

**SUMMARY OF CSB EXPLOSIVE AND TOXIC INCIDENT RECOMMENDATIONS
1998 - 2013**

Date Issued	Case	Rec #	Recipient	Recommendation Text	Recommendation Status	Date Closed
9/22/1998	Sierra	1998-1-I-NV-R1	Sierra Chemical Co.	Explosives manufacturers should evaluate the effectiveness of their explosives safety programs using the following recommendations (numbered for identification) to ensure that: Process hazard analyses include examination of quantity-distance requirements, building, design, human factors, incident reports, and lessons learned from explosives manufacturers.	Closed - No Longer Applicable	3/14/2002
9/22/1998	Sierra	1998-1-I-NV-R2	Sierra Chemical Co.	Explosives manufacturers should evaluate the effectiveness of their explosives safety programs using the following recommendations (numbered for identification) to ensure that: - Written operating procedures are specific to the process being controlled and address all phases of the operation.	Closed - No Longer Applicable	3/14/2002
9/22/1998	Sierra	1998-1-I-NV-R3	Sierra Chemical Co.	Explosives manufacturers should evaluate the effectiveness of their explosives safety programs using the following recommendations (numbered for identification) to ensure that: - Procedures, chemical hazards, and process safety information are communicated in the language(s) understood by personnel involved in manufacturing or handling of explosives.	Closed - No Longer Applicable	3/14/2002
9/22/1998	Sierra	1998-1-I-NV-R4	Sierra Chemical Co.	Explosives manufacturers should evaluate the effectiveness of their explosives safety programs using the following recommendations (numbered for identification) to ensure that: Explosives training and certification programs for workers and line managers provide and require demonstration of a basic understanding of explosives safety principles and job specific knowledge.	Closed - No Longer Applicable	3/14/2002
9/22/1998	Sierra	1998-1-I-NV-R5	Sierra Chemical Co.	Explosives manufacturers should evaluate the effectiveness of their explosives safety programs using the following recommendations (numbered for identification) to ensure that: - Process changes, such as the construction or modification of buildings, or changes in explosive ingredients, equipment, or procedures are analyzed and PSM elements are updated to address these changes.	Closed - No Longer Applicable	3/14/2002
9/22/1998	Sierra	1998-1-I-NV-R6	Sierra Chemical Co.	Explosives manufacturers should evaluate the effectiveness of their explosives safety programs using the following recommendations (numbered for identification) to ensure that: - Pre-startup safety reviews are performed to verify operational readiness when changes are made.	Closed - No Longer Applicable	3/14/2002
9/22/1998	Sierra	1998-1-I-NV-R7	Sierra Chemical Co.	Explosives manufacturers should evaluate the effectiveness of their explosives safety programs using the following recommendations (numbered for identification) to ensure that: - All elements of OSHA's Process Safety Management Standard are verified by performing periodic assessments and audits of safety programs.	Closed - No Longer Applicable	3/14/2002
9/22/1998	Sierra	1998-1-I-NV-R8	Sierra Chemical Co.	Explosives manufacturers should evaluate the effectiveness of their explosives safety programs using the following recommendations (numbered for identification) to ensure that: - The employee participation program effectively includes workers and resolves their safety issues.	Closed - No Longer Applicable	3/14/2002
9/22/1998	Sierra	1998-1-I-NV-R9	Sierra Chemical Co.	Explosives manufacturers should evaluate the effectiveness of their explosives safety programs using the following recommendations (numbered for identification) to ensure that: - Explosives safety programs provide an understanding of the hazards and control of detonation sources. These include: · foreign objects in raw materials; · use of substitute raw materials; · specific handling requirements for raw materials; · impact by tools or equipment; · impingement; · friction; · sparking; and · static discharge.	Closed - No Longer Applicable	3/14/2002

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9/22/1998	Sierra	1998-1-I-NV-R10	Sierra Chemical Co.	Explosives manufacturers should evaluate the effectiveness of their explosives safety programs using the following recommendations (numbered for identification) to ensure that: - The following issues are addressed in plant design or modification: · Operations in explosives manufacturing plants are separated by adequate intraplant distances to reduce the risk of propagation. · Unrelated chemical or industrial operations or facilities are separated from explosives facilities using quantity-distance guidelines. · Facilities are designed to reduce secondary fragmentation that could result in the propagation of explosions.	Closed - No Longer Applicable	3/14/2002
9/22/1998	Sierra	1998-1-I-NV-R11	Institute of Makers of Explosives (IME)	Develop and disseminate process and safety training guidelines for personnel involved in the manufacture of explosives that include methods for the demonstration and maintenance of proficiency.	Closed - Acceptable Action	6/24/2002
9/22/1998	Sierra	1998-1-I-NV-R12	Institute of Makers of Explosives (IME)	Distribute the CSB report on the incident at Sierra to IME member companies.	Closed - Acceptable Action	3/14/2002
9/22/1998	Sierra	1998-1-I-NV-R13	Institute of Makers of Explosives (IME)	Develop safety guidelines for the screening of reclaimed explosive materials.	Closed - Exceeds Recommended Action	6/24/2002
9/22/1998	Sierra	1998-1-I-NV-R14	Nevada Occupational Safety and Health Enforcement Section	Increase the frequency of safety inspections of explosives manufacturing facilities due to their potential for catastrophic incidents. (Note: Nevada Governor Bob Miller signed an Executive Order on June 10, 1998, that will require inspections at least twice a year.)	Closed - Acceptable Action	3/14/2002
9/22/1998	Sierra	1998-1-I-NV-R15	U.S. Department of Defense	Develop a program to ensure that reclaimed, demilitarized explosives sold by the Department of Defense are free of foreign materials that can present hazards during subsequent manufacturing of explosives.	Closed - Acceptable Action	1/11/2008
9/22/1998	Sierra	1998-1-I-NV-R16	U.S. Department of Defense	Provide access to explosives incident reports and lessons learned information to managers and workers involved in explosives manufacturing, associations such as IME, government agencies, and safety researchers.	Closed - Acceptable Action	1/11/2008
8/16/2000	Morton	1998-6-I-NJ-R1	Morton International, Inc.	Establish a program that ensures that reactive chemical process safety information and operating experience are collected and shared with all relevant units of the company.	Closed - Acceptable Action	3/9/2005
8/16/2000	Morton	1998-6-I-NJ-R10A	American Chemistry Council (ACC)	Communicate the findings of this report to your membership.	Closed - Acceptable Action	6/24/2002
8/16/2000	Morton	1998-6-I-NJ-R10B	Center for Chemical Process Safety	Communicate the findings of this report to your membership.	Closed - Acceptable Action	6/24/2002
8/16/2000	Morton	1998-6-I-NJ-R10C	Paper, Allied-Industrial, Chemical & Energy Workers International Union (PACE)	Communicate the findings of this report to your membership.	Closed - Acceptable Action	7/31/2002
8/16/2000	Morton	1998-6-I-NJ-R10D	Synthetic Organic Chemical Manufacturers Association (SOCMA)	Communicate the findings of this report to your membership.	Closed - Acceptable Action	6/24/2002
8/16/2000	Morton	1998-6-I-NJ-R2	Morton International, Inc.'s Patterson, New Jersey Plant	1. Revalidate Process Hazard Analyses for all reactive chemical processes in light of the findings of the U.S. Chemical Safety and Hazard Investigation Board (CSB) report and upgrade, as needed, equipment, operating procedures, and training.	Closed - Acceptable Action	6/25/2002

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8/16/2000	Morton	1998-6-I-NJ-R3	Morton International, Inc.'s Patterson, New Jersey Plant	Evaluate pressure relief requirements for all reaction vessels using appropriate technology, such as the Design Institute for Emergency Relief Systems (DIERS)50 method and test apparatus and upgrade equipment as needed.	Closed - No Longer Applicable	6/25/2002
8/16/2000	Morton	1998-6-I-NJ-R4	Morton International, Inc.'s Patterson, New Jersey Plant	Evaluate the need for and install, as necessary, devices, such as alarms, added safety instrumentation, and quench or reactor dump systems to safely manage reactive chemical process hazards.	Closed - Acceptable Action	6/25/2002
8/16/2000	Morton	1998-6-I-NJ-R5	Morton International, Inc.'s Patterson, New Jersey Plant	Revise operating procedures and training for reactive chemical processes as needed, to include descriptions of the possible consequences of deviations from normal operational limits and steps that should be taken to correct these deviations, including emergency response actions.	Closed - Acceptable Action	6/25/2002
8/16/2000	Morton	1998-6-I-NJ-R6	Morton International, Inc.'s Patterson, New Jersey Plant	Implement a program to ensure that deviations from normal operational limits for reactive chemical processes that could have resulted in significant incidents are documented and investigated and necessary safety improvements are implemented.	Closed - Acceptable Action	6/25/2002
8/16/2000	Morton	1998-6-I-NJ-R7	Morton International, Inc.'s Patterson, New Jersey Plant	Revise the Yellow 96 Material Safety Data Sheet (MSDS) to show the proper boiling point and National Fire Protection Association reactivity rating. Evaluate the need for and change, as necessary, the MSDSs for other Morton dyes. Communicate the MSDS changes to current and past customers (who may retain inventories of these products)	Closed - Acceptable Action	8/27/2003
8/16/2000	Morton	1998-6-I-NJ-R8A	Occupational Safety & Health Administration	1. Issue joint guidelines on good practices for handling reactive chemical process hazards. Ensure that these guidelines, at a minimum, address the following issues: - The evaluation of reactive hazards and the consequences of reasonably foreseeable and worst-case deviations from normal operations. - The importance of reporting and investigating deviations from normal operations. - The determination of proper design for pressure relief capability, emergency cooling, process controls, alarms, and safety interlocks, as well as other good-practice design features for handling reactive substances. - The appropriate use of chemical screening techniques such as differential scanning calorimetry.	Closed - Acceptable Action	2/3/2009
8/16/2000	Morton	1998-6-I-NJ-R8B	EPA (www.epa.gov)	Issue joint guidelines on good practices for handling reactive chemical process hazards. Ensure that these guidelines, at a minimum, address the following issues: - The evaluation of reactive hazards and the consequences of reasonably foreseeable and worst-case deviations from normal operations. - The importance of reporting and investigating deviations from normal operations. - The determination of proper design for pressure relief capability, emergency cooling, process controls, alarms, and safety interlocks, as well as other good-practice design features for handling reactive substances. - The appropriate use of chemical screening techniques such as differential scanning calorimetry.	Closed - Acceptable Action	2/3/2009
8/16/2000	Morton	1998-6-I-NJ-R9A	Occupational Safety & Health Administration	Participate in a hazard investigation of reactive chemical process safety conducted by the CSB (98-006-I-NJ-R09). The objectives of the special investigation will include: - Determine the frequency and severity of reactive chemical incidents. - Examine how industry, OSHA, and EPA are currently addressing reactive chemical hazards. Determine the differences, if any, between large/medium/small companies with regard to reactive chemical policies, practices, in-house reactivity research, testing, and process engineering. - Analyze the effectiveness of industry and OSHA use of the National Fire Protection Association Reactivity Rating system for process safety management purposes. - Develop recommendations for reducing the number and severity of reactive chemical incidents.	Closed - Acceptable Action	8/29/2003

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8/16/2000	Morton	1998-6-I-NJ-R9B	EPA (www.epa.gov)	Participate in a hazard investigation of reactive chemical process safety conducted by the CSB. The objectives of the special investigation will include: - Determine the frequency and severity of reactive chemical incidents. Examine how industry, OSHA, and EPA are currently addressing reactive chemical hazards. Determine the differences, if any, between large/medium/small companies with regard to reactive chemical policies, practices, in-house reactivity research, testing, and process engineering. - Analyze the effectiveness of industry and OSHA use of the National Fire Protection Association Reactivity Rating system for process safety management purposes. - Develop recommendations for reducing the number and severity of reactive chemical incidents.	Closed - Acceptable Action	8/29/2003
5/20/2002	BP Amoco	2001-3-I-GA-R1	Solvay Advanced Polymers, LLC	Examine the manufacturing business acquired from BP Amoco Performance Polymers and ensure that a systematic safety review procedure is developed and implemented for identifying and controlling hazards from unintended chemical reactions. Additionally, ensure that reactive hazards are identified and evaluated: - during product R&D, during conceptual design of a new process, and during detailed design of a new process. Before changes are made to existing equipment or process chemistry. Communicate the results of this review to the workforce.	Closed - Acceptable Action	1/30/2007
5/20/2002	BP Amoco	2001-3-I-GA-R2	Solvay Advanced Polymers, LLC	Ensure that a program is in place at facilities acquired from BP Amoco Performance Polymers to systematically review the hazards associate with new and modified processes and equipment as operating experience accrues. Ensure that facilities correct all identified design, operation, and maintenance deficiencies. Verify that operating experience does not invalidate the design basis for equipment.	Closed - Acceptable Action	3/28/2006
5/20/2002	BP Amoco	2001-3-I-GA-R3	Solvay Advanced Polymers, LLC	Revise the Material Safety Data Sheet (MSDS) for Amodel to warn of the hazards of accumulating large masses of molten polymer. Communicate the MSDS changes to current and past customers (who may retain inventories of this product)	Closed - Acceptable Action	3/28/2006
5/20/2002	BP Amoco	2001-3-I-GA-R4	Solvay Advanced Polymers, LLC	Implement a program to conduct periodic management reviews of incidents and near-miss incidents. Look for trends and patterns among incidents. Ensure that root causes are addressed, and that corrective measures are tracked and implemented.	Closed - Acceptable Action	12/4/2004
5/20/2002	BP Amoco	2001-3-I-GA-R5	Solvay Advanced Polymers, LLC	Revise process safety information to include: - Information regarding the decomposition reactions of Amodel - Design intent, basis, capacity, and limitations of equipment - Hazards and consequences of deviations from design intent and operating limits.	Closed - Acceptable Action	10/16/2002
5/20/2002	BP Amoco	2001-3-I-GA-R6	Solvay Advanced Polymers, LLC	Revalidate hazard analyses for the Amodel process to address: - Credible deviations from process intent and their consequences - Hazards associated with startup and shutdown operations - Prevention of accumulations of potentially hazardous masses of polymer	Closed - Acceptable Action	12/7/2004
5/20/2002	BP Amoco	2001-3-I-GA-R7	Solvay Advanced Polymers, LLC	Revise your lockout/tagout program to ensure that equipment is rendered safe prior to opening for maintenance. At a minimum, ensure that equipment opening procedures contain a stop work provision that requires higher levels of management review and approval when safe opening conditions, such as equipment depressurization, cannot be verified.	Closed - Acceptable Action	10/16/2002
5/20/2002	BP Amoco	2001-3-I-GA-R8	Solvay Advanced Polymers, LLC	Ensure that your management of change policy applies to operational and procedural modifications.	Closed - Acceptable Action	10/16/2002
5/20/2002	BP Amoco	2001-3-I-GA-R9	BP Chemicals Group	Communicate the finding sof this report to your chemical and plastics manufacturing facilities in North America. (2001-03-I-GA-R9)	Closed - Acceptable Action	10/16/2002
5/20/2002	BP Amoco	2001-3-I-GA-R10	American Chemistry Council (ACC)	Communicate the findings of this report to your membership.	Closed - Acceptable Action	10/16/2002

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5/20/2002	BP Amoco	2001-3-I-GA-R11	Society of Plastics Engineers	Communicate the findings of this report to your membership.	Closed - Acceptable Action	4/20/2005
8/28/2002	Motiva	2001-5-I-DE-R1	Occupational Safety & Health Administration	Ensure coverage under the Process Safety Management Standard (29 Health Administration CFR 1910.119) of atmospheric storage tanks that could be involved in a potential catastrophic release as a result of being interconnected to a covered process with 10,000 pounds of a flammable substance.	Open - Awaiting Response or Evaluation/Approval of Response	
8/28/2002	Motiva	2001-5-I-DE-R2	Delaware Department of Natural Resources and Environmental Control	Ensure that regulations developed for the recently enacted Jeffrey Davis Aboveground Storage Tank Act require that facility management take prompt action in response to evidence of tank corrosion that presents hazards to people or the environment. (2001-05-I-DE-R2)	Closed - Acceptable Action	11/5/2004
8/28/2002	Motiva	2001-5-I-DE-R3	Motiva Enterprises - Delaware City Refinery	Implement a system to ensure accountability for mechanical integrity decision making. (2001-05-I-DE-R3) Include the following specific items - Review of inspection reports by subject area experts, such as metallurgists or equipment design engineers, to ensure adequate analysis of failure trends and suitability for intended service. - Establishment of a planning system to ensure the timely repair of equipment. The Center for Chemical Process Safety (CCPS) publication, Plant Guidelines for Technical Management of Chemical Process Safety, Chapter 3, "Accountability Objectives and Goals," presents a model for such a system.	Closed - Acceptable Action	12/7/2004
8/28/2002	Motiva	2001-5-I-DE-R4	Motiva Enterprises - Delaware City Refinery	Review the design of existing tankage that contains or has the potential to contain flammables to ensure that, at a minimum (2001-05-I-DE-R4): - Inerting systems are installed where appropriate and are adequately sized and constructed. - Emergency venting is provided.	Closed - Acceptable Action	6/21/2011
8/28/2002	Motiva	2001-5-I-DE-R5	Motiva Enterprises - Delaware City Refinery	Ensure that management of change reviews are conducted for changes to tank equipment and operating conditions, such as (2001-05-I-DE-R5): - Tank service and contents - Tank peripherals, such as inerting and venting systems.	Closed - Acceptable Action	12/7/2004
8/28/2002	Motiva	2001-5-I-DE-R6	Motiva Enterprises - Delaware City Refinery	Revise the refinery hot work program to address the circumstances that require use of continuous or periodic monitoring for flammables. (2001-05-I-DE-R6)	Closed - Acceptable Action	12/7/2004
8/28/2002	Motiva	2001-5-I-DE-R7	Motiva Enterprises - Delaware City Refinery	Upgrade the refinery Unsafe Condition Report system to include the following (2001-05-I-DE-R7): - Designation of a specific manager with decision-making authority to resolve issues. - Establishment of a mechanism to elevate attention to higher levels of management if issues are not resolved in a timely manner. - Identification of a means to ensure communication of hazards to all potentially affected personnel. Work with the Paper, Allied-Industrial, Chemical & Energy Workers International Union (PACE) Local 2-898 to design and implement the improved system.	Closed - Acceptable Action	12/7/2004
8/28/2002	Motiva	2001-5-I-DE-R8	Motiva Enterprises LLC	In light of the findings of this report, conduct periodic audits of storage tank mechanical integrity and design, Unsafe Condition Reports, hot work, management of change, and accountability systems at Motiva oil refineries. Ensure that the audit recommendations are tracked and implemented. Share the findings with the workforce. (2001-05-I-DE-R8)	Open - Acceptable Response or Alternate Response	
8/28/2002	Motiva	2001-5-I-DE-R9	Motiva Enterprises LLC	Communicate the findings and recommendations of this report to the workforce and contractors at all Motiva refineries. (2001-05-I-DE-R9)	Closed - Acceptable Action	12/7/2004
8/28/2002	Motiva	2001-5-I-DE-R10	American Petroleum Institute	Work with NACE International (National Association of Institute (API) Corrosion Engineers) to develop API guidelines to inspect storage tanks containing fresh or spent H2SO4 at frequencies at least as often as those recommended in the latest edition of NACE Standard RP 0294-94, Design, Fabrication, and Inspection of Tanks for the Storage of Concentrated Sulfuric Acid and Oleum at Ambient Temperatures.	Open - Acceptable Response or Alternate Response	

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8/28/2002	Motiva	2001-5-I-DE-R11	American Petroleum Institute	Revise API tank inspection standards to emphasize that storage tanks with wall or roof holes or thinning beyond minimum acceptable thickness that may contain a flammable vapor are an imminent hazard and require immediate repair or removal from service.	Closed - Acceptable Action	9/13/2006
8/28/2002	Motiva	2001-5-I-DE-R12	American Petroleum Institute	Ensure that API recommended practices address the inerting of flammable storage tanks, such as spent H2SO4 tanks. Include the following (2001-05-I-DE-R12): - Circumstances when inerting is recommended. - Design of inerting systems, such as proper sizing of inerting equipment, appropriate inerting	Open - Acceptable Response or Alternate Response	
8/28/2002	Motiva	2001-5-I-DE-R13	American Petroleum Institute	Communicate the findings and recommendations of this report to your membership. (2001-05-I-DE-R13)	Closed - Acceptable Action	7/12/2006
8/28/2002	Motiva	2001-5-I-DE-R14	NACE International	Work with the American Petroleum Institute to develop API guidelines to ensure that storage tanks containing fresh or spent H2SO4 are inspected at frequencies at least as often as those recommended in the latest edition of NACE Standard RP 0294- 94, Design, Fabrication, and Inspection of Tanks for the Storage of Concentrated Sulfuric Acid and Oleum at Ambient Temperatures. (2001-05-I-DE-R14)	Closed - Acceptable Action	3/28/2006
8/28/2002	Motiva	2001-5-I-DE-R15	NACE International	Communicate the findings and recommendations of this report to your membership. (2001-05-I-DE-R15)	Closed - Acceptable Action	7/12/2006
8/28/2002	Motiva	2001-5-I-DE-R16	Paper, Allied-Industrial, Chemical & Energy Workers International Union (PACE) Local 2-898	Work with Motiva management on the design and implementation of an improved Unsafe Condition Report program. (2001-05-I-DE-R16)	Closed - Acceptable Action	7/25/2011
8/28/2002	Motiva	2001-5-I-DE-R17	Paper, Allied-Industrial, Chemical & Energy Workers International Union (PACE) Local 2-898	Communicate the findings and recommendations of this report to your membership. (2001-05-I-DE-R17)	Closed - Acceptable Action	1/30/2007
8/28/2002	Motiva	2001-5-I-DE-R18	National Petrochemical and Refiners Association (NPRA)	Communicate the findings and recommendations of this report to your membership. (2001-05-I-DE-R18)	Closed - Acceptable Action	7/12/2006
8/28/2002	Motiva	2001-5-I-DE-R19	Building and Construction Trades Department, AFL-CIO	Communicate the findings and recommendations of this report to your membership. (2001-05-I-DE-R19)	Closed - Acceptable Action	8/23/2006

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10/8/2002	Reactives	2001-1-H-XX-R1	Occupational Safety & Health Administration	Amend the Process Safety Management Standard (PSM), 29 CFR 1910.119, to achieve more comprehensive control of reactive hazards that could have catastrophic consequences. (2001-01-H-R1) - Broaden the application to cover reactive hazards resulting from process-specific conditions and combinations of chemicals. Additionally, broaden coverage of hazards from self-reactive chemicals. In expanding PSM coverage, use objective criteria. Consider criteria such as the North American Industry Classification System (NAICS), a reactive hazard classification system (e.g., based on heat of reaction or toxic gas evolution), incident history, or catastrophic potential. - In the compilation of process safety information, require that multiple sources of information be sufficiently consulted to understand and control potential reactive hazards. Useful sources include: - Literature surveys (e.g., Bretherick's Handbook of Reactive Chemical Hazards, Sax's Dangerous Properties of Industrial Materials). - Information developed from computerized tools (e.g., ASTM's CHETAH, NOAA's The Chemical Reactivity Worksheet). Reactives Hazard Investigation 10-17-02, page 90 - Chemical reactivity test data produced by employers or obtained from other sources (e.g., differential scanning	Open - Unacceptable Response	
10/8/2002	Reactives	2001-1-H-XX-R10	American Chemistry Council (ACC)	Work with NIST in developing and implementing a publicly available database for reactive hazard test information. Promote submissions of data by your membership.	Open - Awaiting Response or Evaluation/Approval of Response	
10/8/2002	Reactives	2001-1-H-XX-R11	American Chemistry Council (ACC)	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	7/12/2006
10/8/2002	Reactives	2001-1-H-XX-R12	Synthetic Organic Chemical Manufacturers Association (SOCMA)	Expand the Responsible Care Process Safety Code to emphasize the need for managing reactive hazards. Ensure that: · Member companies are required to have programs to manage reactive hazards that address, at a minimum, hazard identification, hazard evaluation, management of change, inherently safer design, and adequate procedures and training. · There is a program to communicate to your membership the availability of existing tools, guidance, and initiatives to aid in identifying and evaluating reactive hazards.	Open - Awaiting Response or Evaluation/Approval of Response	
10/8/2002	Reactives	2001-1-H-XX-R13	Synthetic Organic Chemical Manufacturers Association (SOCMA)	Develop and implement a program for reporting reactive incidents that includes the sharing of relevant safety knowledge and lessons learned with your membership, the public, and government to improve safety system performance and prevent future incidents.	Open - Awaiting Response or Evaluation/Approval of Response	
10/8/2002	Reactives	2001-1-H-XX-R14	Synthetic Organic Chemical Manufacturers Association (SOCMA)	Work with NIST in developing and implementing a publicly available database for reactive hazard test information. Promote submissions of data by your membership.	Open - Acceptable Response or Alternate Response	
10/8/2002	Reactives	2001-1-H-XX-R15	Synthetic Organic Chemical Manufacturers Association (SOCMA)	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	1/28/2004
10/8/2002	Reactives	2001-1-H-XX-R16	National Association of Chemical Distributors	Expand the existing Responsible Distribution Process to include reactive hazard management as an area of emphasis. At a minimum, ensure that the revisions address storage and handling, including the hazards of inadvertent mixing of incompatible chemicals.	Open - Awaiting Response or Evaluation/Approval of Response	
10/8/2002	Reactives	2001-1-H-XX-R17	National Association of Chemical Distributors	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	1/28/2004

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10/8/2002	Reactives	2001-1-H-XX-R18	International Association of Fire Fighters	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	4/29/2008
10/8/2002	Reactives	2001-1-H-XX-R19	Paper, Allied-Industrial, Chemical & Energy Workers International Union (PACE)	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	3/19/2004
10/8/2002	Reactives	2001-1-H-XX-R2	Occupational Safety & Health Administration	Implement a program to define and record information on reactive incidents that OSHA investigates or requires to be investigated under OSHA regulations. Structure the collected information so that it can be used to measure progress in the prevention of reactive incidents that give rise to catastrophic releases.	Open - Unacceptable Response	
10/8/2002	Reactives	2001-1-H-XX-R20	United Steelworkers of America	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	8/23/2005
10/8/2002	Reactives	2001-1-H-XX-R21	Union of Needletrades, Industrial, and Textile Employees (UNITE)	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	4/27/2005
10/8/2002	Reactives	2001-1-H-XX-R22	United Food and Commercial Workers International Union	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	4/27/2005
10/8/2002	Reactives	2001-1-H-XX-R23	American Society of Safety Engineers	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	6/21/2006
10/8/2002	Reactives	2001-1-H-XX-R24	American Industrial Hygiene Association	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	3/18/2004
10/8/2002	Reactives	2001-1-H-XX-R3	EPA (www.epa.gov)	Revise the Accidental Release Prevention Requirements, 40 CFR 68, to explicitly cover catastrophic reactive hazards that have the potential to seriously impact the public, including those resulting from self-reactive chemicals and combinations of chemicals and process-specific conditions. Take into account the recommendations of this report to OSHA on reactive hazard coverage. Seek congressional authority if necessary to amend the regulation.	Open - Awaiting Response or Evaluation/Approval of Response	
10/8/2002	Reactives	2001-1-H-XX-R4	EPA (www.epa.gov)	Modify the accident reporting requirements in RMP* Info to define and record reactive incidents. Consider adding the term "reactive incident" to the four existing "release events" in EPA's current 5-year accident reporting requirements (Gas Release, Liquid Spill/Evaporation, Fire, and Explosion). Structure this information collection to allow EPA and its stakeholders to identify and focus resources on industry sectors that experienced the incidents; chemicals and processes involved; and impact on the public, the workforce, and the environment.	Closed - Acceptable Action	6/2/2004
10/8/2002	Reactives	2001-1-H-XX-R5	National Institute for Standards and Technology	Develop and implement a publicly available database for reactive hazard test information. Structure the system to encourage submission of data by individual companies and academic and government institutions that perform chemical testing.	Closed - Reconsidered / Superseded	3/7/2008

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10/8/2002	Reactives	2001-1-H-XX-R6	Center for Chemical Process Safety	Publish comprehensive guidance on model reactive hazard management systems. At a minimum, ensure that these guidelines cover: - For companies engaged in chemical manufacturing: reactive hazard management, including hazard identification, hazard evaluation, management of change, inherently safer design, and adequate procedures and training. - For companies engaged primarily in the bulk storage, handling, and use of chemicals: identification and prevention of reactive hazards, including the inadvertent mixing of incompatible substances.	Closed - Exceeds Recommended Action	6/18/2004
10/8/2002	Reactives	2001-1-H-XX-R7	Center for Chemical Process Safety	Communicate the findings and recommendations of this report to your membership.	Closed - Exceeds Recommended Action	6/18/2004
10/8/2002	Reactives	2001-1-H-XX-R8	American Chemistry Council (ACC)	Expand the Responsible Care Process Safety Code to emphasize the need for managing reactive hazards - Member companies are required to have programs to manage reactive hazards that address at a minimum, hazard identification, hazard evaluation, management of change, inherently safer design, and adequate procedures and training - There is a program to communicate to your membership the availability of existing tool, guidance and initiatives to aid in identifying and evaluating reactive hazards.	Open - Acceptable Response or Alternate Response	
10/8/2002	Reactives	2001-1-H-XX-R9	American Chemistry Council (ACC)	Develop and implement a program for reporting reactive incidents that includes the sharing of relevant safety knowledge and lessons learned with your membership, the public, and government to improve safety system performance and prevent future incidents.	Open - Awaiting Response or Evaluation/Approval of Response	
11/20/2002	Georgia-Pacific	2002-1-I-AL-R1	Georgia Pacific Corporation	Conduct periodic safety audits of Georgia-Pacific pulp and paper mills in light of the findings of this report. At a minimum, ensure that management systems are in place at the mills to: - Evaluate process sewers where chemicals may collect and interact, and identify potential hazardous reaction scenarios to determine if safeguards are in place to decrease the likelihood or consequences of such interactions. Take into account sewer system connections and the ability to prevent inadvertent mixing of materials that could react to create a hazardous condition.	Closed - Exceeds Recommended Action	3/9/2005
11/20/2002	Georgia-Pacific	2002-1-I-AL-R2	Georgia Pacific Corporation	Conduct periodic safety audits of Georgia-Pacific pulp and paper mills in light of the findings of this report. At a minimum, ensure that management systems are in place at the mills to: - Identify areas of the mill where hydrogen sulfide (H2S) could be present or generated, and institute safeguards (including warning devices) to limit employee exposure. Require that personnel working in the area are trained to recognize the presence of H2S and respond appropriately. Update emergency response plans for such areas to include procedures for decontaminating personnel exposed to toxic gas.	Closed - Acceptable Action	3/9/2005
11/20/2002	Georgia-Pacific	2002-1-I-AL-R3	Georgia Pacific Corporation	Conduct periodic safety audits of Georgia-Pacific pulp and paper mills in light of the findings of this report. At a minimum, ensure that management systems are in place at the mills to: - Apply good engineering and process safety principles to process sewer systems. For instance, ensure that hazard reviews and management of change analyses are completed when additions or changes are made where chemicals could collect and react in process sewers. (Such principles may be found in publications from the Center for Chemical Process Safety [CCPS].)	Closed - Acceptable Action	3/9/2005
11/20/2002	Georgia-Pacific	2002-1-I-AL-R4	Georgia Pacific Corporation	Conduct periodic safety audits of Georgia-Pacific pulp and paper mills in light of the findings of this report. At a minimum, ensure that management systems are in place at the mills to: - Communicate the findings and recommendations of this report to the workforce and contractors at all Georgia-Pacific pulp and paper mills.	Closed - Acceptable Action	3/9/2005

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11/20/2002	Georgia-Pacific	2002-1-I-AL-R5	GP Naheola Mill	Evaluate mill process sewer systems where chemicals may collect and react to identify potential hazardous reaction scenarios to determine if safeguards are in place to decrease the likelihood or consequences of such interactions. Evaluate sewer connections and ensure that materials that could react to create a hazardous condition are not inadvertently mixed, and that adequate mitigation measures are in place if such inadvertent mixing does occur.	Closed - Acceptable Action	3/9/2005
11/20/2002	Georgia-Pacific	2002-1-I-AL-R6	GP Naheola Mill	Establish programs to comply with recommendations from manufacturers of sodium hydrosulfide (NaSH) regarding its handling, such as preventing it from entering sewers because of the potential for acidic conditions	Closed - Acceptable Action	3/9/2005
11/20/2002	Georgia-Pacific	2002-1-I-AL-R7	GP Naheola Mill	Establish programs to require the proper design and maintenance of manway seals on closed sewers where hazardous materials are present	Closed - Acceptable Action	3/9/2005
11/20/2002	Georgia-Pacific	2002-1-I-AL-R8	GP Naheola Mill	Identify areas of the plant where hydrogen sulfide (H2S) could be present or generated, and institute safeguards (including warning devices) to limit personnel exposure. Institute a plan and procedures for dealing with potential H2S releases in these areas, and require that anyone who may be present is adequately trained on appropriate emergency response practices, including attempting rescue. Require contractors working in these areas to train their employees on the specific hazards of H2S, including appropriate emergency response practices.	Closed - Acceptable Action	3/9/2005
11/20/2002	Georgia-Pacific	2002-1-I-AL-R9	GP Naheola Mill	Update the Naheola mill emergency response plan to include procedures for decontaminating personnel who are brought to the first-aid station. Include specific instructions for decontaminating personnel exposed to H2S so that they do not pose a secondary exposure threat to medical personnel.	Closed - Acceptable Action	3/9/2005
11/20/2002	Georgia-Pacific	2002-1-I-AL-R10	Agency for Toxic Substance and Disease Registry	Evaluate and amend as necessary the ATSDR Medical Management Guidelines to consider the risk to responders posed by the exposure to victims of high levels of hydrogen sulfide (H2S) gas. Specify procedures for adequate decontamination. Communicate the results of this activity to relevant organizations, such as the American Association of Occupational Health Nurses.	Closed - Acceptable Action	1/30/2007
11/20/2002	Georgia-Pacific	2002-1-I-AL-R11	Burkes Construction, Inc.	Train your employees on the specific hazards of hydrogen sulfide (H2S), including appropriate emergency response practices, in areas where Georgia-Pacific has identified this material as a hazard.	Closed - Acceptable Action	1/28/2004
11/20/2002	Georgia-Pacific	2002-1-I-AL-R12	Davison Transport Inc.	Communicate the findings and recommendations of this report to those employees who haul or handle sodium hydrosulfide (NaSH).	Closed - Acceptable Action	8/22/2003
11/20/2002	Georgia-Pacific	2002-1-I-AL-R13	American Forest and Paper Association	Communicate the findings and recommendations of this report to your membership	Closed - Acceptable Action	8/23/2006
11/20/2002	Georgia-Pacific	2002-1-I-AL-R14	International Brotherhood of Electrical Workers, AFL-CIO	Communicate the findings and recommendations of this report to your membership	Closed - Acceptable Action	8/20/2010
11/20/2002	Georgia-Pacific	2002-1-I-AL-R15	Paper, Allied-Industrial, Chemical & Energy Workers International Union (PACE)	Communicate the findings of this report to your membership.	Closed - Acceptable Action	2/9/2005
11/20/2002	Georgia-Pacific	2002-1-I-AL-R16	Pulp and Paper Safety Association	Communicate the findings and recommendations of this report to your membership.	Closed - No Longer Applicable	2/9/2005

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5/1/2003	DPC Festus	2002-4-I-MO-R1	DPC Enterprises L.P. Festus Site	Revise the mechanical integrity program: Develop and implement a quality assurance management system, such as positive materials identification, to confirm that chlorine transfer hoses (CTH) are of the appropriate materials of construction.	Closed - Acceptable Action	2/1/2007
5/1/2003	DPC Festus	2002-4-I-MO-R10	DX Distribution Group	Communicate the findings and recommendations of this report to all DPC facilities.	Closed - Acceptable Action	2/1/2007
5/1/2003	DPC Festus	2002-4-I-MO-R11	Branham Corporation	Implement a materials verification procedure to improve quality assurance during chlorine transfer hose fabrication and shipment, such that hoses shipped to customers are readily identifiable and meet required specifications.	Closed - Acceptable Action	4/12/2007
5/1/2003	DPC Festus	2002-4-I-MO-R12	Jefferson County Emergency Management Agency (EMA)	Work with DPC to implement a community notification system that will immediately alert neighboring residents and businesses of a chemical release.	Closed - Acceptable Action	8/2/2006
5/1/2003	DPC Festus	2002-4-I-MO-R13	Jefferson County Emergency Management Agency (EMA)	Work with DPC, local emergency planning and response authorities in Jefferson and adjacent counties, the City of Festus, and Crystal City to improve overall response and mitigation time.	Closed - Acceptable Action	8/2/2006
5/1/2003	DPC Festus	2002-4-I-MO-R14	Jefferson County Emergency Management Agency (EMA)	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	4/26/2010
5/1/2003	DPC Festus	2002-4-I-MO-R15	Missouri State Emergency Response Commission (MERC)	Communicate the findings and recommendations of this report to local emergency planning committees (LEPC), emergency management agencies (EMA), and local fire departments.	Closed - Acceptable Action	8/10/2010
5/1/2003	DPC Festus	2002-4-I-MO-R16	Missouri Department of Natural Resources (MDNR)	In collaboration with appropriate agencies, hold a community meeting in Festus, Missouri, to hear concerns raised by local citizens affected by the DPC incident and to respond to issues raised by the community.	Closed - No Longer Applicable	10/10/2006
5/1/2003	DPC Festus	2002-4-I-MO-R17	Agency for Toxic Substance and Disease Registry	Work with State and local agencies to address concerns about the long-term health effects of the chlorine release in Festus, Missouri, and communicate your findings to the community.	Closed - No Longer Applicable	6/12/2007
5/1/2003	DPC Festus	2002-4-I-MO-R18	Chlorine Institute, Inc.	Work with the Association of Hose and Accessories Distributors (NAHAD) and chlorine hose manufacturers, such as Crane-Resistoflex, to develop and implement a recommended practice requiring continuous positive identification (e.g., coding, stenciling, stamping) throughout the supply chain, from manufacturing to the end user of the product.	Closed - Acceptable Action	12/6/2004
5/1/2003	DPC Festus	2002-4-I-MO-R19	Chlorine Institute, Inc.	Develop recommended practices to address moisture in dry chlorine piping systems. Include information on suggested material specifications, prevention and corrective measures, and adverse consequences (particularly for emergency shutdown [ESD] systems).	Closed - Acceptable Action	12/6/2004
5/1/2003	DPC Festus	2002-4-I-MO-R2	DPC Enterprises L.P. Festus Site	Revise the mechanical integrity program: Implement procedures and practices to ensure the emergency shutdown (ESD) system operates properly. Include procedures to verify that the ESD valves will close to shut down the flow of chlorine.	Closed - Acceptable Action	3/28/2006
5/1/2003	DPC Festus	2002-4-I-MO-R20	Chlorine Institute, Inc.	Develop recommended practices for testing, inspection, and preventative maintenance of ESD systems for bulk transfer of chlorine.	Closed - Acceptable Action	12/6/2004
5/1/2003	DPC Festus	2002-4-I-MO-R21	Chlorine Institute, Inc.	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	12/6/2004

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5/1/2003	DPC Festus	2002-4-I-MO-R22	National Association for Hose and Accessories Distribution	Work with The Chlorine Institute and chlorine hose manufacturers, such as Crane-Resistoflex, to develop and implement a recommended practice requiring continuous positive identification (e.g., coding, stenciling, stamping) throughout the supply chain, from manufacturing to the end user of the product.	Closed - Acceptable Action	1/4/2012
5/1/2003	DPC Festus	2002-4-I-MO-R23	National Association for Hose and Accessories Distribution	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	4/21/2004
5/1/2003	DPC Festus	2002-4-I-MO-R24	National Association of Chemical Distributors	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	11/19/2008
5/1/2003	DPC Festus	2002-4-I-MO-R3	DPC Enterprises L.P. Festus Site	Revise the mechanical integrity program: Revise the preventive maintenance and inspection program for the chlorine transfer system to address moisture-related corrosion. Evaluate and correct any problems associated with corrosion that could potentially lead to chlorine transfer and safety system failure.	Closed - Acceptable Action	3/28/2006
5/1/2003	DPC Festus	2002-4-I-MO-R4	DPC Enterprises L.P. Festus Site	Revise the mechanical integrity program: Require periodic inspection of the above critical safety systems by the operations or facility manager.	Closed - Acceptable Action	3/28/2006
5/1/2003	DPC Festus	2002-4-I-MO-R5	DPC Enterprises L.P. Festus Site	Revise the Emergency Response Plan: • Develop procedures to clearly designate the roles and responsibilities of facility emergency response personnel, including post-incident remediation.	Closed - Acceptable Action	3/28/2006
5/1/2003	DPC Festus	2002-4-I-MO-R6	DPC Enterprises L.P. Festus Site	Develop and implement a timetable for drills to test emergency response personnel on various levels of response, including a large uncontrolled release that could affect the public. Coordinate these drills with local emergency response authorities. Provide a copy of the revised Emergency Response Plan to the local emergency planning committee, and review the plan with the committee and the local fire department. Work with these authorities to implement an improved community emergency notification system.	Closed - Acceptable Action	3/28/2006
5/1/2003	DPC Festus	2002-4-I-MO-R7	DPC Enterprises L.P. Festus Site	Revise the Emergency Response Plan: Improve accessibility of equipment required for emergency response, considering likely response scenarios.	Closed - Acceptable Action	3/28/2006
5/1/2003	DPC Festus	2002-4-I-MO-R8	DX Distribution Group	In light of the findings of this report, conduct periodic audits of the safety management systems involved in this incident, such as mechanical integrity, emergency response, and material quality assurance. Ensure that the audit recommendations are tracked and implemented. Share findings and recommendations with the work force at your repackaging facilities.	Closed - Acceptable Action	2/1/2007
5/1/2003	DPC Festus	2002-4-I-MO-R9	DX Distribution Group	To improve supervision of day-to-day operations, revise your corporate safety management training program on chlorine repackaging operations. Emphasize safety critical systems, including verification of safety system performance.	Closed - Acceptable Action	2/1/2007
9/30/2003	Kaltech	2002-2-I-NY-R1	Mayor and the Council of the City of New York	Revise the Fire Prevention Code, Title 27, Chapter 4, of the New York City Administrative Code, to achieve more comprehensive control over the storage and use of hazardous materials. such as nitric aide, that could cause a fire or explosion when inadvertently mixed with incompatible substances. Base these revisions on model fire codes such as the International Code Council International Fire Code and the national Fire Protection Association Fire Protection Code. Require that: - All hazardous materials be identified and labeled. - Hazardous materials permit applications include the submission of a management plan and inventory statement - Material safety data sheets be accessible to the workforce - Personnel working with hazardous materials be trained on hazards and safe handling techniques in languages understood by the workforce.	Closed - Acceptable Action	11/19/2008

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9/30/2003	Kaltech	2002-2-I-NY-R2	Mayor and the Council of the City of New York	Amend the New York City Administrative Code 27-4267 to require that - The owner of other person having charge of a mixed occupancy building with a hazardous occupancy be required to develop a building hazardous materials safety plan and designate a responsible individual to ensure that the plan is implemented. - The building hazardous materials safety plan incorporates information from the hazardous materials management plans, inventory statement, right to know facility inventory forms, and Fire prevention Code permits of any tenants who use hazardous materials. - the building hazardous materials safety plan be distributed to all tenants.	Closed - Acceptable Action	8/3/2009
9/30/2003	Kaltech	2002-2-I-NY-R3	Mayor and the Council of the City of New York	Ensure that the New York City Fire Department (FDNY) and the Department of Environmental Protection (NYCDEP) establish a program to exchange facility information regarding hazardous chemical inventories to enhance inspection and enforcement activities.	Closed - Acceptable Action	8/3/2009
9/30/2003	Kaltech	2002-2-I-NY-R4	Department of Environmental Conservation	Raise the priority of inspections of large quantity generators located in mixed occupancy facilities within densely populated areas.	Closed - Acceptable Action	12/6/2004
9/30/2003	Kaltech	2002-2-I-NY-R5	Department of Environmental Conservation	Share Data, such as the Resource Conservation and Recovery Act (RCRA) biennial report, with the New York City Fire Department (FDNY) and Department of Environmental Protection (NYCDEP) concerning the identity, location and hazardous waste inventories of large quantity generators within the City to enhance inspection and enforcement activities.	Closed - Acceptable Action	7/12/2006
9/30/2003	Kaltech	2002-2-I-NY-R6	Kaltech Industries	Develop and implement a written hazard communication program that includes the following requirements: - Maintaining a list of hazardous materials used in the workplace - Labeling of hazardous materials - Maintaining and making material safety data sheets available to the workforce - Training of employees on chemical hazards and their safeguards in languages understood by the workforce	Closed - Acceptable Action	4/22/2005
9/30/2003	Kaltech	2002-2-I-NY-R7	Kaltech Industries	Implement hazardous waste management practices that include the following: - Characterization of unknown waste materials prior to mixing or disposal - Labeling of all waste containers with the words Hazardous Waste and any other language necessary to communicate the specifically hazards associated with the material - Formal hazardous waste management training program	Closed - Unacceptable Action/No Response Received	1/28/2008
9/30/2003	Kaltech	2002-2-I-NY-R8	OSHA Region II	Disseminate information on the requirements of the Hazard Communication Standard, 29 CFR 1910.1200, in the major languages spoken by workers in New York City with limited or no English speaking proficiency.	Closed - Acceptable Action	3/23/2009
9/30/2003	Kaltech	2002-2-I-NY-R9	OSHA Region II	Establish a complaint and referral system with the New York City Fire Department (FDNY) to provide for a coordinated enforcement effort that addresses the following issues: - Policy and practice for referring to OSHA possible health and safety violation or unsafe conditions observed by FDNY personnel in the course of conducting inspection, but outside the scope of FDNY responsibility - Periodic training programs for FDNY personnel on how to recognize and refer serious workplace safety and health problems	Closed - Acceptable Action	3/23/2009
9/30/2003	Kaltech	2002-2-I-NY-R10	New York City Fire Department	Establish a complaint and referral system with the Occupational Safety and Health Administration (OSHA; Region II) to provide for a coordinated enforcement effort that addresses the following issues: - Policy and practice for referring to OSHA possible health and safety violations or unsafe conditions observed by FDNY personnel in the course of conducting inspections, but outside the scope of FDNY responsibility. - Periodic training programs for FDNY personnel on how to recognize and refer serious workplace safety and health problems	Closed - Acceptable Action	8/3/2009

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9/30/2003	Kaltech	2002-2-I-NY-R11	Association of State and Territorial Solid Waste Management Officials	Communicate the findings of this report to your membership	Closed - Acceptable Action	3/18/2008
9/30/2003	Kaltech	2002-2-I-NY-R12	Building Owners and Managers Association	Communicate the findings of this report to your membership	Closed - No Longer Applicable	3/7/2008
9/30/2003	Kaltech	2002-2-I-NY-R13	New York City Central Labor Council, AFL-CIO	Communicate the findings of this report to your membership.	Closed - Acceptable Action	3/28/2006
9/30/2003	Kaltech	2002-2-I-NY-R14	U.S. Conference of Mayors	Communicate the findings of this report to your membership (Closed - No Longer Applicable	10/11/2006
9/30/2003	Kaltech	2002-2-I-NY-R15	National League of Cities	Communicate the findings of this report to your membership.	Closed - No Longer Applicable	3/28/2006
9/30/2003	Kaltech	2002-2-I-NY-R16	New York Committee on Occupational Safety and Health (NYCOSH)	Communicate the findings of this report to your membership	Closed - No Longer Applicable	9/13/2006
9/30/2003	Kaltech	2002-2-I-NY-R17	New York State Conference of Mayors and Municipal Officials (NYCOM)	Communicate the findings of this report to your membership (2002-02-NY-R17)	Closed - No Longer Applicable	8/10/2010
9/30/2003	Kaltech	2002-2-I-NY-R18	The Real Estate Board of New York, Inc.	Communicate the findings of this report to your membership	Closed - Acceptable Action	5/8/2006
9/30/2003	Kaltech	2002-2-I-NY-R19	Skyscraper Safety Campaign	Communicate the findings of this report to our membership	Closed - No Longer Applicable	2/9/2005
10/15/2003	First Chemical	2003-1-I-MS-R1	E.I. du Pont de Nemours and Company	Conduct audits to ensure that the First Chemical Pascagoula facility addresses the issues detailed below, under "DuPont-First Chemical Pascagoula Facility." Communicate results of these audits to the workforce. (2003-01-I-MS-R1) (please see recommendations 2-7)	Closed - Acceptable Action	8/23/2005
10/15/2003	First Chemical	2003-1-I-MS-R10	American Chemistry Council (ACC)	Amend the Technical Specifications guidelines in the Responsible Care Management System to explicitly require facilities to identify findings and lessons learned from process hazard analyses and incident investigations in one unit and apply them to other equipment that processes similar material. (2003-01-I-MS-R10)	Closed - Acceptable Action	8/23/2006
10/15/2003	First Chemical	2003-1-I-MS-R11	American Chemistry Council (ACC)	Ensure that ACC members understand the audit requirements of Responsible Care and accurately identify and address gaps in facility process safety programs.	Closed - Acceptable Action	3/28/2006
10/15/2003	First Chemical	2003-1-I-MS-R12	American Chemistry Council (ACC)	Communicate the findings of this report to your membership. (2003-01-I-MS-R12)	Closed - Acceptable Action	6/21/2006
10/15/2003	First Chemical	2003-1-I-MS-R13	Synthetic Organic Chemical Manufacturers Association (SOCMA)	Amend the Technical Specifications in the Responsible Care Management System to explicitly require facilities to identify findings and lessons learned from process hazard analyses and incident investigations in one unit and apply them to other equipment that processes similar material.	Open - Awaiting Response or Evaluation/Approval of Response	
10/15/2003	First Chemical	2003-1-I-MS-R14	Synthetic Organic Chemical Manufacturers Association (SOCMA)	Ensure that SOCMA members understand the audit requirements of Responsible Care and accurately identify and address gaps in facility process safety programs. (2003-01-I-MS-R14)	Open - Awaiting Response or Evaluation/Approval of Response	

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10/15/2003	First Chemical	2003-1-I-MS-R15	Synthetic Organic Chemical Manufacturers Association (SOCMA)	Communicate the findings of this report to your membership. (2003-01-I-MS-R15)	Closed - Acceptable Action	6/21/2006
10/15/2003	First Chemical	2003-1-I-MS-R2	Dupont - First Chemical Pascagoula Facility	Establish a program for conducting process hazard analyses of processes involving reactive materials. (2003-01-I-MS-R2)	Closed - Acceptable Action	3/28/2006
10/15/2003	First Chemical	2003-1-I-MS-R3	Dupont - First Chemical Pascagoula Facility	Evaluate the need for layers of protection and install appropriate safeguards, such as alarms and interlocks, to reduce the likelihood of a runaway reaction and catastrophic release of material. (2003-01-I-MS-R3)	Closed - Acceptable Action	3/28/2006
10/15/2003	First Chemical	2003-1-I-MS-R4	Dupont - First Chemical Pascagoula Facility	Review and revise as necessary procedures for units that process highly energetic material, effectively communicate the updated procedures, and train workers appropriately. Revised procedures should include (2003-01-I-MS-R4): - Specific steps for isolation of energy sources. - Warnings and cautions concerning process chemicals and consequences of deviations from operating limits. - Critical operating limits and guidance when the limits are exceeded. - Instruction on how to perform a shutdown for all foreseeable causes, to ensure proper isolation, and to continue monitoring critical parameters (such as temperature) while the column is shut down; in addition, review conditions under which material must be deinventoried (such as during extended shutdowns).	Closed - Acceptable Action	8/10/2010
10/15/2003	First Chemical	2003-1-I-MS-R5	Dupont - First Chemical Pascagoula Facility	Conduct a facility-wide survey of pressure vessels to ensure that all equipment that processes reactive materials has appropriate overpressure protection. (2003-01-I-MS-R5)	Closed - Acceptable Action	3/28/2006
10/15/2003	First Chemical	2003-1-I-MS-R6	Dupont - First Chemical Pascagoula Facility	Identify equipment critical to safe operation of processes containing reactive materials. Upgrade the maintenance program and establish inspection schedules to ensure the integrity of such equipment. (2003-01-I-MS-R6)	Closed - Acceptable Action	3/28/2006
10/15/2003	First Chemical	2003-1-I-MS-R7	Dupont - First Chemical Pascagoula Facility	Survey and take appropriate action to ensure that buildings occupied by plant personnel are of adequate construction and are located so as to protect people inside in the event of an explosion in equipment processing reactive materials.	Closed - Acceptable Action	8/10/2010
10/15/2003	First Chemical	2003-1-I-MS-R8	Jackson County Board of Supervisors, Jackson County Emergency Management Agency, Jackson County Local Emergency Planning Committee	Update the community notification system to: - Immediately alert residents in the Moss Point community when an incident occurs that could affect their health and safety. - Determine when a community response should be initiated. - Communicate the nature of the incident and the appropriate response by residents. - Alert residents when the incident is over (i.e., the all-clear has sounded).	Closed - Acceptable Action	4/15/2011
10/15/2003	First Chemical	2003-1-I-MS-R9	Jackson County Board of Supervisors, Jackson County Emergency Management Agency, Jackson County Local Emergency Planning Committee	Conduct an awareness campaign to educate residents on the proper steps for a shelter-in-place and orderly evacuation.	Closed - Acceptable Action	4/15/2011

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8/8/2005	Honeywell	2003-13-I-LA-R1	Honeywell Baton Rouge Facility	Revise inspection and testing procedures to include effective methods for detecting and preventing leaks in coolers that use chlorine. These procedures should include the use of appropriate NDT methods.	Closed - Acceptable Action	4/15/2011
8/8/2005	Honeywell	2003-13-I-LA-R2	Honeywell Baton Rouge Facility	Analyze layers of protection installed to prevent possible consequences of failure of heat exchangers that use chlorine, and implement corrective actions as appropriate. Examples of additional measures include installing monitors on the coolant stream to detect the presence of chlorine, and determining the feasibility of operating the coolant stream at a pressure high enough to prevent the entry of chlorine in the event of a leak.	Closed - Acceptable Action	6/12/2007
8/8/2005	Honeywell	2003-13-I-LA-R3	Honeywell Baton Rouge Facility	To address ongoing issues regarding layers of protection and leaks in heat exchangers, revise procedures for performing process hazard analyses for equipment that contains hazardous materials such as chlorine to, at a minimum: - Require an evaluation of the effects of leaks in heat exchangers.	Closed - Acceptable Action	2/14/2013
8/8/2005	Honeywell	2003-13-I-LA-R4	Honeywell Baton Rouge Facility	To address ongoing issues regarding layers of protection and leaks in heat exchangers, revise procedures for performing process hazard analyses for equipment that contains hazardous materials such as chlorine to, at a minimum: - Consider the layers of protection necessary to prevent a catastrophic incident and require recommendations to be implemented when existing protection is inadequate.	Closed - Acceptable Action	2/14/2013
8/8/2005	Honeywell	2003-13-I-LA-R5	Honeywell Baton Rouge Facility	Revise the incident investigation procedure to ensure that odors inside positive pressure control rooms are investigated, the causes identified, and the appropriate corrective actions implemented. Address causes of the releases as well as entry of the material into the building.	Closed - Acceptable Action	4/15/2011
8/8/2005	Honeywell	2003-13-I-LA-R6	Honeywell Baton Rouge Facility	Survey units that handle chlorine, and evaluate the effectiveness of shutdown systems for detecting and preventing the release of chlorine. At a minimum, ensure that shutdown systems and procedures are integrated to stop all potential sources of chlorine.	Closed - Acceptable Action	6/12/2007
8/8/2005	Honeywell	2003-13-I-LA-R7	Honeywell Baton Rouge Facility	Conduct training to emphasize that MOC evaluations must consider whether emergency shutdown procedures need to be changed when there are changes in material inventory.	Closed - Acceptable Action	2/14/2013
8/8/2005	Honeywell	2003-13-I-LA-R8	Honeywell Baton Rouge Facility	Conduct a hazard analysis (such as a job safety analysis) in the ton-cylinder area, incorporate appropriate findings into unit operating procedures, and train personnel accordingly.	Closed - Acceptable Action	4/10/2012
8/8/2005	Honeywell	2003-13-I-LA-R9	Honeywell Baton Rouge Facility	Revise plant procedures on receiving cylinders to require that weights be recorded on incoming materials and suspicious materials be isolated so that hazardous materials are handled appropriately.	Closed - Acceptable Action	4/10/2012
8/8/2005	Honeywell	2003-13-I-LA-R10	Honeywell Baton Rouge Facility	Revise the personal protective equipment matrix to include requirements for specific activities, such as draining HF equipment. Refer to the HFIPI guidelines as appropriate.	Closed - Acceptable Action	2/14/2013
8/8/2005	Honeywell	2003-13-I-LA-R11	Honeywell Baton Rouge Facility	Develop and implement a program for the identification and management of hazards in nonroutine situations. Ensure that this program covers the following: - Situations where employees are unable to follow standard operating procedures, such as properly purging equipment.	Closed - Acceptable Action	6/12/2007
8/8/2005	Honeywell	2003-13-I-LA-R12	Honeywell Baton Rouge Facility	Develop and implement a program for the identification and management of hazards in nonroutine situations. Ensure that this program covers the following: - Circumstances where there is no specific formal procedure for handling a highly hazardous chemical.	Closed - Acceptable Action	6/12/2007
8/8/2005	Honeywell	2003-13-I-LA-R13	Honeywell Baton Rouge Facility	Develop and implement a program for the identification and management of hazards in nonroutine situations. Ensure that this program covers the following: - Operations following an emergency shutdown.	Closed - Acceptable Action	2/14/2013

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8/8/2005	Honeywell	2003-13-I-LA-R14	Honeywell International, Inc.	Develop and implement corporate standards to ensure positive pressure control rooms, including the HVAC systems, are designed and maintained to prevent the short-term entry of hazardous materials. Implement corporate standard changes at the Baton Rouge facility, and other Honeywell facilities as appropriate.	Closed - Acceptable Action	6/12/2007
8/8/2005	Honeywell	2003-13-I-LA-R15	Honeywell International, Inc.	Develop and implement procedures for positively identifying material rejected by contractors such as C&MI so that hazardous materials are handled appropriately.	Open - Awaiting Response or Evaluation/Approval of Response	
8/8/2005	Honeywell	2003-13-I-LA-R16	Honeywell International, Inc.	Develop and implement corporate standards for safely handling hydrogen fluoride.	Closed - Acceptable Action	2/14/2013
8/8/2005	Honeywell	2003-13-I-LA-R17	Honeywell International, Inc.	In light of the findings of this investigation report, conduct a comprehensive audit of fluorine-based manufacturing facilities in your Specialty Materials group facilities. Ensure that the audit addresses: <i>Thoroughness of hazard analysis and adequacy of safeguards.</i>	Closed - Acceptable Action	6/12/2007
8/8/2005	Honeywell	2003-13-I-LA-R18	Honeywell International, Inc.	In light of the findings of this investigation report, conduct a comprehensive audit of fluorine-based manufacturing facilities in your Specialty Materials group facilities. Ensure that the audit addresses: <i>Recognition and management of nonroutine situations.</i>	Closed - Acceptable Action	6/12/2007
8/8/2005	Honeywell	2003-13-I-LA-R19	Honeywell International, Inc.	In light of the findings of this investigation report, conduct a comprehensive audit of fluorine-based manufacturing facilities in your Specialty Materials group facilities. Ensure that the audit addresses: <i>Adherence to standard operating procedures.</i>	Closed - Acceptable Action	6/12/2007
8/8/2005	Honeywell	2003-13-I-LA-R20	Honeywell International, Inc.	In light of the findings of this investigation report, conduct a comprehensive audit of fluorine-based manufacturing facilities in your Specialty Materials group facilities. Implement the recommendations from the audit and communicate the findings to the work force.	Closed - Acceptable Action	5/22/2012
8/8/2005	Honeywell	2003-13-I-LA-R21	Honeywell International, Inc.	Communicate the findings and recommendations of this report to your employees at fluorine-based manufacturing facilities in your Specialty Materials group.	Closed - Acceptable Action	5/22/2012
8/8/2005	Honeywell	2003-13-I-LA-R22	American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)	Develop guidance on the effective design and maintenance of HVAC systems and other necessary control room components designed to protect employees and equipment in the event of a release of hazardous materials.	Open - Awaiting Response or Evaluation/Approval of Response	
8/8/2005	Honeywell	2003-13-I-LA-R23	Baton Rouge Fire Department	Evaluate and update as necessary community notification procedures to include timely notification of residents in the event of a chemical release. Conduct periodic refresher training with staff on the requirements in the procedures.	Closed - Acceptable Action	8/20/2010
8/8/2005	Honeywell	2003-13-I-LA-R24	East Baton Rouge Parish Office of Homeland Security and Emergency Preparedness (OHSEP)	Conduct an awareness campaign to educate residents on the proper response during a chemical release. Include instructions on the way residents (including those outside the affected area) can obtain information during an emergency.	Closed - Acceptable Action	1/25/2011
8/8/2005	Honeywell	2003-13-I-LA-R25	Hydrogen Fluoride Industry Practices Institute (HFIPI)	Conduct a survey of members to determine best industry practices for HF handling activities, such as draining equipment, use of open systems, and nonroutine work. Develop best practices guidance as appropriate and communicate it to your members.	Open - Acceptable Response or Alternate Response	
8/8/2005	Honeywell	2003-13-I-LA-R26	Hydrogen Fluoride Industry Practices Institute (HFIPI)	Communicate the findings and recommendations from the August 13 incident to your membership.	Closed - Acceptable Action	2/16/2006

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8/8/2005	Honeywell	2003-13-I-LA-R27	Chemical and Metal Industries (C&MI)	Develop formal procedures for disposition of nonconforming materials received from customers. Ensure that procedures include positive identification prior to shipment.	Closed - Acceptable Action	2/16/2006
8/8/2005	Honeywell	2003-13-I-LA-R28	American Society for Nondestructive Testing (ASNT)	Communicate the findings and recommendations from the July 20 incident to your membership. Emphasize the need to evaluate test methods for appropriateness in the given equipment.	Closed - Acceptable Action	3/28/2006
8/8/2005	Honeywell	2003-13-I-LA-R29	International Brotherhood of Teamsters Local #5	Work with Honeywell to communicate the findings and recommendations of this report to your members employed at the Honeywell Baton Rouge Facility.	Closed - Unacceptable Action/No Response Received	2/14/2013
2/13/2006	Sterigenics	2004-11-I-CA-R1	Sterigenics International	Audit all Sterigenics ethylene oxide sterilization facilities using oxidizing emissions control devices. Ensure that audits assess the issues detailed below, under Sterigenics International - Ontario Facility, and that necessary corrective measures are promptly implemented. Communicate results of these audits to your workforce.	Closed - Acceptable Action	4/12/2007
2/13/2006	Sterigenics	2004-11-I-CA-R2	Sterigenics International - Ontario Facility	Review and revise the Process Hazard Analysis (PHA) program to ensure that: - Hazardous scenarios are identified, evaluated, and documented. - Lessons learned from past incidents are applied, where appropriate.	Closed - Acceptable Action	4/12/2007
2/13/2006	Sterigenics	2004-11-I-CA-R3	Sterigenics International - Ontario Facility	Evaluate current process controls and install appropriate safeguards, such as: - Real-time chamber and/or effluent concentration monitoring connected to alarms, interlocks, and/or fast acting control devices. - Post-ignition deflagration detection and damage control devices.	Closed - Acceptable Action	4/12/2007
2/13/2006	Sterigenics	2004-11-I-CA-R4	Sterigenics International - Ontario Facility	Ensure that all employees with passwords capable of modifying the sterilization cycle sequence have process experience and training that enables them to make safe process decisions. Training should emphasize flammability hazards and the need for gas washes when the chamber is empty of products to be sterilized.	Closed - Acceptable Action	4/12/2007
2/13/2006	Sterigenics	2004-11-I-CA-R5	Sterigenics International - Ontario Facility	Ensure that the control room, and any other room where employees congregate in dangerous proximity to the sterilization area, is located and/or designed to protect workers from an explosion.	Closed - Acceptable Action	4/12/2007
2/13/2006	Sterigenics	2004-11-I-CA-R6	Sterigenics International - Ontario Facility	Communicate the findings and recommendations of this report to all employees, including operators and maintenance staff.	Closed - Acceptable Action	4/12/2007
2/13/2006	Sterigenics	2004-11-I-CA-R7	California Air Resources Board	In collaboration with other state/regional agencies as necessary, such as California Occupational Safety and Health Administration, recommend to facilities that treat ethylene oxide backvent emissions with oxidizing emissions control devices to evaluate current process controls and install appropriate safeguards, such as: - Real-time chamber and/or effluent concentration monitoring connected to alarms, interlocks, and/or fast acting control devices. - Post-ignition deflagration detection and damage control devices.	Closed - Acceptable Action	7/21/2006
2/13/2006	Sterigenics	2004-11-I-CA-R8	California Occupational Safety and Health Administration (Cal/OSHA)	In collaboration with other state/regional agencies as necessary, such as California Environmental Protection Agency, identify the ethylene oxide sterilization facilities in California that utilize oxidizing emissions control devices and conduct inspections of those facilities (including the Sterigenics Ontario facility) in terms of the findings of this report. Ensure prompt correction of all violations identified during these inspections.	Closed - Acceptable Action	2/14/2013

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2/13/2006	Sterigenics	2004-11-I-CA-R9	National Fire Protection Association	Review and revise NFPA 560, Standard for the Storage, Handling, and Use of Ethylene Oxide for Sterilization and Fumigation in terms of the findings of this report. Specifically: - Include references to the following: o NFPA 69, Standard on Explosion Prevention Systems. o NFPA 86, Ovens and Furnaces. o NIOSH Alert: Preventing Worker Injuries and Deaths from Explosions in Industrial Ethylene Oxide Sterilization Facilities.	Closed - Acceptable Action	4/26/2010
2/13/2006	Sterigenics	2004-11-I-CA-R10	National Fire Protection Association	Review and revise NFPA 560, Standard for the Storage, Handling, and Use of Ethylene Oxide for Sterilization and Fumigation in terms of the findings of this report. Specifically: - Include requirements for appropriate safeguards, such as: o Real-time chamber and/or effluent concentration monitoring connected to alarms, interlocks, and/or fast acting control devices. o Post-ignition deflagration detection and damage control devices.	Closed - Acceptable Action	4/26/2010
2/13/2006	Sterigenics	2004-11-I-CA-R11	National Institute for Occupational Safety and Health (NIOSH)	Revise and reissue the NIOSH Alert: Preventing Worker Injuries and Deaths from Explosions at Industrial Ethylene Oxide Facilities (Publication No. 2002-119) in terms of the findings of this report. Specifically: - Include industry guidance materials on Process Hazard Analysis (PHA), such as those published by the Center for Chemical Process Safety (CCPS).	Closed - Acceptable Action	8/3/2009
2/13/2006	Sterigenics	2004-11-I-CA-R12	National Institute for Occupational Safety and Health (NIOSH)	Revise and reissue the NIOSH Alert: Preventing Worker Injuries and Deaths from Explosions at Industrial Ethylene Oxide Facilities (Publication No. 2002-119) in terms of the findings of this report. Specifically: - Add references to NFPA 68 Guide for Venting of Deflagrations; NFPA 69 Standard on Explosion Prevention Systems; NFPA 86 Ovens and Furnaces; and NFPA 560 Standard for the Storage, Handling, and Use of Ethylene Oxide for Sterilization and Fumigation.	Closed - Acceptable Action	8/3/2009
2/13/2006	Sterigenics	2004-11-I-CA-R13	National Institute for Occupational Safety and Health (NIOSH)	Revise and reissue the NIOSH Alert: Preventing Worker Injuries and Deaths from Explosions at Industrial Ethylene Oxide Facilities (Publication No. 2002-119) in terms of the findings of this report. Specifically: - Coordinate with the Ethylene Oxide Sterilization Association (EOSA) to remove the portion of paragraph D of Appendix C that states, "[t]he accuracy, reliability, resolution, and availability of current ethylene oxide measurement devices is questionable.?"	Closed - Acceptable Action	8/3/2009
2/13/2006	Sterigenics	2004-11-I-CA-R14	Ethylene Oxide Sterilization Association	Coordinate with NIOSH to revise and reissue Appendix C of the NIOSH Alert: Preventing Worker Injuries and Deaths from Explosions at Industrial Ethylene Oxide Facilities (Publication No. 2002-119) in terms of the findings of this report. Specifically, remove the portion of paragraph D that states, "[t]he accuracy, reliability, resolution, and availability of current ethylene oxide measurement devices is questionable."	Closed - Acceptable Action	8/3/2009
2/13/2006	Sterigenics	2004-11-I-CA-R15	Ethylene Oxide Sterilization Association	Conduct outreach to communicate the findings and recommendations of this report, and the contents of the NIOSH Alert: Preventing Worker Injuries and Deaths from Explosions at Industrial Ethylene Oxide Facilities, to your membership.	Closed - Acceptable Action	8/3/2009
2/13/2006	Sterigenics	2004-11-I-CA-R16	EPA (www.epa.gov)	Communicate the findings and recommendations of this report to the states that require EO backvent emissions treatment. Emphasize the need for facilities to evaluate current process controls and install appropriate safeguards, such as: - Real-time chamber and/or effluent concentration monitoring connected to alarms, interlocks, and/or fast acting control devices. - Post-ignition deflagration detection and damage control devices.	Closed - Acceptable Action	1/30/2007
2/13/2006	Sterigenics	2004-11-I-CA-R17	Institute of Clean Air Companies	Communicate the findings and recommendations of this report to your membership.	Closed - Acceptable Action	8/20/2010

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3/31/2006	MFG	2004-9-I-GA-R1	MFG Chemical, Inc.	Develop written procedures that require a comprehensive hazard analysis of new processes, especially those involving reactive chemistry. Ensure the hazard evaluations address critical process controls, overpressure protection, alarms, and other equipment such as vent collection/containment devices to minimize the possibility and consequences of a toxic or flammable release.	Closed - Acceptable Action	4/6/2011
3/31/2006	MFG	2004-9-I-GA-R2	MFG Chemical, Inc.	Provide EPA Risk Management Program regulation and OSHA Process Safety Management program training to affected personnel to ensure that the facility understands the scope and application of each regulation, and implements all requirements prior to receiving and using covered chemicals.	Closed - Acceptable Action	4/6/2011
3/31/2006	MFG	2004-9-I-GA-R3	MFG Chemical, Inc.	Create a comprehensive emergency response plan and provide equipment and training that is appropriate to the duties assigned to employees in the event of an emergency.	Closed - Acceptable Action	6/21/2011
3/31/2006	MFG	2004-9-I-GA-R5	GP Chemicals, Inc.	Implement written procedures for tolling agreements using resources such as the CCPS book Process Safety in Outsourced Manufacturing Operations. Ensure that tolling agreements provide for: - Direct GPC involvement in new process development, including the detailed process hazard analysis and emergency planning, - Active participation in the first production run, as appropriate.	Closed - Acceptable Action	1/25/2011
3/31/2006	MFG	2004-9-I-GA-R6	Lyondell Chemical Co.	Revise the applicable sections of the Allyl Alcohol Product Safety Bulletin, appendices, and web page, to emphasize the applicability of the EPA Risk Management Program regulation and OSHA Process Safety Management standard. Clearly identify the threshold quantity of allyl alcohol applicable to each regulation.	Closed - Acceptable Action	1/8/2007
3/31/2006	MFG	2004-9-I-GA-R7	Lyondell Chemical Co.	Revise the customer site safety assessment process, clearly addressing both PSM and Risk Management Program applicability before shipping allyl alcohol to a new customer. Include a requirement to review the customer's program documents, including the (draft) RMP, and internal and external safety audit or assessment records. Require that appropriate Lyondell health, safety, and environmental personnel review the written customer safety assessment before approving the shipment of allyl alcohol.	Open - Awaiting Response or Evaluation/Approval of Response	
3/31/2006	MFG	2004-9-I-GA-R8	City of Dalton	Establish, equip, and train a hazardous materials response team. Work with the Whitfield County Emergency Management Agency to update the Emergency Operations Plan, clearly defining the roles and responsibilities of the response team.	Closed - Acceptable Action	12/6/2010
3/31/2006	MFG	2004-9-I-GA-R9	City of Dalton	Revise fire department and police department procedures and training to clearly define facility and evacuation zone access control responsibilities when hazardous chemicals are involved or suspected in an emergency.	Open - Awaiting Response or Evaluation/Approval of Response	
3/31/2006	MFG	2004-9-I-GA-R10	Whitfield County	Establish a Local Emergency Planning Committee to assist the Whitfield County Emergency Management Agency to: - Develop site-specific agency emergency response plans and standard operating procedures, - Develop training programs and conduct drills for emergencies at fixed facilities, - Educate the community regarding proper protective actions, such as shelter-in-place and evacuation procedures.	Open - Awaiting Response or Evaluation/Approval of Response	

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3/31/2006	MFG	2004-9-I-GA-R11	Whitfield County	Work with the City of Dalton, representatives from local facilities, and relevant community representatives to review and revise the Emergency Operations Plan to: -Update the list of facilities handling hazardous chemicals, including those covered by the EPA Risk Management Program regulation, -Develop standard operating procedures addressing communication of emergency information, evacuation, and shelter-in-place, - Conduct community training and drills that involve operation of the emergency notification system and potential actions in the event of an emergency, -Implement an automated community emergency notification system	Open - Awaiting Response or Evaluation/Approval of Response	
3/31/2006	MFG	2004-9-I-GA-R12	Governor, State of Georgia	Clearly designate and define the roles of the agencies responsible for ensuring compliance with all sections of the SARA Title III (Emergency Planning and Community Right-to-Know Act) including review of Local Emergency Response Plans and accompanying attachments, such as standard operating procedures.	Closed - Acceptable Action	7/21/2006
3/31/2006	MFG	2004-9-I-GA-R13	Governor, State of Georgia	Designate a responsible agency and develop a system that will encourage and assist local authorities to obtain and use Risk Management Plans for those facilities that are required to develop this information to aid in the development of the site-specific emergency response plans.	Open - Acceptable Response or Alternate Response	
3/31/2006	MFG	2004-9-I-GA-R14	Synthetic Organic Chemical Manufacturers Association (SOCMA)	Revise the SOCMA website to simplify locating the link to the CSB website www.csb.gov, such as adding a link in More Resources on the SOCMA home page. Ensure that the CSB website and the report Hazard Investigation: Improving Reactive Hazard Management, Report No. 2001-01-H can be easily located using the SOCMA website search engine.	Closed - Acceptable Action	9/13/2006
3/31/2006	MFG	2004-9-I-GA-R15	Synthetic Organic Chemical Manufacturers Association (SOCMA)	Develop a ChemStewards Management System Guidance Module that addresses tolling, including the best practices described in the CCPS book Process Safety in Outsourced Manufacturing Operations, and emergency planning involving new products.	Open - Awaiting Response or Evaluation/Approval of Response	
3/31/2006	MFG	2004-9-I-GA-R16	Synthetic Organic Chemical Manufacturers Association (SOCMA)	Develop a formal training module for the ChemStewards Management System Tolling Guidance Module and provide appropriate training to SOCMA member companies. Include in the training program a discussion on the tolling issues identified in the MFG report.	Open - Awaiting Response or Evaluation/Approval of Response	
3/31/2006	MFG	2004-9-I-GA-R4	MFG Chemical, Inc.	Implement written tolling procedures using resources such as the CCPS book Process Safety in Outsourced Manufacturing Operations. Ensure effective communication between the toller (MFG) and client throughout the process development, completion of a detailed process hazard analysis, creation of emergency procedures, and dissemination to all parties who would be involved in emergency response situations.	Closed - Acceptable Action	9/8/2011
2/7/2007	DPC Glendale	2004-2-I-AZ-R1	DPC Enterprises	Establish and implement DPC corporate engineering standards that include adequate layers of protection on chlorine scrubbers at DPC facilities, including: -additional interlocks and shutdowns, such as automatically stopping chlorine flow to the scrubber upon oxidation-reduction potential alarm; -mitigation measures, such as systems to automatically add caustic to over-chlorinated scrubbers, or back-up scrubbing capability to treat emissions from over-chlorinated scrubbers; -increases in the final caustic concentration in the scrubbers to eight percent or higher to provide a substantial safety margin against over-chlorination; and -use of the site's continuous bleach manufacturing system to convert scrubber solution to saleable bleach.	Closed - Acceptable Action	9/20/2012

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2/7/2007	DPC Glendale	2004-2-I-AZ-R10	Glendale Police Dept	Ensure that police officers responding to hazardous material incidents are briefed on specific incident conditions, and are equipped with and trained on the proper use, capabilities, and limitations of appropriate protective equipment.	Closed - Acceptable Action	3/30/2010
2/7/2007	DPC Glendale	2004-2-I-AZ-R11	Glendale Police Dept	Ensure that police officers receive hazardous materials - operations level training, and annual hazardous materials and air purifying respirator (APR) refresher training.	Closed - Acceptable Action	3/30/2010
2/7/2007	DPC Glendale	2004-2-I-AZ-R12	Glendale Police Dept	Conduct exercises with the Glendale Fire Department to identify and resolve police/fire integration issues. Coordinate exercise planning with the Arizona Division of Emergency Management Exercise Officer and with the Maricopa County LEPC. Schedule periodic hazardous materials incident drills to ensure safe and effective responses to future hazardous materials incidents.	Closed - Acceptable Action	3/30/2010
2/7/2007	DPC Glendale	2004-2-I-AZ-R13	Maricopa County Air Quality Dept	Revise DPC's permitted operating conditions to specify a minimum scrubber caustic concentration of 8 percent or more, as determined by laboratory measurement, with measurements taken daily and upon completion of each scrubber batch.	Closed - Acceptable Action	1/30/2013
2/7/2007	DPC Glendale	2004-2-I-AZ-R14	Chlorine Institute, Inc.	Clarify the chemistry involved in over-chlorination incidents so that Chlorine Scrubbing Systems, Pamphlet 89, and other pertinent publications: -Ensure that the recommended practices and safeguards prevent, mitigate, and control hazardous releases due to bleach decomposition. -Provide sufficient detail on the safety and environmental consequences of over-chlorination to enable companies to provide emergency responders with information on the potential characteristics of over-chlorination events, and on the best means of mitigating the bleach decomposition reaction following a release.	Open - Acceptable Response or Alternate Response	
2/7/2007	DPC Glendale	2004-2-I-AZ-R2	DPC Enterprises	Revise scrubber SOPs to include: -clearly described operating limits and warnings about the consequences of exceeding those limits, and -the safety and environmental hazards associated with scrubber over-chlorination.	Closed - Acceptable Action	9/20/2012
2/7/2007	DPC Glendale	2004-2-I-AZ-R3	DPC Enterprises	Train employees on the revised SOPs and include a test to verify understanding. Periodically review operator understanding of and conformance to the scrubber SOPs.	Closed - Acceptable Action	9/20/2012
2/7/2007	DPC Glendale	2004-2-I-AZ-R4	DPC Enterprises	Include scrubber operation in facility PHAs. Ensure that they: -include lessons learned from this incident and other DPC scrubber incidents, as well as industry experience with over-chlorination, and -consider off-site consequences when evaluating the adequacy of existing safeguards.	Closed - Acceptable Action	9/20/2012
2/7/2007	DPC Glendale	2004-2-I-AZ-R5	DPC Enterprises	Use a qualified, independent auditor to evaluate DPC's PSM and RMP programs against best practices. Implement audit recommendations in a timely manner at all DPC chlorine repackaging sites.	Closed - Acceptable Action	9/20/2012
2/7/2007	DPC Glendale	2004-2-I-AZ-R6	DPC Enterprises	Implement a recognized safety management system, including third party verification and certification, to achieve documented continuous improvement in safety performance at Glendale and the other DPC chlorine repackaging sites.	Closed - Acceptable Action	9/20/2012
2/7/2007	DPC Glendale	2004-2-I-AZ-R7	Glendale Fire Dept	Work with the Glendale Police Department to integrate them into the incident command structure during hazardous material incidents, and address communications issues, such as radio interoperability, to ensure the timely transmission of critical safety information to responding officers.	Closed - Acceptable Action	3/25/2010

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2/7/2007	DPC Glendale	2004-2-I-AZ-R8	Glendale Fire Dept	Conduct hazardous materials exercises with the Glendale Police Department to identify and resolve police/fire integration issues. Coordinate exercise planning with the Arizona Division of Emergency Management Exercise Officer and with the Maricopa County LEPC. Schedule periodic hazardous materials incident drills to ensure safe and effective responses to future hazardous materials incidents.	Closed - Acceptable Action	3/25/2010
2/7/2007	DPC Glendale	2004-2-I-AZ-R9	Glendale Police Dept	Work with the Glendale Fire Department to integrate the Glendale Police Department into the command structure during hazardous material incidents, and address communications issues, such as radio interoperability, to ensure the timely transmission of critical safety information to responding officers.	Closed - Acceptable Action	3/30/2010
2/16/2007	Formosa Illiopolis	2004-10-I-IL-R1	Formosa Plastics Corporation, USA	Review the design and operation of FPC USA manufacturing facilities and implement policies and procedures to ensure that: -Site-wide policies are implemented to address necessary steps and approval levels required to bypass safety interlocks and other critical safety systems. -Chemical processes are designed to minimize the likelihood and consequences of human error that could result in a catastrophic release. -Safety impacts of staffing changes are evaluated. -Risks identified during hazard analyses and near-miss and incident investigations are characterized, prioritized, and that corrective actions are taken promptly. -High-risk hazards are evaluated using layers of protection analysis (LOPA) techniques and that appropriate safeguards are installed to reduce the likelihood of a catastrophic release of material. -All credible consequences are considered in near-miss investigations. -Emergency procedures clearly characterize emergency scenarios, address responsibilities and duties of responders, describe evacuation procedures, and ensure adequate training. Ensure that periodic drills are conducted. -The siting of offices for administrative and support personnel is evaluated to ensure the safety of personnel should an explosion or catastrophic release occur	Closed - Acceptable Action	8/3/2009
2/16/2007	Formosa Illiopolis	2004-10-I-IL-R2	Formosa Plastics Corporation, USA	Conduct periodic audits of each FPC USA PVC manufacturing facility for implementation of the items in Recommendation R1. Develop written findings and recommendations. Track and promptly implement corrective actions arising from the audit. Share audit findings with the workforce at the facilities and the FPC USA Board of Directors.	Closed - Acceptable Action	8/3/2009
2/16/2007	Formosa Illiopolis	2004-10-I-IL-R3	Formosa Plastics Corporation, USA	Design and implement a program requiring audits of newly acquired facilities that address the issues highlighted in this report. Document, track, and promptly address recommended actions arising from the audits.	Closed - Acceptable Action	1/11/2008
2/16/2007	Formosa Illiopolis	2004-10-I-IL-R4	Formosa Plastics Corporation, USA	Communicate the contents of this report to all employees of FPC USA PVC facilities.	Closed - Acceptable Action	1/11/2008
2/16/2007	Formosa Illiopolis	2004-10-I-IL-R5	National Fire Protection Association	Revise NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection, to provide additional design guidance for deluge systems designed to prevent or mitigate fires and explosions. Include information concerning the limitations of using deluge systems for this purpose.	Closed - Acceptable Action	4/10/2012
2/16/2007	Formosa Illiopolis	2004-10-I-IL-R6	Vinyl Institute	Issue a safety alert to your membership highlighting the need to identify design features that may render processes vulnerable to human error and to implement sufficient layers of protection to minimize the likelihood human error causing catastrophic releases of hazardous material. Include lessons from PVC industry industrial accidents (including those described in this report and others highlighted in The Encyclopedia of PVC and elsewhere) that involved human error.	Closed - Acceptable Action	8/28/2007

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2/16/2007	Formosa Illiopolis	2004-10-I-IL-R7	EPA (www.epa.gov)	Ensure that the EPA's Enforcement Alert concerning PVC facilities includes the causes and lessons learned from this investigation. Emphasize the importance of analyzing human factors and the need to implement adequate safeguards to minimize the likelihood and consequences of human error that could result in catastrophic incidents.	Closed - Acceptable Action	3/7/2008
2/16/2007	Formosa Illiopolis	2004-10-I-IL-R8	Center for Chemical Process Safety	Develop guidelines for auditing chemical process safety at newly acquired facilities. Emphasize the identification of major hazards, a review of the acquired facility's previous incident history and hazard analyses, the adequacy of management safety systems, and harmonization of the acquired facility's standards and practices with those of the acquiring company.	Closed - Acceptable Action	8/20/2010
6/8/2007	Honeywell 4	2005-6-I-LA-R1	U.S. Department of Transportation	Expand the scope of DOT regulatory coverage to include chlorine railcar unloading operations. Ensure the regulations specifically require remotely operated emergency isolation devices that will quickly isolate a leak in any of the flexible hoses (or piping components) used to unload a chlorine railcar. The shutdown system must be capable of stopping a chlorine release from both the railcar and the facility chlorine receiving equipment. Require the emergency isolation system be periodically maintained and operationally tested to ensure it will function in the event of an unloading system chlorine leak.	Open - Acceptable Response or Alternate Response	
6/18/2007	EQ	2007-1-I-NC-RU1	Mobile Aerospace Engineering	Revise and or develop company procedures and policies to require and ensure that unspent chemical oxygen generators that have exceeded their service life be actuated and the chemical core expended before shipping by any transport mode.	Closed - Acceptable Action	1/11/2008
6/18/2007	EQ	2007-1-I-NC-RU2	Mobile Aerospace Engineering	Review and revise as necessary company procedures and policies for handling hazardous waste to ensure that hazardous waste is correctly characterized on the shipping manifest.	Closed - Acceptable Action	4/30/2008
6/18/2007	EQ	2007-1-I-NC-RU3	Mobile Aerospace Engineering	Communicate to all of your waste brokers and treatment, storage and disposal facilities to which unspent oxygen generators were shipped: -the hazards associated with unspent chemical oxygen generators and -that the incorrect shipping name was, or might have been used, for unspent chemical oxygen generators shipped from your facility	Closed - Acceptable Action	1/11/2008
3/19/2008	EQ	2007-1-I-NC-R1	EPA (www.epa.gov)	Ensure that the emergency response planning required for permitted hazardous waste treatment, storage, and disposal facilities (40 CFR 264.37) includes providing written information to state and local emergency response officials on the type, approximate quantities, and locations of materials within the facility (similar to reporting requirements of the Emergency Planning and Community Right-to-Know Act). Additionally, ensure that permit holders periodically update this information throughout the ten-year permit period.	Closed - Acceptable Action	6/1/2010
3/19/2008	EQ	2007-1-I-NC-R2	Environmental Technology Council	Petition the National Fire Protection Association, following the guidelines of their Codes and Standards Development Process (http://www.nfpa.org/index.asp), to develop a fire protection standard (occupancy standard) specific to hazardous waste treatment, storage, and disposal facilities. This standard should address fire prevention, detection, control, and suppression requirements.	Closed - Reconsidered / Superseded	8/20/2010
3/19/2008	EQ	2007-1-I-NC-R3	Environmental Technology Council	Develop standardized guidance for the handling and storage of hazardous waste to reduce the likelihood of releases and fires at hazardous waste treatment, storage, and disposal facilities.	Closed - Reconsidered / Superseded	8/20/2010
12/4/2008	Allied	2009-3-I-VA-R1	Allied Terminals Inc.	Take immediate action to reduce the risk of a catastrophic failure of Tanks 202, 205, and 209 at the Allied Terminals Hill Street facility including but not limited to significantly reducing the maximum liquid levels ("safe fill height") based on sound engineering principles. Report the actions taken to the City of Chesapeake.	Open - Acceptable Response or Alternate Response	

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12/4/2008	Allied	2009-3-I-VA-R2	Allied Terminals Inc.	Select and retain a qualified, independent tank engineering firm to evaluate Tanks 202, 205, and 209 and determine their fitness for continued service. The evaluation should be based on recognized and generally accepted good engineering practices, such as API 653 - Tank Inspection, Repair Alteration, and Reconstruction and API 579 - Fitness for Service.	Open - Acceptable Response or Alternate Response	
12/4/2008	Allied	2009-3-I-VA-R3	Allied Terminals Inc.	Within 30 days, provide the report prepared by the independent tank engineering firm to the City of Chesapeake, together with a comprehensive action plan and schedule to address any identified deficiencies.	Open - Acceptable Response or Alternate Response	
5/18/2009	Allied	2009-3-I-VA-R10	Fertilizer Institute, The	Formally recommend to all member companies the incorporation of The Fertilizer Institute tank inspection guidelines into contracts for the storage of liquid fertilizer at terminals.	Closed - Acceptable Action	1/8/2010
5/18/2009	Allied	2009-3-I-VA-R4	EPA (www.epa.gov)	Revise and reissue the Chemical Emergency Preparedness and Prevention Office Rupture Hazard from Liquid Storage Tanks Chemical Safety Alert. At a minimum, revise the alert to: -Include the Allied Terminals tank failure, -Discuss the increased rupture hazard during first fill or hydrostatic testing, and - List The Fertilizer Institute fertilizer tank inspection guidelines in the reference section.	Closed - Acceptable Action	5/12/2010
5/18/2009	Allied	2009-3-I-VA-R5	Governor and Legislature of the Commonwealth of Virginia	Require state regulation of 100,000-gallon and larger fertilizer storage tanks (which presently are located solely along and in the area of the Elizabeth River) or authorize local jurisdictions to regulate these tanks. The regulations should: - Address design, construction, maintenance, and inspection of 100,000-gallon and larger liquid fertilizer storage tanks, and - Incorporate generally recognized and accepted good engineering practice.	Open - Acceptable Response or Alternate Response	
5/18/2009	Allied	2009-3-I-VA-R6	Allied Terminals Inc.	Hire a qualified independent reviewer to verify that maximum liquid levels for all tanks at Allied's Norfolk and Chesapeake terminals meet the requirements of American Petroleum Institute Standard 653, Tank Inspection, Repair, Alteration, and Reconstruction. At a minimum, the review should verify that all requirements for welding, inspection of welds, and In-Service and Out-of-Service tank inspections are met. Make the complete review report for both terminals available to the Cities of Norfolk, Chesapeake, and Portsmouth, Virginia, as well as the Virginia Department of Environmental Quality.	Open - Awaiting Response or Evaluation/Approval of Response	
5/18/2009	Allied	2009-3-I-VA-R7	Allied Terminals Inc.	Develop and implement worker safety procedures for initial filling of tanks following major modification or change-in-service. At a minimum, require the exclusion of all personnel from secondary containment during the initial filling.	Open - Awaiting Response or Evaluation/Approval of Response	
5/18/2009	Allied	2009-3-I-VA-R8	HMT Inspection	Implement The Fertilizer Institute's inspection guidelines as part of tank inspector training and inspection procedures for fertilizer tank inspection.	Closed - Acceptable Action	7/25/2011
5/18/2009	Allied	2009-3-I-VA-R9	HMT Inspection	Revise company procedures to require tank inspectors to verify that radiography required as part of the calculation for a maximum liquid level has been performed.	Closed - Acceptable Action	7/25/2011
9/15/2009	T2	2008-3-I-FL-R1	American Institute of Chemical Engineers (AIChE)	Work with the Accreditation Board for Engineering and Technology, Inc. to add reactive hazard awareness to baccalaureate chemical engineering curricula requirements.	Closed - Exceeds Recommended Action	2/27/2012
9/15/2009	T2	2008-3-I-FL-R2	American Institute of Chemical Engineers (AIChE)	Inform all student members about the Process Safety Certificate Program and encourage program participation.	Closed - Acceptable Action	5/12/2010

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Date Issued	Case	Rec #	Recipient	Recommendation Text	Recommendation Status	Date Closed
9/15/2009	T2	2008-3-I-FL-R3	Accreditation Board for Engineering and Technology, Inc.	Work with the American Institute of Chemical Engineers to add reactive hazard awareness to baccalaureate chemical engineering curricula requirements.	Closed - Exceeds Recommended Action	2/27/2012
11/23/2009	Citgo	2009-14-I-TX-R2	Citgo Petroleum Corporation	<ul style="list-style-type: none"> • Within 60 days, complete a third-party audit of all (Corpus Christi, TX and Lemont, IL) CITGO HF alkylation unit operations in the United States as recommended by API Recommended Practice 751, Safe Operation of Hydrofluoric Acid Alkylation Units, Third Edition June 2007. The selected lead auditor shall have extensive knowledge of HF hazards, HF alkylation units, and API 751. • Consistent with the employee participation requirements of the Process Safety Management Standard for Highly Hazardous Chemicals (29 CFR 1910.119(c)), share all audit results and actions planned or completed to correct deficiencies in each refinery with all CITGO and contract employees whose work area includes that refinery's alkylation unit. 	Closed - Acceptable Action	1/25/2011
11/23/2009	Citgo	2009-14-I-TX-RUR1	Citgo Petroleum Corporation	<ul style="list-style-type: none"> • Within 30 days, develop and initiate actions to ensure adequate water supply to the CITGO HF mitigation system. Actions could include, but are not limited to, increasing onsite storage capacity, installing a permanent backup system, and developing procedures and training for water management in an emergency. • Every 30 days, report actions planned or completed to the Refinery Terminal Fire Company and Local Emergency Planning Committee. Continue the 30-day periodic reporting until all planned actions are fully implemented. 	Closed - Acceptable Action	1/25/2011
1/20/2011	Bayer	2008-8-I-WV-R1	Bayer CropScience- Research Triangle Park, NC	Revise the corporate PHA policies and procedures to require: a. Validation of all PHA assumptions to ensure that risk analysis of each PHA scenario specifically examines the risk(s) of intentional bypassing or other nullifications of safeguards, b. Addressing all phases of operation and special topics including those cited in chapter 9 of "Guidelines for Hazard Evaluation Procedures" (CCPS, 2008), and c. Training all PHA facilitators on the revised policies and procedures prior to assigning the facilitator to a PHA team. Ensure all PHAs are updated to conform to the revised procedures.	Open - Acceptable Response or Alternate Response	
1/20/2011	Bayer	2008-8-I-WV-R10	Occupational Safety & Health Administration	In light of the findings of this report and the serious potential hazards to workers and the public from chemicals used and stored at the Bayer Institute site (such as phosgene, MIC, and methomyl), conduct a comprehensive Process Safety Management (PSM) inspection of the complex. Coordinate with the Environmental Protection Agency, as appropriate.	Closed - No Longer Applicable	1/30/2013
1/20/2011	Bayer	2008-8-I-WV-R11	Occupational Safety & Health Administration	Revise the Chemical National Emphasis Program and the targeting criteria to: a. Expand the coverage to all OSHA regions, b. Include in the targeting criteria from which potential inspections are selected all establishments that have submitted certifications of completions of actions in response to previous PSM citations; c. Require NEP inspections to examine the status of compliance of all previously cited PSM program items for which the company has submitted certifications of completion to OSHA.	Closed - Acceptable Action	1/4/2012
1/20/2011	Bayer	2008-8-I-WV-R12	EPA (www.epa.gov)	In light of the findings of this report and the serious potential hazards to workers and the public from chemicals used and stored at the Bayer Institute site (such as phosgene, MIC, and methomyl), conduct a comprehensive Risk Management Program (RMP) inspection of the complex. Coordinate with the Occupational Safety and Health Administration, as appropriate.	Closed - No Longer Applicable	1/30/2013
1/20/2011	Bayer	2008-8-I-WV-R2	Bayer CropScience- Institute, WV	Review and revise, as necessary, all Bayer production unit standard operating procedures to ensure they address all operating modes (startup, normal operation, temporary operations, emergency shutdown, emergency operations, normal shutdown, and startup following a turnaround or emergency shutdown), are accurate, and approved.	Closed - Acceptable Action	1/4/2012

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1/20/2011	Bayer	2008-8-I-WV-R3	Bayer CropScience- Institute, WV	Ensure that all facility fire brigade members are trained in the National Incident Management System, consistent with municipal and state emergency response agencies.	Closed - Acceptable Action	1/4/2012
1/20/2011	Bayer	2008-8-I-WV-R4	Bayer CropScience- Institute, WV	Evaluate the fenceline air monitor program against federal, state, and local regulations, and Bayer corporate policies, and upgrade and install air monitoring devices as necessary to ensure effective monitoring of potential releases of high-hazard chemicals at the perimeter of the facility.	Closed - Acceptable Action	1/30/2013
1/20/2011	Bayer	2008-8-I-WV-R5	Bayer CropScience- Institute, WV	Commission an independent human factors and ergonomics study of all Institute site PSM/RMP covered process control rooms to evaluate the human-control system interface, operator fatigue, and control system familiarity and training. Develop and implement a plan to resolve all recommendations identified in the study that includes assigned responsibilities, required corrective actions, and completion dates.	Closed - Acceptable Action	4/10/2013
1/20/2011	Bayer	2008-8-I-WV-R6	Kanawha-Charleston Health Department, Director of the	Establish a Hazardous Chemical Release Prevention Program to enhance the prevention of accidental releases of highly hazardous chemicals, and optimize responses in the event of their occurrence. In establishing the program, study and evaluate the possible applicability of the experience of similar programs in the country, such as those summarized in Section 5.3 of this report. As a minimum: a. Ensure that the new program: 1. Implements an effective system of independent oversight and other services to enhance the prevention of accidental releases of highly hazardous chemicals 2. Facilitates the collaboration of multiple stakeholders in achieving common goals of chemical safety; and, 3. Increases the confidence of the community, the workforce, and the local authorities in the ability of the facility owners to prevent and respond to accidental releases of highly hazardous chemicals. b. Define the characteristics of chemical facilities that would be covered by the new Program, such as the hazards and potential risks of their chemicals and processes, their quantities, and similar relevant factors; c. Ensure that covered facilities develop, implement, and submit for review and approval: 1. Applicable hazard and process information and evaluations. 2. Written safety plans with	Open - Acceptable Response or Alternate Response	
1/20/2011	Bayer	2008-8-I-WV-R7A	West Virginia Department of Health and Human Resources, Secretary of the	Work with the Director of the Kanawha-Charleston Health Department to ensure the successful planning, fee collection, and implementation of the Hazardous Chemical Release Prevention Program as described in Recommendation 2008-08-WV-R6, above, including the provision of services to all eligible facilities in the State	Open - Awaiting Response or Evaluation/Approval of Response	
1/20/2011	Bayer	2008-8-I-WV-R7B	West Virginia Department of Environmental Protection, Secretary of the	Work with the Director of the Kanawha-Charleston Health Department to ensure the successful planning, fee collection, and implementation of the Hazardous Chemical Release Prevention Program as described in Recommendation 2008-08-WV-R6, above, including the provision of services to all eligible facilities in the State	Open - Awaiting Response or Evaluation/Approval of Response	
1/20/2011	Bayer	2008-8-I-WV-R8	Kanawha-Putnam Emergency Planning Committee	Work with the Kanawha and Putnam counties Emergency Response Directors to prepare and issue a revision to the Kanawha Putnam County Emergency Response Plan and Annexes to address facility emergency response and Incident Command when such functions are provided by the facility owner.	Closed - Acceptable Action	9/8/2011
1/20/2011	Bayer	2008-8-I-WV-R9	West Virginia Fire Commission	Revise the Fire Department Evaluation Administrative Section Matrix addressing the periodic inspection of local fire departments to include a requirement for inspectors to examine and identify the status of National Incident Management System fire department personnel training.	Closed - Acceptable Action	4/10/2012

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9/20/2011	DuPont Belle	2010-6-I-WV-R1	Occupational Safety & Health Administration	Revise OSHA 29 CFR 1910.101, General Industry Standard for Compressed Gases, to require facilities that handle toxic and highly toxic materials in compressed gas cylinders to incorporate provisions that are at least as effective as the 2010 edition of Section 7.9, Toxic and Highly Toxic Gases, in National Fire Protection Association (NFPA) 55, Compressed Gases and Cryogenic Fluids Code, including enclosures, ventilation and treatment systems, interlocked fail-safe shutdown valves, gas detection and alarm systems, piping system components, and similarly relevant layers of protection.	Open - Awaiting Response or Evaluation/Approval of Response	
9/20/2011	DuPont Belle	2010-6-I-WV-R10	Compressed Gas Association	Revise CGA P-1, Safe Handling of Compressed Gases in Containers, to incorporate by reference CGA E-9, Standard for Flexible, PTFE-lined Pigtailed for Compressed Gas Service.	Open - Awaiting Response or Evaluation/Approval of Response	
9/20/2011	DuPont Belle	2010-6-I-WV-R11	American Chemistry Council Phosgene Panel	Revise the Phosgene Safe Practice Guidelines Manual to • Advise against the use of hoses for phosgene transfer that are constructed of permeable cores and materials subject to chlorides corrosion. • Include guidance for the immediate reporting and prompt investigation of all potential (near-miss) phosgene releases.	Open - Awaiting Response or Evaluation/Approval of Response	
9/20/2011	DuPont Belle	2010-6-I-WV-R12	E.I. du Pont de Nemours and Company	Commission an audit in consultation with operations personnel to establish and identify the conditions that cause nuisance alarms at all DuPont facilities. Establish and implement a corporate alarm management program as part of the DuPont PSM Program, including measures to prevent nuisance alarms and other malfunctions in those systems. Include initial and refresher training as an integral part of this effort.	Closed - Acceptable Action	4/10/2013
9/20/2011	DuPont Belle	2010-6-I-WV-R13	E.I. du Pont de Nemours and Company	Revise the DuPont PSM standard to require confirmation that all safety alarms/interlocks are in proper working order (e.g., not in an active alarm state) prior to the start-up of all Higher-Hazard Process facilities.	Closed - Acceptable Action	2/14/2013
9/20/2011	DuPont Belle	2010-6-I-WV-R14	E.I. du Pont de Nemours and Company	Reevaluate and clarify the DuPont corporate MOC policies to ensure that staff can properly identify and use the distinctions between subtle and full changes and train appropriate personnel how to properly apply the distinctions on any changes in the policy.	Closed - Acceptable Action	4/10/2013
9/20/2011	DuPont Belle	2010-6-I-WV-R2	Occupational Safety & Health Administration	Take sustained measures to minimize the exposure of hazards to workers handling highly toxic gases from cylinders and associated regulators, gages, hoses, and appliances. Ensure that OSHA managers, compliance officers, equivalent state OSHA plan personnel, and regulated parties conform, under the Process Safety Management Standard (29 CFR 1910.119) Recognized and Generally Accepted Good Engineering Practices (RAGAGEP) provisions, to industry practices at least as effective as the following: 1. NFPA 55 - Compressed Gases and Cryogenic Fluids Code (2010) 2. CGA P-1 Safe Handling of Compressed Gases in Containers (2008) 3. CGA E-9 Standard for Flexible, PTFE-lined Pigtailed for Compressed Gas Service (2010) 4. ASME B31.3 Process Piping (2008)	Open - Awaiting Response or Evaluation/Approval of Response	
9/20/2011	DuPont Belle	2010-6-I-WV-R3	Dupont Belle Plant	Improve the existing maintenance management by • Supplementing the computerized system with sufficient redundancy to ensure tracking and timely scheduling of preventive maintenance for all PSM-critical equipment. • Conducting Management-of-Change (MOC) reviews for all changes to preventive maintenance orders for all PSM-critical equipment in the computerized maintenance management system.	Open - Acceptable Response or Alternate Response	

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9/20/2011	DuPont Belle	2010-6-I-WV-R4	Dupont Belle Plant	Revise the facility emergency response protocol to require that a responsible and accountable DuPont employee always be available (all shifts, all days) to provide timely and accurate information to the Kanawha County Emergency Ambulance Authority (KCEAA) and Metro 9-1-1 dispatchers.	Open - Acceptable Response or Alternate Response	
9/20/2011	DuPont Belle	2010-6-I-WV-R5	Dupont Belle Plant	Revise the near-miss reporting and investigation policy and implement a program that includes the following at a minimum: • Ensures employee participation in reporting, investigating, analyzing, and recommending corrective actions as appropriate for all near-misses and disruptions of normal operations. • Develops and encourages use of an anonymous electronic and/or hard copy near-miss reporting process for all DuPont Belle site employees. • Establishes roles and responsibilities for ownership, management, execution, and resolution of recommendations from incident or near-miss investigations at the DuPont Belle facility. • Ensures that the near-miss investigation program requires prompt investigations, as appropriate, and that results are promptly circulated to well-suited recipients throughout the DuPont Corp. • Ensures that this program is operational at all times (e.g. nights, weekends, and holiday shifts).	Closed - Acceptable Action	2/14/2013
9/20/2011	DuPont Belle	2010-6-I-WV-R6	E.I. du Pont de Nemours and Company	Revise safeguards for phosgene handling at all DuPont facilities by • Requiring that all indoor phosgene production and storage areas, as defined in NFPA 55, have secondary enclosures, mechanical ventilation systems, emergency phosgene scrubbers, and automated audible alarms, which are, at a minimum, consistent with the standards of NFPA 55 for highly toxic gases. • Prohibiting the use of hoses with permeable cores and materials susceptible to chlorides corrosion for phosgene transfer. • Conducting annual phosgene hazard awareness training for all employees who handle phosgene, including the hazards associated with thermal expansion of entrapped liquid phosgene in piping and equipment.	Closed - Acceptable Action	4/10/2013
9/20/2011	DuPont Belle	2010-6-I-WV-R7	E.I. du Pont de Nemours and Company	Review all DuPont units that produce and handle phosgene that, at a minimum, observe and document site-specific practices for engineering controls, construction materials, PPE, procedures, maintenance, emergency response, and release detection and alarms, and use information from external sources to develop and implement consistent company-wide policies for the safe production and handling of phosgene.	Open - Acceptable Response or Alternate Response	
9/20/2011	DuPont Belle	2010-6-I-WV-R8	E.I. du Pont de Nemours and Company	For each DuPont facility that uses, but does not manufacture, phosgene onsite • Conduct a risk assessment of manufacturing phosgene onsite against the current configuration. • Communicate the findings of each assessment to compile recommendations applicable to all DuPont phosgene delivery systems. • Implement these recommendations.	Open - Acceptable Response or Alternate Response	
9/20/2011	DuPont Belle	2010-6-I-WV-R9	Compressed Gas Association	Revise CGA P-1, Safe Handling of Compressed Gases in Containers, to include specific requirements for storing and handling highly toxic compressed gas, including enclosure ventilation and alarm requirements at least as protective as Section 7.9, Toxic and Highly Toxic Gases, in NFPA 55, Compressed Gases and Cryogenics Fluids Code.	Open - Acceptable Response or Alternate Response	
1/17/2013	DEI	2011-6-I-HI-R1	Federal Acquisition Regulatory Council	Establish an additional contractor responsibility determination requirement under Subpart 9.104-1 of the Federal Acquisition Regulation (FAR) addressing contractor safety performance. The analysis under this requirement should focus on incident prevention, and environmental and system safety. At a minimum, the language should specifically require the review of a prospective contractor's: • Environmental and safety programs; • Safety record and incident history; • Ability to use safe methods for any work involving hazardous materials (including explosives); and • Suitable training and qualifications for the personnel involved in the work including prior relevant safety experience.	Open - Awaiting Response or Evaluation/Approval of Response	

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1/17/2013	DEI	2011-6-I-HI-R10	EPA (www.epa.gov)	Until recommendation 2011-06-I-HI-R9 can be implemented, develop and issue a policy guidance document to provide a regulatory process with rigorous safety reviews to replace the use of emergency permits under 40 CFR §270.61 for the disposal of explosive hazardous materials, including fireworks. At a minimum, the new process should require the use of best available technology, safe disposal methodologies, as well as safety management practices, such as those required by OSHA's Process Safety Management Standard (PSM), 29 CFR §1910.119 (e.g., hazard analysis and control, management of change). Ensure its effective communication to all EPA regional administrators, state environmental agencies, and organizations within the fireworks industry.	Open - Awaiting Response or Evaluation/Approval of Response	
1/17/2013	DEI	2011-6-I-HI-R11	EPA (www.epa.gov)	Effectively participate in the National Fire Protection Association's standard development process to develop guidance on the safe and environmentally sound disposal of fireworks, as recommended under recommendation 2011-06-I-HI-R7.	Open - Awaiting Response or Evaluation/Approval of Response	
1/17/2013	DEI	2011-6-I-HI-R12	Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF)	Effectively participate in the National Fire Protection Association's standard development process to develop guidance on the safe disposal of fireworks, as recommended under recommendation 2011-06-I-HI-R7.	Open - Awaiting Response or Evaluation/Approval of Response	
1/17/2013	DEI	2011-6-I-HI-R2	Treasury Office of the Procurement Executive	Establish formal policy requiring that: • Solicitations for contracts dealing with the storage, handling, and disposal of explosive hazardous materials, including fireworks, incorporate rigorous safety-related contractor selection provisions such as those provided in the DoD's Contractor's Safety Manual for Ammunition and Explosives, Section C1.5, "Pre-Award Safety Survey"; and • Contracts dealing with the storage, handling, and disposal of explosive hazardous materials, including fireworks, include a provision requiring that any subcontract (regardless of tier) for the storage, handling, and disposal of explosives (including fireworks) be selected based on rigorous safety-related contractor selection provisions such as those provided in the DoD's Contractor's Safety Manual for Ammunition and Explosives, Section C1.5, "Pre-Award Safety Survey."	Open - Awaiting Response or Evaluation/Approval of Response	
1/17/2013	DEI	2011-6-I-HI-R3	Treasury Office of the Procurement Executive	Establish a formal policy requiring that contracts and subcontracts dealing with the storage, handling, and disposal of explosive hazardous materials, including fireworks, incorporate rigorous safety-related contractor oversight provisions such as those provided in the DoD's Contractor's Safety Manual for Ammunition and Explosives, Section C1.6, "Pre-Operational Safety Survey" and C1.7, "Post-Award Contractor Responsibilities" to provide effective oversight of subcontractors handling and disposing of explosives and hazardous materials.	Open - Awaiting Response or Evaluation/Approval of Response	
1/17/2013	DEI	2011-6-I-HI-R4	Treasury Office of the Procurement Executive	When the NFPA guidance developed by the National Fire Protection Association for the safe disposal of fireworks as recommended under recommendation 2011-06-I-HI-R7 is completed, incorporate this document by reference into the formal policies established by 2011-06-I-HI-R2 and 2011-06-I-HI-R3.	Open - Awaiting Response or Evaluation/Approval of Response	
1/17/2013	DEI	2011-6-I-HI-R5	Treasury Executive Office for Asset Forfeiture (TEOAF)	Require additional provisions within the TEOAF seized property management contract, such as a contract line item number (CLIN), that provide for the prime contractor to use expert(s) to assist the prime contractor's personnel in the selection and oversight of subcontractors who handle, store, or dispose of explosive hazardous materials, including fireworks, pursuant to the main contract.	Open - Awaiting Response or Evaluation/Approval of Response	

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1/17/2013	DEI	2011-6-I-HI-R6	VSE Corporation	Use experts to: • Assist VSE procurement in selecting vendors to properly handle, store, and dispose of explosive hazardous materials, including fireworks, pursuant to prime contract requirements; and, • Assist VSE personnel in overseeing the work to ensure it is being conducted safely.	Open - Awaiting Response or Evaluation/Approval of Response	
1/17/2013	DEI	2011-6-I-HI-R7	National Fire Protection Association	Develop a new standard, or incorporate within an existing standard, best practices for the safe disposal of waste fireworks that are consistent with environmental requirements. At a minimum this guidance or standard should: • Discourage the disassembly of waste fireworks as a step in the disposal process; • Minimize the accumulation of waste explosive materials, and encourage practices that reduce, recycle, reuse, or repurpose fireworks; and • Incorporate input from ATF, EPA, and other agencies, experts, and available resources on fireworks disposal methodologies.	Open - Awaiting Response or Evaluation/Approval of Response	
1/17/2013	DEI	2011-6-I-HI-R8	National Fire Protection Association	Once fireworks disposal best practices under recommendation 2011-06-I-HI-R7 is completed, develop and implement an outreach plan to promptly communicate the new NFPA practices to relevant government agencies and private entities that dispose of waste fireworks.	Open - Awaiting Response or Evaluation/Approval of Response	
1/17/2013	DEI	2011-6-I-HI-R9	EPA (www.epa.gov)	Revise the Resource Conservation and Recovery Act (RCRA) Subtitle C regulations to require a permitting process with rigorous safety reviews to replace the use of emergency permits under 40 CFR §270.61 for the disposal of explosive hazardous materials, including fireworks. At a minimum, the new process should require the use of best available technology, safe disposal methodologies, as well as safety management practices, such as those required by OSHA's Process Safety Management Standard (PSM), 29 CFR §1910.119 (e.g., hazard analysis and control, management of change).	Open - Awaiting Response or Evaluation/Approval of Response	

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Investigation	Number
Sierra	16
Morton	15
BP Amoco	11
Reactives	24
Georgia-Pacific	16
DPC Festus	24
Kaltech	19
First Chemical	15
Honeywell 1-3	29
Sterigenics	17
MFG	16
DPC Glendale	14
Formosa Iliopolis	8
Honeywell 4	1
EQ	6
Allied	10
T2	3
Citgo	2
Bayer	13
DuPont Belle	14
DEI	12
Motiva	19
TOTAL	304