September 25, 2008

Mitch Tillman
Plant Manager
Honeywell Metropolis Works
P.O. Box 430
Highway 45 North
Metropolis, IL 62960

SUBJECT: REVIEW OF CALENDAR YEAR 2007 CONFIGURATION CHANGES, INTEGRATED SAFETY ANALYSIS AND SAFETY DEMONSTRATION REPORT CHANGES, HONEYWELL METROPOLIS WORKS (TAC NO. L32423)

Dear Mr. Tillman:

By letter dated January 21, 2008, Honeywell Metropolis Works (MTW) provided its configuration changes, integrated safety analysis (ISA) and safety demonstration report changes made to its facility during calendar year 2007, as required by Honeywell Material License Condition (LC)-20. LC-20 was imposed by the U. S. Nuclear Regulatory Commission (NRC) via a letter dated May 11, 2007, and it requires Honeywell to submit all changes that affect the MTW ISA to the NRC for review within 30 days after the end of the calendar year in which the changes, either a revised ISA or revised ISA pages, as appropriate, were implemented.

By letter dated July 23, 2008, the staff issued a request for additional information by selecting a diverse sampling of changes from Honeywell MTW's list and requested detailed reviews of these changes to determine whether any of these ISA revisions were potentially safety significant. The staff also requested Honeywell's evaluation results that were documented in its Plant Features and Procedures Review Report, issued on November 5, 2007, for each of these selected ISA changes.

In a correspondence dated July 30, 2008, Honeywell provided the requested information to the staff. The staff reviewed Honeywell's evaluation results for the selected ISA revisions and found that either adequate safety measures were in place or administrative in nature. The staff's individual review results of the selected ISA revisions and/or changes to ISA pages are documented in the enclosure.

The staff has determined that the Honeywell MTW facility changes which have been reviewed by the staff were appropriately made in accordance with the requirements of LC-20, and that prior NRC approval for these changes was not required. Therefore, the staff has no further questions at this time. The NRC Technical Assignment Control (TAC) number associated with this effort (L32423) is closed upon issuance of this letter.

If you have any questions regarding this matter, please contact Ms. Tilda Liu, Project Manager for Honeywell MTW, at 301-492-3217 or via email to tilda.liu@nrc.gov.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Section 2.390 of the NRC's Rules of Practice, a copy of this letter will be available electronically from the Publicly Available Records component of NRC Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Website at http://www.nrc.gov/reading-rm/adams.html.

Sincerely,

/RA/

Brian W. Smith, Chief
Enrichment and Conversion Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

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

Enclosure: Review of Selected Integrated Safety Analysis Change Evaluations

cc: Larry Parscale, Honeywell

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cc: Larry Parscale, Honeywell

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Honeywell Metropolis Works (MTW)
Review of Selected 2007 Integrated Safety Analysis (ISA) Change Evaluations

1. Plant Features and Procedures (PFAP) 36

Modification to PFAP36 affects the following four (4) Honeywell MTW 2007 ISA pages. Therefore, the staff's review and analysis for one of these pages are also applicable to another page and/or other pages as appropriate.

1.1 ISA Page 8-4: Section 8.4, Reduction

Findings

Does the change create a new type of accident sequence that, unless mitigated or prevented, would exceed the performance requirements as described in the MTW ISA?
YES ☐ NO ☒

Does the change use new processes, technologies, or control systems for which the licensee has no prior experience? YES ☐ NO ☒

Does the change remove any Plant Features and Procedures (PFAP) without equivalent replacement of the safety function? YES ☐ NO ☒

Does the change alter any sole PFAP? YES ☐ NO ☒

Is the change prohibited by other regulations? YES ☐ NO ☒

Conclusion

This revision specifically addresses potential impact from process stack emissions in which the associated statement, "HF in the exhaust gas is removed by scrubbers for each dust collection train," is being removed and replaced with "The operator can manually shutdown ammonia feed if the interlock fails. The operator can also manually shutdown raw material feed to the reductors." The deletion of "HF in the exhaust gas is removed by scrubbers for each dust collection train" contained in Section 8.4, Reduction, is not a plant physical configuration change; instead, it is an incorrect identification of safety feature and another safety feature was designated to prevent the accident sequence Reduction (RD)-6, failure of the process gas incinerate system. Specifically, the current PFAP36 is being deleted and replaced with new PFAP36 mitigating the Accident Scenario RD-6. The new PFAP36 requires that operators verify automatic actions associated with a failure of the off-gas system and take any necessary actions to ensure that the system is shutdown.

The staff has reviewed the licensee's submittal and its response to the staff's RAI, and found the proposed change acceptable.

1.2 ISA Page 9-62: Accident Identifier RD-6

Findings

Does the change create a new type of accident sequence that, unless mitigated or prevented, would exceed the performance requirements as described in the MTW ISA?
YES ☐ NO ☒

Does the change use new processes, technologies, or control systems for which the licensee has no prior experience? YES ☐ NO ☒

Does the change remove any Plant Features and Procedures (PFAP) without equivalent replacement of the safety function? YES ☐ NO ☒

Does the change alter any sole PFAP? YES ☐ NO ☒

Is the change prohibited by other regulations? YES ☐ NO ☒

Conclusion

This revision addresses PFAP36 where the existing ISA specifies the Green Salt Dust Collector Scrubbers as a safety feature and PFAP. This is erroneous as the scrubbers are not associated with the redactor off-gas flow to the incinerator and do not prevent or mitigate the accident scenario. This revision corrects this error from exhaust gas scrubbers to operator's monitoring. This is not a plant physical configuration change; instead, it was an incorrect identification of safety feature made in the PFAP 36.

Additionally, the proposed revision modifies the associated failure probability index from -3, originally corresponding to a single passive engineered control (PEC), to -2, corresponding to a single administrative control (AC), for PFAP36. Honeywell stated in its January 21, 2008 submittal that a failure probability index of -2 was selected for PFAP36. This appears to be in error because the staff noted that the failure probability index of -3 for PFAP36 is listed in current MTW ISA. In its response to the staff's RAI dated July 30, 2008, Honeywell MTW stated that the failure index assigned to the original PFAP36 was -3. As operator manual actions mitigate the failure probability and accident likelihood, PFAP36 is being changed from exhaust gas scrubbers, which is a PEC, to operators monitoring, which is an AC. Consequently, the associated failure probability index was recalculated from -3 to -2 and the likelihood index was changed from -7 to -6. As shown in the table below, a Likelihood Index of -7 or -6 results in Likelihood Category of 1, i.e., Highly Unlikely.

Likelihood Category	Likelihood Index, T
1 (Highly Unlikely)	$T < -5$
2 (Unlikely)	$-5 \leq T \leq -4$
3 (Not Unlikely)	$-4 < T$

In its submittal dated July 30, 2008, Honeywell MTW provided it's PFAP36 modification originally prepared on November 21, 2007, where detailed risk evaluation was performed pertaining to this change. The staff noted that the proposed replacement for PFAP36 will not be equally or more reliable than the original PFAP36 since the Likelihood Index increased from -7 to -6. Because the Likelihood Category remains at 1 (i.e., Highly Unlikely), and the replacement PFAP36, which

is supported by formal operating and training procedures, requires operator actions to maintain safety conditions under Honeywell MTW's administrative control process, the replacement PFAP36 will continue to demonstrate that the associated performance requirements will be met.

The staff has reviewed the licensee's submittal and its response to the staff's RAI, and found the proposed changes acceptable.

1.3 ISA Page 9-13: Table 9-1, Plant Features and Procedures (PFAP)

Findings

Does the change create a new type of accident sequence that, unless mitigated or prevented, would exceed the performance requirements as described in the MTW ISA?
YES ☐ NO ☒

Does the change use new processes, technologies, or control systems for which the licensee has no prior experience? YES ☐ NO ☒

Does the change remove any Plant Features and Procedures (PFAP) without equivalent replacement of the safety function? YES ☐ NO ☒

Does the change alter any sole PFAP? YES ☐ NO ☒

Is the change prohibited by other regulations? YES ☐ NO ☒

Conclusion

This revision addresses PFAP36 and the change made in this part is not a plant physical configuration change. Instead, it is to correct the safety feature made in PFAP36 where existing MTW ISA states that PFAP36 equipment included Green Salt Dust Collector Scrubbers and Exhausters. Honeywell identified that since these components are not associated with the Reductor off-gas flow path to the incinerator, the ability of these components to mitigate the RD-6 accident likelihood and consequences was not valid, and operator manual action would be the appropriate measure for mitigation.

The staff has reviewed the licensee's submittal and its response to the staff's RAI, and found the proposed changes acceptable.

1.4 ISA Page 9-55: Table 9.6-1 Accident Sequence and Risk Index [regarding PFAP36]

Findings

Does the change create a new type of accident sequence that, unless mitigated or prevented, would exceed the performance requirements as described in the MTW ISA?
YES ☐ NO ☒

Does the change use new processes, technologies, or control systems for which the licensee has no prior experience? YES ☐ NO ☒

Does the change remove any Plant Features and Procedures (PFAP) without equivalent replacement of the safety function? YES ☐ NO ☒

Does the change alter any sole PFAP? YES ☐ NO ☒

Is the change prohibited by other regulations? YES ☐ NO ☒

Conclusion

This revision is related to the change on page 9-13 regarding PFAP36 where PFAP36 equipment included Green Salt Dust Collector Scrubbers and Exhausters, both of which are not related to the Reductor off-gas flow path to the incinerator. Hence, the PFAP 36 was not the appropriate PFAP to mitigate the accident sequence RD-6. The PFAP description was modified and an equivalent safety feature was included. Accordingly, the associated PFAP failure and likelihood index were changed. The modification made to the PFAP 36 description is not a plant physical configuration change.

The staff has reviewed the licensee's submittal and its response to the staff's RAI, and found the proposed changes acceptable.

2. ISA Page 9-55: Table 9.6-1 Accident Sequence and Risk Index [regarding PFAP 57]

Findings

Does the change create a new type of accident sequence that, unless mitigated or prevented, would exceed the performance requirements of as described in the MTW ISA?
YES ☐ NO ☒

Does the change use new processes, technologies, or control systems for which the licensee has no prior experience? YES ☐ NO ☒

Does the change remove any Plant Features and Procedures (PFAP) without equivalent replacement of the safety function? YES ☐ NO ☒

Does the change alter any sole PFAP? YES ☐ NO ☒

Is the change prohibited by other regulations? YES ☐ NO ☒

Conclusion

This revision modifies Table 9.6-1 by including safety function PFAP57, "Pressure relieved by cold traps relief valves is directed to a Surge tank designated to hold the trap's contents." PAP-57 was erroneously omitted as a preventive measure and was not credited in the risk index value calculations for Accident Identifier, CT-4 (Control of Ethylene Glycol). The addition of PFAP57 to the CT-4 risk index evaluation is not a plant physical configuration change and do not affect the Accident Sequence CT-4 risk index value. This revision is more reliable than the original PFAP and it will prevent or mitigate any release of UF_6 from the cold traps. Therefore, the revised PFAP57 will continue to meet and/or enhance the intended performance criteria.

Additionally, Table 9.6-1 is revised to delete PFAP63 from applicability to CT-4 and change the Likelihood Index from -14 to -12, which results the Likelihood Category remaining at 1, i.e., Highly Unlikely. As a result, this revision continues to demonstrate that the associated performance requirements will be met.

The staff has reviewed the licensee's submittal and its response to the staff's RAI, and found the proposed changes acceptable.

3. ISA page 8-10: Section 8.10, Cold traps and Off-Gas Cleanup

Findings

Does the change create a new type of accident sequence that, unless mitigated or prevented, would exceed the performance requirements as described in the MTW ISA?
YES ☐ NO ☒

Does the change use new processes, technologies, or control systems for which the licensee has no prior experience? YES ☐ NO ☒

Does the change remove any Plant Features and Procedures (PFAP) without equivalent replacement of the safety function? YES ☐ NO ☒

Does the change alter any sole PFAP? YES ☐ NO ☒

Is the change prohibited by other regulations? YES ☐ NO ☒

Conclusion

This revision deletes dump tank as a safety feature for the hazards associated with hydrocarbon or glycol contamination of UF_6 which can cause vigorous reactions. It is explained in Honeywell MTW ISA Section 8.10, Cold Traps and Off-Gas Cleanup, that "weight and temperature indicator/alarm on the dump tank will alert the process operator of any weight or temperature gain." This action is designated as PFAP 63 for the accident sequence CT-4 (Control of Ethylene Glycol).

Honeywell MTW evaluated a number of its operating procedures and technical documentation regarding PFAP63, and determined that the weight and temperature alarms on the dump tanks would not prevent the consequences of a glycol leak. Consequently, the alarms were eliminated as one of the safety measures and PFAP63 was deleted. The deletion of PFAP63 is not a plant physical configuration change. The associated Likelihood Index for Accident Sequence CT-4 changes from -14 to -12, with the Likelihood Category remaining at 1, i.e., Highly Unlikely. Therefore, the revision continues to demonstrate that the associated performance requirements will be met.

The staff has reviewed the licensee's submittal and its response to the staff's RAI, and found the proposed change acceptable.