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U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Director, Office of Nuclear Material Safety and Safeguards
11555 Rockville Pike
Rockville, MD 20852

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

SUBJECT: HONEYWELL METROPOLIS WORKS RESPONSE TO RAIs FOR CHEMICAL SAFETY AND FIRE SAFETY

On February 9, 2017, Honeywell Metropolis Works submitted to the USNRC an application for renewal of USNRC Source Materials License SUB-526; the application also included the submittal of an Environmental Report. On November 7, 2017, the USNRC provided to Honeywell Requests for Additional Information (RAI) on the following sections of the License Application:

- Section 6.0 Chemical Safety
- Section 7.0 Fire Safety

This letter transmits Honeywell's responses to the subject RAIs. To the extent that Honeywell has identified the need for changes to the submitted License Renewal Application or its supporting documents, the enclosed RAI responses include the proposed changes in the form of mark-ups of the affected text. Please note that Honeywell intends to include the proposed changes in a future revision of the License Renewal Application or its supporting documents, as appropriate.

We hope that you find the enclosed materials to be complete and that our responses are helpful in furthering your review of Honeywell's License Renewal Application. If you have questions or comments regarding this submittal, please contact Sean Patterson, Regulatory Affairs Manager, at (618) 524-6341

Sincerely,

Jeff Fulks
Plant Manager

Enclosure 1 – Responses to RAIs on Section 6.0 Chemical Safety of the MTW License Renewal Application
Enclosure 2 – Responses to RAIs on Section 7.0 Fire Safety of the MTW License Renewal Application

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NMSS20

cc: Attention: Tilda Liu
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245 Peachtree Center Ave. NE, Suite 1200
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Honeywell Metropolis Works
USNRC Source Materials License SUB-526
Docket No. 40-3392

License Renewal Application
Responses to Requests for Additional Information
Section 6.0 – Chemical Safety

RAI 6-1

Section 6.2.2 of the Integrated Safety Analysis (ISA) Summary identifies three categories of chemical hazards: chemicals of concern (Class 1), interaction chemicals (Class 2) and incidental chemicals (Class 3). The ISA Summary defines a chemical of concern (Class 1) as one which could result in high or intermediate consequences as defined in 10 CFR 70.61. The only chemical of concern (Class 1) appears to be uranium hexafluoride (UF_6) with Class 2 chemicals being hydrogen fluoride (HF) (ISA Summary, page 6-8) and uranyl fluoride (UO_2F_2) (ISA Summary, page 6-9). The apparent Class 2 chemicals identified in page 6-8 and page 6-9 are different from the Class 2 chemicals identified in Table 6-2.

Clarify how these categories are determined and how the determination is related to the ISA. For example, are ISA analyses conducted to determine the category of a chemical or are a-priori determinations made which limit the scope of ISAs for that chemical?

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

Section 6.2 of the ISA Summary discusses aspects of the MTW chemical process safety program, with subordinate Section 6.2.1 describing the major chemicals used at the facility, and Section 6.2.2 discussing the facility's hazardous chemicals. The intent of pp. 6-7 through 6-9 in Section 6.2.2 is to provide a description of UF_6 and its byproducts. Although UF_6 is a Class 1 chemical, nowhere on page 6-9 is it stated that Uranyl fluoride (UO_2F_2) is a Class 2 chemical. Uranyl fluoride does not interact with or propagate accidents with UF_6 and is not a Class 2 chemical.

Discussion of Tables 6-1 and 6-2

Table 6-1 "Major Chemical Storage Systems" of the ISA Summary shows the major chemicals discussed in Section 6.2.1.

Per the Chemical Screening and Classification subsection of Section 6.2.2, Table 6-2 "Chemicals - Hazardous Properties" lists the "chemicals and related chemical wastes that are expected to be in use at MTW," but the table "does not include the listing of all incidental sludges, wastes, and waste streams..." Therefore,

- Tables 6-1 and 6-2 list Hydrogen fluoride (HF) because it is a chemical that is in use at MTW as described in Section 6.2.1.
- In contrast, Uranyl fluoride (UO_2F_2) does not appear in either table since it is not a chemical in use at MTW, but is a byproduct that would be formed only in the event of an accidental UF_6 release.
- H_2, and F_2 are listed in Table 6-2 because they are in use at MTW and are flammable. In addition, fluorine is toxic.
- U_3O_8 is listed in Table 6-2 because it is a licensed material in use at MTW and is radioactive.

Discussion of Chemical Hazard Categories

As noted in the text of RAI 6-1, three categories of chemicals are identified in Section 6.2.2 of the ISA Summary: chemicals of concern (Class 1), interaction chemicals (Class 2) and incidental chemicals (Class 3).

These classifications are the same as those identified for the National Enrichment Facility (NEF) as described in Section 6.0, Chemical Process Safety, of the NEF Safety Analysis Report (SAR), Rev. 6 (ADAMS ML060680653). The ISA Summary for the MTW and the NEF SAR both refer to these categories as "NEF Classes," and provide identical definitions:

> NEF Class 1 (Chemicals of Concern) – "Chemicals of Concern (NEF Class 1) are determined based on one or more characteristics of the chemical and/or the quantity in storage/use at the facility. For licensed material or hazardous chemicals produced from licensed materials, chemicals of concern are those that, in the event of release have the potential to exceed any of the concentrations defined in 10 CFR 70."
>
> NEF Class 2 (Interaction Chemicals) – "Interaction chemicals (NEF Class 2) are those chemicals/chemical systems that require evaluation for their potential to precipitate or propagate accidents in chemical of concern (NEF Class 1) systems, but by themselves are not chemicals of concern."
>
> NEF Class 3 (Incidental Chemicals) – "The facility will use other chemicals that are neither chemicals of concern nor interaction chemicals. Some of these incidental chemicals (NEF Class 3) include those that have the potential to result in injurious occupational and/or environmental exposure, but represent no potential for acute exposure to the public and which via their nature, quantity, and/or use, have no potential for impacting chemicals of concern (NEF Class 1)."

Uranium hexafluoride (UF_6)

Uranium hexafluoride is classified as a chemical of concern (Class 1) for the following reasons:

- If released into the atmosphere UF_6 will react with water, such as the water vapor in the air forming byproducts of hydrogen fluoride (HF) gas and a uranyl fluoride solid (UO_2F_2) which are chemically toxic.
- Per Section 8 and Table 4-1 of the ISA summary, in the event of a release, the concentrations defined in 10 CFR 70.61 may be exceeded.

Section 6.2 (Chemical Hazards and Accident Sequences) of the License Renewal Application (LRA) states, "The ISA Summary provides a description of the chemical hazards and accident sequences affecting licensed material at MTW." Since a detailed discussion is provided in the ISA Summary, the LRA itself requires no revision.

Planned License Renewal Application Revision

None.

RAI 6-2

Section 3.3 of the license renewal application (LRA) states, "Honeywell has conducted an ISA for selected processes."

Describe what the "selected processes" are and how they were selected.

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

The license renewal application (LRA) does not describe the selected processes or how they were selected. However, the ISA Summary, Revision 14, does describe the selected processes and how they were selected. The ISA Summary describes (in Section 5.3) and analyzes (in Section 6.3) the processes of concern. This discussion addresses all the major processes that are involved in the production of uranium hexafluoride (UF_6) from uranium ore. Process concerns are related to the loss of confinement of UF_6 or hydrofluoric acid (HF). Other concerns include radiation exposure (from uranium ore or compounds), worker safety, public safety, equipment damage and uncontrolled releases of hazardous chemicals to the environment. These incidents could be initiated because of failures in process components, human error or operational errors, or external events (e.g., seismic or tornado). The processes selected are as follows:

1. Sampling and Storage
    a. Analysis, weighing and storage of uranium ore concentrates
2. Pre-treatment Facility
    a. Sulfuric acid leach, ammonia precipitation
    b. Settling and filtration of uranium-bearing solids
    c. Processing hard or wet ore

3. Ore Concentrates Preparation
    a. Calciner
    b. Blending
    c. Agglomeration using water, sulfuric acid, magnesium hydroxide, and/or sodium hydroxide and potassium hydroxide
    d. Drying, crushing and sizing
    e. Dust collection
4. Reduction
    a. Reduction of U_3O_8 to UO_2 using hydrogen and fluidizing nitrogen
    b. Off-gas filtration and incineration
5. Hydrofluorination
    a. Conversion of UO_2 to UF_4 using HF
    b. Off-gas filtration and scrubbing
6. Fluorination
    a. Conversion of UF_4 to UF_6 using fluorine
    b. Product gas filtration
    c. Fluid-bed material collection and retirement
7. Cold Traps and Off-Gas Cleanup
    a. UF_6 desublimation
    b. Off-gas scrubbing and wet process
8. Distillation and Product Packaging
    a. UF_6 distillation, condensation and packaging
    b. Off-gas processing
9. Uranium Recovery
    a. Collection of fluorination solid residues
    b. Precipitation of waste liquors using KOH and NH_3.
10. Cylinder Wash Facility
    a. Cylinder washing using sodium carbonate or sodium hydroxide and potassium hydroxide solution
    b. Cylinder pressure testing
    c. Leach liquor filtration

Planned License Renewal Application Revision

In Section 3.3 of the LRA, revise the first paragraph to state:

"Honeywell has conducted an ISA for selected processes as described in Sections 5.3 and 6.3 of the ISA Summary. This discussion addresses the major processes that are involved in the production of uranium hexafluoride (UF_6) from uranium ore. Process concerns are related to the loss of confinement of UF_6 or hydrofluoric acid (HF). Other concerns include radiation exposure (from uranium ore or compounds), worker safety, public safety, equipment damage and uncontrolled releases of hazardous chemicals to the environment. These incidents could be initiated because of failures in process components, human error or operational errors, or external events (e.g., seismic or tornado)."

RAI 6-3

Section 4.3.2 of the ISA Summary, Rev. 14, states that for worker exposure analysis it is "presumed that a source term of UF_6/HF is released into a hemisphere that reflects the proximity of the worker's breathing zone and that the worker would remain in the space for a period of 10 seconds."

Explain how this calculation is performed and the basis for the size of the hemisphere. Explain if there is a release rate of the material into the cloud or if the material is released and mixed in the cloud instantaneously.

Identify the standard being used to assess the severity of the consequences for such short-term exposures. Table 4-4 in the ISA Summary, Rev. 14, does not address exposure durations of less than 10 minutes.

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

A calculation was performed to evaluate the consequences of hazards involving UF_6 by determining worker exposure to HF. The method used for this calculation assumes an instantaneous release of UF_6 that immediately reacts with moisture in the air to produce HF and UO_2F_2. The calculation assumes the release is limited to a volume of 10 ft. x 10 ft. x 10 ft. (1000 ft^3). Note that the volume is not important, because a comparison is being made between a concentration of HF produced and the amount of moisture in the air necessary for the reaction to occur. If the volume were increased, the amount of moisture present would increase proportionally and a larger mass of HF would be required to maintain the same concentration. The breathing rate for the worker was assumed to be $3.5x10^{-4}$ m^3/s, based on Regulatory Guide 1.183 – "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors (Ref. 6)". The calculation concluded that the severity of consequences for UF_6 releases can be evaluated solely by determining HF concentration.

A similar calculation was performed to evaluate uranium intake to a worker in the immediate vicinity of the 2015 UF_6 release from the low boiler condenser at the facility. The method used for this calculation assumes a constant release rate of UF_6 that is mixed in a 3-ft radius sphere, based on data from the actual event (Ref: NRC Special Inspection Report 40-3392/2015-007). The basis for the 3-ft radius sphere is the radius of UO_2F_2 deposits that were found on the floor below the release. The source term was a constant release of 12 pounds of UF_6 over an 86-minute duration. UF_6 was assumed to be distributed evenly throughout the 3-ft radius sphere. The breathing rate for the worker was assumed to be $3.5x10^{-4}$ m^3/s based on Regulatory Guide 1.183. The calculation concluded that the 2015 UF_6 release from the low boiler condenser was a low consequence event to workers.

Table 4-4 in the ISA Summary Revision 14 provides a reproduction of the published values for Emergency Response Planning Guideline (ERPG) and Acute Exposure Guideline Level (AEGL) for HF. Table 4-2 in the ISA Summary Revision 14 gives the standard being used to assess the severity of the consequences for short term exposures. For worker exposures, shorter than those given in Table 4-2, the criteria given in Table 4-2 are conservatively used.

Planned License Renewal Application Revision

Insert a new reference in section 3.7
6. Regulatory Guide 1.183 – "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors", USNRC, March 1999.

RAI 6-4

Neither the LRA nor the ISA Summary, Rev. 14, discusses the Memorandum of Understanding (MOU), between the NRC and the Occupational Safety and Health Administration (OSHA) that identifies the specific hazards regulated by the NRC and those hazards regulated by OSHA.

Clarify whether all the chemical hazards that are under NRC's regulatory jurisdiction are identified and analyzed in an ISA against the performance requirements of 10 CFR 70.61 as described in Section 3.3 of the LRA.

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

Per Sections II.1 and II.2 of the Memorandum of Understanding (MOU) between the U.S. Nuclear Regulatory Commission (NRC) and the Occupational Safety and Health Administration (OSHA), dated 09/06/2013, the three hazards that are regulated within the NRC's authority and responsibility are as follows:

a. Radiation hazards produced by radioactive materials;
b. Chemical hazards produced by radioactive materials; and
c. Facility hazards that affect the safety of radioactive materials and thus present an increased radiation risk to workers. For example, these conditions might produce a fire or an explosion and, thereby, cause a release of radioactive materials or an unsafe condition.

OSHA has authority and responsibility for facility conditions that result in occupational hazards that do not involve the use of licensed radioactive materials (otherwise referred to as industrial safety and health hazards). This hazard is listed as item (d) in Section II.1 of the MOU.

Section 3.3 of the License Renewal Application (LRA) states that the Integrated Safety Analysis (ISA) Summary identifies the following hazards:

- Radiological hazards related to possessing or processing licensed material;
- Chemical hazards of licensed material and hazardous chemicals produced from licensed material;
- Facility hazards that could affect the safety of licensed materials and thus present an increased radiological risk.

Section 1.3 and Table 1.1 of the LRA describe the licensed material as natural uranium in various forms, and sealed and unsealed radioactive sources. Thus, the LRA and the ISA Summary identify all the chemical (as well as radiological) hazards that are under NRC's regulatory jurisdiction per the MOU.

Planned License Renewal Application Revision

Insert a new paragraph after the final bullet in Section 3.3, and before the existing subsequent paragraph:
"The chemical and radiological hazards identified in the first three bullets, above, are those that fall within the NRC's authority and responsibility per Sections II.1 and II.2 of the Memorandum of Understanding (MOU) between the U.S. Nuclear Regulatory Commission and the Occupational Safety and Health Administration (Ref. 7)."

Insert a new reference in Section 3.7:
7. Memorandum of Understanding between the U.S. Nuclear Regulatory Commission and the Occupational Safety and Health Administration concerning "Worker protection at facilities licensed by the NRC", dated 09/06/2013.

RAI 6-5

Neither the LRA nor the ISA Summary, Rev. 14, discusses whether the ISA considers all phases of operation. NUREG-1520, Rev. 2 (page 3-22), discusses method acceptability if it addresses all modes of operation, including startup, normal operation, shutdown and maintenance. The NRC staff notes that several of the chemical releases at Honeywell Metropolis Works (MTW) occurred during plant operations involving non-routine or maintenance activities.

Section 4.2 of the ISA Summary, Rev 14, states "Maintenance problems or industrial personnel accidents were not evaluated since the consequences are not considered to be a safety issue."

Clarify if the ISA considers all phases of operation for the hazards that are under NRC's regulatory jurisdiction.

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

RAI 6-5 asserts that the acceptability of the ISA Method should depend on whether "it addresses all modes of operation, including startup, normal operation, shutdown and maintenance." Because of the specific discussion in NUREG-1520 regarding the allowable and alternative Process Hazard Analysis methods, the stated condition isn't directly applicable to the MTW ISA, as discussed below.

The method used for the Honeywell MTW ISA was based on the guidance provided in NUREG-1513 which is given as an acceptable method in NUREG-1520. The first sentence of Paragraph b of Section 3.4.3.2(5) of NUREG-1520, Rev. 2 provides acceptance criteria for the ISA Process Hazard Analysis (PHA) Method:

> *"b. Process Hazard Analysis Method. The process hazard analysis method is acceptable if it involves selecting one of the methods described in NUREG-1513 in accordance with the selection criteria established in that document."*

Section 2.3 of NUREG-1513 provides a list of 12 ISA Hazard Evaluation methods: 1) Safety Review, 2) Checklist Analysis, 3) Relative Ranking, 4) Preliminary Hazard Analysis, 5) What-If Analysis, 6) What-If/Checklist Analysis, 7) Hazard and Operability Analysis (HAZOP), 8) Failure Modes and Effects Analysis (FMEA), 9) Fault Tree Analysis, 10) Event Tree Analysis, 11) Cause-Consequence Analysis, and 12) Human Reliability Analysis.

The MTW ISA Process Hazard Analysis method used is a Hazard and Operability Analysis or HAZOP. It is noted that selection of this method is not stated in the LRA or ISA Summary.

Because the ISA Process Hazard Analysis used the HAZOP method, and the HAZOP method is one of the acceptable methods listed in NUREG-1513, Section 2.3, the first sentence of Paragraph b of Section 3.4.3.2(5) of NUREG-1520 is satisfied.

In addition, Section 6.3 of the ISA Summary states:

> *"The hazards of concern for this facility are all related to either a loss of confinement of UF6 or HF. All of the consequences of concern are the result of initiating events due to hazards that would result in accidents of these types. The initiating events considered for this facility are the result of failures in process components, human error or operational errors including maintenance activities, fires (external to the process), and external events (e.g., severe weather, seismic, transportation and industrial hazards)."*

Therefore, the ISA considers all phases of operation, including maintenance activities, for the hazards that are under the regulatory jurisdiction of the NRC. Honeywell will revise the text in section 4.2 of the ISA Summary to clarify the intent related to maintenance problems in a future revision.

Planned License Renewal Application Revision

None.

RAI 6-6

Neither the LRA nor the ISA Summary, Rev. 14, states that the ISA systematically considers chemically reactive as well as toxic hazards as a normal course of the ISA analysis. The discussion in ISA Summary, Rev. 14, identify instances where reactive hazards have been identified and analyzed (e.g., limits on organic content in UF_6 cylinders), but there are no statements about the scope of the ISA on this subject.

Clarify if the ISA considers reactive as well as toxic hazards that are under NRC's regulatory jurisdiction.

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

Section 4.1 of the Integrated Safety Analysis (ISA) Summary, Revision 14, states:

> *"The hazards identification process results in identification of physical, radiological or chemical characteristics that have the potential for causing harm to site workers, the public, or to the environment. Hazards are identified through a systematic review process that entails the use of system descriptions, piping and instrumentation diagrams, process flow diagrams, plot plans, topographic maps, utility system drawings, and specifications of major process equipment.*
>
> *The hazard identification process documents materials that are:*
> - *Radioactive*
> - *Flammable*
> - *Explosive*
> - *Toxic*
> - *Reactive"*

Section 4.1 also states that this was done consistent with the guidance provided in NUREG-1513 and NUREG-1520.

The ISA systematically considers chemically reactive as well as toxic hazards as a normal course of the ISA analysis. The License Renewal Application does not explicitly state that chemically reactive and toxic hazards were systematically considered. However, chemically reactive hazards were addressed in the hazard evaluations.

Planned License Renewal Application Revision

Revise the second bullet in Section 3.3 of the License Renewal Application to state:

- Chemically reactive and toxic hazards of licensed material and hazardous chemicals produced from licensed material;

RAI 6-7

ISA Summary, Rev. 14 (page 6-6), states that, "There are no non-licensed chemicals of concern at the facility."

Clarify the meaning and provide the basis for this statement. Is it a conclusion after a thorough analysis or does it reflect an assumption that is made for the ISAs? Discuss whether the ISA considers "facility conditions (e.g., non-licensed material releases) that could affect the safety of radioactive materials and thus present an increased radiation risk to workers," as stated in the NRC-OSHA MOU.

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

The specified statement ("There are no non-licensed chemicals...") on page 6-6 of the ISA Summary is a conclusion, and is based on information and discussion in the ISA and ISA Summary.

Section 6.2 of the ISA Summary discusses aspects of the MTW chemical process safety program, with subordinate Section 6.2.1 describing the major chemicals used at the facility, and Section 6.2.2 discussing the facility's hazardous chemicals. Table 6-2 of the ISA summary lists the various chemicals needed to produce UF_6 at the facility.

In Table 6-2, the only Chemical of Concern (Class 1) is uranium hexafluoride (UF_6), which is a licensed material per Section 1.3 and Table 1-1 of the LRA. All other chemicals listed in Table 6-2 are categorized as either Class 2 or 3. Based on the Process Hazard Analyses in Section 6.3 of the ISA summary, a postulated release of a Class 2 or Class 3 chemical will not cause the concentrations of Chemicals of Concern, as described in Section 6.2.2, to be exceeded.

Thus, there are no other Chemicals of Concern (whether identified as licensed or as non-licensed material) at MTW.

Planned License Renewal Application Revision

None.

RAI 6-8

The first sentence in Section 6.3, Process Hazard Analysis, of the ISA Summary, Rev. 14, states, "The hazards of concern for this facility are all related to either a loss of confinement of UF_6 or HF."

Clarify whether this a conclusion based on an analysis of all identified hazards at the Honeywell MTW which are under NRC's regulatory authority, or an assumption that limits the scope of ISAs.

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

The initial statement ("The hazards of concern for this facility...") in Section 6.3 of the ISA Summary is a conclusion, and is based on information and discussion in the Integrated Safety Analysis (ISA) and the ISA Summary.

As required by Section 3.3.2 of NUREG-1520 (Rev. 2), the ISA summary should provide assurance that a systematic evaluation of the hazards was performed and that credible accident sequences were identified. In doing so, the ISA Summary should contain the following:

- Facility Processes - The descriptions of processes in the ISA Summary must include all processes in which upset conditions could credibly lead to accidents with high or intermediate consequences.
- Hazards - The description of process hazards provided in the ISA Summary is acceptable if it identifies, for each process, all types of hazards that are relevant to determining compliance with the performance criteria of 10 CFR 70.61.
- Accident Sequences - The ISA Summary identifies all types of accidents for which the consequences could exceed the performance requirements of 10 CFR 70.61.

Per Section 6 of NUREG-1520, the hazards that must be evaluated are those that are related to the storage, handling, and processing of licensed materials which are within the NRC's regulatory jurisdiction. For MTW, licensed materials are the various forms of natural uranium as stated in Section 1.3 and Table 1-1 of the LRA.

The approach used to perform the ISA is outlined in Section 4 of the ISA Summary. The ISA summary:

- identifies the facility processes (Section 5.3),
- identifies the hazards in these processes (Sections 4.1, 6.1, and 6.2),
- analyzes these hazards (Sections 4.2 and 6.3),

- identifies the sequences and consequences of postulated accidents (Sections 4.3 and 7), and
- identifies the Plant Features and Procedures (PFAP) that either reduce the likelihood of occurrence, or the consequences, of the accident scenarios such that the associated risks are acceptable (Section 8).

Thus, the statement in question in Section 6.3 summarizes the identified hazards at the facility, which were determined based on knowledge and discussion of the various plant processes in prior sections. The statement also prefaces the subsequent evaluation of the postulated failures within plant processes that could lead to an accident.

Planned License Renewal Application Revision

None.

RAI 6-9

The last sentence in the first paragraph of Section 6.3, Process Hazard Analysis, of the ISA Summary, Rev. 14, states, "The process hazard evaluation for the various plant systems are presented in the following sections." The following sections present tables which list hazards and associated safety features for various portions of the MTW.

Describe the process used for the identification of the "hazards" presented in the tables and associated "safety features". Explain whether they were identified as a result of an ISA of the type described in Section 3.3 of the LRA.

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

Section 6.3 Process Hazard Analysis of the ISA was copied from the Safety Demonstration Report (SDR). The information in the SDR section 6.3 and the ISA Summary Section 6.3 were based on professional knowledge of the hazards associated with the operations at the MTW. No standard methodology was used to develop this table. This table was the standard 10 CFR Part 40 safety analysis prior to implementation of the ISA methodology. Honeywell intends to delete this section from the ISA Summary following the issuance of the renewed license.

Planned License Renewal Application Revision

None

RAI 6-10

Neither the LRA nor the ISA Summary, Rev. 14, discusses whether the ISA systematically considers all acute chemical exposure pathways. The table in Section 6.3.5 of the ISA Summary acknowledges the potential for serious burns from skin contact. However, the HF toxicity discussion on page 6-9 of the ISA Summary, as well as the acute chemical exposure standards, do not discuss or allude to non-inhalation exposure. The NRC staff notes that there have been non-inhalation exposure events at Honeywell MTW and other fuel cycle facilities in the past.

Clarify whether the ISA considers all acute chemical exposure pathways.

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

Honeywell MTW has considered chemical exposures, including acute chemical exposure pathways as required by the OSHA and the US Environmental Protection Agency in accordance with 29 CFR 1910.119 for the hazardous chemicals used at the site, including Hydrogen Fluoride (HF). SUB-526 License Renewal Application, Revision 0, Section 6.0, pg. 6-1 states:

> *"Honeywell implements a PSM Program consistent with the requirements of 29 CFR 1910.119 (Ref. 1). The PSM Program includes the fourteen program elements required by 29 CFR 1910.119 and addresses the following hazardous chemicals:*
>
> - *Hydrogen (below the PSM threshold quantities);*
> - *Aqueous Ammonia; and*
> - *Anhydrous Hydrofluoric Acid*
>
> *Because uranium hexafluoride can react to form hydrofluoric acid, it is considered in the PSM program.*
>
> *The MTW PSM applicability document provides a complete listing of the chemicals, processes, and the areas impacted by the PSM program."*

The ISA considers applicable MTW acute chemical exposure pathways. Dermal and ocular exposure to HF is considered at Honeywell MTW, as indicated in the ISA Summary Revision 14, pg. 6-9 which states:

> *"Skin exposure to concentrated liquid HF will result in aggressive chemical burns. Burns from exposure to dilute solutions (1-20%) of hydrofluoric acid (aqueous HF) or moderate concentrations of vapor may not be immediately painful or visible. Symptoms of skin exposure include immediate or delayed throbbing, burning pain followed by localized destruction of tissue and blood vessels that may penetrate to the bone. Exposure to liquid forms of HF is not expected at the facility.*

Ocular exposure to HF causes a burning sensation, redness and secretion. Splashes of aqueous hydrofluoric acid to the eye rapidly produce conjunctivitis, keratitis and more serious destructive effects but these are not expected at the facility."

While anhydrous and liquid HF are used at Honeywell MTW, these forms of HF are regulated by OSHA in accordance with the NRC/OSHA memorandum. Gaseous HF is under NRC jurisdiction because it is produced from releases of UF_6 (the reaction of UF_6 with moisture in the air). A review of available literature on acute exposure to gaseous HF does not reveal any broadly accepted guidelines for dermal or ocular exposure. The effects of dermal and ocular exposure to gaseous HF appear to be significantly less severe than the effects of dermal and ocular exposure to liquid HF. The Toxicological Profile for Fluorides, Hydrogen Fluoride, and Fluorine (Exh. AES000077, U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, September 2003) identified the effects of acute ocular and dermal exposure to gaseous HF as follows:

- Very mild eye irritation for exposures between 0.5 ppm and 4.5 ppm for 1 hour
- Mild eye irritation for exposures of 3 ppm for 6 hours
- Slight eye irritation for exposures of 10 ppm for greater than 15 minutes
- Mild eye irritation for exposures of 30-50 ppm for 3 minutes
- Marked eye irritation for exposures of 100 ppm for < 1 minute
- Smarting of the skin for exposures of 122 ppm for 1 to several minutes

The data is limited to acute ocular exposures which result in irritation only (i.e., equivalent to Category 1, Low Consequence Severity Category defined in ISA Summary).

Analysis of the other data in the Toxicological Profile for Fluorides, Hydrogen Fluoride, and Fluorine indicates the most severe effects of acute exposure to gaseous HF are experienced by the respiratory tract. As such, the inhalation limits set in the ISA summary for acute HF exposure bound any dermal or ocular limits for the type of acute exposure expected at MTW.

Planned License Renewal Application Revision

None.

RAI 6-11

Section 6.3.4 of the ISA Summary, Rev 14, identifies ammonia and HF exposure hazards for the reduction operations.

Discuss the nature of the scenarios for ammonia and HF exposure in reduction operation.

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

The RD-6 and RD-7 accident sequences are included in the ISA Summary because they were determined to be intermediate to high consequence events. RD-6 is related to the failure of the process gas incinerator system. Failure of the incinerator could result in excessive hydrogen concentrations and resulting equipment failure. In the event of incinerator malfunction, the reductor feed is automatically shut down. RD-7 is related to failure of a reductor because of overheating. The use of ammonia was discontinued and replaced by a liquid hydrogen unit and does not present the same hazard. The next revision of the ISA Summary will remove all references to anhydrous ammonia. Since HF is not used in the reductor vessel, there is no intermediate or high consequence HF exposure scenario for the Reductor system. The Reductor product is fed directly into the Hydrofluorinator, in the event of an overheating scenario in the Reductor all HF flow to the Hydrofluorinator is stopped via the manual action to close the HF control valves.

Planned License Renewal Application Revision

None

RAI 6-12

Section 3.3 of the LRA states that Process Hazard Analyses (PHA) team leaders receive training on the Process Safety Management (PSM) program as outlined in Section 11 of the LRA. Section 11.3 of LRA (training and qualification) does not discuss training of PHA or ISA leaders/members.

Describe the required training for PHA or ISA leaders or analysts. Also clarify if there are any additional minimum requirements for the PHA team leaders.

The information is required for the evaluation of the applicant's qualifications to use the source material is such manner as to protect health and minimize the danger to life or property as required under 10 CFR 40.32(b).

Response

PHA leaders are required to attend vendor-provided training and Honeywell in-house training. The Honeywell training also includes training related to the MTW ISA Summary for those personnel that will be involved in ISA activities. The following is the training that is required for PHA leaders:

- To be eligible for the position, employees and contractors must have chemical industry experience
- Initial training in PHA methodologies
- Refresher training as required by Honeywell PSM procedures
- Must have actively participated in a PHA
- Completed training in dispersion modeling

ISA team leader requirements:

- Trained and knowledgeable in ISA methodologies as defined in NUREG 1513
- Experienced in chemical process engineering or radiological safety
- Possess an understanding of PSM requirements
- Be familiar with process operations and site hazards

Planned License Renewal Application Revision

Section 11.3 Qualifications and Training – will be revised to include information about PHA and ISA Leader training as stated in the response.

RAI 6-13

The table on page 4-9 of the ISA Summary, Rev. 14, identifies ISA team members and their expertise. The individuals and information is identical to the table in earlier ISA Summaries including the one submitted in 2008.

Clarify whether these individuals are still major contributors to the current ISAs and ISA Summary. Does Honeywell have a requirement that plant personnel lead ISAs and provide major technical input to the ISA?

The information is required for the evaluation of the applicant's qualifications and procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(b) and (c).

Response

The team members identified in the original ISA are still contributors to the ISA and ISA Summary. One of the original contributors now works for Honeywell as a Regulatory Affairs Specialist. Honeywell does not have a requirement that plant personnel lead the ISA effort, however Honeywell personnel do provide major technical input prior to any changes to the ISA or ISA Summary. The MTW Regulatory Affairs Manager is responsible for all revisions to the NRC license documents to ensure the level of safety described is not reduced.

Planned License Renewal Application Revision

Section 2 and Section 6 of the LRA will be revised to ensure that Honeywell personnel stay involved in the development, analysis, and review of the ISA and ISA Summary.

RAI 6-14

Plant Features and Procedures (PFAP) 48 states, "all vessels used in fluorine and UF_6 service are degreased prior to being put into service". The ISA Summary, Revision 14, only associates this PFAP with the fluorination operation and not with all areas that involve fluorine or UF_6.

A similar control, not a PFAP, is identified as a safety feature for fluorination (ISA Summary, Section 6.3.6) and for cold traps and off-gas cleanup (ISA Summary, Section 6.3.7). No such control is identified for distillation.

Clarify if this control is only a PFAP for the fluorination or if it is a PFAP for all operations involving fluorine or UF_6. Also, discuss the reason that this control is not identified as a safety feature for distillation operations.

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

Degreasing, Hydrocarbon, and Glycol control are considered anywhere that UF6 or Fluorine are in the system. This includes both fluorination and distillation. The following is from the ISA Summary Section 7.3.2 Hydrocarbon Controls and Section 7.3.2 Glycol Contamination Controls:

7.3.2 ***Hydrocarbon Controls***

The following controls are utilized to address hydrocarbon contamination of UF_6 cold trap systems and UF_6 product cylinders:

- *UF_6 is produced, distilled and packaged in a closed system to reduce the likelihood of hydrocarbon contamination during normal operations.*
- *The possibility of hydrocarbon contamination does exist during equipment and piping maintenance, particularly from replacement equipment or piping. These sources are controlled via extensive degreasing processes. Administrative controls, in the form of increased supervision, are utilized during maintenance of UF_6-bearing equipment and piping.*
- *Cylinder sampling and line evacuations are performed using an oil-filled vacuum pump. The vacuum system is engineered with safeguards that provide an oil trapping capacity in excess of 20 times the volume of oil contained in the vacuum pump. Additionally, one trap contains activated alumina to prevent oil mist carryover. A check valve in this system prevents oil contamination due to back flow. The system also contains a "fail safe" slam*

valve that closes automatically upon loss of power to the vacuum pump motor. Similar safeguards have been engineered into the laboratory UF_6 sub-sampling system.

- *The plant establishes administrative provisions requiring that incoming cylinders that contain "heels" be sealed with tamper-evident seals in accordance with ANSI N14.1 as applicable at the date of manufacture of the UF_6 cylinder.*
- *A sample selection of new cylinders manufactured for the plant is inspected at the manufacturing site during the production process. Newly manufactured cylinders are degreased in accordance with the current ANSI N14.1. The cylinders are inspected by Honeywell personnel prior to valve and plug installation. Upon installation, valves and plugs are sealed in a manner consistent with the provisions of ANSI N14.1 for full or empty UF_6 cylinders.*
- *When cleaned cylinders (that are not owned by Honeywell) are to be received, the owner shall certify as to the absence of hydrocarbons in the cylinders. Additionally, these cylinders shall be sealed in a manner consistent with the provisions of ANSI N14.1 applicable at the date of manufacture. Alternatively, cylinders that do not meet these specifications shall be subject to an internal inspection by Honeywell personnel prior to filling or shall be returned.*
- *All cylinders received at Honeywell undergo an external receiving inspection. An integral part of this inspection is an evaluation of the tamper-evident seals. Violation of the seals would be readily apparent. Evidence of a broken seal will be investigated and appropriate action will be taken.*
- *Once received, cylinders are secured within the restricted area.*

Cylinders that receive five-year re-certification, or are washed and/or hydrostatically tested for other reasons, are internally inspected prior to reuse. Water and air systems are engineered to preclude any contamination of the cylinders with oil.

7.3.2 ***Glycol Contamination Controls***

The following controls shall be utilized to detect and minimize the potential of contaminating UF_6 with ethylene glycol during routine operation of primary cold traps:

- *A weight and temperature indicator/alarm is provided on the UF_6 Surge Tank to alert the process operator of an unusual weight or temperature increase.*
- *The temperature and weight of the UF_6 Surge Tank is recorded before and after a primary cold trap is heated in preparation for draining. An excessive gain in temperature or weight of the UF_6 Surge Tank requires notification to the responsible Supervisor.*

Each cold trap that is returned to service after washing or internal repairs shall have the tare weight determined before and after completion of one (1) heating and cooling cycle. An excessive gain in weight during this cycle requires notification to the responsible Supervisor.

Planned License Renewal Application Revision

None

RAI 6-15

Discuss whether there is an ISA that provides an evaluation of the hazards of feeding UF_6 from cylinders into the Feed Materials Building (FMB).

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

Honeywell does not have a specific safety analysis that provides an evaluation of the hazards of feeding UF_6 from cylinders into the Feed Materials Building (FMB). This process is performed to purify and transfer UF6 from different cylinder types. The cylinders are heated with a steam chest to liquefy the UF6 and feed the UF6 through the distillation process. Once the UF6 has been purified, it is then fed back into a cylinder. This process is governed by operating procedures and there are not expected to be specific accident sequences identified in this process that are not already evaluated in the ISA. Honeywell is developing a process hazards analysis (PHA) that will confirm the applicable accident sequences. Pending the results of the PHA, the potentially affected accident sequences are DI-1, DI-2, DI-3, DI-4, DI-5, and DI-6. These accident sequences are listed below from the Honeywell ISA, Table 9.6-2.

- DI-1: The assumed event is potential UF6 release due to vessel overpressurization.
- DI-2: The assumed event is potential UF6 release due to failure to control process resulting in process vessel failure.
- DI-3: The assumed event is potential UF6 release due to the overpressure failure of a UF6 product cylinder.
- DI-4: The assumed event is potential UF6 release during the UF6 product cylinder filling operation due to "pigtail" failure.
- DI-5: The assumed event is potential UF6 release during heating to obtain a sample.
- DI-6: The assumed event is potential UF6 release due to the drop of a filled UF6 product cylinder and subsequent cylinder failure.

These accident sequences are evaluated in the Honeywell ISA in Tables 9.6-1 and 9.6-2, and have acceptable risk and consequences.

Planned License Renewal Application Revision

None.

RAI 6-16

Section 1.5.8 of the LRA discusses controls on filled cylinder movement. Has Honeywell evaluated the need for controls on activities (e.g., equipment movement, operations) around liquid UF_6 cylinders?

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

Honeywell has not specifically evaluated an accident scenario involving the movement of a filled cylinder in the cylinder yard or other areas of the plant. This activity will be evaluated and if the scenario is an intermediate to high consequence event, Honeywell will include the accident sequence in the next update to the ISA Summary.

Planned License Renewal Application Revision

None

RAI 6-17

Section 11 of the LRA states, "Honeywell implements specified management measures to provide reasonable assurance that PFAP will perform their intended safety functions when needed to prevent accidents or mitigate the consequences of accidents to an acceptable level." The staff notes that management measures could play a broader safety role by making sure that facility changes do not degrade the level of safety (e.g., configuration management); that all controls (not just PFAP) are implemented as intended (e.g., training and qualification, procedures); that the overall safety program is made more robust because of audits and inspections; and that lessons for overall program improvement are drawn from the investigation of accidents and near misses.

Discuss whether management measures identified in the LRA play a broader role in safety in addition to assuring that PFAP would perform their intended safety functions when needed.

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

The management measures identified in the LRA do play a broader role in the safety of the plant. Section 11.1 of the LRA applies to PFAPs as well as other changes throughout the plant. The mechanism used to assure that safety is not degraded is the MTW management of change procedure. This along with other procedures such as the Right of Approval and PFAP management procedures assists in improving the overall safe operations of the facility.

Planned License Renewal Application Revision

None

RAI 6-18

PFAP 5 requires that hoses be tested "periodically." PFAP 85 requires "periodic" inspection of the crane cable.

Clarify the frequency of these "periodic" tests or inspections.

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

Both PFAP 5 and PFAP 85 are included in the MTW preventative maintenance (PM) program. The PM on PFAP 5 is that the hoses be tested annually and PFAP 85 requires an inspection of the crane cable every month.

Planned License Renewal Application Revision

None

RAI 6-19

The discussion in Section 1 of the ISA Summary states that the ISA Summary "focuses on higher risk accident sequences with consequences that could exceed the performance criteria of 10 CFR 70.61."

Amplify this statement. The staff notes that, since Section 7 of the ISA Summary addresses accident sequences that could exceed the performance requirements of 10 CFR 70.61, and therefore PFAP are required, as presented in Section 8 of the ISA Summary.

The information is required for the evaluation of the applicant's procedures for protecting health and minimizing the danger to life or property as required under 10 CFR 40.32(c).

Response

The Integrated Safety Analysis (ISA) Summary only discusses accident sequences for which the uncontrolled risk index indicates that Plant Features and Procedures (PFAP) would be required. This only occurs in eight accident sequences; TF-1, TF-5, RD-6, RD-7, FL-2, DI-3, DI-4, and DI-6 per Tables 7-1 and 8-3 of the ISA Summary. The ISA identifies 28 accident sequences in

Table 9.6-1. The uncontrolled risk index associated with the 20 accident sequences not identified in the ISA Summary are all less than or equal to 4 and therefore do not require PFAP per Section 7.5 of the ISA Summary. The ISA Summary highlights the 8 accident sequences of the 28 which must have one or more of the existing PFAPs to meet the requirements of 10 CFR 70.61.

Planned License Renewal Application Revision

None.

Honeywell Metropolis Works
USNRC Source Materials License SUB-526
Docket No. 40-3392

License Renewal Application
Responses to Requests for Additional Information
Section 7.0 – Fire Safety

RAI 7-1

Describe the qualifications and training of the Regulatory Affairs Manager specifically related to the area of Fire Protection.

Section 7.1 of the License Renewal Application (LRA), "Fire Safety Management Measures," states that the Regulatory Affairs Manager is responsible for the development and implementation of the fire protection program. Section 2.2.3, "Regulatory Affairs Manager," describes the qualifications of the Regulatory Affairs Manager. Regulatory Guide (RG) 3.55, "Standard Format and Content for the Health and Safety Sections of License Renewal Applications for Uranium Hexafluoride Production," states that the application should list the personnel in charge of implementing the fire protection program and provide adequate detail to ensure that staff are sufficiently technically competent to implement the programs and procedures important to safety.

Response:

Section 2.2.3 of the LRA requires the Regulatory Affairs Manager to have a four-year degree or equivalent experience in Engineering, Science, or related discipline with knowledge of applicable regulations and other standards. This requirement is satisfied for the current Regulatory Affairs Manager, because he holds a B.S. Degree in Occupational Safety and Health. This degree required coursework in fundamental fire protection practices and the National Fire Protection Administration standards. He also has over 25 years of experience at the site and is familiar with the regulatory requirements and the specific site programs in which they are implemented related to fire protection.

Planned License Renewal Application Revision

None

RAI 7-2

Describe the system used for dispensing and managing hot work permits.

Section 7.1.2, "Fire Prevention," of the LRA describes the fire prevention methods used by Honeywell, such as combustible audits, however there is no description of hot work performed or

hot work permits. RG 3.55, Section 9.7, "Fire Protection" states that the development of the fire protection program should be described.

Response:

Honeywell site procedure MTW-SAF-LS-0005, Revision 13, *"Hot Work Permits"* has been provided to the NRC for review. The procedure defines the minimum requirements for hot work activities. The requirements contained in the procedure are designed to minimize the risk of hot work activities and to protect personnel, property, and the environment. The scope of the procedure is to minimize the risk of fire and explosion from the hazards associated with any work involving heat, open flame, or spark producing devices. It also includes the use of equipment in electrically classified areas, confined spaces, or where potential exists for the development of combustible or flammable atmospheres. The procedure also designates responsibilities for the program, issuing permits, atmospheric testing, performance of hot work, fire watch requirements, and the conditional requirements for areas that require Hot Work Permits. Lastly, the attachments to the procedure contain valuable information including an example of the Hot Work Permit, the Hot Work Decision Tree (per NFPA 51B), and the Hot Work Field Verification Audit Checklist. The program is routinely audited by internal and external stakeholders to confirm compliance with applicable federal and Honeywell requirements.

Planned License Renewal Application Revision

None

RAI 7-3

Given that there are no fire-related Plant Features and Procedures (PFAP), describe the maintenance and testing program for fire protection apparatuses, including any annual testing performed by Honeywell MTW or the facility's insurance carrier. Additionally, detail if any fire protection systems are inspected and testing in accordance with codes and standards.

Section 11.2, "Maintenance," of the LRA describes the procedures and processes for maintenance of PFAP. Section 7.1.1, "Fire Safety Administration," of the LRA states that there are no PFAP for fire-related accidents. Section 7.1.3, "Inspection, Testing, and Maintenance," of the LRA states that routine testing and inspection of the plant fire apparatus and accessories is performed.

Response:

The inspection and testing of fire protection apparatuses are described in Honeywell site procedure MTW-ADM-FPP-0012, Revision 4, *"Fire Protection Systems and Maintenance"* that has been provided to NRC for review. The purpose of the procedure is to ensure that fire protection systems are properly installed and maintained to ensure they are functional when

needed. This includes standpipes, water supplies, and fire protection system inspections. The procedure designates the responsibilities and frequency of the testing for the various fire protection systems such as sprinklers, fire water control valves, hydrants, fire extinguishers, and clean agent suppression systems.

Planned License Renewal Application Revision

None

RAI 7-4

Describe fire protection related training provided to employees at MTW (i.e. training related to fire hazards, fire extinguisher, etc.) including any training for new employees and contractors.

Section 11.3, "Training and Qualification," of the LRA details the training provided to employees, but does not describe what specific fire protection related training employees and contractors receive. RG 3.55 states that the application should describe the training program, including fire protection.

Response:

Current Honeywell employees are required to attend monthly B Council safety meetings. Fire identification and actions taken upon the discovery of a fire are discussed annually in the meetings. New hire employees and contractors receive fire awareness and reporting training during the site indoctrination (see LRA Section 11.3.2.1 – *"New Employee Training"*) that must be completed prior to gaining unescorted access to the site. The site contract maintenance workers get additional training as part of the confined space rescue/fire training annually. The site is capable of incipient stage firefighting only and relies on the Massac County and City of Metropolis Fire Departments for any structural firefighting needs.

Planned License Renewal Application Revision

None

RAI 7-5

Describe the transient combustibles audits and the combustible control program for the MTW facility, including storage and disposal for combustible waste.

Section 7.1.2, "Fire Prevention," of the LRA states that transient combustible audits are performed to identify fire hazards. RG 3.55 states that "procedures for storage of combustibles and combustible contaminated waste should be described."

Response:

Honeywell site procedure MTW-ADM-FPP-0001, Revision 4, "*Control of Transient Combustibles and Ignition Sources*" which has been provided to NRC for review, establishes the requirements for the control of combustibles as an integral part of fire safety, housekeeping, and safe work practices. The procedure defines the responsibilities for the program along with definitions of transient combustibles and maximum safe limits of combustibles for each major facility area that assures compliance with the National Fire Protection Association (NFPA) and International Building Code (IBC) requirements. The procedure identifies the combustible material storage requirements which includes flammable and combustible liquids, flammable gases, aerosol cans, liquefied petroleum gas, wood, combustible metals, and waste materials. Other specific requirements are also included such as the frequency of transient combustible audits, resolution of audit findings, transient combustible permitting, and addenda that provide the transient combustible storage limits, material inspection form, and an example of the transient combustible permit.

Planned License Renewal Application Revision

None

RAI 7-6

Describe training provided to the emergency response team at MTW.

Section 7.1.2, "Emergency Response Organization," of the LRA states that the MTW Emergency Response Plan (ERP) establishes requirements for the Emergency Response Team training, however, no requirements were found in the ERP. RG 3.55, Section 9.7, "Fire Protection" states that the application should describe the firefighting training.

Response:

As stated in the response for RAI 7-4, the site contract maintenance workers receive additional training as part of the confined space rescue/fire training annually. The site is capable of incipient stage firefighting only and relies on the Massac County and City of Metropolis Fire Departments for any structural firefighting needs. The Emergency Response Plan and the Emergency Plan Implementing Procedures describe the identification, classification, notification, and coordination with the off-site emergency response organizations in the event of a beyond incipient stage fire.

Planned License Renewal Application Revision

None