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Stanley Fire Department
Stanley, Iowa

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
June 4, 2017
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 the Stanley fire station.
- Once the classroom part was done, 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 Stanley and surrounding areas.

The 2-hour Water Supply Drill

- The tanker shuttle drill was held on June 4th just outside of Stanley near Buffalo Creek.
- 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



- *The participants for the drill were from six different fire departments in the Stanley area and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in Stanley.*

Drill Participants

- Stanley Engine 511
 - 1,000 gpm pump w/1,500 gal tank
- Stanley Tanker 511
 - 1,000 gpm pump w/3,000 gal tank



Drill Participants

- Stanley Tanker 514
 - 2,500 gal tank
- Independence Tanker 1
 - 250 gpm pump
w/2,000 gal tank



Drill Participants

- Hazelton Tanker 454
 - 250 gpm pump
w/1,600 gal tank
- Aurora Rescue Engine 1
 - 1,250 gpm pump
w/1,000 gal tank



The Drill Begins



Units participating in the drill took a “standby” position along Nelson Street and received an operational briefing and drill assignment.

Dump Site Operations



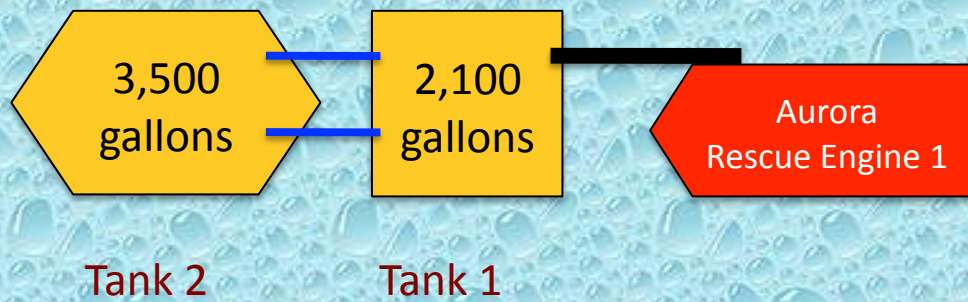
Four tankers were used to haul water during the drill. Water flow was started at 500 gpm and peaked at 800 gpm for the last 20 minutes of the drill.

Dump Site Operations



A two-dump tank operation was used to support the drill. Aurora Rescue Engine 1 (1250 gpm) drafted using a single-lane tank arrangement. Stanley Tanker 514 (2500 gals) is seen dumping water into the 3,200-gallon Fol-Da-Tank Type II SLT.

Dump Site Layout



— Suction Hose
— Jet Siphon

The Fill Site

- For this drill – one fill site was used.
- The site was located on Nelson Street at the crossing over Buffalo Creek.
- The site provided about a 2.9-mile round trip for units hauling water.
- The creek had to be dammed in order to provide sufficient water depth for use.
- Four portable pumps supplied water to a 1,000 gpm pumper using an open-relay arrangement.

Buffalo Creek Fill Site



Crews had to build a dam in order to impound sufficient water for drafting. A 14-ft roof ladder and a salvage tarp were used as the base for the dam. A Turbodraft was initially used but operations were changed over to portable pumps about $\frac{1}{4}$ of the way into the drill.

Buffalo Creek Fill Site



Two portable pumps were used to complement the Turbodraft device at first. However, the pumper was unable to support the Turbodraft and load tankers at the same time, so two additional portable pumps were brought on line and the Turbodraft operation was discontinued.

Buffalo Creek Fill Site



The portable pumps supplied water to a 3500-gallon dump tank. Lift to the dump tank was over 14-ft...so this diminished the flow ability of the pumps some.

Buffalo Creek Fill Site



Engine 511 (1,000 gpm) then drafted from the open-relay set up and supplied water to a loading station that then filled tankers. This arrangement allowed tankers to be loaded at close to 1,000 gpm.

Buffalo Creek Fill Site



An LDH manifold was supplied by Engine 511 and tankers were loaded from that point. The goal of the loading operation was a 1,000 gpm fill rate.

The Results

- The drill was stopped at the 90-minute mark due to time constraints.
- Water flow was interrupted a couple of times during the first 20 minutes of the drill.
- A peak flow of 800 gpm was reached during the last 20 minutes of the drill.
- The drill produced an average flow of 550 gpm during the time period of water flow.

The Lessons Learned

- The single-lane tank arrangement worked out for keeping a lane of traffic open. The lone, rear dumping tanker was able to access the tank in the arrangement and thus contribute to the overall flow..
- The four portable pumps proved quite useful in supporting the open relay operation. The brand-new, unused pumps were acquired through a government surplus program..

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.
- Standardized fill connections in a mutual aid group is clearly a “best practice” when it comes to tanker shuttle operations.

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.
- 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

- High-flow discharges are an important feature on pumpers that support LDH operations. When a pumper does not have an LDH discharge, then it is important to carry an appliance and short lengths of hose that can be used to supply high-flows using multiple discharges.
- The use of dual, 3-inch lines feeding the LDH manifold at the lake fill site made a big difference in loading the tankers fast.

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 Stanley Fire Department for sponsoring and hosting this seminar.



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