U. S. Chemical Safety and Hazard Investigation Board
RECOMMENDATIONS STATUS CHANGE SUMMARY

Report:	**Veolia ES Technical Solutions, LLC: Explosion and Fire in West Carrollton, Ohio**
Recommendation Numbers:	**2009-10-I-OH-R1** **2009-10-I-OH-R3**
Date Issued:	**July 21, 2010**
Recipient:	**Veolia ES Technical Solutions**
New Status:	**R1: Closed-Acceptable Action** **R3: Closed-Acceptable Action**
Date of Status Change:	**April 10, 2013**

Recommendation Text:

Recommendation No. 2009-10-I-OH-R1:
During the rebuild of the plant, revise policy to restrict occupancy of non-essential personnel in buildings in close proximity to operating plants.

Recommendation No. 2009-10-I-OH-R3:
Conduct a process hazard analysis on all OSHA Process Safety Management covered processes to ensure all buildings and structures at the West Carrollton facility are located and designed in accordance with electrical classification and spacing as defined in NFPA 70.

Board Status Change Decision:

A. Rationale for Recommendation

On May 4, 2009, an explosion and fire occurred at the Veolia ES Technical Solutions LLC (Veolia) facility in West Carrollton, Ohio. The facility provided hazardous waste services for industrial and municipal customers and was a state-permitted treatment, storage and disposal facility (TSDF). On the day of the incident, tetrahydrofuran (THF), a flammable organic solvent, was released from a solvent recovery process in a tank farm area. Uncontrolled venting of THF allowed the flammable vapors to accumulate to explosive concentrations outside the process equipment, and the gas subsequently ignited. The initial blast injured four workers, two seriously. Multiple explosions significantly damaged the site; nearby residences and businesses also sustained considerable damage.

The CSB investigation concluded that the likely ignition source was one of two in-service natural gas-fired boilers located in a lab/operations building less than thirty feet away from the process areas. The CSB found that the lab/operations building was not designed with explosion-proof electrical equipment. In addition, the two most seriously injured workers from the incident were in the lab/operations building and were not involved with the process. The CSB recommended that Veolia restrict non-essential personnel in buildings near process areas and consider building siting issues when conducting a process hazard analysis under OSHA's PSM standard.

Response to the Recommendation:

Veolia provided a copy of their new "Building Occupancy Policy" to the CSB, which restricts non-essential personnel[1] from occupying buildings near process areas. Essential personnel[2] are the only ones permitted to be in close proximity to process areas.

Veolia also reported that they conducted a siting and process hazard analysis during the rebuild of the West Carrolton facility. As a result of these analyses, Veolia designed the appropriate buildings with electrical classification and spacing requirements consistent with NFPA 70, *National Electric Code*. Veolia provided the CSB a facility layout illustrating the electrical classifications of the buildings in question.

Board Analysis and Decision:

The Board reviewed Veolia's response and documentation and found their actions consistent with the intent of the CSB's recommendation. Therefore, the Board voted to designate Recommendation Nos. 2009-10-I-OH-R1 and 2009-10-I-OH-R3 with the status "Closed-Acceptable Action."

[1] Veolia defines "Non-essential Personnel" as "Employer and contractor personnel who are not essential personnel as defined…examples include, but are not limited to, maintenance, laboratory, clerical staff, and administrative support personnel."

[2] Veolia defines "Essential Personnel" as "Employer and contractor personnel with specific work activities that require them to be located in buildings in close proximity to a process area. Examples of essential personnel include, but are not limited to operators and tank farm personnel."