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January 22, 2004

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U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Mail Stop T-8A33, Two White Flint N, 11545 Rockville Pike
Rockville, MD 20852-2738

Subject: 30 Day written follow-up Report to NRC event number 40405
Reported 12-22-03 to NRC Operation Center
Docket No. 40-3392, License No. SUB-526

Honeywell Specialty Materials, Metropolis Works (MTW) facility reported to the NRC Operation Center pursuant to 10 CFR 40 the release of UF₆ to the environment. This letter is a required follow-up report to address specific items required by the regulations. The questions requiring response by the regulations are listed below (i-vi) with the appropriate responses.

(i) A description of the event, including the probable cause, the manufacturer and model number (if applicable) of any equipment that failed or malfunctioned;

On December 22, 2003, the Plant was preparing to start up a second fluorination operating train within the UF₆ manufacturing area. Prior to this time, the Plant had been operating on a single fluorination train. To accommodate dual fluorination operating trains, the first train had to be removed from service and the system piping reconfigured to allow the second train's pollution control system (scrubbing system) to be brought online. It was during this activity that a UF₆ gas release occurred.

From about 0200 hours until about 0313 hours, a small quantity of UF₆ gas was released. The release occurred in two parts. The first part involved fugitive releases from system components that exited building openings such as windows and vents. The second part involved a release through the Ash Dust Collector System within the Feeds Material Building of the Plant at an elevation of approximately 86 feet above ground level.

The fugitive releases were caused when the fluorination system was inadvertently pressurized with fluidizing air, nitrogen, and UF₆ gas. This gas mixture escaped from the piping system into the building through system breaches. The second part of the release was caused when Plant personnel, responding to the observed internal leak, connected the fluorination system to the Ash Dust Collector System, which exhausted the gas mixture to the atmosphere.

When the UF₆ gas was exposed to atmospheric moisture, it reacted to form Uranyl Fluoride (UO₂F₂) and Hydrogen Fluoride (HF). Any material released would have separated approximately into three parts UO₂F₂ and one part HF on a mass basis. The release was carried offsite by wind at five to ten miles per hour from the south-southeast (SSE) toward a sparsely populated area to the north-northwest (NNW) of the Plant.

The maximum amount of UF₆ gas available for release within the affected system did not exceed seven pounds.

Plant personnel promptly notified local authorities by telephone to the local sheriff's department and notified the NRC. Plant personnel advised public emergency responders to evacuate potentially impacted residents. Evacuation and sheltering in-place of local area residents was conducted at the discretion of public emergency responders.

Honeywell promptly monitored the resident health, property and the environment. All available data establishes that there was no adverse impact to resident health, property or the environment arising from the release.

NMSS01

Honeywell is presently finalizing a comprehensive root cause analysis and a plant-restart/corrective action plan as requested by NRC.

Probable Cause:

The probable cause is still under investigation as we are in process of completing the root cause analysis.

Equipment Failure or Malfunction:

There were two equipment failures or malfunctions. These included a failure of a coupling for the pump providing seal liquor to the Nash vacuum pump and a bellows failure of the C-Minus control valve that leaked through the packing.

Equipment Manufacturer or Serial Number:

- Rubber Sure flex #6J-E for T. B. Woods 'SURE-FLEX' Couplings
- Fisher Type E Bonnet Assembly, CF3M Enviro-Seal Bellows

(ii) The exact location of the event:

This event occurred at the Honeywell Specialty Materials, Metropolis Works (MTW) facility, Metropolis, IL. The primary release was from the ASH vacuums bag house and secondary fugitive releases were from various floors of the Feeds Material Building (FMB).

(iii) The isotopes, quantities and chemical and physical form of the licensed material involved:

When the UF_6 gas was exposed to atmospheric moisture, it reacted to form Uranyl Fluoride (UO_2F_2) and Hydrogen Fluoride (HF). Any material released would have separated approximately into three parts UO_2F_2 and one part HF on a mass basis. The release was carried offsite by wind at five to ten miles per hour from the south-southeast (SSE) toward a sparsely populated area to the north-northwest (NNW) of the Plant.

The maximum amount of UF_6 gas available for release within the affected system did not exceed seven pounds.

(iv) Date and time of the event;

The event occurred 12-22-03 at approximately 02:00 CDT and ended at approximately 0313.

(v) Corrective actions taken or planned and the results of any evaluations or assessments;

Initial actions taken have been to suspend UF_6 production activities until a complete root cause can be performed and effective corrective actions identified and implemented.

(vi) The extent of exposure of individuals to radiation or to radioactive materials without identification of individuals by name.

Plant Personnel Exposure:

Uranium bioassays (analytical results) reflect exposure below regulatory requirements.

Public Exposure:

Based on our current knowledge, radiation exposure dose associated with this release was not above applicable regulatory limits.

Plant Effluent Results:

Highest fixed area boundary air sample results 1.4E-12 µCi/ml. NRC effluent monthly average limit 3E-12 µCi/ml. This air sample location was directly down wind.

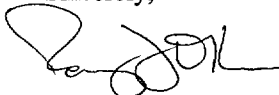
Environmental Results:

Environmental sample results are comparable to pre-release results. Samples were independently obtained and analyzed with similar results. Samples were obtained from potential down wind sectors. Sample results are as follows:

Location	Sample	Type	Release Results Result PPM U	Pre Release Result PPM U
Special Sample down wind	SPV1	Vegetation	0.31	
Reiniking Property	V5	Vegetation	0.16	1.14
Metropolis Airport	V6	Vegetation	1.54	0.61
Maple Grove School	V7	Vegetation	0.83	1.08
Nearest Residence	V-NR7	Vegetation	4.05	1.61
Lindsay Lake	M6	Mud	0.626	0.819
Oak Glenn Lake	M7	Mud	0.599	2.30
Special Sample down wind	SPV1	Soil	0.750	
Reiniking Property	S5	Soil	1.223	0.787
Metropolis Airport	S6	Soil	1.200	0.823
Maple Grove School	S7	Soil	0.783	0.385
Nearest Residence	S-NR7	Soil	4.002	5.538
Lindsay Lake	W6	Water	0.002	0.0006
Oak Glenn Lake	W7	Water	0.000058	0.0003

For answers to questions regarding this event please contact Darren Mays, HS&Reg Affairs Manager at 618-524-6396) or Michael Ginzel, Health Physics Supervisor at 618-524-6349).

Sincerely,



Rory J. O'Kane
Plant Manager

cc: D. Mays
M. Ginzel

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