

December 7, 2016

Mr. John Albritton
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SUBJECT: CLOSURE OF GENERIC LETTER 2015-01, "TREATMENT OF NATURAL PHENOMENA HAZARDS IN FUEL CYCLE FACILITIES," FOR THE HONEYWELL METROPOLIS WORKS FACILITY

Dear Mr. Albritton:

On June 22, 2015, the U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2015-01, "Treatment of Natural Phenomena Hazards (NPH) in Fuel Cycle Facilities." (Agencywide Documents Access and Management System [ADAMS] Accession No. ML14328A029). GL 2015-01 was issued for two purposes: (1) to request that addressees submit information to demonstrate compliance with regulatory requirements and applicable license conditions regarding the treatment of natural phenomena events in the facilities' integrated safety analysis (ISA); and (2) to determine if additional NRC regulatory action is necessary to ensure that licensees comply with their licensing basis and existing NRC regulations.

The NRC staff has completed its evaluation of the Honeywell Metropolis Works (Honeywell) response to GL 2015-01 dated September 16, 2015 (ADAMS Accession No. ML15273A244). The results are documented in the enclosed Staff Evaluation Report.

Based on the evaluation of Honeywell's response to GL 2015-01 and previous evaluations of Honeywell's responses to Confirmatory Order NRC-2012-0244, the NRC staff concludes that Honeywell has performed appropriate evaluations of NPH at the Honeywell and has adequately addressed the requested actions in GL 2015-01. As a result, GL 2015-01 is considered closed.

J. Albritton

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In accordance with Title 10 of the *Code of Federal Regulations* Section 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System component of the NRC's ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

/RA BSmith for/

Craig G. Erlanger, Director
Division of Fuel Cycle Safety, Safeguards,
and Environmental Review
Office of Nuclear Material Safety
and Safeguards

Enclosure:
Staff Evaluation Report

Docket No. 40-3392

J. Albritton

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ADAMS Accession Number: ML16252A096

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**STAFF EVALUATION OF THE RESPONSE TO GENERIC LETTER 2015-01,
“TREATMENT OF NATURAL PHENOMENA HAZARD IN FUEL CYCLE FACILITIES”
HONEYWELL METROPOLIS WORKS FACILITY
DOCKET NUMBER: 040-3392**

I. Background

On June 22, 2015, the U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2015-01, “Treatment of Natural Phenomena Hazards in Fuel Cycle Facilities” (Agencywide Documents Access and Management System [ADAMS] Accession Number ML14328A029). GL 2015-01 was issued for two purposes: (1) to request that addressees submit information to demonstrate compliance with regulatory requirements and applicable license conditions regarding the treatment of natural phenomena events in the facilities’ integrated safety analysis (ISA); and (2) to determine if additional NRC regulatory action is necessary to ensure that licensees comply with their licensing basis and existing NRC regulations. By letter dated September 16, 2015, Honeywell Metropolis Works (Honeywell) responded to GL-2015-01 (ML15273A244). The purpose of this evaluation report is to document the staff’s review of Honeywell’s response to GL 2015-01 to determine if the potential effects of NPH events were adequately addressed.

In May 2012, NRC staff performed a Temporary Instruction inspection (TI 2600/015) at Honeywell related to the agency's "post-Fukushima" nuclear facilities assessment effort. This TI inspection evaluated the adequacy of and compliance of the facility to prevent and/or mitigate the consequences of selected natural phenomena events. Subsequent to the TI inspection, a Confirmatory Order (CO) (EA-12-157) (ML12289A800) was issued on October 15, 2012, directing Honeywell to reassess the facility's design safety basis for seismic and high wind/tornado external events. The CO also documented Honeywell's agreement to implement certain corrective actions prior to restarting operations.

In response to the TI findings and CO, Honeywell developed a Safety Basis and Corrective Action Plan (SBCAP) implementing significant modifications to plant structures, systems, and components. The SBCAP provided specific details pertaining to Honeywell's seismic and high wind/tornado safety design bases, associated risk analyses, and risk mitigation actions.

The NRC staff reviewed the information in Honeywell’s SBCAP and documented its conclusion in a Technical Evaluation Report (TER) (ML13168A187) dated June 25, 2013. The staff concluded that Honeywell had met the requirements of Section IV.1 of the CO. The staff performed inspections during 2013 (ML13101A092 and ML13168A069) and verified that Honeywell implemented the requirements of the CO. Upon completion of the evaluation in the TER and the inspection of the modifications, the NRC confirmed Honeywell's implementation of the CO and granted Honeywell the authorization to resume full operations in July 2013.

Enclosure

As a final condition of the CO, Honeywell was required to submit a revised ISA Summary within 6 months subsequent to restart. The revised ISA Summary was submitted on October 28, 2013. The staff documented its evaluation of the ISA Summary with regard to seismic and high wind/tornado events in an evaluation report dated June 2, 2014 (ML14042A396). The NRC staff found that "...the requirement to revise the ISA Summary as delineated in the NRC order has been met by Honeywell and that adequate commitments are in place to maintain the safety basis for seismic and high wind/tornado events as described in the reference documents."

Although Title 10 of the *Code of Federal Regulations* (10 CFR) Part 70 requirements are not applicable to Honeywell facility, Honeywell is using the ISA processes and makes commitments to meet selected requirements equivalent to those described in 10 CFR Part 70, Subpart H. Therefore, Honeywell elected to provide requested information related to seismic and high wind/tornado events by referencing appropriate sections of the ISA Summary.

GL 2015-01 Requested Actions

In the GL, the staff requested that all addressees provide information to verify the assumptions in their facility's ISA regarding how each facility provides adequate protection against the occurrence of natural phenomena events. Specifically, the staff asked that addressees take the following actions:

- a) Submit definitions of "unlikely," "highly unlikely," and "credible" in evaluating natural phenomena events in the ISA such as earthquakes, tornadoes, tornado missile impacts, floods, hurricanes, and other wind storms.
- b) Submit a description of the safety assessment for the licensing and design basis natural phenomena events, including the following information:
 - i. likelihood and severity of the natural phenomena events, such as earthquakes, tornadoes, floods, hurricanes, and other wind storms;
 - ii. accident sequences as a result of natural phenomena event impacts to facility structures and internal components;
 - iii. assessment of the consequences for the accident sequences from item ii that result in intermediate and/or high consequence events; and
 - iv. items relied on for safety (IROFS) to prevent or mitigate the consequences of the events from items ii and iii.

- c) For facilities subject to 10 CFR Part 70, Subpart H requirements, submit a description of the results of the ISA review used to comply with 10 CFR 70.62(c), identifying the characteristics of the licensing and design basis natural phenomena events applicable to the site, that evaluates possible changes in the methodology, likelihood, and severity of natural phenomena events with those used in the original design/evaluation of the facility.
- d) Submit for staff review a summary of the results of any facility assessments or walk downs, if performed, to identify and address degraded, nonconforming, or unanalyzed conditions that can affect the performance of the facility under natural phenomena and have available for NRC inspection the documentation of the qualifications of the team.

II. Honeywell Response to GL 2015-01 and Staff Evaluation

NRC GL 2015-01, Requested Action (1)a: Submit the definitions of “unlikely,” “highly unlikely,” and “credible” in evaluating natural phenomena events in the ISA such as earthquakes, tornadoes, tornado missile impacts, floods, hurricanes, and other wind storms.

Honeywell submitted definitions of “unlikely,” “highly unlikely,” and “credible” by referencing Section 9.1.3 and Section 9.2.3 of the ISA Summary.

The staff has previously evaluated and accepted the definitions for NPH events in the ISA Summary and documented its findings in its evaluation report dated June 2, 2014 (ML14042A396). Therefore, the staff finds that Honeywell has adequately responded to GL 2015-01 Requested Action (1)a.

NRC GL 2015-01 Requested Action (1)b: Submit a description of the safety assessment for the licensing and design basis natural phenomena events, including the following information:

- i. likelihood and severity of the natural phenomena events, such as earthquakes, tornadoes, floods, hurricanes, and other wind storms;
- ii. accident sequences as a result of natural phenomena event impacts to facility structures and internal components;
- iii. assessment of the consequences for the accident sequences from item ii that result in intermediate and/or high consequence events; and
- iv. IROFS to prevent or mitigate the consequences of the events from items ii and iii.

Honeywell referenced ISA Summary sections for each of the above requested actions in Table 1, "References in Response to Requested Actions, Section (1) of the Generic Letter 2015-01," of their GL response. The staff previously reviewed the revision to the Honeywell ISA Summary regarding seismic and high wind/tornado events. The staff documented its findings and acceptance in its evaluation report dated June 2, 2014 (ML14042A396).

For flooding events, Honeywell submitted an analysis of flooding potential at the Metropolis facility titled "Metropolis Works (MTW) Facility Flooding Analysis" dated April 26, 2012. Honeywell stated that even though the Honeywell Metropolis Works (MTW) site is in close proximity to the Ohio River, the site is located at a significantly higher elevation than the surrounding areas, and is outside of the 500-year floodplain. Although the licensee concludes in its response to GL 2015-01 that the risk of flooding due to an increase in the level of the river is not credible, the facility flooding analysis states, in part, that it is reasonable to assume that in the case of a catastrophic rise in river level there would be sufficient time to place the plant into a safe configuration to minimize damage. In addition, the analysis recommended that procedures should be in place to put the plant in a safe configuration. Honeywell has committed to including the flood analysis in the next revision of the ISA Summary.

The staff reviewed the flooding analysis and compared it to topographical and historical flooding data near the facility and concludes that it is highly unlikely that the facility will experience a flood that will challenge safe operations. The staff notes that Honeywell defines the term credible in Section 4.2 of its ISA Summary as external hazard events with an initiating event frequency greater than 10^{-6} year. Therefore, in the case of flooding, the initiating event frequency is greater than 10^{-6} year which categorizes the event as one that is credible. However, based on current data available for the site location, the staff agrees that the site is located outside the 1 percent (100 year flood) and 0.2 percent (500 year) annual chance floodplains. The staff recognizes the slow development of a flooding scenario which allows time for plant workers to reduce the material, including hazardous chemicals that are at risk of being released by a flood. The staff also notes that the flooding scenario that could cause a release of hazardous chemicals would also make it very difficult for individuals to be near the release point such that there could be an acute exposure that would result in high or intermediate consequences as defined in Chapter 4 of the MTW Integrated Safety Analysis Summary and in 10 CFR 70.61. Overall, the staff found the information provided by Honeywell adequately supports the staff position that it is highly unlikely that flooding could result in any high or intermediate events as defined Chapter 4 of the MTW ISA Summary and in 10 CFR 70.61.

Therefore, based on its previous evaluations regarding seismic and high wind events, a review of Honeywell's location with respect to flooding, and Honeywell's commitments to include flooding in the next revision of the ISA Summary, the staff finds that Honeywell has adequately responded to NRC GL 2015-01 Requested Action (1)b.

NRC GL 2015-01 Requested Action (1)c: For facilities subject to 10 CFR Part 70, Subpart H requirements, submit a description of the results of the ISA review used to comply with 10 CFR 70.62(c), identifying the characteristics of the licensing and design basis natural phenomena events applicable to the site, that evaluates possible changes in the methodology, likelihood, and severity of natural phenomena events with those used in the original design/evaluation of the facility.

Honeywell referenced the following sections of its licensing documentation to address this question in response to GL 2015-01: Section 9.1, Seismic External Event ISA Summary; Section 9.2; Risk Analysis, SBCAP, Rev. 3, Section Wind/Tornado Event Safety Basis; MTW Seismic Event Safety Basis; SBCAP, Rev.3, Section IV; MTW Wind/Tornado Event Safety Basis; and Attachment III, MTWRPT-GEN-0003, Rev.1, Project Report for Metropolis Works (MTW) Facility Flooding Analysis.

The staff has previously reviewed the revision to the Honeywell ISA Summary regarding seismic and high wind/tornado events. The staff documented its findings and acceptance in its evaluation report dated June 2, 2014 (ML14042A396).

The staff has evaluated the flooding analyses submitted by Honeywell as described in (1)b. Based on the previous evaluation of the ISA Summary and the evaluation of flooding as presented in (1)b., the staff finds that Honeywell has adequately responded to GL 2015-01 Requested Action (1)c.

NRC GL 2015-01 Requested Action (1)d: Submit for staff review a summary of the results of any facility assessments or walk downs, if performed, to identify and address degraded, nonconforming, or unanalyzed conditions that can affect the performance of the facility under natural phenomena and have available for NRC inspection the documentation of the qualifications of the team.

Honeywell referenced the following in response to this action in the GL: SBCAP, Rev. 3, Section III; MTW Seismic Event Safety Basis, specifically Section 2c.; Seismic Safe-Guards Identification and Scope Description; SBCAP, Rev.3, Section IV; MTW Wind/Tornado Event Safety Basis, specifically Sections C.2., Modified Tornado Risk Analysis, C.4; Tornado Risk Protection Considerations, and C.5, TI Compliance Tornado Scope Items.

The staff has previously evaluated and inspected Honeywell's facility assessments and walk downs that were used as basis to demonstrate compliance with the CO and information from the SBCAP (ML131550608) submitted by Honeywell to support their restart. In performing this review, the staff considered the safety basis as the current physical configuration of the facility and components. The staff documented its findings and acceptance in a technical evaluation report dated June 25, 2013 (ML13168A187).

Therefore, the staff finds that Honeywell has adequately responded to NRC GL 2015-01 Requested Action (1)d.

III. Conclusion

On the basis of this evaluation and previous evaluations of Honeywell's responses to the CO, the NRC staff finds that Honeywell has performed appropriate evaluations of NPH at the Honeywell facility. Therefore, the staff concludes that Honeywell has adequately addressed the requested actions discussed in GL 2015-01.