

# **AIRBORNE RELEASES AD HOC COMMITTEE**

## **Final Report to the City Commission**

**June 14, 1999**

**Wayne Bowers, City Manager**

### **Advisory Committee:**

Richard Williams, Chair

Chris Bird, Vice Chair

Amy McAliley, Staff Liaison

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### **Alternates:**

David Donnelly

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**RECOMMENDED ACTIONS TO BE INVESTIGATED  
FINALIZATION OF RECOMMENDATIONS**

**I. By the City of Gainesville, independent of actions by other agencies:**

- A. Review our existing fire code for sections that could be better enforced to help prevent such incidents from occurring in the future. Review whether additional fire/hazmat inspectors or coordination with other regulatory agencies would better address the need to prevent future releases.

**Findings:**

Gainesville uses the Standard Fire Prevention Code, 1994 Edition. Chapter 22 of the Code has extensive regulations involving the use and storage of hazardous materials. This requires advanced expertise on the part of municipal fire inspectors that is beyond their current training level. Gainesville has only two such inspectors in the fire rescue department. Currently, they review plans, inspect fire protection systems, and inspect the city's 15,000 commercial occupancies. The frequency of inspection at hazardous materials facilities is low to non-existent. The time required to develop sufficient expertise is very limited.

A section of the fire code that could be better enforced to help prevent accidental releases to the atmosphere relates to personnel training and written procedures. The fire code requires that persons responsible for the operation of areas in which hazardous materials are stored, dispensed, handled, or used shall be familiar with the chemical nature of the materials and the appropriate mitigating actions necessary in the event of fire, leak, or spill. Many industrial sites are also subject to various related federal environmental or health and safety training requirements.

**Recommendation:**

The City Commission directs staff to establish permit requirements for higher risk hazardous materials facilities. Fire inspections, when applicable, should be conducted in conjunction and coordination with other regulatory agency inspections. The inspector should be able to determine that the company demonstrates if it knows: 1) what training employees have received; 2) what training they must receive; and 3) when they must receive it to remain in compliance.

- B. Investigate establishing further training and providing personal protective equipment for all public safety personnel who may be called to serve during such an incident.

**Findings:**

The committee received comments from various emergency response agencies on the levels of training and personal protection available to law enforcement personnel. Based on the events described and the known levels of training, the committee concluded that initial training is adequate. Individual protective equipment is not provided by the agencies. There appear to be several protective devices new to the market that have low cost and long shelf life; however, these devices only allow safe escape from an exposed area and do not provide full operational protection.

**Recommendation:**

Area law enforcement agencies be equipped with limited escape devices and receive training on their proper use. There should be additional hazardous materials awareness training in the form of an annual refresher to all law enforcement personnel including command level officers. This training should conclude with a simulation exercise.

- C. Investigate establishing a mechanism for cost recovery for impacts to nearby businesses, neighborhoods, and individuals.

**Findings:**

Compensating affected parties from a hazardous release is based upon the legal concept of damages. Local code enforcement bodies may assess fines for non-compliance, i.e., for the express purpose of achieving compliance. They may not assess costs (damages) for the effects of such non-compliance. Fees cannot be assessed prospectively for the purpose of paying damages for an event that might occur in the future. A fee must directly relate to the actual costs of administering the program for which it is assessed. Establishment of a local administrative board to review claims and assess damages would be the equivalent of establishing a local court. Research by Elizabeth Waratuke from the City Attorney's Office indicates that the Florida Constitution's separation of powers would not permit a local court beyond those already authorized.

**Recommendation:**

The City Commission not further consider establishment of local compensatory mechanisms for damages and refer such claims to the appropriate local or state courts.

- D. Direct cost of responding to such emergencies should be compensated by the facility causing the incident. This should include compensation for fire and hazardous materials teams, police, public works, utilities, and other necessary responders.

**Findings:**

Local governments have the ability to enact cost recovery ordinances for "extraordinary cost" relating to providing services for a hazardous materials emergency. These costs have been determined to be those above the ordinary cost of providing services to the public at large. The LEPC coordinates the hazardous materials response for its eleven county region. A part of that effort includes adoption of "model" cost recovery ordinances in each community that will receive the services.

**Recommendation:**

The City Commission should continue working to establish a cost recovery ordinance and encourage other local governments to pass similar ordinances. The LEPC has a model cost recovery ordinance. Adoption by all the local governments served by the designated hazardous materials response team will allow costs for an incident anywhere in the response area to be recovered.

- E. Review the assurances that have been made to the FAA regarding incompatible land uses near the airport. Review whether the City of Gainesville is fully exercising its authority to regulate the siting or expansion of chemical plants in populated or other at risk areas.

**Findings:**

According to an opinion from Gainesville Alachua County Regional Airport Authority, Attorney Charles Hauck, the City's assurances provided to the FAA are only to provide reasonable protection against hazards to aircraft operations and to prevent incompatible land uses surrounding aviation operations. He further states that the FAA encourages industrial uses rather than residential or educational uses.

The City of Gainesville has full zoning authority in the Airport Industrial Park. As such, it has created zoning categories Industrial-1 and Industrial-2. The lands at the airport industrial park are zoned I-2, a category that has "chemical production facilities" as a use by right. Archimica, Inc. (formerly PCR, Inc.), has an approved five-year plan that proposes expansion on land that it owns. There are covenants that restrict uses on facilities built after October of 1996.

**Recommendation:**

The City Commission should consider whether the existing land use plans and zoning categories provide sufficient distinction among hazardous chemical facilities. Although there are limited numbers of vacant existing industrial sites in the city, some of them are within short distances of what might be considered incompatible uses for certain facilities. There is, however, a caveat. Some non-industrial facilities use and store significant quantities of hazardous materials, e.g., water treatment plants, large swimming pools, large refrigeration plants, etc.

- F. Investigate establishing a funding source similar to the "gross receipts tax" applied by State Statute to RCRA Treatment, Storage, and Disposal Facilities such as Permafrix (Florida Statute 403.7215). Review how such a funding source could be used to increase preventative measures on the part of the City.

**Findings:**

There is a fee levied on listed hazardous materials stored or used in threshold quantities. These fees are levied by the Florida Department of Community Affairs and used to fund LEPC staff at the regional planning councils, Florida Department of Community Affairs administrative staff, and some training grants for first responders through the LEPC. Increasing such fees would require lowering the reportable thresholds, increasing the charges, and/or changing the allocation of the fees to provide more funds at the local level.

**Recommendation:**

Authority to levy a local tax, similar to the gross receipts tax, would require legislative action similar to Florida Statute 403.7215. A local fee could be levied, but it must be the reasonable cost created by the person or entity required to pay the fee; thus, the fee would have to be based upon the cost to the City of services, regulatory or otherwise, provided to the facility. The City has no local regulatory powers over such facilities but creates that power if a local permitting requirement were established (see Section II.B.3.). Without such local regulatory power, the City could not charge regulatory fees.

- G. Request copies of the reports referred to by PCR regarding the 1994 spill from the NTSB and the EPA as well as PCR's own internal report.

**Findings:**

The committee examined the NTSB's report file in its entirety and found the only factual dispute was over the cause of the hose failure. The committee believes this dispute is a relatively minor issue. The disagreement between Archimica's interpretation of the results and that of the NTSB seems more an issue of establishing legal liability. The hose in question was replaced with one less susceptible to failure. The defective tank anti-siphon device has been repaired.

**Recommendation:**

The committee has no specific recommendation. However, there is a recommendation elsewhere in this report for an expert consultant for the appropriate regulatory body to review the safety engineering for such technically complex systems.

**II. In coordination with Alachua County, the LEPC, the Florida Department of Community Affairs, the Florida Department of Environmental Protection, the US Environmental Protection Agency, the National Weather Service, and any other relevant governmental organizations:**

- A. Investigate institution of early warning or "call out" systems that could be used to notify potentially affected homes and businesses by telephone in the event of an emergency. Review how such a system might be hindered by unlisted phone numbers and whether this problem could be overcome. Audible alarms, coordination with the National Weather Service notification system, and closer coordination with local media outlets should also be considered.

**Findings:**

The Alachua County Department of Emergency Management has several available warning systems, including commercial radio, television, and connection to the Emergency Alert System. Recently, Archimica purchased a "Reverse 911" call alerting system for the Alachua County Sheriff's Emergency 911 Center. This system allows programmed messages to be sent to telephones in a selected geographic area. This system has been installed and is undergoing testing. One difficulty presented in the installation is the unwillingness of BellSouth to provide unlisted telephone numbers in the database. Persons with unlisted telephone numbers will not receive warning messages as a result.

All of these systems require a period of time to activate, ranging from 10 minutes after the start of the incident and beyond. This is a result of the time sequence required to identify a problem, report it, have response agencies evaluate the hazard and have the information acted upon through the Department of Emergency Management or dispatching center.

Archimica also has a warning siren on the facility that can be heard offsite. In addition to sounding the warning siren, their notification procedures include telephonic notices to neighboring facilities following a report of an emergency. Realistically, this provides a warning delay time of 2 minutes or longer, depending upon the significance of the event and sequence of the calls. It does not provide warning for people out of doors. The outdoor warning siren at Archimica has indeterminate range.

An immediate warning system is needed to alert the neighboring businesses and residents to ensure adequate time for protective measures, whether inside or outside of their structures. Such a system, if generally applied to other facilities, would have some significant costs. Crystal River nuclear power plants have an outdoor warning siren system that covers an inland radius of 10 miles, requiring 26 large sirens mounted on poles. The city of Chicago has instituted an outdoor warning siren system that has cost several millions of dollars and is not yet completed.

**Recommendation:**

The City Commission recommends that the County Commission include early warning requirements in the Hazardous Materials Management Code for all facilities that have Federal SARA Title III, Section 302, reporting requirements. This should include a performance standard that establishes threshold requirements for population at risk, establishes a warning distance for a worst case, and a time performance standard for warning the at-risk population within that distance.

- B. Encourage an update to the Alachua County Hazardous Materials Management Code.
  - 1. Consider implementing a section to address airborne releases of hazardous materials.

**Findings:**

The Alachua County Hazardous Materials Management Code is being revised by the Alachua County Department of Environmental Protection for consideration by the County Commission. Our committee reviewed the proposed language. Two concepts are introduced in the new version. First, the restrictions on chemical releases to soil and water are being applied to airborne discharges. Secondly, the "public nuisance" regulatory standard is added. This will allow regulatory action even if the chemical involved is not on federal or state listed chemical of concern. The public nuisance standard will also apply to releases that are smaller than permitted thresholds for facilities with air release permits. The enforcement mechanism is being established under the County's civil citation process. There will be fines and ultimately court action for non-compliance. The limitation for such fines is \$500. The final wording had not been finished for the committee to review.

**Recommendation:**

The City Commission endorses and recommends to the Alachua County Commission the concepts presented in the proposed amendments to the Hazardous Materials Management Code.

- 2. Expand the cost recovery capabilities.  
  
This section is answered in I-D.
- 3. Review instituting permitting requirements at the local level.

**Findings:**

As we interpret from the charge to this committee, the belief is that there is insufficient local ability to regulate adverse exposures to people and the environment from the various hazardous chemicals used by Archimica and other chemical sites in the City. Based upon our discussions, the committee concurs.



We conclude that one obstacle is the variety of non-local regulatory bodies charged with regulating Archimica and others. These include OSHA, USEPA, USDOT, FDEP, FDOT, and many others. Another issue is that Alachua County's Hazardous Material Management Code and the City of Gainesville's Fire Safety Codes are also insufficient for various reasons, including lack of breadth, lack of expertise, and staffing shortages. All these bodies are responsible for ensuring that there is adequate public protection from the various hazards, which means that no one agency is wholly accountable -- excepting local elected officials, who are held accountable by the public. A local jurisdiction seeking assurance that a high level of safety is being achieved must have: 1) timely access to appropriate and necessary information; 2) the expertise to examine that information for its local implications; and 3) the ability to take local action to correct defects without becoming mired in multiple agency responsibilities.

Although land use management controls could be used, i.e., special use permits, contracts, and ordinances for Planned Unit Developments, etc., the committee viewed these as indirect methods at best and of no value for retrospective issues (for facilities already established). As was pointed out in the committee discussion, the City's existing zoning categories allow Archimica and similar operations as a right in their zoning category. Establishing ongoing controls through land use regulation would be cumbersome and ineffective.

**Recommendation:**

The City Commission create a local permit requirement for facilities that store, process, transport, manufacture, or distribute materials that are hazards to health or the environment. The permit is required in addition to any other regulations or in land use category restrictions. The permit will act as the instrument by which the facility is reviewed for compliance with all federal, state, and local requirements -- including such additional safety practices as may be required from periodic safety audits. Fees for the permit should be sufficient to administer the permitting program including review, compilation, and retention of audits and safety inspections from regulatory agencies. The permit regulation should establish types of businesses and threshold quantities of known hazardous substances that would require permits. There should also be a general permit requirement for those substances that present hazards of reaction, interaction, and exposure whether or not they are specifically listed.

A requirement to obtain a permit should be the successful completion of a safety audit by an independent consultant hired by the City. The cost of the audit is to be paid by the permitted entity. The use of a consultant is recommended because the City lacks expertise in the processes and substances across the wide spectrum of facilities. The variety of audit subjects requires different types of expertise on a per case basis. A safety audit should consist of a review of all regulatory inspections, safety plans, facility practices, and such tests or inspections identifiable as standards for the industry to achieve a high level of safety.

The audit will also include a risk analysis that reviews any foreseeable event, its probability, and concludes whether sufficient safeguards are in place to prevent such events. Audits would be required on a periodic basis. The periodicity would depend upon the degree of hazard (combination of risks, quantities, and uses), the findings of other regulatory bodies as a result of inspections, and the frequency of releases or other adverse on or offsite consequences. It is contemplated that an initial permit would be granted following the first successful safety audit. Additional audits for permit renewal could occur on a five-year cycle unless warranted at a higher frequency by the degree of hazard, adverse events, or regulatory findings of concern. All audit findings, including information obtained from other regulatory agencies, would remain property of the City and public record -- with the exception of trade secrets and proprietary processes as recognized in federal and state public records laws.

It is likely that there are industries for which local permitting may be pre-empted by federal or state law. These matters would have to be researched on a case-by-case basis. For purposes of permitting, an audit might not require additional action by the permitted business if it has an active program that includes all elements listed in the audit requirements. Permitted entities that already have risk management plans and preventive maintenance programs could furnish this information in lieu of having to develop it specifically for the audit. Where the permitted entity has adequate internal practices and controls, the audit could be limited to verification on behalf of the City that appropriate and best safe practices are being followed.

Permits could be revoked for failure to comply with permit requirements. A due process procedure would be required to issue, renew, or revoke permits. This committee has not researched whether retention of a permit can be conditioned on the levying of fines and/or reimbursement of costs for adverse events.

- C. Under the Clean Air Act, Section 112(r)(1), the "general duty clause" states that owners/operators have a general duty to identify hazards, to design and maintain a safe facility, and to minimize the consequences of releases that do occur. Investigate whether local delegation of this provision may be accomplished by adopting a general duty clause under state law.

**Findings:**

The Clean Air Act general duty clause states in part, "Regardless of whether a substance is listed ... the general duty to identify and access hazards associated with accidental releases (as defined in Section 112 (2)(2)), to design and maintain such a facility to prevent such releases and to minimize the consequences of such releases that do occur, extends to the owners and operators of any facility that may cause such impacts due to short-term exposure." The USEPA does not allow delegation of its enforcement authority under the Clean Air Act. The state does not have such a general duty clause.

**Recommendation:**

The City Commission adopts a general duty clause if a permit system is adopted. A general duty clause should also be recommended to the Alachua County Commission for inclusion in the Hazardous Materials Management Code.

- D. Participate in the "Safety Street" public awareness program of the Local Emergency Planning Committee. The event is planned for March 29, 1999.

**Findings:**

The event was held as scheduled at the Martin Luther King Center. Originally it was scheduled at the Oaks Mall; however, scheduling conflicts prevented holding it there. The majority of attendees were industry representatives. The quality of display was outstanding and a great opportunity for the community to learn, but it did not reach much of the target audience. At the request of the Airborne Releases Ad Hoc Committee, GRU was also a participant with multiple displays and a presentation of their hazardous chemical safety programs. Many others, including Archimica, participated.

**Recommendation:**

The City Commission requests that the LEPC conduct a similar event next year with a more central location, more public involvement, and greater publicity to attract the interest of citizens.

- E. Review capabilities for air monitoring during emergency incidents and increase capacity for this as appropriate.

**Findings:**

Gainesville Fire Rescue has air-monitoring equipment and will be purchasing additional equipment in the future. There is not yet a comprehensive post-release downwind monitoring program. Development of such a plan will require assigning sufficient personnel with adequate protective equipment, developing an implementation and activation plan, and training personnel.

**Recommendation:**

Develop a comprehensive post-release plan that provides personnel with adequate protective and monitoring equipment. Developing local inventories may facilitate this. The City of Gainesville should increase training for Gainesville Fire Rescue and cooperating local agencies to conduct onsite and downwind monitoring. Regulated facilities should be required through the Alachua County Hazardous Materials Management Code to maintain appropriate equipment to monitor potential air discharges.

- F. Review procedures for reporting of respiratory distress or other health impacts suffered by the public as a result of hazardous materials incidents.
  - 1. Develop health effects reporting system.

**Findings:**

There is no local chemical release or chemical exposure health effects reporting system. State and federal laws require the reporting of health effects from infectious or contagious diseases. Examples of reportable outbreaks are rabies, meningitis, etc. The Office of Emergency Management employs a countywide alert and warning system. Primary and emergency care physicians have recently been included in the notification and warning system.

**Recommendation:**

Request that the Alachua County Office of Emergency Management utilizes the alert and warning system to request that primary and emergency care physicians provide local officials with information about infected or exposed individuals.

2. Develop an early warning system for medical practitioners.

**Findings:**

The Office of Emergency Management and the County Public Health unit began collecting and compiling business office and other official telephone and telephone facsimile numbers of primary and emergency care medical practitioners throughout Alachua County early in 1999. The Office of Emergency Management conducts alerting and warning activities that include facsimile and Local Alert Warning System paging when pending or actual emergencies occur anywhere in Alachua County. Notification information includes announcing the event, providing the latest information including operations and response if needed and Material Safety Data Sheets (MSDS) if chemicals are involved. For each chemical involved, an MSDS will be provided. The MSDS provides physicians and emergency rooms with medical information including care and treatment from exposure.

**Recommendation:**

The County Office of Emergency Management treats the primary and emergency care physicians as an integral group of the notification system. No further recommendation is required.

- G. Investigate the possibility of using Doppler Radar equipment to better track movement of chemical plumes.

**Findings:**

The committee received testimony from its own members indicating that there is no ground device that can remotely monitor a plume. To some extent this is caused by ground clutter, but the other constraint is the lack of reflectivity for a transmitted signal except at precise frequencies unique to the involved substance. A device to precisely tune for specific chemicals is not available. During daylight a plume can be monitored visually from above if it is a visible substance. This requires an aerial observation method, the most likely being an aircraft.

**Recommendation:**

Gainesville Fire Rescue and other emergency response agencies within our region coordinate with the Joint Police Aviation Unit to provide plume monitoring when feasible from the aircraft available from their unit. This should include practice for the observer(s) and, if feasible, experimentation with the advanced visual devices on the aircraft to determine if they enhance tracking in daylight or at night.

- H. Investigate establishing a "unified command structure" composed of responding and assisting agencies to promote operational efficiency through shared knowledge, skills, information, and activity coordination.

**Findings:**

Large events may dictate multiple when jurisdictions and agencies respond, the need to conduct joint operations, and to continue to work side by side. The goal of unified command operation(s) is maximizing the efficient use of personnel and resources by rapidly identifying need(s) and establishing an overall incident commander that directs participating agencies' activities by working towards a common goal under a single commander. Agency assignments are best accomplished by employing an objective-oriented scheme.

Gainesville Police Department and Gainesville Fire Rescue report an ongoing program already exists. In addition, the Santa Fe Community College Institute of Public Safety is developing a formal unified command-training program and will be made available to public safety agencies.

**Recommendation:**

Senior public safety staff attends the Institute of Public Safety training. Develop and conduct multi-jurisdictional and intra-city joint agency exercises to develop command and communication skills, multi-agency operations, and maintain readiness.

**III. In coordination with PCR and any other facility that uses or stores hazardous materials in amounts that may threaten public health, safety, or welfare:**

- A. Establish procedures for identifying thresholds for which emergency procedures will be initiated and first responders (GFR Hazardous Materials Team) will be called. Chief Williams noted that there might be a reluctance to call 911 during what is perceived to initially be a small spill. A cooperative discussion between GFR and the facilities in question may help eliminate under-reporting that increases public risk.

**Findings:**

There do not appear to be any statutory requirements regarding thresholds for calling or notifying local emergency personnel in the event of an airborne release. There are standards that require reporting of releases to environmental agencies. There is a general reporting requirement under OSHA regulations, but it does not include any specific criteria. There is great difficulty in establishing such thresholds because it is largely in the judgement of the involved party as to whether there is any threat from the event.

The recent attention devoted to this topic has resulted in improved reporting from Archimica. For several small events at their facility, emergency responders have been notified even when the plant fire brigade has the incident under control. Unfortunately, there is no way to disprove a negative -- meaning that unreported events are unknown to the outside agencies, thus there is no means to determine if under-reporting is occurring.

**Recommendation:**

The City Commission recommends to the County Commission that amendments to the Hazardous Materials Management Code contain threshold emergency reporting requirements for airborne releases that travel offsite. The Committee recognizes that this is a formidable task simply because of the anticipatory language that cannot cover all situations. Hazardous Materials Management Code's threshold reporting quantities could be used to establish emergency response notification thresholds. Gainesville Fire Rescue and other emergency response agencies should have frequent dialogue with industries that have hazardous materials on the importance of early warning. This can be on a checklist for inspections if they are conducted regularly.

- B. Establish requirements or other mechanisms that ensure appropriate preventative maintenance programs for storage tanks, hoses, piping, and other appurtenances that contain hazardous materials. Operating procedures and training programs should also be reviewed periodically. Under certain circumstances, external audits from other companies within the same industry may be appropriate.

**Findings:**

The committee received a presentation from Amy Sweeney, Archimica's Mechanical Integrity Engineer. In the presentation, she explained the current OSHA mandated Risk Management Plan being implemented. This plan includes having an outside contractor review all piping systems (including non-invasive wall thickness testing), pressure testing, and other examinations of Archimica systems to insure integrity and proper function. The presentation stated that of the more than \$8 million in facility upgrades at PCR in the past 5 years, over \$3 million was directed at enhancing safety. The examination has also included Y2K compliance testing.

The committee found that the steps being undertaken are important and should continue. However, these steps, in and of themselves, do not answer whether safety is adequate and properly maintained.

**Recommendation:**

Refer to recommendations on permitting and fire safety inspections on pages 1 and 7.

- C. In the case of PCR, request additional information regarding why double-walled secondary containment is not possible or appropriate for TCS hoses and piping. It was also suggested that it would be helpful to receive additional information regarding reviews and reports of the 1994 and 1998 incidents and actions that have or have not been taken as a result.

**Findings:**

The committee heard significant testimony from process engineers indicating that double-walled piping for corrosive substances (such as TCS) allows corrosion to occur without being observed. Unless there is detection equipment between the walls, a leak will go undetected until failure of the secondary containment. Inner pipe failures would result in significant repair expense but only after failures occur. From a practical standpoint, it is more effective to conduct frequent inspections of single-wall piping and make repairs or replacements if wall thickness erosion occurs. Such an inspection program could have prevented the failure in 1998, which is now ongoing. The inspection service is being furnished under the same aforementioned contract. There is not an independent review of that consultant's work or results.

**Recommendation:**

The City Commission considers the permitting and inspection recommendations elsewhere as a means of obtaining independent review of facility safety programs.

- D. The Gainesville Job Corps Center and the Alachua County Jail represent populations that are proximate to Archimica and may be difficult to quickly evacuate. Several businesses and residential areas are also nearby. A cooperative review of the "worst case scenario" that could affect these organizations and individuals would be appropriate. Archimica should provide warning mechanisms and other desirable safeguard equipment.

**Findings:**

As stated elsewhere in this report, the committee finds that in the future residential facilities should be located at greater distances from industrial areas that have chemical production facilities. However, within the greater community, it is very difficult to state an appropriate distance because there are numerous hazardous chemicals located in otherwise innocuous zoning categories.

This having been said, the Job Corps Center and other facilities proximal to Archimica are unlikely candidates for evacuation. The committee concluded that the most appropriate action in an emergency is sheltering in place, as is true for Nordstrom and others. Should evacuation occur at a later time, it would have to be planned by the emergency response agencies to avoid the outdoor dangers if a plume is still in the area. Adequacy of warning systems is discussed elsewhere in this report.

**Recommendation:**

The committee had no specific recommendation other than to continue the training effort.