

October 1, 2007

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

SUBJECT: HONEYWELL - REQUEST TO TRANSFER SCRAP MATERIALS UNDER 10
CFR 40.13 (TAC L32385)

Dear Mr. Edwards:

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of the July 23, 2007, Honeywell Specialty Materials Metropolis Works request. The request has been approved.

The staff's detailed review of your request is provided in the enclosed Safety Evaluation Report. Note that once the materials at issue have been transferred to the Texas licensee, the disposition of that material is a matter under Texas jurisdiction.

If you have any questions concerning this letter or the enclosure, please contact Michael Raddatz by phone at (301) 492-3108 or through e-mail at mgr@nrc.gov.

In accordance with the NRC's rules of practice concerning "Public inspections, exemptions, requests for withholding" (10 CFR 2.390), a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

/RA/

Michael Tschiltz, Acting Deputy Director
Fuel Facilities Licensing Directorate
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

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

Enclosures:
Safety Evaluation Report

October 1, 2007

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

SUBJECT: HONEYWELL - REQUEST TO CONTINUE TRANSFER SCRAP MATERIALS UNDER
10 CFR 40.13 (TAC L32385)

Dear Mr. Edwards:

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of the July 23, 2007, Honeywell Specialty Materials Metropolis Works request. The request has been approved.

The staff's detailed review of your request is provided in the enclosed Safety Evaluation Report. Note that once the materials at issue have been transferred to the Texas licensee, the disposition of that material is a matter under Texas jurisdiction.

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Michael Tschiltz, Acting Deputy Director
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Docket No.: 40-3392
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Enclosures:
Safety Evaluation Report

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DATE	9/26/07	9/28/07	9/25/07	10/1/07	10/1/07

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DOCKET: 40-3392

LICENSEE: Honeywell International Inc.
Metropolis, IL

SUBJECT: SAFETY EVALUATION REPORT FOR A REVIEW OF A REQUEST DATED JULY 23, 2007, BY HONEYWELL, TO TRANSFER SCRAP MATERIALS UNDER 10 CFR 40.13, "UNIMPORTANT QUANTITIES OF SOURCE MATERIAL"

The U.S. Nuclear Regulatory Commission (NRC) regulates Honeywell Specialty Materials Metropolis Works (MTW) in Metropolis, Illinois, under Materials License SUB-526. The primary activity of MTW is the conversion of uranium ore concentrates (U_3O_8) to uranium hexafluoride (UF_6). The UF_6 product is used as feed material for uranium enrichment plants. The U.S. Atomic Energy Commission first authorized operations at the site on December 17, 1958. The license was last renewed for a 10-year term, expiring May 11, 2017.

1.0 Transfer of Scrap Material

On July 23, 2007, NRC received a request from MTW to transfer scrap materials citing the *Code of Federal Regulations*, Title 10, Section 40.13 (10 CFR 40.13), "Unimportant Quantities of Source Material". The request referenced prior approvals received from NRC dated August 27, 1999, and July 19, 2000. Specifically, MTW requested NRC concurrence to transfer up to 90,000 cubic feet (ft^3) of scrap material. The scrap would be buried at Waste Control Specialists LLC, a facility near Midland, Texas, licensed by the State to receive such material. As of July 2007, MTW had onsite approximately 18,000 steel drums ($23,400ft^3$), 30,000 pounds of wooden pallets and shoring material ($1600ft^3$) and 20 tons of scrap metal ($52,000ft^3$)

1.1 Regulatory Requirements

According to 10 CFR 40.13(a), persons are exempt from the regulations if the source material is by weight less than 0.05 percent of the mixture, compound, solution, or alloy. However, it has been Commission Policy to review potential use and disposition scenarios on a case-by-case basis to ensure public health and safety.

1.2 Regulatory Acceptance Criteria

In this case, the 0.05 percent by weight limit is equivalent to 12.5 becquerels per gram (Bq/g) or 338.5 picocuries per gram (pCi/g) for natural uranium. This review is necessary because for limited types and quantities of materials that fall under the exemption of 10 CFR 40.13(a), transfer of materials could potentially exceed exposure limits defined in 10 CFR 20, "Standards for Protection Against Radiation." NRC policy, "Transfers of Certain Source Materials by Specific Licensees, (67 FR 55175), dated August 28, 2002, also provides guidance. The policy states that the NRC will evaluate potential use and disposition scenarios (such as this one) on a case-by-case basis, to determine whether the transfer of less than 0.05 percent source material will pose a safety concern.

Enclosure

1.3 Staff Review and Analysis

In reviewing the request, the NRC staff used the guidance provided in NUREG-1640, "Radiological Assessment for Clearance of Materials from Nuclear Facilities," Vol. 3, Appendix F, individual members of the critical group from the metal activities. As discussed in NUREG-1640, the radiological assessment of the clearance of steel scrap metal from NRC-licensed facilities compares the radiation exposures to various groups using 30 different exposure scenarios with 115 possible radionuclides and their progenies. Using Monte Carlo uncertainty analyses, the effective dose equivalent (EDE) from one year of exposure is calculated and normalized to an initial unit activity concentration of each separate radionuclide in the scrap material at the time of clearance. The results are reported as both mass-based (in units of microsievert per year (Sv/yr) per Bq/g) and surficial (in units of Sv per Bq/cm²) normalized doses.

For the industrial scrap disposal scenario, all of the residual radioactivity is assumed to be U-238. This is because the normalized effective dose equivalent from all pathways results in a mean mass-based dose of 0.33 Sv/yr per Bq/g which is conservative for U-234 with a mean mass-based dose of 0.00099 Sv/yr per Bq/g (NUREG-1640, Vol.3, Appendix F). The effective dose equivalent from all pathways for U-235 does not substantially add to the dose. For a concentration of 12.5 Bq/g (338.5 pCi/g), the calculated mean dose is 4.13 Sv/yr (0.41 millirem per year (mrem/yr)). Even if the concentration was five times the concentration of 12.5 Bq/g (338.5 pCi/g) of U-238, the calculated dose would be 20.6 Sv/yr (2.1 mrem/yr) for the industrial scrap disposal scenario.

For a truck driver scenario, the normalized effective dose equivalent from all pathways results in a mean mass-based dose of 0.025 Sv/yr per Bq/g, according to NUREG-1640, Vol.3, Appendix F. Assuming a concentration of 12.5 Bq/g (338.5 pCi/g) of U-238, the calculated Dose is 0.31 Sv/yr (0.03 mrem/yr).

1.4 Findings

Based on the staff's independent analyses, the proposed transfer of 90,000 ft³ of industrial scrap, with a maximum concentration of 12.5 Bq/g (338.5 pCi/g) of natural uranium, is an action within the scope of 10 CFR 40.13. The staff evaluated an industrial scrap disposal scenario as well as a truck driver scenario. The doses from both scenarios resulted in less than 1 mrem/yr exposure.

Reviewers

Anita T. Gray, Ph.D., FSME/DWMEP

Michael Raddatz, Sr. Project Manager

References

Letter from David Edwards from Honeywell Specialty Materials Metropolis Works to the NRC, dated July 23, 2007, (ADAMS Accession No. ML072150208).

Letter to Mr. J. William Lessig, Plant Manager of Honeywell International, Inc. from the NRC, dated July 19, 2000.

U.S. NRC, "Radiological Assessments for Clearance of Materials from Nuclear Facilities," Appendices F and G, NUREG-1640, Vol.3, June 2003, (ADAMS Accession No. ML032250625).