



COMMISSIONERS
Jane L. Campbell
Jimmy Dimora
Tim McCormack

MEMORANDUM

TO: Facility Emergency Coordinators for Facilities Storing
Extremely Hazardous Substances

CC: Community Emergency Coordinators
Cuyahoga County Fire Chiefs
Cuyahoga County Police Chiefs
Murray A. Withrow
Jeanne M. Schmotzer
Michael S. Kalstrom
Robert G. Rolan, Ph.D.
Jennifer L. Sterin

FROM: Robert J. Patton, Chairman, Cuyahoga County LEPC
Richard N. Connelly, Vice Chairman, Cuyahoga County LEPC

DATE: November 21, 2001

RE: Security at Facilities Storing Extremely Hazardous Substances

Recent tragic events make it more important than ever to review site security at your facility. The Cuyahoga County LEPC recommends that you undertake such a review to assure that the hazardous materials stored on-site at your location are adequately protected from intruders by structural and procedural safeguards. It is also recommended that you review any emergency plans for your facility to assure that you have accounted for the possibility of deliberate releases of these materials by others. Finally it is recommended that you review personnel protection issues as well as any opportunities for hazard reduction.

Last month we forwarded you a memorandum that recommended that you contact local public safety officials for your community to get further assistance with plans and procedures and their coordination with local emergency responders. This correspondence is intended to assist you in your review of your facility's security. Please review the site security considerations listed below and consider those that may apply to your facility. These considerations were designed to address all EHS facilities and many of the recommendations may not be

ADMINISTRATION
Office (216) 443-3196
FAX (216) 443-4923

CECOMS CENTER
24-hr Dispatch (216) 771-1363
Office (216) 443-5941
FAX (216) 443-5705

EMERGENCY MANAGEMENT
Office (216) 443-5700
FAX (216) 443-5705

SARA/LEPC
Office (216) 443-7597
FAX (216) 443-5705

appropriate for your facility. However, we recommend that you review them all to assist with the comprehensive site security review that the LEPC recommends.

We recommend the following documents for more detailed information on facility emergency planning and site security:

Site Security Guidelines for the U.S. Chemical Industry, American Chemistry Council, Chlorine Institute, Inc., Synthetic Organic Chemical Manufacturers Association, October 2001. This document is available on the Internet at <http://www.AmericanChemistry.com>.

Emergency Management Guide for Business and Industry, Federal Emergency Management Agency, October 1993. This document is available on the Internet at <http://www.fema.gov/library/lib07.htm>.

Chemical Accidents from Electric Power Outages, United States Environmental Protection Agency, EPA550-F-01-010, September 2001. This document is available on the Internet at <http://www.epa.gov/swercepp/p-new.htm>.

National Fire Protection Association code *NFPA 1600 – Disaster Management (latest edition)*. This document is available for a fee from the NFPA at <http://www.nfpa.org>.

SITE SECURITY CONSIDERATIONS FOR EHS FACILITIES*

PHYSICAL SECURITY

- **Provide Security Lighting** that delivers protective illumination in all weather, including secure automatic auxiliary systems and power sources (such as generators or batteries), underground circuits, and redundant wiring.
- **Install Intrusion Detection Systems and Alarms** that protect EHS operations by detecting motion, heat, smoke, sound, or pressure at the facility perimeter, in critical areas (such as computer centers and EHS areas), and at all potential access points (such as doors, windows, floors, roof hatches and skylights, gates, manholes, drains and discharge outfalls, adjoining buildings, and air vents).
- **Consider Closed Circuit TV** that maximizes intrusion-monitoring capabilities.
- **Install Access Controls** that address personal identification and clearance, key control, parcel inspection, metal detection, visitor logs, escorts for outside service vendors, remote locks, and lock change schedules (including upon changes in employees).
- **Consider Grounds Maintenance and Landscaping** procedures that keep EHS zones and sightlines free from obstructions, such as double fences with vegetation-free medians.
- **Establish Guard Force Requirements** that ensure sufficient and well-prepared staffing, with accurate and updated written duties and standards for supervision, training, and performance evaluation.

- **Construct Physical Barriers** that prevent unauthorized access by persons and vehicles (including air and watercraft) through building design, well-maintained and monitored fences, walls, truck barriers, locks, window bars, safety glass, etc., including compartmental barriers around EHS areas.
- **Install Projectile Shields** that protect EHS tanks and vessels from airborne and propelled explosive devices and projectiles (as well as from blast fragments).

COMPUTER AND UTILITY SECURITY-REDUNDANT SYSTEMS

- **Review Computer Security and Consider Cyber Barriers** that block persons outside a facility from electronically manipulating computers that control critical valves, pressures, temperatures, facility access, and other safety systems (using cyber "firewalls," encryption, and electronic pass keys with changing codes).
- **Consider Physical Computer Security** safeguards for critical computer systems via fire/water/blast safe construction, access controls, dedicated security officers, safe distances from EHS hazards, secure air vents safe from EHS gas leaks, fully-compatible backup computers and expertise, backup electricity and communications, and automatic shutdown capabilities.
- **Install Failsafe Computer Backup Systems** that independently monitor critical security and safety systems and take over to prevent catastrophic failure.
- **Install Secure Backup Utilities** to ensure continuous safety and emergency response capabilities upon loss of electricity, telephones, water, sewers, or cyber systems, including redundant wiring (on-site and incoming), secure electrical panels, and backup generators.

PROCESS CONTROL

- **Establish Safe Shutdown Procedures** that enable operators to shut down facilities in emergencies; they must be clearly documented, simple, and robust enough to function in urgent situations, including clear procedures, exercises, and authority.
- **Investigate Add-on Safety Equipment** that contains, controls, and mitigates releases (such as containment buildings, water spray curtains, automatic shutoff valves, and blast mitigation barriers).
- **Plan for Product Transportation** that reduces hazards through delivery route planning (avoiding tunnels, downtown areas, and sensitive populations), random timing, alternate routes, driver training, security escorts, equipment maintenance, secure valves, compatible cargoes, and appropriate volume packaging.

EMERGENCY PLANNING, TRAINING AND EXERCISES

- **Coordinate Response Planning and exercise response plans** with local emergency responders and planning committees (LEPCs), addressing emergency notification and response, hazmat response teams, decontamination facilities, drills, evacuation routes, medical care and pharmaceutical stockpiles, trauma counseling, community restoration,

emergency resources, and additional elements listed in Section 303 of the Emergency Planning and Community Right-to-Know Act.

- **Provide for Certified Training** that prepares and certifies security and other staff on safety, fire protection, weapons, bomb threats, hostage situations, arson, access controls, security devices, first aid, self defense, case reports and records, communications, human relations, and special training on EHS dangers and response.
- **Consider Blast and Fire Safe Control Rooms and Safe Rooms** to protect workers and visitors from explosions and fires that originate from criminal activity or plant design, and contain breathing devices, first aid supplies, and secure independent external communications.
- **Evaluate the Potential Crime Impact** at your facility to determine the potential worst-case impact from terrorism involving EHS materials, in terms of injuries, deaths, and property damage on-site and off-site.
- **Establish Testing and Maintenance Schedules** that ensure the evaluation of security equipment and systems, including periodic fire and emergency drills, and daily review of grounds, fences and barriers, utilities, backup systems (such as lighting and computers), fire and intrusion detection systems, alarms, sprinklers, and other security elements.
- **Inspect Emergency Exits** and ensure that workers can quickly vacate buildings and grounds through clearly marked and maintained exits. Self-contained alarms and warning signs prevent non-emergency use.
- **Appoint On-site Response Teams** to shut down or reestablish power or water, contact outside assistance (police, fire, medical, bomb squad), provide first aid, direct evacuations, and operate and troubleshoot backup computer systems.

DESIGN

- **Prioritize Safety in Design** both prior to construction and major reconstruction at EHS sites, and during safer redesign of existing security risk facilities.
- **Reduce/Eliminate Inherent Hazards** where feasible (e.g. substitute less hazardous chemicals, reduce quantity of hazardous chemicals, store hazardous chemicals at other than ambient temperature and pressure only when necessary).
- **Make Architects Aware of Safety Concerns** to promote the incorporation safer design and security elements into new construction, reconstruction, and redesign of EHS areas.
- **Establish Construction Materials Specifications** that specify materials that are appropriately resistant to fire, blast, and forced entry, among other safety and security concerns.
- **Establish Security Device Standards** that specify suitable materials, hardware, construction, inspection, and maintenance of locks and frames.

- **Evaluate Buffer Zone Setbacks** to determine if sufficient separation exists between EHS facilities and public receptors such as schools, homes, day care centers, sports arenas, shopping malls, major highways, businesses, and hospitals.

AUDITING PROCEDURES

- **Establish Materials Accounting Procedures** that make evident any theft of EHS chemicals, facilitate site safety and prevention planning, and help managers to keep unwanted substances out of a facility (the hazardous materials pharmacy concept).
- **Establish Theft Prevention Guidelines** that provide for tracking and safely storing EHS materials to prevent theft, and to address legal liability for harm associated with inadequate theft and fraud prevention.
- **Audit Internal Security** to periodically assess security systems and safer alternatives.
- **Provide for Certified Third-Party Audits** that regularly review security systems and propose safer alternatives.

ADMINISTRATIVE AND MANAGERIAL CONTROLS

- **Establish Policy Statements** that commit your facility to determine if chemical hazards can be readily reduced or eliminated before analyzing risks and potential consequences of these hazards, and help engage senior managers and full corporate resources in design for safety and security.
- **Establish Financial Analysis Standards** that ensure that prevention investments receive comprehensive treatment during the capital budgeting process, including costs of EHS operations avoided through specific projects (such as heightened security, liability, regulatory compliance, add-on safety equipment, and remedial cleanups).
- **Establish Line Item Security Budgeting** to inform senior managers about security costs for EHS operations in existing and proposed projects.
- **Establish Security Records Systems** that document security deficiencies, malfunctions, case reports, and corrective actions in a written retrievable format sufficient to support planning, budgeting, and maintenance schedules.
- **Establish Administrative Controls** that ensure that facilities operate within design capacity, and eliminate or reduce chemical hazards through mandatory review of: proposed process changes; EHS purchases; order frequency and volume; and chemical uses.
- **Establish and Maintain a Labor Dialogue** that ensures that workers are involved in security problem solving.

If you have any questions regarding this memorandum please contact Michael Kalstrom of the Cuyahoga County Division of Emergency Services by calling (216) 443-7597. Thank you for cooperating with local emergency responders and for participating in this effort.

* These safety and security elements are derived from, among other sources: Lawrence J. Fennelly, *Handbook of Loss Prevention and Crime Prevention*, Second Edition, 1989; and Russell L. Bintliff, *The Complete Manual of Corporate and Industrial Security*, 1992. Elements related to inherent safety are derived from, among other sources: Trevor Kletz, *Process Plants: A Handbook for Inherently Safer Design*, 1998.