quantities listed in the license application, which listed the maximum capacities allowed to be stored onsite.

The licensee was in the process of revalidating the ammonia and uranium hexafluoride PHAs. The inspectors confirmed that team leaders received training on hazard analysis methodologies. The inspectors also confirmed that multi-discipline teams, including maintenance and operations personnel, performed the PHAs.

(3) Conclusions

Process safety information was maintained current for the existing plant configuration and was readily accessible to employees. The licensee's program inventory of hazardous chemicals was adequate to control the chemical hazards.

c. Standard Operating Procedures (IP 88058)
Management of Change (IP 88063)

(1) Inspection Scope

The inspectors interviewed operators and reviewed selected procedure manuals to verify that appropriate operating procedures were used. The inspectors reviewed the licensee's progress in their development and implementation of their procedure upgrade program. The inspectors also reviewed the licensee's management of change program to determine if changes in materials, procedures, or equipment were proceduralized, controlled, and would result in changes in PSI elements.

(2) Observations and Findings

The inspectors reviewed the procedure manuals for the fluorination and distillation processes. The procedure manuals contained information on startup, routine operations, shut down (emergency and normal), and alarm response. The procedure manuals also contained MSDSs, equipment lists, and identified safety controls. The inspectors noted that operators were knowledgeable of the operating procedures. Operators stated that they were involved in the development of new procedures.

The inspectors reviewed the licensee's ongoing actions relative to their procedure upgrade program. The inspectors noted some procedure program areas that warranted continued licensee attention. One area needing improvement was the appropriate maintenance of records of pen and ink procedure changes until the procedure revisions were processed. The licensee stated they were designating an additional person to approve these changes and also revising their procedure governing pen and ink changes to include a checklist in order to ensure proper implementation of these changes.

The inspectors observed that operators obtained field copies of operating procedures from the Document Management System (DMS) to ensure that the most current copy was used. The inspectors identified several examples where the controlled procedure manual for fluorination and distillation contained pen and ink changes, and these changes were not incorporated in the field copies. The control room foreman stated that management expected the operators to review the controlled procedure manual and add pen and ink changes, if any, to the field copy. The licensee acknowledged the issue and stated that it would be addressed.

The inspectors also noted inconsistencies in the expectations for procedure compliance as documented in higher-tier documents, lower-tier documents, and operator procedures. Discussions with selected operators also verified that management expectations for procedure compliance and procedure changes were not always clearly

understood. Specifically, there was not a clear and consistent flow down of management expectations from the higher-tier documents to the lower-tier documents and to operator procedures. Another inconsistency dealt with the expectations for following procedures in the order they were written, or being able to perform sections or steps within a section in a different order. During discussions with licensee management and with personnel from the licensee's procedure writers organization, the licensee indicated that they would address these needed clarifications as part of their ongoing procedure upgrade program.

The inspectors observed a shift change in the control room. The inspectors also discussed with fluorination and distillation operators the procedures to be used for the existing operating conditions at the time of the shift change. No problems were identified.

The inspectors reviewed different elements of the licensee's management of change program, including procedures and training, and concluded that the program, outside of the procedure inconsistencies discussed above, would adequately control changes in materials, procedures, and equipment.

(3) Conclusions

The inspectors determined that the reviewed procedures contained adequate safety and operational information. The inspectors noted that the licensee was making continuing improvements in the implementation of their procedure upgrade program. The licensee's management of change program adequately controlled changes in materials, procedures, and equipment.

d. Detection and Monitoring (IP 88060)
Maintenance and Inspection (IP 88062)
Site-Wide Safety Procedures (IP 88059)

(1) Inspection Scope

The inspectors examined calibration, preventive maintenance (PM), and functional test records for detection/monitoring equipment and critical equipment on the "A" list. The inspectors also reviewed mechanical integrity inspection records for anhydrous ammonia and hydrofluoric acid.

The inspectors observed maintenance activities to ensure that they were performed in accordance with written procedures.

(2) Observations and Findings

The inspectors confirmed that critical equipment on the "A" list was included in the preventive maintenance program, except for the remotely operated valves in the cylinder filling area. The licensee stated that they were in the process of adding the remotely operated valves to the PM program. The licensee also stated that the remote operated valves were functionally tested as part of routine operations. The inspectors also reviewed PM records for critical equipment on the "A" list including but not limited to:

pressure relief valves, rupture disc, load cells, emergency shut down systems, pressure vessels, flow totalizers, reducers, fluorinators, and cold traps. The inspectors observed that PMs were performed at the required frequency.

The inspectors also reviewed mechanical integrity inspection records for the anhydrous ammonia and hydrofluoric acid (HF) tanks. The inspectors noted that the scheduled internal inspection for HF Tank U-201 had not been performed and that the tank had been taken out of service. The inspectors verified that the tank was tagged "out-of-service" at the yard control panel. No problems were identified.

The inspectors examined calibration records for HF fence monitors, UF₆ detectors, and hydrogen detectors. The inspectors also discussed with security personnel the response to HF monitor alarms. The inspectors observed calibration of X-434 UF₆ cylinder scale, cold trap load cells, and the HF tank load cell. The inspectors determined that maintenance personnel wore the required personnel protective equipment and were using the appropriate written procedures. During plant tours the inspectors noted adequate use of lock-out/tag-out procedures. Safety showers and eye wash stations were in satisfactory condition. No safety issues were identified.

(3) Conclusions

The licensee adequately implemented the preventive maintenance, calibration, and inspection programs to ensure the operability and reliability of safety equipment.

e. Chemical Safety Training (IP 88061)

(1) Scope

The inspectors discussed the chemical safety training program for new and experienced plant personnel with cognizant licensee managers and reviewed training material to verify that the training program adequately covered safe work practices and chemical hazards.

(2) Observations and Findings

The inspectors' review verified that the plant personnel training program adequately addressed process safety information such as material safety data sheets, personal protective equipment, confined space entry, safe work practices, job hazard analyses, chemical job hazard analyses, and hazard communication. Discussions with recently hired and experienced operators on safety and health hazards indicated an adequate understanding of specific job hazards.

(3) Conclusions

The licensee's chemical safety training for new and experienced plant personnel adequately covered safe work practices and chemical hazards.

f. Audits and Inspections (IP 88066)(1) Scope

The inspectors reviewed the licensee's audit and inspection program to verify that audits and inspections were performed, the results documented and conveyed to management, and that audit findings were resolved in a timely manner.

(2) Observations and Findings

The inspectors reviewed selected portions of several different audits and inspections including independent audits performed by outside contractors, the last triennial corporate audit, the results of weekly and monthly audits performed by the supervisors of a process area, the last process safety management audit, and a completed 200-question self-assessment tool. The inspectors noted that the audits were generally of sufficient depth and appropriately targeted. Audit findings and recommendations were documented, assigned, and tracked to completion or follow-up. The inspectors verified that proper notification and follow-up actions were taken as appropriate. The inspectors noted that the findings, positive and negative, identified by supervisors during their monthly audits were incorporated, where appropriate, into monthly training sessions given to employees. There were no concerns noted in this area.

(3) Conclusions

Audits and inspections were of sufficient depth and appropriately targeted, the results documented and conveyed to management, and that audit findings were resolved in a timely manner.

3. **Radiation Protection (IP 83822)(R1)**a. Radiation Protection Program Implementation (R1.01)(1) Inspection Scope

The inspectors conducted interviews and reviewed licensee documentation to ascertain the status of program implementation.

(2) Observations and Findings

Audits were performed on a quarterly basis by the Health Physics (HP) Supervisor to determine if various program elements were implemented in accordance with the license and regulations. In addition, the licensee contracted an outside consultant agency to perform independent audits periodically. The audits were effective in the verification of program implementation and included both compliance and performance-based activities.

The inspectors toured the FMB along with the lead health physics technician to observe ongoing maintenance and operations activities. The inspectors observed activities on the first, second, and fourth floors, all of which were posted as high airborne radioactivity areas. Personnel were wearing half face respirators as required.

From the tour of the FMB and review of documentation, the inspectors noted that housekeeping on all floors of the FMB was an area of weakness for the licensee. The licensee stated that housekeeping was a problem due to the large amount of ongoing maintenance activities in the building at the time. They planned to develop a program that would make workers in the FMB more accountable for housekeeping in their specific areas of responsibility. In addition, management intended to inspect the areas periodically, assess the housekeeping, and provide feedback to plant staff.

While monitoring to exit the administration building, an inspector observed an operator set off the alarm while using another frisker. The operator was wearing his protective coveralls and shoes and had intended to retrieve an item from his personal vehicle in the employee parking lot. The operator reset the alarm and was instructed by the security guard to re-enter the controlled area while he notified health physics. Subsequent surveys performed by health physics determined that there was no spread of contamination.

In addition, Section 3.2.1 of the license application required workers and visitors to deposit personnel protective clothing and shoes in appropriate containers prior to exiting the "restricted area." However, the inspectors noted that the "restricted area" was not referred to in a consistent manner in Section 3.2.1. The licensee interpreted the restricted area to include the entire fenced-in area of the plant. The inspectors noted that verbiage in Section 3.2.1 also indicated that the restricted area was exited after performing exit monitoring in the administrative building. The inspectors' further review to determine how the restricted area was defined, as well as the licensee's practice of allowing plant personnel to wear their personnel protective clothing outside of the controlled area, will be tracked as Unresolved Item (URI) 04003392/2004-07-01.

(3) Conclusions

The radiation protection program was implemented in accordance with the license and regulatory requirements. However, poor housekeeping was observed in the FMB. The inspectors also identified an unresolved item regarding how the restricted area of the plant was defined, as well as the licensee's practice of allowing plant personnel to wear their personnel protective clothing outside of the controlled area.

b. External Exposure Control (R1.04)

(1) Inspection Scope

The inspectors reviewed radiation protection procedures and discussed with licensee representatives personnel exposure data to determine if exposures were in compliance with 10 CFR Part 20.1201 limits and if controls were in place to maintain occupational doses as low as reasonably achievable (ALARA).

(2) Observations and Findings

Based on interviews, procedural reviews, and observations of plant personnel inside radiation control areas, the licensee's exposure control monitoring programs were consistent with requirements in 10 CFR Part 20. The inspectors reviewed dosimetry results from January 2001 to December 2003 and determined that the maximum assigned external exposure was well below the limits for occupational exposure in 10 CFR 20.1201. Table 1 displays the total plant exposure data and the maximum assigned exposure data for calendar years (CY) 2001 to 2003.

Table 1. Annual Exposures

Year	Deep Dose Equivalent (DDE) Plant	Total Effective Dose Equivalent (TEDE) Plant	Committed Effective Dose Equivalent (CEDE) Plant	DDE Maximum Assigned Exposure	TEDE Maximum Assigned Exposure	CEDE Maximum Assigned Exposure
2001	50.791 rem	124.312 rem	73.521 rem	1.1 rem	1.7 rem	0.9 rem
2002	41.36 rem	159.55 rem	118.19 rem	0.85 rem	1.7 rem	0.96 rem
2003	34.5 rem	119.8 rem	85.3 rem	0.9 rem	1.7 rem	1.4 rem

(3) Conclusions

Based on dosimetry results for CY 2003, the maximum assigned external exposure was approximately 34 percent of the limit for occupational exposure in 10 CFR 20.1201. The external exposure monitoring program was implemented in a manner to maintain doses as low as reasonably achievable.

c. Internal Exposure Control (R1.05)(1) Inspection Scope

The inspectors reviewed controls for assessing internal exposure to determine if they were in place to monitor occupational doses, and verify that the administrative limits were established to control occupational dose ALARA. Exposure data was examined to determine if exposures resulting from various plant operations were exceeding limits in 10 CFR Part 20.

(2) Observations and Findings

Table 1 presents the total plant internal exposure and the maximum assigned internal exposure for CY 2001 to CY 2003. Based on an interview with the Health Physicist Supervisor and a review of the results from the calendar years, the maximum assigned CEDE (which ranged from 0.9 rem to 1.4 rem) was less than 5 percent of the limits in 10 CFR 20.1201.

The licensee continued to improve its engineering features and administrative controls to reduce contamination and airborne activities. However, some employees' internal exposures exceeded the licensee's administrative action limits. The licensee conducted investigations to determine the origin of the employees' internal exposure and verified that the employees had not exceeded their weekly action limits. The inspectors determined that administrative controls and procedures were in place to both monitor and assign dose resulting from routine operations or an unplanned release of radioactive material.

(3) Conclusions

Internal exposures were significantly less than the limits in 10 CFR Part 20.1201. The inspectors determined that administrative controls and procedures were in place to both monitor and assign dose resulting from routine operations or an unplanned release of radioactive material.

d. Respiratory Protection (R1.06)

(1) Inspection Scope

Respiratory protection equipment issuance, storage, maintenance, and training were examined for adequacy in assuring that equipment was properly maintained and issued to certified users only.

(2) Observation and Findings

The inspectors observed activities at the respirator facility involving fit testing and issuance of equipment. The inspectors observed three workers who successfully completed a respirator fit test. Fit tests were conducted every 12 months during which the worker was fitted for two types of half face and a full face respirator. Names were also selected from specific plant activities requiring respiratory protection to verify that the workers' certifications were current and that the appropriate devices were issued. No examples were noted of unauthorized use of equipment by untrained personnel or by workers with expired training.

3. Conclusions

The issuance of respiratory protection equipment met regulatory requirements. No negative observations or findings were noted.

e. Postings, Labeling and Control (R1.07)(1) Inspection Scope

The inspectors reviewed the licensee's program for postings as required by 10 CFR 19.11 to determine if documents were posted in sufficient places to permit individuals engaged in licensed activities to observe them. Several work locations were examined to determine if radioactive containers were properly labeled and to assess the adequacy of contamination control barriers and posting of radiation areas as required by 10 CFR 20.1902. Radiation work permits (RWPs) and work procedures were reviewed to determine the adequacy of the requirements posted for worker protection and the degree to which those requirements were implemented.

(2) Observations and Findings

Bulletin boards located in designated areas were posted such that workers could observe documents or obtain details as to where documents could be examined. All observed work areas involving radioactive material or potentially contaminated material were properly posted and RWPs were readily available. Selected containers examined during facility tours were labeled or had other markings on the containers in accordance with requirements.

However, during a tour of the Feeds Material Building, the inspectors observed that doors to the first floor that were posted with high airborne radioactivity signs were opened, and the signs could not be seen by personnel who may have entered the area through the open doors. The licensee indicated that the building was at a negative pressure, and that the operators opened the doors to allow cooler air to enter. The inspectors did not observe any personnel violating the postings. Health physics staff agreed that it was a poor radiological work practice and intended to followup with operations personnel to prevent recurrence.

(3) Conclusions

Radiological safety postings and radiation work permits were properly utilized to communicate potential hazards and protective equipment requirements to workers. However, the inspectors identified a poor radiological work practice by the operators, who opened doors to high airborne radioactivity areas and blocked the posted signs from observation by plant personnel. Health physics staff intended to followup with operations personnel to prevent recurrence.

f. Surveys (R1.08)(1) Inspection Scope

The twenty-four hour grab air samples and the contamination control survey programs were reviewed to determine if surveys were effective in the identification of airborne particulates and surface contamination and were performed in accordance with procedures.

(2) Observations and Findings

The results disclosed that the routine and non-routine surveys were adequate in the identification of potential airborne and contaminated areas. During plant tours, the inspectors observed the daily air sample locations on all floors and also observed plant operators conducting work requiring respirators. In addition, the inspectors walked the floors of the FMB with the lead HP technician to identify areas where weekly, monthly, and quarterly contamination surveys were conducted.

The inspectors reviewed airborne and contamination survey results from January to June 2004. The inspectors noted that the survey results from the control room indicated a continued trend of contamination levels above the licensee's action limits for an uncontrolled area. The inspectors noted that eating, drinking, and smoking by the operators were allowed in the control room. However, most of the contamination was concentrated on areas of the floor in the control room. In addition, the inspectors did not identify any abnormal internal dose to affected personnel due to ingestion of radioactivity. As followup to this issue, health physics staff intended to review radiological work practices for individuals entering the control room to reduce introduction of contamination, including the use of "sticky pads."

(3) Conclusion

The contamination survey program and airborne particulate surveys were appropriately implemented to protect workers and identify potential areas posing an internal or external radiation hazard. The licensee intended to review radiological work practices for individuals entering the control room to minimize introduction of contamination.

g. Implementation of ALARA Program (R1.10)(1) Inspection Scope

The licensee's ALARA program was reviewed to determine if the program and ALARA goals were developed and implemented in accordance with the license. In addition, the program for reinforcing the ALARA concept among employees was assessed.

(2) Observations and Findings

On a quarterly basis, the licensee conducted ALARA Committee meetings detailing ALARA goals and exposure summaries to identify undesirable trends. In those cases where exposures were elevated, consideration was given to ways for reducing exposures. The inspectors interviewed the Health Physicist Supervisor assigned responsibility for the ALARA evaluations and assessments associated with external and internal exposures.

Some ALARA actions implemented by the licensee were entered into their new corrective action system (E-CATS) to reduce exposure and track trends in the radiation safety program, including installing shielding on the exterior walls of the control room in order to reduce radiation levels to the operators and installing additional strobe lights to

identify posted airborne areas. Annually, ALARA goals and objectives were approved by the ALARA Committee.

Several workers were interviewed regarding ALARA and demonstrated an adequate knowledge and/or understanding of ALARA concepts. From the interviews and review of records, the inspectors determined that the licensee evaluation of the ALARA program was appropriate.

(3) Conclusions

Based on records review and interviews, the inspectors concluded that the licensee's ALARA program was properly implemented.

4. Emergency Preparedness (88050)(F3)

a. Review of Program Changes (F3.01)

(1) Inspection Scope

Changes to the licensee's emergency organization, facilities, and equipment were reviewed to assess the impact on the effectiveness of the program. The adequacy of the emergency preparedness audit required by the Emergency Response Plan was also evaluated.

(2) Observations and Findings

The inspectors reviewed the Emergency Response Plan and the Radiological Contingency Plan and noted that the recently revised plan was still in draft form and was awaiting NRC approval. The independent audits for CY 2004 were performance-based via the emergency exercises and training held since January 2004. The independent audits provided an adequate assessment of the licensee's ability to implement the emergency response program to protect the plant and public during postulated accident conditions.

(3) Conclusions

The independent audits provided an adequate assessment of the licensee's ability to implement the emergency response program.

b. Training and Staffing of Emergency Organization (F3.03)

(1) Inspection Scope

The inspectors reviewed emergency response training to determine if it was provided to key emergency management organization personnel in accordance with the Emergency Response Plan. The inspectors also reviewed the adequacy of the licensee's training program for activating and staffing personnel in the event of an emergency during on and off-hours.

(2) Observations and Findings

The inspectors conducted a walk-through with the HP Supervisor who is responsible for the emergency organization. The HP Supervisor, a HP technician, and a plant foreman demonstrated good knowledge and familiarity with the implementation of the Emergency Response Plan, the implementing procedures for emergency classification, notification time limits, and the role of each appointed individual during emergencies. When presented with postulated accident conditions, the interviewees were prompt and correct in the identification of the emergency action level and the emergency classification determination. The inspectors reviewed training documentation for several key individuals assigned as members on the emergency team. No problems were noted, and training was current.

(3) Conclusions

The licensee's staff for emergency preparedness was adequately trained and sufficiently numbered, and they maintained a state of readiness in the event of an emergency.

c. Emergency Equipment and Facilities (F3.06)

(1) Inspection Scope

The emergency facilities, emergency response equipment, instrumentation, and supplies were inspected to determine the state of operational readiness.

(2) Observations and Findings

The inspectors examined emergency equipment and supplies (e.g., protective clothing, gas sampling tubes, etc.) used for personnel protection during an emergency at the emergency response storage locations. No problems were noted. The equipment and supplies were available as described in procedures and performed the intended function when checked for operability.

Periodic maintenance and surveillance records covering the period since January 2004 disclosed that emergency equipment and facilities were properly maintained. The inspectors verified via interviews and documentation that periodic testing and maintenance was performed on the new public warning system (sirens) to ensure operability. The results disclosed when problems were identified, prompt corrective actions were taken to resolve them.

(3) Conclusions

Based on facility tours, interviews, and surveillance documentation, the inspectors concluded that the facilities and equipment were adequately maintained.

5. **Corrective Actions and Auditing**

a. Inspection Scope

The inspectors performed an assessment of corrective actions and auditing enhancements implemented since the restart of plant operations.

b. Observations and Findings

The inspectors reviewed a sampling of issues that the licensee had entered into their new corrective action system (E-CATS) as part of the plant restart. One item was a commitment made to the NRC prior to plant restart that required the licensee to validate the relief valve system design for cold traps and low boiler condensers. The licensee determined that procedural changes were required to ensure that the condensers were protected and completed those changes that applied to restart and normal operations. The changes included controls for locking valves in position to ensure that a relief valve on a nearby column provided relief protection.

However, the licensee had not completed similar changes to ensure protection was provided during a cleaning activity. In response, the licensee had issued a standing order to prohibit performing the cleaning activity until the applicable procedure was revised. The inspectors noted that the standing order could not be located and that the procedure had not yet been revised. Therefore, there was no mechanism in place to prevent licensee staff from performing the activity.

The inspectors also noted that there was no tracking mechanism for completing the procedure revision, as the E-CATS item generated for the overall commitment to validate the relief valve system had been closed. The inspectors determined that the cleaning activity had not been performed since the restart. As corrective action, the licensee recovered the standing order and was drafting the revised procedure for the cleaning activity.

The inspectors also assessed the licensee's overall timeliness in resolving issues that were entered in E-CATS. The inspectors noted that data provided by the licensee indicated that about a quarter of the items in the system were an average of 25 days past due, and about half of these were assigned to Operations. The licensee attributed the large percentage of items past due to lack of experience with implementing the new system and the large volume entered into the system during the plant restart. The licensee intended to address the backlog of open items, including prioritization of the more safety significant issues.

Some of the contractors that the licensee hired to perform on-shift audits of restart activities continued to perform that function after the plant was returned to service. The inspectors noted that the auditors were identifying high quality findings and documenting them for review by plant management. Some of the issues were similar to those identified by the inspectors including a lack of rigor in maintaining operator logs, operator aids, and standing orders and poor radiological control/housekeeping practices. The licensee was developing conduct of operations procedures to address those deficiencies. The licensee was also reviewing other issues raised by the auditors

and intended to enter those requiring corrective action into the E-CATS system, as appropriate. The inspectors will continue to monitor the licensee's progress in implementing the new system and resolving restart items using existing Inspector Followup Item 04003392/2003-007-04, licensee actions to centralize and automate the corrective action system to enhance their ability to perform adverse trend analyses.

c. Conclusions

The inspectors identified that there was no tracking mechanism in place to revise the procedure for cleaning low boiler condensers to ensure the required relief protection was provided. The inspectors also noted that there were a large number of overdue actions in the licensee's corrective action system. The licensee intended to take action to address the issues.

6. **Strike Contingency**

a. Inspection Scope

The inspectors reviewed the licensee's strike contingency plan content to determine if the minimum number of qualified personnel were available as required for proper operation and safety of the facility.

b. Observation and Findings

Due to the possibility of a strike by plant employees, as the contract with the union was to expire on June 21, licensee management prepared a strike contingency plan as a precaution. The inspectors interviewed and reviewed the qualifications of some health physicists and emergency preparedness personnel to determine if they were adequate to support operation and safety of the plant and if they were available and sufficient in numbers to support the plant in the event of a strike and/or an emergency. From discussion with licensees' representatives and review of the strike contingency plan, the inspectors determined that the licensee's readiness to support plant operation and their ability to respond in the event of an emergency was adequate.

The inspectors also noted that the plan included contingencies for ensuring that adequate materials and supplies would be available, salaried personnel would be qualified to initially place the plant in a standby mode to allow time for a safe transition, and the security force would be augmented to provide enhanced security at the site. There were no significant safety issues identified. On June 18, the union agreed to a new three year contract with plant management.

c. Conclusion

The licensee's strike contingency plans were adequate and met the requirements of the license application.

7. Follow up on Previously Identified Issues

- a. (Closed) URI 40-3392/2003-001-01: Inspector review of the effectiveness of the ALARA Committee in identifying and reversing an apparent significant increase in personnel whole body exposure. The inspectors interviewed the HP supervisor and reviewed records of the ALARA committee, and determined that the staff reported annually to the committee the total plant exposure and the maximum allowable exposure to individuals. The inspectors also noted that the licensee had initiated actions to reduce exposure to personnel as discussed in Section 3.g above. The inspectors had no further issues and this item is closed.
- b. (Closed) IFI 40-3392/2003-001-02: Inspector review of the licensee's efforts to enhance controls for alerting personnel prior to entering areas requiring a respirator, as well activating such controls prior to initiating activities having a high potential for causing positive air samples to be received. The inspectors observed airborne postings for areas requiring a respirator and reviewed procedures for those areas and determined that the posting and procedures were adequate. The inspectors have no further issues and this item is closed.
- c. (Closed) VIO 40-3392/2003-007-01: Licensee staff conducted an operation to remove blockage from the distillation production unit without detailed procedural instructions.

(Closed) VIO 40-3392/2003-007-03: Licensee staff failed to close the evacuation line (PP-8) valve for the No.4 fill spot prior to closing PP-16 and opening the PP-8 valve at the spot that had been filled.

As corrective action to these violations, affected operations procedures were revised and policies were enhanced to emphasize adherence to those procedures. Long-term actions, including the ongoing performance improvement plan, will be tracked using VIO 40-3392/2004-003-01.

8. Exit Meeting Summary

The inspectors presented the inspection results to members of the plant staff and management at the conclusion of the inspection on June 10, 2004. The plant staff acknowledged the findings presented. The inspectors asked the plant staff whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

1. PARTIAL LIST OF PERSONS CONTACTED

Honeywell Specialty Chemicals

- R. O’Kane, Plant Manager
- P. Bryan, Nuclear Fuel Manager
- *M. Ginzel, Health Physics Manager
- J. Malanowski, Engineering Manager
- *D. Mays, Environmental and Regulatory Affairs Manager
- *B. Vandermeulen, Quality Assurance/Supply Chain Manager

* Denotes those present at the exit meeting on June 10, 2004

2. INSPECTION PROCEDURES USED

- IP 83822 Radiation Protection
- IP 88050 Emergency Preparedness
- IP 88056 Process Safety Information
- IP 88057 Hazard Identification and Assessment
- IP 88058 Standard Operating Procedures
- IP 88059 Site-Wide Safety Procedures
- IP 88060 Detection and Monitoring
- IP 88061 Chemical Safety Training
- IP 88062 Maintenance and Inspection
- IP 88063 Management of Change
- IP 88066 Audits and Procedures
- IP 92709 Strike Contingency Plans

3. ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Item Number</u>	<u>Status</u>	<u>Description</u>
URI 40-3392/2004-07-01	Open	Determine how the restricted area is defined, and review and evaluate the licensee’s practice of allowing plant personnel to wear their personnel protective clothing outside of the controlled area (Paragraph 3.a)
URI 40-3392/2003-001-01	Closed	Effectiveness of the ALARA Committee in identifying increase in personnel exposure (Paragraph 7)
IFI 40-3392/2003-001-02	Closed	Alerting personnel prior to entering areas requiring a respirator (Paragraph 7)

VIO 40-3392/2003-007-01	Closed	Licensee staff conducted an operation to remove blockage from the distillation production unit without detailed procedural instructions (Paragraph 7)
VIO 40-3392/2003-007-03	Closed	Licensee staff failed to close the evacuation line (PP-8) valve for the No.4 fill spot prior to closing PP-16 and opening the PP-8 valve at the spot that had been filled (Paragraph 7)

4. LIST OF ACRONYMS USED

ADAMS	Agency Document Access and Management System
ALARA	As Low As Reasonably Achievable
CEDE	Committed Effective Dose Equivalent
CFR	Code of Federal Regulations
CY	Calendar Year
DFFI	Division of Fuel Facility Inspection
DDE	Deep Dose Equivalent
DMS	Document Management System
FMB	Feeds Material Building
HF	Hydrofluoric Acid
HP	Health Physics
IFI	Inspector Followup Item
IP	Inspection Procedure
IR	Inspection Report
MSDS	Material Safety Data Sheet
No.	Number
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
P&ID	Process and Instrumentation Drawing
PHA	Process Hazard Analysis
PM	Preventive Maintenance
PSI	Process Safety Information
RWP	Radiation Work Permit
SAR	Safety Analysis Report
TEDE	Total Effective Dose Equivalent
UF ₆	Uranium Hexafluoride
URI	Unresolved Item