

GREENSBORO Junction

From site assessment
to systems execution,
experience leads to best solutions

CASE STUDY: Greensboro Fire Department / Colonial Facility

Recently in our history the U.S. federal government established the Fire Act Grant program for funding much needed infrastructure development and systems deployment to better protect against both natural and terroristic threats to our nation's vital industrial and municipal energy resources.

Grant programs can become a lengthy and tedious process trying to assure that funds are being allocated to protect the exposures most in need of assistance. Due to the diligence of Assistant Chief Paul Brooks the Greensboro, North Carolina Municipal Fire Department was recently awarded the first of funds supplied through the Fire Act Grant. These funds were to be applied toward the eastern United States' largest storage and distribution facility — Colonial Storage Facility.

Colonial and its sister facility — Plantation — operate the largest barrels-per-day distribution center along the East Coast pipeline running from Port Arthur, Texas to Linden, NJ. These two facilities store and channel various fuels including petroleum, and blended fuels such as gasoline, diesel, and jet fuels to up-line facilities including Fort Belvare, VA, Reagan International Airport, Baltimore Washington International Airport, Quantico military facilities, Andrews Air Force base and the Washington D.C area.

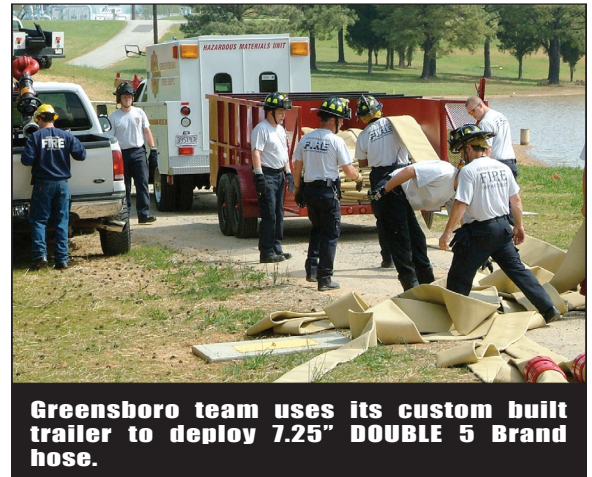
Today's geopolitical climate has increased the importance of better protecting such facilities, especially in light of the geographic proximity of many such facilities to major open transportation arteries such as interstates and city highways.

Case in point, the Colonial storage facility includes many 180-foot storage tanks lying a mere 50 feet from interstate highways! Beyond protecting the vital fuel resource this facility provides, protecting these exposures is critical for the additional reasons of public safety, and maintaining fluid transportation along the adjacent thoroughfares.

Following years of concern regarding exposure limits, manpower, and resources for responding to the potential scenarios, Station 20 (located NW of Colonial) provided thorough research data to the 10 facilities located along the Greensboro Junction to better assess the situation at hand.

To date the only response mechanisms in place has been a 1,250 gpm pumper truck carrying 750 gallons of foam, 4" hose stores, hand held nozzles, an accompaniment of aerial nozzles, and ground monitor tactics.

It was revealed through Station 20's research and outside consultation that the traditional methods of



Greensboro team uses its custom built trailer to deploy 7.25" DOUBLE 5 Brand hose.

attacking the facility's largest tank exposure of a 180-foot, fully involved storage tank would not only be inadequate, but the necessary water pressure and application rates could not be achieved using existing and available technology!

Enter Williams Fire & Hazard Control, Inc®.

With equipment protecting the Panama Canal, major refineries throughout North & South America, Europe, Africa, and all around the globe Williams Fire & Hazard Control's vast experience both in industrial equipment/systems, and effective attack strategies was called upon in assessing the situation in Greensboro.

Troy Johnson, representative for Williams Fire & Hazard Control along the east coast (NC, SC, VA, TN, GA) followed up on initial consultations by Williams' Lead Firefighter Chauncey Naylor of Beaumont, Texas. Stationed as a Captain with the Charlotte Municipal Fire Department,

Troy established a personal relationship with Deputy Chief David Spears, and Assistant Chief Warren Ritter of the Greensboro Fire Department.

Once the Greensboro grant was awarded in September 2002, Troy helped diagnose the situation on the ground in Greensboro. Williams' Lead Firefighter Glenn Durham teamed with Troy to closely study the physical layout and resulting exposures of the Colonial facility. Glenn Durham, having spent the last 25 years with Williams', brought great wisdom and experience to the assessment of Colonial's equipment and tactical requirements.

Upon thorough study of the situation, Williams' recommended - and Greensboro opted to deploy - the following powerful yet mobile attack array from Williams Fire & Hazard Control:

- 1,000 gallons of Thunder-Storm™ ATC 1 x 3 (plans to grow to 6,000 - 7,000 gallons of foam stores)
- DP-PAT 6040 — A true 6,000 gpm pump with pumping capacity of 150 psi from a 10' lift
- 10,000 feet of DOUBLE 5 BRAND 7.25" hose (actually putting their hose supply to more than most industrial facilities)



DPAT 6040 - 6,000 gpm transportable pump with a pumping capacity of 150 psi

- One Ambassador 1 x 6 trailer mounted monitor/nozzle array with Hydro-Foam™ capabilities
- One ring-main manifold (Hydrant manifold) with 10" riser to 10" header with 5" discharges (plans to expand to 6 or 7 additional manifolds spaced approximately 1/2 mile apart) (1000 gpm per 5" discharge)

The Greensboro department also built two hose trailers designed to Williams' specifications to deploy their new hose supplies more easily.

While the system components were being assembled, preliminary tests and trials — including down gauging of foam apparatus and recalibration of metering valves for 1% and 3% foam mixtures — were executed by Troy and Paul Enderle — also with Williams Fire & Hazard Control Beaumont.

Trials were also done to assure that all draft points were adequate.

All components of the requested array were delivered by April of 2004.

Following delivery, Troy Johnson and Glenn Durham led a 3-day school to cover operational aspects of the new equipment, service requirements, safety issues, fireground hydraulics and

proportioning, foam basics, as well as tactical applications. A practical exercise was done to lay 4,500 feet of DOUBLE 5 Brand hose (4 lines) using ATV's for speed and efficiency, and to use JRC's (Jet Ratio Controllers) in line for moving foam concentrate through the hoselays.

As the firefighters grew anxious to get out and use the new equipment a live demonstration planned around their most important exposure was executed.

The Colonial site has a 20-million gallon lake to draft from. Therefore, a scenario involving a 180-foot full surface storage tank fire requiring 4,570 gpm was put into action.

With a draft point 1,000 feet away, four 1,000 foot hoselays of DOUBLE 5 Brand hose were deployed from the new 6,000 gpm pump to the Ambassador™ staged just 300' away from the target tank.

With 50' of head loss from pump to nozzle, a tip pressure of 108 psi was attained surpassing the required pressure of 100 psi by a comfortable margin!

A drop tank was temporarily used as a dummy foam reservoir, using red-dyed Prell dish soap as a foam substitute. The test was a success ... the team could now successfully deploy a powerful arsenal that could effectively defeat their largest flammable liquid fire exposure!

From Grant to deployment, from assessment to execution, Williams Fire & Hazard Control's team of industrial firefighters and equipment engineers have unmatched knowledge and experience to help facilities around the world assure they are well armed to defend against the hazards in their midst.



Successful Big Gun test means you can pack a mean punch!