

September 22, 2005

Mr. David B. Edwards, Plant Manager
Honeywell Metroplis Works
P.O. Box 430
Metropolis, IL 62960

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION ASSOCIATED WITH LICENSE
RENEWAL REQUEST FOR LICENSE NO. SUB-526 (TAC LU0093)

Dear Mr. Edwards:

I am responding to your letter dated May 27, 2005, which forwarded your request for renewal of the Honeywell Metropolis Works Source Materials License, for U.S. Nuclear Regulatory Commission (NRC) staff's review and approval. We are in the process of reviewing your application and during our review, several omissions/deficiencies were identified. These deficiencies are provided within Enclosure 1.

Please provide the requested information within 30 days of the date of this letter so our review schedule is not adversely impacted. If you are unable to respond within 30 days, please respond with an alternate schedule.

If you have any questions, please call me at (301) 415-6334 or mgr@nrc.gov.

In accordance with 10 CFR 2.390 of the NRC's Rules of Practice, a copy of this letter will be available electronically from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

/RA/

Michael G. Raddatz
Sr. Project Manager
Uranium Processing Section
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

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

Enclosure: Request for Additional Information

September 22, 2005

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**REQUEST FOR ADDITIONAL INFORMATION
RELATED TO THE REQUEST FOR A LICENSE RENEWAL FOR THE HONEYWELL
METROPOLIS WORKS URANIUM CONVERSION FACILITY**

Environmental Report

The following RAIs numbers are based upon the section numbers within the Environmental Report (ER)

ER 1.1-1: ER Section 1.1 provides a list of five “upgrades and modifications” that have been implemented since the last license renewal in May 1995. This list is significantly different than the list of changes to the facility that is presented on pages 1-1 and 1-2 of the Safety Demonstration Report (SDR). A list of completed upgrades and modifications will be incorporated in the EA; however, the reviewer is unable to determine the basis for the two lists. To aid the NRC staff in the development of an independent analysis of the environmental effects associated with the proposed license renewal, the licensee is requested, in accordance with 10 CFR 51.41, to provide the criteria used to develop these two lists, and explain the significance of the differences between the lists.

ER 2.1.2.1-1: An apparent inconsistency exists between the Honeywell Metropolis Works (MTW) facility’s production capacity and source material quantities in the Environmental Assessment (EA) for the last license renewal and the current license renewal ER. The 1995 EA states that the design capacity of the plant is 12,700 metric tons of UF₆ per year (14,000 tons per year). The 1995 EA also states, “Approximately 650 feed ore shipments are received each year and approximately 30,000 metric tons (33,000 tons) of ore are stored onsite.” (Reference is made to AlliedSignal’s RAI responses dated September 6, 1994, and November 16, 1994).

Section 1.0 of the current license renewal ER states that capacity was increased to 12,700 metric tons in 1995 and approximately 14,000 metric tons in 2001. On Page 10 of the ER, under the *Feed Storage, Sampling, and Preparation* heading, it states that approximately 650 feed ore shipments are received each year and approximately 30,000 metric tons (33,000 tons) of ore are stored onsite. It is unclear how the plant capacity, and presumably, the actual production rate, can increase by greater than 10 percent (from 12,700 metric tons to 14,000 metric tons) without a corresponding increase in source material, a decrease in on-site storage, or both.

To satisfy the NRC’s requirements for completeness and accuracy of information provided to the Commission (10 CFR 40.9) and to resolve this apparent inconsistency, the licensee is requested to confirm the following information:

1. Design capacity in metric tons and tons of UF₆;
2. Quantity of UF₆ produced in each of the past 5 years;
3. Approximate number of feed ore shipments received for each of the past 5 years; and
4. Approximate quantity of ore currently stored onsite.

Enclosure

ER 2.1.2.1-2: Table 2.1, "Maximum storage quantity for industrial chemicals used in the conversion process," of the 1995 EA provided the maximum capacity of the various industrial chemical storage facilities. Table 2.1-1 of the current ER provides the current "bounding and frequently actual quantities" of these chemicals. The actual quantities for KOH in the current ER [46,500 kg (102,510 lbs)] are greater than the maximum capacities for these chemicals in the 1995 EA [190,410 kg (419,722 lbs)], but no mention is made of expanding the chemical storage capabilities. To satisfy the NRC's requirements for completeness and accuracy of information provided to the Commission (10 CFR 40.9), the licensee is requested to clarify the term "bounding and frequently actual quantities," and explain the relationship between the bounding quantity, the frequently actual quantity, and the maximum capacity.

ER 2.1.2-1: ER Section 2.1.1 (page 8 of 215) discusses planned modifications to the MTW facility. This list includes (a) an on-going expansion of the Environmental Protection Facility, to be completed in 2005, and (b) construction of a new cooling tower that will cool the full compliment of new water-cooled rectifiers. The following information is requested for these planned modifications:

- a) Please provide additional details regarding the anticipated environmental benefits associated with these modifications. Specifically, discuss any reduction in effluents (radiological and non-radiological) and water usage that are expected to result from these capital improvements.
- b) Please provide the environmental evaluation and additional details regarding the planned cooling tower project. The information provided should include the modified water consumption and discharge requirements, cooling water chemistry requirements, cooling tower location and dimensions, areas to be disturbed by construction activities, and permitting status.

ER 2.1.2.2-1: ER Section 2.1.2.2, under the *Gaseous Waste Management* heading, states that the contaminants and types of pollution control devices (including rated efficiencies) for each process stack are presented in Table 2.1-2. ER Table 2.1-2 does not provide this information; however, it was later determined that Safety Demonstration Report (SDR) Table 2-1 does provide the referenced information. A comparison of Table 2.2 of the EA for the last license renewal to the information provided in SDR Table 2-1 identified that the rated efficiencies of many of the pollution control devices listed in these tables have decreased from the values identified in the earlier assessment (NRC, 1995. Table 2.2). For example, the baghouse filter efficiencies have decreased from 99 percent to 95 percent. Please provide the basis and justification for these changes.

ER 2.1.2.2-2: ER Table 2.1-3, "Discharge Direction, Stack Height, Flow And Annual Uranium Emissions For The Years 2000 – 2004," provides details on the facility's exhaust stacks and emissions from these stacks. A similar table was provided in the EA for the last license renewal. The 1995 EA identified Stack No. 15-57 as the "Exhaust fan maintenance area 1st floor south," for the CaF₂ facility. This stack is not listed in Table 2.1-3 of the current ER. Please confirm that this stack no longer exists. Also, if this stack has been removed, please confirm that there are no exhaust stacks associated with the CaF₂ facility.

ER 2.1.2.2-3: ER Table 2.1-4 provides the annual non-radiological air emission totals for the 2000 – 2004 timeframe. The corresponding table from the 1995 EA, Table 2.4, provided estimates of the 1993 emission totals for HF, NH₃, and SO₂ only. The values in the current ER indicate a significant change in the quantities of HF and NH₃ emissions (93 percent increase in HF; 77 percent decrease in NH₃). In accordance with 10 CFR 51.45(c), the environmental report is required to include an analysis that considers the environmental effects of the proposed action. To support the NRC's analysis of the environmental effects associated with the increased nonradiological air emissions, the staff requests a description of the operational and/or monitoring changes in the past 10 years that would account for this change. Explain effluent changes in air emissions from those presented in the 1995 EA (1993 estimated) to those reported in 2005 ER (average 2000 to 2004).

ER 2.1.2.2-4: The EA for the last license renewal period (NRC, 1995, page 2-27) identified a general decline in fluoride concentrations both on- and off-site since the previous license renewal period (1979–1982). However, data presented in Table 2.1-4 of the current ER indicate that fluoride emissions have risen steadily over the past five years. In accordance with 10 CFR 51.45(c), the environmental report is required to include an analysis that considers the environmental effects of the proposed action. To support the NRC's analysis of the environmental effects associated with the increased airborne emissions, the licensee is requested to discuss the cause of the fluoride emissions increases, including any changes in plant operation or maintenance activities that may account for this apparent trend. In addition, please discuss corrective actions (current or planned) to mitigate this apparent trend.

ER 2.1.2.3-1: ER Section 2.1.2.3 notes that uranium concentrations have increased from those reported in the previous license renewal. A comparison of data reported in ER Table 2.1-8 to that in Table 2.9 of the 1995 EA identifies a significant increase (i.e., greater than 100 percent) in uranium concentrations at air sampling Station Nos. 6 and NR-7. In accordance with 10 CFR 51.45(c), the environmental report is required to include an analysis that considers the environmental effects of the proposed action. To support the NRC's analysis of the environmental effects associated with the increased airborne uranium emissions, the licensee is requested to discuss the cause of this increase and corrective actions (current or planned) to mitigate this apparent trend.

ER 2.1.2.3-3: Please provide a summary of any National Ambient Air Quality Standards (NAAQS) or state ambient air monitoring limits exceedances that have occurred during the current license period (i.e., 1995 to present). Additionally, please provide a copy of correspondence to State environmental agencies discussing these exceedances, if any. This information is necessary to address the current status of compliance with applicable environmental quality standards, as required by 10 CFR 51.45(d).

ER 2.1.2.3-4: ER Table 2.1-9 provides environmental air monitoring results for Ra-226 and Th-230 at onsite locations, at the Metropolis Municipal Airport, and at the nearest residence. A review of the data in this table finds that Th-230 readings for year 2003 have increased significantly over those from previous years. In accordance with 10 CFR 51.45(c), the environmental report is required to include an analysis that considers the environmental effects of the proposed action. To support the NRC's analysis of the environmental effects associated with the increased airborne emissions, the licensee is requested to provide an explanation for

this increase and discuss the significance of this increase. Additionally, please summarize any planned or actual mitigative actions to prevent this increase from continuing in future years.

ER 3.1.1-1: NRC requirements, in 10 CFR 51.45(c), specify that an environmental report should contain sufficient information to aid the Commission in its development of an independent analysis of the environmental effects of the proposed action. The EA should be based on environmental conditions currently existing in the area (NUREG-1748, Section 3.4.5). Certain information that the staff considers critical to the environmental assessment was based on data provided in the 1995 EA. Therefore, to satisfy the NRC's requirements for completeness and accuracy of information provided to the Commission (10 CFR 40.9), the licensee is requested to confirm that the following information remains current:

- ER Section 3.1.1, Site Vicinity, on page 53, discusses agricultural land use in the immediate vicinity of the MTW facility. This information is based on the NRC's 1995 EA. Please verify that this information is still accurate.
- ER Section 3.4.3, Water Use, on page 66, states that the nearest downstream public drinking water intake is located in Cairo, Illinois, about 51 kilometers (32 miles) away from the plant. This statement is based on AlliedSignal correspondence dated 1994. Please verify that this statement is still accurate.

ER 3.4.8-1: ER Section 3.4.8 provides a discussion of the groundwater monitoring program. This program is credited, in part, for identification of seepage from the settling ponds into the underlying aquifers. In accordance with 10 CFR 51.45(c), the environmental report should contain sufficient data to enable the staff to develop an independent assessment of this monitoring program. To complete the assessment of the groundwater impacts that would result from the proposed license renewal, the licensee is requested to provide the following additional information regarding the use of this program for the identification of seepage from the settling ponds:

- periodicity of the monitoring activities that would be used to identify pond seepage,
- threshold values for considering a pond liner in leak status;
- corrective actions that would be taken if a liner was determined to be in leak status,
- recent pond sump data; and
- summary of any pond liner leaks identified since the last license renewal period, including severity of leakage and corrective actions.

ER 3.7-1: Noise impacts is an environmental effect that must be addressed in the NRC's assessment (NUREG-1748, Section 3.4.6). ER Section 3.7 addresses noise impacts associated with continued operation of the MTW facility. The ER states that the only noise-sensitive receptors (NSRs) located in close proximity to the site are "Category B rural residences typically assigned a [noise abatement criteria] NAC of 72dBA. However, ER Table 3.7-1 indicates that residences are considered Category E NSRs with an assigned NAC of 52 dBA (interior). The licensee is requested to explain why residences in the vicinity of the facility are not considered Category E NSRs in accordance with 23 CFR 772 [ER Reference (FHA, 1977)].

ER 3.9-1: Table 3.11-1, Occupational Injury and Fatality Rates, on page 151, provides an overview of Honeywell's occupational injury rates in the past 10 years. Please summarize the method for determining the OSHA Recordable Incident Rate, and compare this incident rate to industry standards.

ER 4.2-1: Transportation impacts is an environmental effect that must be addressed in the NRC's assessment. Section 4.2 of the ER provides a brief assessment based on NUREG-0170, Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes, dated 1977. The EA should be based on environmental conditions currently existing in the area (NUREG-1748, Section 3.4.5). Therefore, to confirm the current applicability of the environmental assessment in NUREG-0170, the licensee is requested to provide the following information regarding shipments of UF₆ product from the MTW site:

- Discuss the mode of transportation for shipments of UF₆ product from the MTW facility;
- Provide the average number of annual shipments that occur each year; and
- Discuss whether there have been any traffic accidents regarding the shipment of UF₆ product from the MTW facility to U.S. Enrichment Corporation (USEC) or domestic ports for shipping to foreign customers. If so, please indicate whether these traffic accidents resulted in any radiological release.

ER 3.4.8.3-1: In accordance with 10 CFR 51.120, environmental documents that are related to environmental reports, environmental assessments, and findings of no significant impact must be made available at the NRC web site, <http://www.nrc.gov>, and/or at the NRC Public Document Room. To complete the groundwater assessment, the staff needs to review the relevant documentation, as referenced in the ER. The licensee is requested to provide a copy of the following documents pertaining to RCRA Groundwater Investigation Monitoring:

- Honeywell report, "RCRA Groundwater Investigation Report," submitted to IEPA in August 2003;
- Andrews Environmental Engineering report, "RCRA Groundwater Investigation Timeline/Summary," dated April 2005;
- Andrews Environmental Engineering report, "RCRA Groundwater Investigation Report;" dated January 2005,
- The proposed work plan, proposing additional soil sampling and additional perimeter groundwater wells, which was to be submitted to IEPA before May 20, 2005; and
- Any other reports or correspondence necessary to provide an understanding of the basis and status of the RCRA groundwater issues at the Honeywell facility.

Process Safety Management Requirements

PSM 1: In accordance with 29 CFR 1910.119, and as provided in application para 5.3.1, Honeywell has committed to the minimum for a satisfactory chemical safety evaluation as provided by compliance with the OSHA Process Safety Management requirements ("PSM

Rule”). However, for licensing compliance the license should provide a commitment, as part of the Safety Analysis Report or as a proposed license condition, specifically to the subparagraphs. At a minimum the following areas should be addressed.

- (1) process safety information
- (2) process hazard analysis
For example Honeywell could utilize the Failure Modes & Effects Analysis performed in spring 2004
- (3) operating procedures
- (4) training (initial employee training, refresher training, subcontractor training. etc.)
- (5) pre-startup safety reviews
- (6) inspection, testing, and maintenance of key safety components
Include an identification of the critical equipment lists
- (7) hot work permit system
- (8) management of change program
- (9) incident investigation program
- (10) emergency planning
- (11) audits and assessments

Health Physics

HP 1: In Section 1.2.2 “Site Description” the licensee states that “Plant operations are conducted in a fenced restricted area (as defined at 10 CFR 20.1003).”

10 CFR 20.1003 defines restricted area, in part, as an area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive material.

From observation by the inspectors, the licensee’s parking lot is within the site description of the fenced restricted area. However, it appears during the day shift that access is not limited to the parking lot, but is limited at the security force posted at the entrance to the administration building.

Utilizing 10 CFR 20.1003 as a guide (it defines unrestricted area as an area, access to which is neither limited nor controlled by the licensee), the single fenced area around the parking lot compared to the double fenced area connecting the administration building should be redefined in the licensee’s application as to what part is considered restricted vs. unrestricted.

HP 2: Section 1.7 "Exemption and Special Authorizations" the licensee requests exemption from the requirements of 10 CFR 20.1904(a) as applied to labeling of containers. In lieu of labeling each individual radioactive material container, the licensee wishes to establish one or more Radioactive Material Areas within the restricted area and post all entrance or access points to the area with signs bearing "CAUTION RADIOACTIVE MATERIAL AREA".... Any area or container in this plant (or "beyond this point") may contain radioactive materials.

It is not clear if the licensee wishes to be exempted from all of the requirements of 10 CFR 20.1904(a) or just be exempted from the "Caution radioactive material area labels only." There are other portions of 10 CFR 20.1904(a), which require: identifying the radionuclide(s) present, estimate the quantity of radioactivity, the date the activity was estimated, radiation levels, kinds of material and mass enrichment. Please state the specific provisions of 10 CFR 20.1904(a) from which an exemption is requested.

HP 3: Section 3.2.1.2 "Protective Clothing" states, in part, "Prior to exiting the restricted area, individuals deposit protective clothing in appropriate containers for in-plant laundering and reuse or disposal." The comment from Section 1.1.2 Site Description, regarding where exactly the restricted area(s) begins and ends. Please clarify if the restricted area includes the parking lot.

HP 4: Section 3.2.6, "Surface Contamination," defines "controlled areas" as plant areas in which uranium is processed and could be present in un-encapsulated form. In addition, "uncontrolled areas" are defined as plant areas where food may be consumed, locker rooms, and entrance/exit areas from the plant.

10 CFR 20.1003 defines "controlled area" as an area outside of a restricted area but inside the site boundary, access to which can be limited by the licensee for any reason.

10 CFR 20.1003 defines "restricted area," in part, as an area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive material. An "unrestricted area" is defined as area, access to which is neither limited or controlled by the licensee.

The licensee's definition of "controlled area" appears to be equivalent to the 10 CFR 20.1003 definition of "restricted area." Please revise the definitions in Section 3.2.6 to be consistent with 10 CFR 20.1003.

HP 5: Please clarify if the Feeds Materials Building control room, and other areas where food is consumed, is considered controlled or unrestricted areas as defined by 10 CFR 20.100. If it is considered restricted, please provide the basis for why it is acceptable to consume food in those areas.

HP 6: Regarding Section 3.2.4, "Radioactivity Measurement Instrumentation," please indicate by what industry standard the instruments are calibrated and whether the sources used are National Institute of Standards and Technology (NIST) traceable.

HP 7: You have indicated that a cylinder rupture is not a credible event. However, you have removed, from the SAR, all commitments to controls of the handling and storage of hot UF6 cylinders. Being that these controls are required to prevent the situation where a cylinder could be dropped or damaged (events that could lead to rupture), provide justification for their removal from the SAR.

HP 8: Regarding Section 2.6.2.1, "Operator Attentiveness," since no restrictions regarding hours of work were provided, please describe how the operators are monitored to ensure that they are fit for duty.