

# **Metropolis Works**

**Pre-Decisional Enforcement Conference**

## **Nuclear Regulatory Commission**

*Atlanta, Georgia*

**27 August 2012**

**Honeywell**

# Agenda

- **Introduction & Background**
- **Overview of MTW Licensing Basis**
- **Apparent Violation 1 (AV-1)**
- **Apparent Violation 2 (AV-2)**
- **Additional Information**
- **Mitigating Circumstances**
- **Severity Level**
- **Enforcement Discretion**
- **Summary and Closing Remarks**

# Introduction

- Committed to ensuring the safety, health, and well-being of employees & community where we operate
  - Since 2006, made significant capital investments in MTW (\$10s million) with more planned in the next five years before the most recent inspection
  - Significant investments in projects that directly support Health, Safety, and the Environment (HS&E) and Emergency Response (per our existing and communicated ISA)
    - ◆ Enhanced material transfer equipment and improved seal technology
    - ◆ Firewater and fire protection upgrades
    - ◆ Dedicated Emergency Response trailer and installation of new sirens
- Licensee Performance Review (May 2012)
  - Honeywell continued to conduct its activities safely
  - Areas of safety operations, radiological controls, facility support, and special topics were adequately implemented
  - No areas of improvement were identified

***MTW Committed to Protecting Health and Safety***

# Introduction

- Honeywell is dedicating significant resources to evaluating the issues identified in the TI inspection
  - Both MTW and Honeywell corporate actively engaged
  - Multiple meetings with NRC (Staff and Commission)
- Honeywell is taking prompt and comprehensive actions to address the issues identified by the NRC
  - Work to address risks was already underway at time of TI inspection
  - Restart Plan is currently under development
- TI Findings are part of NRC's post-Fukushima response
  - Relate to safety margins for consideration of beyond-design-basis events
  - Not enforcement matters

***MTW Committed to Addressing TI Findings***

# Background

- **May 21-24, 2012: post-Fukushima Temporary Inspection**
  - MTW plant shut down at the time
- **July 13, 2012: Confirmatory Action Letter issued**
  - Requires written NRC approval before restart
- **August 9, 2012: TI Inspection Report 40-3392/2012-0006**
  - Identified two apparent violations:
    - ◆ AV-1: Failure to identify all relevant accident sequences related to credible seismic events and tornadoes that could result in large uranium hexafluoride (UF<sub>6</sub>) releases
    - ◆ AV-2: Failure to provide complete and accurate information related to MTW's emergency response plan (ERP) as required by 10 CFR 40.9(a)
- **Current Status**
  - Plant remains shut down per NRC request
  - Anticipate 12 months to make necessary upgrades

***MTW Remains Shut Down to Address TI Findings***

# Seismic Licensing Basis Overview

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- **Seismic Licensing Basis**
  - Late 1950s - original design & construction met seismic and tornado standards, including building codes (UBC and BOCA), in use at the time
  - 1991 Leighton & Associates Study
    - ◆ Licensing Maximum credible earthquake (MCE) determined to be 475-year event
  - **1993 EQE Conceptual Modifications Report**
    - ◆ Identified structural modifications to Feed Materials Building (FMB) and tank farm to meet 475-year MCE; did not address piping
  - **1993-1998 MTW implemented upgrades (e.g., seismic bracing in FMB)**
  - **1998 Inspection Reports conclude MTW meets licensing basis**
    - ◆ IR 98-201 (Sept. 1998): NRC noted that "the strengthening modifications recommended for the [FMB] were complete." Identified seismic vulnerabilities with Tanks Farm AHF and UF<sub>6</sub>. URI was opened for tank farm and UF<sub>6</sub>.
    - ◆ IR 98-202 (Dec. 1998):
      - NRC reviewed the highest risk vessels (i.e., containing largest volumes of liquid UF<sub>6</sub>) within FMB and determined vessels able to withstand a "credible" earthquake.
      - Highest risk was failure to complete the structural upgrades for AHF. URI closed based on commitment to complete AHF seismic upgrades. IFI 98-202-1 opened to track to completion. IFI 98-202-1 closed Nov. 1999 with no further concerns identified.

***Licensing Basis = 475-Year Earthquake***

# Seismic Licensing Basis Overview, cont'd

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- **License Renewal Licensing Basis**
  - Continuation of licensing basis (i.e., 475-year event is MCE)
  - Not committed to NUREG-1520, but approach generally consistent with NRC guidance
    - ◆ “The applicant should also provide earthquake accelerations for the site associated with a 250-year and 500-year earthquake.”
    - ◆ “The discussion should identify all design-basis natural events for the facility, indicate which events are considered incredible, and describe the basis for that determination. The assessment should also indicate which events could occur without adversely impacting safety.”
  - **2006 ISA Summary at Section 5.2.1 (page 5-9):**
    - ◆ “[T]he plant is designed to withstand the 475-year earthquake with no safety implications.”
    - ◆ “[T]here are no design basis accidents associated with seismic events.”
  - **Licensing basis linked to deterministic licensing basis, not ISA performance requirements**

***License Renewal Did Not Change Licensing Basis***

# Seismic Licensing Basis Overview, cont'd

- License Renewal Licensing Basis
  - NRC accepted Honeywell definitions of "credible" in MTW license
    - ◆ Consistent definition in SDR, ERP, and ISA
    - ◆ LR TER: "NRC staff concludes that credible accident scenarios at the MTW have been adequately evaluated."
  - MTW ISA definition of "credible" linked to design basis accidents
    - ◆ ISA determined "accident sequence risk assessment demonstrates that credible high-consequence events are highly unlikely and credible intermediate-consequence events are unlikely."
  - MTW ISA specifically defines "credible accidents"

Credible Accidents	Non-Credible Accidents
HF rail car unloading	HF storage tank rupture
NH <sub>3</sub> unloading	NH <sub>3</sub> storage tank rupture
UF <sub>6</sub> cylinder filling (pigtail)	UF <sub>6</sub> product cylinder failure
Still Feed Tank vapor release	Still Feed Tank failure (liquid release)

***"Credible" Defined in MTW License***



# Tornado Licensing Basis Overview

- **License Renewal ISA concludes:**
  - Direct strike not credible, based on FMB/tank farm area
  - Unlikely that a tornado missile striking tank farm could result in a chemical release
    - ◆ Bechtel Topical Report BC-TOP-3 guidance
    - ◆ MTW not committed to NUREG/CR-4461, “Tornado Climatology of the Contiguous United States”
  - Storage tanks adequate to prevent a chemical release
  - No design basis accident that requires a PFAP
- **License Renewal TER:**
  - “NRC staff concludes that credible accident scenarios at the MTW have been adequately evaluated.”

***Tornado Hazard Methodology Accepted by NRC***

# Apparent Violation 1

*AV-1: Failure to identify all relevant accident sequences related to credible seismic events and tornadoes that could result in large uranium hexafluoride ( $UF_6$ ) releases for which protective actions may be needed as required by 10 CFR 40.31(j)(3)*

- **AV-1 does not establish a non-compliance with current licensing basis**
- **Licensing documents use consistent definition of credible seismic event**
  - 475-year earthquake is Maximum Credible Earthquake
  - Less frequent events are, per the MTW licensing documents, not credible
  - Definition of credible is incorporated into ERP
  - ERP definition of “credible” seismic event is the same as in the SDR and ISA

**AV-1 Does Not Establish Non-Compliance**

# Apparent Violation 1, cont'd

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- No regulatory basis for using different definition of "credible" for AV-1
  - No regulatory requirements or standards apply to MTW ISA
  - Violation cannot be premised on NRC definition of "credible" for Part 70 facilities, since Part 70 does not apply
- Tornado hazards – no non-compliance with tornado licensing basis
  - No prescriptive tornado hazard methodology in regulations
  - MTW not committed to specific guidance (e.g., NUREG/CR-4461)
  - NRC accepted Honeywell tornado methodology
- Honeywell does not agree that UF<sub>6</sub> volume released in "credible" event, as defined by licensing basis, would be significantly larger than assumed in ERP

***No Regulatory Basis for AV-1***

# Apparent Violation 2

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*AV-2: Failure to provide complete and accurate information related to MTW's emergency response plan as required by 10 CFR 40.9(a)*

- Accident evaluations disclosed previously, including Leighton (1991), EQE (1993), NRC IRs (1998), and ISA (2006)
- ERP incorporates worst-case “credible” accidents as defined by licensing basis
  - MTW licensing documents use consistent definition of “credible”
  - ERP definition of “credible” is the same as SDR and ISA
  - Section 2.1.1, Maximum Credible UF<sub>6</sub> Release = pigtail failure
- ERP identifies each type of accident for which protective actions may be needed, based on MTW licensing basis
- Honeywell provided complete and accurate information in ERP, based on MTW licensing basis

***No Incomplete or Inaccurate Information***

# Additional Information

- **Causal Factors**

- **Hazard Identification**

- ◆ Limited historical documentation of seismic or tornado design bases
    - ◆ No prescriptive regulatory standards for seismic or tornado licensing basis acceptability or methodology
    - ◆ Changing hazard information over time

- **Regulatory Considerations**

- ◆ Original license was deterministic
    - ◆ Shift from deterministic to performance-based regulation over time, but without change in regulations
      - Lack of regulatory requirements or acceptance criteria for seismic/tornado evaluations or ISA
      - Lack of guidance on seismic or tornado licensing bases for conversion facilities
      - Lack of clearly-defined acceptance criteria for ERP accident evaluations
    - ◆ License renewal based on continuation of existing licensing basis; involved limited-scope reviews

## ***Evolving Hazards and Regulatory Expectations***

# Additional Information, cont'd

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- Honeywell identified risks and potential accidents previously
  - Risk identified during PHAs for proposed Part 40 ISA rule
  - All accident initiators were identified by Honeywell before TI inspection
  - Honeywell briefed NRC on ISA work
    - ◆ December 17, 2010 Meeting in Atlanta (ML103540064)
    - ◆ March 19, 2012 Meeting in Rockville
    - ◆ June 26, 2012 Meeting in Atlanta (canceled)
- **Many enhancements already planned as part of proposed Part 40 ISA effort**
- **Conclusion: Issues were self-identified, but not regulatory violations**

***Credit for Self-Identification***

# Additional Information, cont'd

Honeywell

- **Corrective Actions**

- Plant shut down in response to TI findings and NRC concerns
- Will Ensure the continued safety, health, and well-being of our employees and the community
- **Construction activities being planned before restart include:**
  - ◆ Upgrades to the FMB and supporting infrastructure
  - ◆ Installation of isolation valves for major equipment
  - ◆ Confinement and venting for the FMB to provide dilution/dispersion
  - ◆ Installation of missile shields
- **Full scope of corrective actions tied to restart plan, which is currently being developed pursuant to discussions with NRC Staff**

- **Overall: If NRC issues NOVs, Honeywell should receive credit under Enforcement Policy for both self-identification and corrective actions**

***Credit for Extensive Corrective Actions***

# Mitigating Circumstances

- Significant historical and regulatory uncertainty
  - Issue is not new – dates back to early 1990s
  - Lack of clear regulatory standards and design basis
  - No actual safety consequences
- Prompt recognition of NRC concerns
  - Ensuring the continued safety, health, and well-being of our employees and the community where we operate
  - Developing plan for comprehensive corrective actions
  - MTW will not restart until NRC concerns are addressed/resolved
- Current issue relates to post-Fukushima reviews of "beyond-design-basis events"
  - This is a Commission policy issue, related to margin of safety for severe accidents, not an enforcement matter
  - Violation(s) not appropriate under these circumstances

***Strong Mitigating Circumstances Exist***



# Severity Level

- **AV-1 – Identification of Accident Sequences**
  - If NRC issues NOV, SL III is appropriate
  - Analogous SL III Examples
    - ♦ Materials Operations – System designed to prevent /mitigate a serious safety event has one of the following characteristics: (a) unable to perform its intended function under certain conditions, or (b) outside design specifications to the extent that a detailed evaluation is required to determine its operability.
    - ♦ Fuel Cycle Operations – For licensees not under Part 70, Subpart H, a substantial increase in the likelihood of a consequence commensurate with a Part 70 high consequence occurs.
    - ♦ Emergency Preparedness - Ability to implement regulatory requirement related to assessment or notification is degraded such that effectiveness of the ERP decreases.
  - SL II not appropriate since no actual event/emergency or prescriptive ERP acceptance criteria
- **AV-2 – Incomplete and Inaccurate Information**
  - If NRC issues NOV, SL IV is appropriate
    - ♦ No actual safety consequences
    - ♦ Only became inaccurate, if at all, due to changed NRC interpretations

***If Violations, At Most SL III (AV-1) or SL IV (AV-2)***

# Enforcement Discretion

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- **Alternatively, Enforcement Discretion is Appropriate**
  - NRC should use Enforcement Discretion to refrain from issuing NOVs
  - Appropriate given longstanding licensing bases and strong mitigating circumstances
  - Sections 3.1, 3.2, and 3.5 of Enforcement Policy are applicable
- **Honeywell in Extended Shutdown (Section 3.1)**
  - Issue documented in inspection report
  - The violation preceded the shutdown
  - Issues identified during PHAs for proposed Part 40 rule
  - Violation is not SL I
  - Restart requires NRC approval (per CAL)

***NRC Should Exercise Enforcement Discretion***

# Enforcement Discretion, cont'd

- **Issue Involves Old Design Issues (Section 3.2)**
  - Involves historic design/engineering issue
  - Documented in an Inspection Report
  - Identified by MTW during PHAs for proposed Part 40 rule
  - Conduct not linked to present performance
- **Special Circumstances Exist (Section 3.5)**
  - **Strong mitigating circumstances**
    - ◆ Age of the violation
    - ◆ Regulatory requirements not clear (e.g., no ISA requirement in Part 40)
    - ◆ Evolving regulatory expectations and absence of prescriptive guidance
    - ◆ Excellent recent performance at MTW
  - **Remain shut down per NRC request**
  - **Comprehensive corrective actions planned prior to restart**

***NRC Should Exercise Enforcement Discretion***

# Summary

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- **AVs are inconsistent with MTW licensing basis**
  - There is no prescriptive or regulatory definition of "credible"
  - Honeywell's definition of "credible" included in licensing documents and based on longstanding terminology
  - Definition of credible consistent across SDR, ISA, and ERP
- **Involves Commission policy issue**
  - Post-Fukushima safety margins for severe accidents
  - Not a matter of compliance with current licensing basis
- **Alternatively, NRC should exercise enforcement discretion and decline to issue NOV**

***NRC Should Not Issue NOVs***

# Closing Remarks

Honeywell

- Committed to ensuring the continued safety, health, and well-being of our employees and the community where we operate
  - Significant capital investment, including HS&E and Emergency Response
  - Major improvements in operations and safety performance
  - Major effort underway to comply with Part 40 ISA rule
- Taken significant steps to respond to TI issues, but....
- Honeywell needs regulatory certainty
  - Need near-term clarity on relationship among licensing basis and restart, and post-Fukushima enhancements
  - Parallel enforcement action not appropriate path for resolving these issues (and creates additional uncertainty)
- Continue to work with NRC to resolve these issues in timely manner

***MTW Will Ensure Safe Operations***