Chemical Safety and Hazard Investigation Board
OFFICE OF GENERAL COUNSEL

Memorandum

To:       Board Members
From:     Richard C. Loeb
Cc:       Leadership Team
          Mark Kaszniaak
          Christina Morgan

Subject:  Board Action Report – Notation Item 2013-21
Date:     February 26, 2013

On February 14, 2013, the Board approved Notation Item 2013-21, thereby designating
Recommendation 2010-07-I-CT-UR7, to Mitsubishi Power Systems (from the Kleen Energy
investigation), with the status of Closed – Acceptable Action.

**Voting Summary – Notation Item 2013-21**

Disposition:  APPROVED
Disposition date: February 14, 2013

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Recommendation Text:

Provide to your customers:

- Comprehensive technical guidance on inherently safer methods for cleaning fuel gas piping, such as the use of air or pigging with air.
- Comprehensive Cleaning Force Ratio (CFR) guidelines, specifying both the upper and lower limits required to obtain satisfactory cleaning for the fuel gas piping for purposes of the warranties of the turbines.
- Warnings against the use of fuel gas to clean pipes.

Board Status Change Decision:

A. Rationale for Recommendation

This recommendation was issued pursuant to the CSB’s investigation of the February 7, 2010 explosion at Kleen Energy, a combined-cycle, natural gas-fueled power plant then under construction in Middletown, Connecticut. A catastrophic natural gas explosion occurred during the planned cleaning of fuel gas piping using natural gas. The CSB found that this practice is inherently unsafe and that safer, non-flammable cleaning methodologies are available.

B. Response to the Recommendation

Mitsubishi reported to the CSB that it provides a standard cleaning procedure for fuel gas piping to its turbine customers and contractors selected by the customer to conduct commissioning activities. This document was revised to clearly warn against the use of combustible gas for pipe cleaning and to “highly” recommend that customers use air or inert gas instead. This document also provides step-by-step directions for conducting non-flammable pipe cleaning operations, including appropriate target pressures to achieve sufficient cleaning.

C. Board Analysis and Decision

Because Mitsubishi reported actions that are consistent with the intent of this recommendation, the Board designated this recommendation with the status “Closed-Acceptable Action.”