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Pike Road Fire Department
Pike Road, Alabama

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
October 6, 2019
Summary Report

The Purpose

- The purpose of the seminar and drill was to review the basics of rural water supply operations and to practice water supply operations in a non-hydranted setting.
- The drill also allowed mutual aid companies to work together in a real-life training situation.

The Seminar

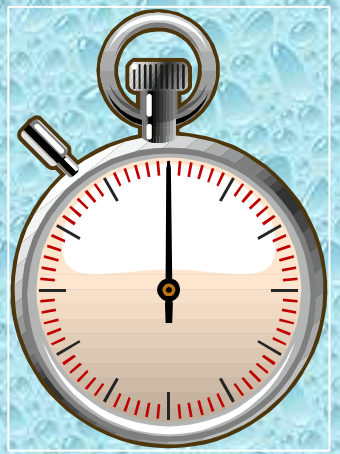
- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at Pike Road FD Station 1.
- Once the classroom part was over, the seminar continued with 8 hours of practical work on fill-site and dump site operations.
- The program concluded with the 2-hr ISO tanker shuttle exercise and program review.
- Seminar participants were from the Montgomery County region.

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on October 6th at a residential development in Pike Road.
- The drill attempted to replicate the 2-hour Water Supply Delivery Test used by ISO in their evaluation of fire department water supply capabilities.
- While ISO no longer uses the physical demonstration of water supply delivery, the 2-hour test is still a reasonable standard by which fire departments can compare their water supply operations.
- *ISO now uses computer modeling to predict tanker shuttle flow capabilities.*

The ISO Test

- The ISO 2-hour Water Supply Delivery Test has three critical time segments:
  - 0:00 to 5:00 minutes
  - 5:01 to 15:00 minutes
  - 15:01 to 120:00 minutes



ISO Test *0:00 to 5:00 Minutes*

- A drill location is selected and the units due to respond on the first-alarm assignment are dispatched.
- Time starts when the first engine arrives on the scene and comes to a complete stop.
- There is no requirement to flow water during the first 5 minutes, but the crew must be prepared to flow water once the 5-minute mark is reached.

ISO Test *5:01 to 15:00 minutes*

- At the 5-minute mark, a flow of at least 250 gpm must be started - and it must be sustained.
- During the next 10-minutes, crews can work to further develop their water supply and increase their flow, however…
- At the 15-minute mark (5+10), whatever amount of water is flowing at that time must be maintained for the remainder of the 2-hour test.

ISO Test *15:01 to 120:00 minutes*

- Once the 15-minute mark has been reached, the remainder of the 2-hour test is really just about ***sustaining*** the flow.
- The ISO test includes the simulation of automatic mutual aid response and allows additional water supply units to arrive and assist in the delivery process as would happen on a real incident.
- The real advantage of the ISO test is that it gives a fire department the chance to see where improvements can be made in their water supply delivery process.

It is one thing to say that your fire department can deliver 500 gpm for two hours – it is another thing to prove it in a real-life drill scenario!

Water Supply Drill Participants

Participants				
Department	**Unit**	**Pump Size**	**Tank Size**	**Dump Tank**
Pike Road	Engine 1	1500 gpm	1500 gal	2100 gal
Pike Road	Engine 2	1500 gpm	1000 gal	NA
Pike Road	Tanker 1	250 gpm	2000 gal	NA
Pike Road	Tanker 6	250 gpm	2000 gal	2100 gal
Rolling Hills Lakes	Tanker 1	500 gpm	2000 gal	2100 gal
North Montgomery	Tanker 1	500 gpm	2500 gal	2100 gal
Fitzpatrick	Engine 1	1250 gpm	3000 gal	NA

- *The participants for the drill were from several different fire departments in the Montgomery County region and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in the Pike Road area.*

Drill Participants

- Pike Road Engine 1
  - 1500 gpm pump w/1500 gal tank

- Pike Road Engine 2
  - 1500 gpm pump w/1000 gal tank

Drill Participants

- Pike Road Tanker 1
  - 250 gpm pump w/2000 gal tank
- Pike Road Tanker 6
  - 250 gpm pump w/2000 gal tank

Drill Participants

- Rolling Hills Tanker 1
  - 500 gpm pump w/2000 gal tank
- North Montgomery Tanker 1
  - 500 gpm pump w/2500 gal tank

Drill Participants

- Fitzpatrick Engine 1
  - 1250 gpm pump w/3000 gal tank

The Drill Begins

The drill began using a nurse tanker operation. Pike Road Engine 1 sets up to draft while the first arriving tanker positions to supply water to the engine.

Dump Site Operations

The engine's 6-inch rear intake was perfect for arranging dump tanks along the narrow road. Flow was started at 250 gpm at the 5-minute mark.

Dump Site Operations

By the 19-minute mark two dump tanks were down and in operation. At the 15-minute mark, flow was moved to 500 gpm.

Dump Site Operations

As additional tankers arrived, positioning for dumping became very important. The travel route was adjusted some to make off-loading easier.

Dump Site Operations

A new proto-type of jet siphon tube was provided by ETT, LLC and proved quite interesting in moving water between dump tanks.

Dump Site Operations

At the 40-minute mark three dump tanks were in full-operation and flow was moved to 620 gpm at the 80-minute mark.

Dump Site Operations

Crews adjusted the travel route so that two tankers could dump water at the same time – especially when side dumping tankers arrived.

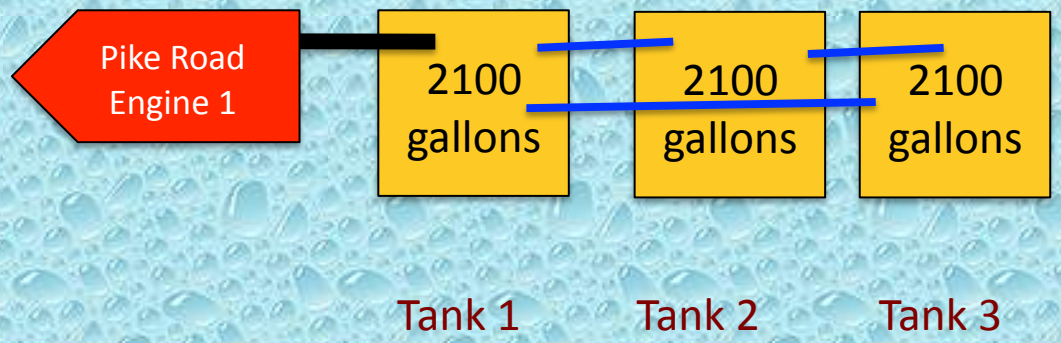
Dump Site Operations

Jet siphon control was set-up using a gated wye remote from the engine so that the pump operator could focus on drafting and supplying the fire flow.

Dump Site Operations

During the last 35-minutes of the drill the flow was moved back to 500 gpm because one of the tankers hauling water suffered a mechanical problem.

Dump Site Layout



Suction Hose

Jet Siphon

The Fill Sites

- For this drill – one fill site was used – a large lake equipped with a portable dry fire hydrant.
- The lake fill site provided about a 1.4-mile round trip for the units hauling water.
- The fill site had ample water volume to support the drill and access was not a problem.
- A 1,500 gpm pumper was used at the lake both sites to support the tanker fill station.

Lake Fill Site Operation

Pike Road Engine 2 drafts from the lake (via a dry fire hydrant) and supplies water to the loading station via 5-inch LDH.

Lake Fill Site Operation

The folks running the loading station did a great job of loading one tanker at a time while having another one connected and ready to load.

The Results

- The drill was stopped at the 2:00-hour mark.
- Water flow was never interrupted during the entire drill, however flow did have to be reduced during the last 35-minutes when one of the tankers suffered a mechanical problem.
- An estimated 55,600 gallons of water were flowed through the attack engine during the drill producing an average flow rate of 483 gpm.
- A peak flow of 620 gpm was achieved during the second half of the drill.

The Lessons Learned

- At this drill, a nurse tanker operation was used to support operations while crews set up the dump site.
- The dump site pumper had a 1500-gallon water tank which increased the “buffer” between when nurse tanker operations had to stop and dump tank operations had to begin.

The Lessons Learned

- The dump site pumper operated with a three-person crew for most of the first 15 minutes which meant everyone had to hustle to get a dump tank up and running.
- The transition to dump tank operation was very smooth and the dump site pumper driver did a good job of using onboard tank water as needed to keep the flow sustained.

The Lessons Learned

- A tanker fill-site needs to run like a NASCAR pit stop. Anything that slows down the loading of tankers is going to reduce the efficiency of the tanker shuttle.
- At this drill, not all tankers had the same fill connection so folks worked to try and fill as efficiently as possible.
- Eventually, all tankers were outfitted to load in the same manner and flow was increased at the dump site.

The Lessons Learned

- Jet siphons, suction hose, and dump tanks are needed at most every dump tank operation – therefore, it is wise to carry those items on every tanker – as well as adaptors.
- The "bundling" of water hauling mutual aid resources has proven successful in many drills. The tanker task force concept again proved to be an effective process for requesting and using additional rural water supply resources.

The Lessons Learned

- Tanker travel routes need to be closely monitored for efficiency. At this drill, only one of the tankers could side dump its water. The bigger problem was the tanker approach and the position of the dump tanks. After the first wave of tankers dumped their water, the Water Supply Officer altered the tankers' approach to the dump site so that the rear-dumping tankers would not impede traffic flow.

Drill Videos

Be sure to watch videos from the drill on the GotBigWater YouTube Channel.

Summary

- The drill was a success. For the new folks, they got to see how dump tank operations work.
- For the older, experienced folks, it was a chance to practice their "craft."
- The success of the drill showed the importance of mutual aid response practices and procedures – and the importance of mutual aid interoperability.
- Many thanks to the Pike Road Fire Department for sponsoring and hosting this seminar.

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This program was developed by
GBW Associates, LLC

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