

**Specialty Materials**

Honeywell  
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March 23, 2009

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US Nuclear Regulatory Commission  
Director, Office of Nuclear Material Safety & Safeguards  
Attention: Document Control Desk  
Mail Stop T8A33, Two White Flint N, 11545 Rockville Pike  
Rockville, MD 20852-2738

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

Subject: 30-Day Written Follow-Up Report to NRC Event Number 44871 Reported  
02//23/2009 to NRC Operations Center

The Honeywell Metropolis Works facility (MTW) reported to the NRC Operations Center in accordance with 10 CFR 40.60 (b)(1) the occurrence of an unplanned contamination event that required access to be restricted for more than 24 hours by imposing additional radiological controls. This letter is a follow-up report to address specific items required by 10 CFR 40.60(c)(2).

**NRC Event Number 44871 dated February 23, 2009 reported:**

An unplanned contamination event occurred on February 22, 2009. This is reportable in accordance with 10 CFR 40.60 paragraph (b)(1) based on an unplanned event that results in additional radiological controls being required for more than 24 hours. The 24 hour period ended at 10.30 a.m. on February 23, 2009. The additional control imposed was to wearing a half-face respirator in the 6<sup>th</sup> floor of the Feed Materials Building. The Feed Materials Building converts uranium ore concentrates into uranium hexafluoride. Air samples from the 6<sup>th</sup> floor were analyzed and the airborne radioactivity average was approximately  $6.73e-11$   $\mu\text{Ci/ml}$ . The airborne radioactivity exceeds the MTW action level of 30% of a DAC ( $5.00e-11$   $\mu\text{Ci/ml}$ ). One DAC is  $1.7e-10$   $\mu\text{Ci/ml}$ . Uranium Tetrafluoride (green salt) was the material that was airborne on the 6<sup>th</sup> floor. A release point could not be determined. The air samples indicate that the air emission occurred on the northwest side of the building likely to be from a release of material from the green salt elevator and conveyor system.

**10 CFR 40.60(c)(2) Written 30-day follow up report required sections**

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

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An unplanned contamination resulting in no measurable off-site radioactivity occurred during the period from 10.00 a.m. February 22<sup>nd</sup> to 10.00 a.m. February 23<sup>rd</sup>, 2009. This is a reportable event in accordance with 10 CFR 40.60, subparagraph (b)(1) based on additional radiological controls being required for more than 24 hours. The additional control imposed was the requirement to wear air purifying respirators in the Feed Materials Building (FMB) where the event occurred. Milled uranium oxide is converted to uranium hexafluoride in the process equipment contained within the FMB.

The event location was the 6<sup>th</sup> floor of the FMB. At 10.00 a.m. on February 22, 2009 the Health Physics staff identified an elevated average airborne radioactivity of approximately  $6.12 \text{ E-}11 \text{ } \mu\text{Ci/ml}$  on the 6<sup>th</sup> floor of the FMB. The additional control to wear air purifying respirators was imposed. Investigation and cleanup activities were initiated immediately. During the decontamination activities, the average airborne radioactivity concentration remained elevated for more than 24 hours resulting in a reportable event.

Routine bioassay results from the affected employees indicated no elevated uptake of radioactivity.

The equipment inspection determined that the cause of this event was a release of material from the green salt elevator and conveyor system.

*(2)(ii) The exact location of the event.*

The high airborne radioactivity occurred as a result from the material release from the green salt elevator and conveyor system on the 6<sup>th</sup> floor of the Feed Materials Building of the Honeywell facility in Metropolis, IL.

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

The isotope released was the natural uranium in Uranium Tetrafluoride. The material chemical form was Uranium Tetrafluoride ( $\text{UF}_4$ ), and the physical form was a dust particulate.

The highest average airborne activity concentration for the 6<sup>th</sup> floor was  $8.27 \text{ E-}11 \text{ } \mu\text{Ci/ml}$ , which is less than 1 gram of natural uranium suspended in air for the event period.

*(2)(iv) Date and time of the event.*

The event occurred between 8.00 a.m. February 21, 2009 and 8.00 a.m. February 22, 2009.

*(2)(v) Corrective actions taken or planned and the results of any evaluations or assessments.*

The following actions have been taken:

1. Air purifying respirator requirement was imposed at the time of event identification on February 22, 2009.
2. Radioactive contamination resulting from this event was cleaned from the FMB. Airborne radioactivity returned to the levels below an administrative action level of  $5.0 \text{ E-11 } \mu\text{Ci/ml}$  (for the floor average) at 10.00 on February 26, 2009.
3. Incident report was initiated in the plant's Corrective Action system (IT&CA) on February 22, 2009
4. Routine bioassay sample results for potentially affected personnel were reviewed. The bioassay results indicated no elevated uptake of radioactivity. Bioassay results evaluation was completed on March 12, 2009.

The following actions are planned in response to this event:

- Evaluate potential engineered controls to manage solids and reduce pressure applied to the elevators during HF filter bumping. Target date 4/24/2009.

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

Following the event, the routine bioassay samples from potentially affected employees were reviewed. The bioassay results indicated no elevated uptake of radioactivity.

Please contact Mr. Michael Greeno, Acting Regulatory Affairs Manager, at 618-309-5005 if you have additional comments or questions regarding this matter.

Sincerely,



Mitch Tillman  
Plant Manager

cc: Regional Administrator (UPS: 404-562-4731)  
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