

EMERGENCY RESPONSE REVIEW

C & G Aircraft Chemical Fire
Ferris, Texas

FINAL REPORT -- JANUARY 4, 2005



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The Environmental Protection Agency (EPA) Region 6 is issuing this Emergency Response Review as part of its ongoing effort to protect human health and the environment by responding effectively to chemical accidents.

Emergency Response Reviews are designed to:

- Review with a local community and state officials the response procedures and outcomes to a specific chemical accident, affecting that community;
- Share information about chemical response safety practices;
- Develop potential recommendations and lessons learned to more effectively respond to an accidental release in the future;
- Build cooperation among local, state, and federal government agencies.

Emergency Response Reviews are entirely voluntary and may include all local, state, and federal entities involved with the response, as well as the responsible party and their representatives.

This document does not substitute for EPA's regulations, nor is it a regulation itself. It cannot impose legally binding requirements on EPA, states, or the regulated community, and may not apply to a particular situation based upon circumstances. This guidance does not represent final agency action, and may change in the future, as appropriate.

SUMMARY OF INCIDENT

On the morning of 26 August 2004, a chemical release occurred at the C & G Aircraft facility, a subsidiary of High Tech Aircraft Services, located in Ferris, Ellis County, Texas. The incident resulted in an explosion, fire, and the combining of incompatible chemicals resulting in the potential release of cyanide gas.

The cause of the accident is not addressed within this report.

Two workers were critically injured in the incident while three other employees were sent to the hospital. The community was evacuated approximately 3 blocks east, 3 blocks west, 3 blocks south and up to 7 miles downwind (north) from the incident, including approximately 800 - 1000 school children as a precaution.

The Ferris Fire Department was the initial response agency, but soon numerous other response organizations arrived on scene to assist in the response.

Within the Ferris Fire Department, there are 25 volunteer firefighters total, with 12 to 15 part time individuals.

Their equipment includes 2 ambulances, 2 brush tanks, 1 tanker, & 2 suburbans. Their area covers 2 1/2 square miles of the city proper and a total of 62 miles which includes Ellis County. 50% of the FD is trained to the HAZMAT awareness level as of 2 years ago & they are seeking a refresher class for this training.

The Lancaster Fire Department assumed the role of Incident Commander later in the incident, and is to be commended for their assistance.

Other organizations providing support included: Palmer, Red Oak, Wilmer, Ovilla, Dallas County, Glenn Heights, Ennis, DeSoto, City of Dallas, Waxahachie, and Avalon Fire Departments; CAREFLITE, Dallas County EMS, Texas Lifeline, East Texas Medical Center; Lancaster, Ferris, Red Oak Police Departments, Ellis County Sheriff; Texas Division of Emergency Management, Department of Public Safety, Railroad Commission, Texas Forest Service, and Texas Department of Transportation.

Upon arrival of the Ferris Fire Department, the smoke had become more darkly colored. Members of the department made an initial entry with Self-Contained Breathing Apparatus (SCBAs) and bunker gear.

Responders were unable to determine the exact origin of the fire, but were able to quickly extinguish the flames. One employee was brought out of the building and received emergency treatment from the Ferris EMS.

Members of the Ferris Fire Department were exposed to chemical fumes during the response and rescue efforts, and were segregated from the response until they could be gross decontaminated and examined.

The critically injured employee was transported to Dallas Parkland Hospital, where he subsequently died from injuries.

The Ferris FD was initially unaware that chemicals were present in the facility, or involved in the fire, as the facility had not provided any information about chemicals to community officials, and had only been open for a short time.

The Ferris Police Department established a safety perimeter around the facility and provided continued security at the site.

A total of 9 firemen & 14 bystanders were transported to Parkland for precautionary treatment. This measure was taken once the facility presented a chemical list to the FD, which include several highly toxic chemicals. Exposure to the firefighters was determined to be confined to contact with the contaminated victims.

EPA Region 6 provided air monitoring support during the incident, as well as assisting in the entry made by Garner Environmental to determine the potential release of chemicals within the facility. After the fire was extinguished, all readings from monitoring instruments showed only background levels outside the facility.

Representatives from Texas Commission on Environmental Quality (TCEQ) provided logistical and technical support to the Incident Command.

After the initial emergency subsided, Garner Environmental was contracted by the facility to do the cleanup of the chemicals, with oversight by the TCEQ.

Additional information on this incident and response and can be found on the EPA Response Webpage:

[www.epaossc.net/C&G Aircraft](http://www.epaossc.net/C&G_Aircraft)

OBSERVATIONS / RECOMMENDATIONS

<p>Observation / Recommendation # 1</p>	<p>All local response organizations should review protocols based on the following:</p> <p>“Response teams to a disaster scene have a responsibility to first protect themselves and their team members. If you or your team is injured, not only are the number of victims increased, but the response is now delayed, resulting in additional resource utilization.</p> <p>This delay and need for additional resources due to your inability to keep yourself and your team protected could cost other victims their lives. DISASTER Paradigm: Safety and Security</p> <p>Don't be selfish - protect yourself. Scene priorities:</p> <ul style="list-style-type: none">● Protect yourself and your team members first● Protect the public● Protect the patients● Protect the environment <p style="text-align: right;"><u>"Basic Disaster Life Support Manual, Version 2.5"</u></p> <p>At an incident, safety should be the first concern of any responder.</p> <p>When fire fighters, police officers or emergency medical technicians become injured or contaminated, they become part of the problem, instead of a solution. It's unfair to ask first responders to risk their life, health, or the health of their families by becoming contaminated at an incident.</p> <p>Difficult decisions need to be made and risks taken should be weighed against the possibility of a positive outcome.</p> <ul style="list-style-type: none">● OSHA 29 CFR 1910.120 -- Hazardous Waste Operations and Emergency Response (HAZWOPER)● OSHA 29CFR 1910.134 -- Respiratory Protection (Commonly referred to in the fire service as the Two In/Two Out Rule)● EPA 40 CFR 311 -- Worker Protection● NFPA 471 -- Recommended Practice For Responding to Hazardous Materials Incidents● NFPA 472 -- Professional Competence of Responders to Hazardous Materials Incidents● NFPA 473 -- Competencies for Emergency Medical Personnel Responding to Hazardous Materials Incidents● NFPA 1500 -- Standard on Fire Department Occupational Safety and Health Program
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<p>Observation / Recommendation # 2</p>	<p>All response / planning organizations within Ellis County should meet to determine the need and effectiveness to re-invigorate an LEPC within the County.</p> <p>The Superfund Amendments and Reauthorization Act (SARA), Titles I and III states the roles of local governments in hazardous materials.</p> <p>The federal government has directed local governments to set up mechanisms to assure that planning and training are taking place. The LEPC is responsible for this at the local level.</p> <p>The "Hazardous Materials Operating Sites Practices" course from the National Fire Academy states:</p> <p>"The LEPCs' planning responsibilities included the following:</p> <ul style="list-style-type: none">● Identifying local hazardous material facilities and transportation routes.● Preparing emergency response procedures for facilities and operators, emergency responders, and medical personnel.● Designating community and facility emergency response coordinators.● Providing for timely release of detection and notification procedures.● Maintaining an inventory of essential emergency response equipment and facilities.● Assisting in the development of evacuation plans, training programs, and planned exercises." <p>Information on establishing and maintaining an LEPC can be found at: www.epa.gov/region6/lepc</p>
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<p>Observation / Recommendation # 3</p>	<p>Anyone who responds to a hazardous materials incident should receive at least operations level HAZMAT training. All other individuals involved in the incident, including dispatchers, should be trained to a minimum of the awareness level.</p> <p>Awareness level training teaches you to recognize, identify, notify the proper authorities and to isolate an incident. All levels of HAZMAT training are required to have annual updates that demonstrate competencies.</p> <p>All response organizations within the City should make it a priority for all their personnel to receive Awareness Level HAZWOPER training.</p> <p>Training and exercise are the best way to insure responder safety.</p> <p>Any emergency responder, whether it is a police officer, fire fighter or emergency medical technician, who might respond to a hazardous materials incident, should receive, as minimum, hazmat training to the operations level.</p> <p>All other individuals involved, including dispatchers, should be trained to a minimum of the awareness level.</p> <p>Awareness level training teaches a person to Recognize, Identify, Notify and Isolate an incident.</p> <p>When dispatchers are able to recognize and identify a hazardous materials incident, they can relay this information to responders and reduce contamination and injuries.</p> <p>If the first arriving fire fighters had sufficient hazardous materials training, it is likely their contamination and subsequent medical treatment may have been prevented. All levels of hazardous materials training are required to have annual updates that demonstrate an individual's competencies.</p>
<p>Observation / Recommendation # 4</p>	<p>Ferris FD should have the 24 hour phone numbers for both EPA Region 6 (866-372-7745) and TCEQ, as well as the phone number for the National Response Center (NRC 800-424-8802), and CHEMTREC (800-424-9300).</p>

<p>Observation / Recommendation # 5</p>	<p>As with virtually every other emergency response or simulated drill, communication was an issue in this response.</p> <p>This includes the use of two separate dispatchers during the response which resulted in personnel being routed to the scene without knowledge from the incident command.</p> <p>All organizations within the City of Ferris and Ellis County should work to resolve these communications problems during a response, including coordinating dispatch during an emergency.</p>
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<p>Observation / Recommendation # 6</p>	<p>As a result of communication problems with Parkland Hospital, treatment of the critically injured employee may have been delayed at the Hospital while decontamination was set up and provided to the victim outside the Emergency Room.</p> <p>All response organizations within Ellis County need to ensure what the proper procedures are for notifying hospitals which may receive patients from a chemical emergency. This notification is critical to the hospitals to prepare for receiving the patient.</p>
<p>Observation / Recommendation # 7</p>	<p>Local governments that respond to hazardous materials emergencies should always be aware of the potential for reimbursement under the Local Government Reimbursement program, operated through EPA.</p> <p>Hood County and the local communities are aware of the program, and will avail themselves of the program as is appropriate.</p> <p>More information on this program can be found at:</p> <p>www.epa.gov/region6/lepc</p>
<p>Observation / Recommendation # 8</p>	<p>During the response, media personnel gained entry into the command area without escort or proper authorization, and were seen photographing sensitive information that should not be disseminated.</p> <p>During any response, media relations plays an important role, and can be used as an asset in disseminating information to the public.</p> <p>However, officials should ensure that media members are only allowed into permissible areas, and that controls be in place to ensure the integrity of the command post or center.</p>

<p>Observation / Recommendation # 9</p>	<p>Incident Command was established early on in the incident, due to the quick actions of Chief Duran. However, due to the severity of the incident and shortage of personnel initially at the scene, some confusion was noted through the command structure.</p> <p>A command presence must be established at all incidents. FEMA's United States Fire Administration, National Fire Academy course "Hazardous Materials Incident Management" states:</p> <p>"It is human nature to want to 'do something' when responding to a hazardous material incident or any other response. However, the occasion may arise when responders have no option except to back off, at least temporarily.</p> <p>'Protective equipment that is not compatible with the product, or the lack of proper or specialized training to handle the incident, are but two of the times when responders have very limited options. Again, structural fire fighting gear (turn-outs) is NOT chemical protective clothing!</p> <p>'The IC must remember that remaining in the defensive mode is 'doing something,' though others sometimes may not perceive it as such."</p> <p>Safe operations standard operating procedures (SOP's) need to be developed for the fire department which state that a conservative response must be taken until an evaluation of the situation can be completed, the involved chemicals and products can be identified, and sufficient personnel have arrived.</p>
<p>Observation / Recommendation # 10</p>	<p>During the reconnaissance of the building after extinguishing the fire, personnel were suited up at various times.</p> <p>This led to personnel being exposed to the extreme conditions inside a Level A suit while others were still being suited up.</p> <p>Entry efforts need to be coordinated by one official, to ensure that all personnel (entry, decon, backup) are working in harmony and reduce the stress to all personnel.</p>

Observation / Recommendation # 11	<p>A critically injured victim and the attending fire fighter entered an ambulance before being decontaminated.</p> <p>No precautions were taken to protect the medical staff, the ambulance or its equipment from being contaminated. When asked why the patient wasn't decontaminated, the statement was given that they didn't know if any of the chemicals would be water reactive.</p> <p>Water was used to extinguish the fire; therefore, it seems logical that the chemicals were not water reactive.</p> <p>At a minimum, patients should be given quick water rinse and be placed on plastic to prevent cross contamination of the ambulance and its equipment.</p> <p>Attending medical personnel should have, at a minimum, operations level training, disposable chemical protective suits with gloves, and breathing protection available to them.</p> <ul style="list-style-type: none">● NFPA 1561 -- Standard on Emergency Services Incident Management Systems● NFPA 1994 -- Protective Ensembles for Hazardous Materials Emergencies● NFPA 1720 -- Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Fire Departments.
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<p>Observation / Recommendation # 12</p>	<p>Mutual aid was requested. However, responses were delayed because more than one dispatching center was being used, multiple response agencies requested assistance and it was not clear who was responding and with what equipment.</p> <p>The dispatcher for the City of Ferris was quickly overwhelmed by the magnitude of this incident. There was confusion as to what was happening and what was needed at the incident.</p> <p>There is no radio time log of the incident and Ellis County had to handle the overflow radio traffic.</p> <p>A set of standard operating procedures (SOP's) governing dispatch of response agencies to major incidents would enhance responder safety and reduce confusion.</p> <p>Such SOP's would also enhance communications capabilities of responders at the local, state, and federal levels. Memorandums of Understanding need to be developed with communities for mutual aid assistance, especially with the City of Dallas and Dallas County HAZMAT.</p> <p>This would also bring both the city and county into compliance with the National Incident Management System (NIMS). Such compliance is required by 2005.</p> <p>The Ferris Fire Department should contact the Division of Emergency Management Regional Liaison Officer, as well as their District Disaster Committee, to determine the procedures in place to request mutual aid from surrounding communities and counties.</p> <p>As stated on the DEM webpage, "In Accordance with the State Emergency Management Plan, when an emergency occurs or threatens to occur and is beyond the capability of local government to respond, state assistance will be requested by the local government chief elected official to the appropriate Disaster District Committee (DDC) Chairman as prescribed in the state emergency management plan.</p> <p>'The DDC is chaired by the Highway Patrol commanding officer and is the first step in management of state resources during emergencies.'</p> <ul style="list-style-type: none"> ● Homeland Security Presidential Directive (HSPD)-5, Management of Domestic Incidents
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Each of the emergency response reviews conducted within Region 6 show one consistent pattern: Emergency response personnel within Region 6 are be commended for their professionalism and sincere desire to protect the citizens of their communities.

Region 6 EPA is grateful for the efforts made by all emergency response personnel, and hopes the above recommendations can be used to improve the response and preparedness readiness of a community, if a future emergency occurs.

Emergency Response Review (November 2, 2004) Attendees

Steve Mason	EPA OSC
John Martin	EPA OSC
Angie Mills	EPA-START
David McCarty	EPA-START
Mike Goldsworthy	FEMA Region VI
Mike McDonald	TCEQ Region 4
Joel Dalworth	Dallas County Fire
Richard Woods	Dallas County Fire
Chase Miner	Ferris Fire Department
Jim Parks	Ferris Fire Department
Paul Jones	Ferris Fire Department
Henry Duran	Ferris Fire Department
Brian Smith	Ferris Fire Department
Kevin Drigger	Ferris Fire Department
Eddie Duran	Ferris Fire Department
David Ayala	Ferris Fire Department
Sara Russell	Ferris Fire Department
Teresa Tucker	Ferris Fire Department
Jennifer Duran	Ferris Fire Department
Jeff Aaron	Ferris Fire Department
J. Cone	Ferris Fire Department
Brent Little	Ferris Fire Department
Brandon Roberts	Ferris Fire Department