

Bergquist Bulletin



FALL/WINTER 2014

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Thank you for stopping by our Bergquist Open Houses!

We'd like to thank all of our vendors and customers for attending our annual Toledo and Bowling Green Open Houses this past August. We hope you all had a terrific time.

Thank you, too, to the Women in Propane Council for exhibiting and hosting your Customer Care workshop in Bowling Green. Your participation was a great addition to our day.

Lastly, we'd like to thank Jake Barry, Anne Garrett, Pam Sienko and Carol Miller for catering our delicious lunches. **A very special thank you also goes to Lenny Martin.** He came out of retirement to grill for us in Toledo. It was great to see you again, Lenny!



*We hope to see you
at our Open Houses
next year, too!*



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Autogas Station Design

A guide to the design, safety, and automation of your autogas station

By Robin Parsons, President, Parafour Innovations, LLC

Full article originally published in the July issue of Butane-Propane News. To read the entire article, please visit our website: www.bergquistinc.com

Autogas stations have come a long way since what many of us remember just 5 years ago, let alone 20-30 years ago or more. Autogas was invented here in the United States, and has grown over the last century to be a worldwide alternative (fuel). Sadly, it is the rest of the world who in many respects, has advanced and somewhat left us behind.

One can find today in India, Russia, Chile, Central America, and Asia, stations which you would be challenged to tell that they were not gasoline stations, as they are built so similar. Fore-courts with canopies, multi hose dispensers, card payment systems, buried storage, and fully automated station operations are the norm.



These markets see that Autogas, while being typically a lower margin sale, is incremental to existing higher margin sales, and not a segment that merely dilutes margins. It is new gallons that one did not have before. They see the potential for stable and growing year round sales and so they invest in better, nicer and more capable stations, ones which the driving public will accept, as a simple and comfortable change in fueling experience. Where this most stands out apart from us, is the understanding of public access and self-fueling, and how the liability in these applications, dictates not only better appearance, convenience and comfort than our traditional "cabinet dispensers" but also a different level of safety integration as well.

When considering safety and liability there are effectively 3 categories of Autogas stations, under which you can classify your project, for the purposes of risk assessment and liability. This should guide you in the design and what level of safety and automation is best to integrate into that design.

Category 1:

Stations on your company property, for refueling of all applications, secured inside a fenced area, operated for limited hours a day, and always operated by trained professionals.

Category 2:

These are stations which we build at the fleet operator's site, also typically in a secured area, not directly adjacent to vehicular traffic, or accessible to the general public.

Category 3:

These are retail, self-service stations, frequently installed at convenience stores or other open and public access sites.

So what should we consider in these cases? There are many levels of safety equipment for each application. Personally, I always recommend to my customers to simply standardize on the highest level of safety for ALL categories, but of course there are often many issues to consider, not least of which is economics. So I will try to categorize some of the general areas for improvement.

INTERNAL VALVES

The traditional "pull cable and fusible link" emergency shutdown is not the best solution. All internal valve manufacturers offer valve options for pneumatic actuators. A pneumatic actuator, with a pressurized gas source, controlled by a 3 way solenoid valve, will allow for a single "Emergency Shutdown Device" which will both close the tank valve(s) and shutdown the power to the site, with a single action.



PNEUMATIC ACTUATORS

Traditionally when we have used pneumatics, we rely on the pressurized vapor in the tank to open the valves. This is not a good idea for several reasons. The use of either compressed air or compressed nitrogen is a much better application. There are now compact and maintenance free compressor packages, specifically designed for this purpose. While they may not be the cheapest upfront solution, they are always the least expensive and most reliable in the long term.



CRASH PROTECTION

Most stations today are built to the NFPA58 minimum standard. This basically calls for 3" schedule 40 pipe, placed in the ground a minimum of 36" from the tank wall, and usually 36" of separation between bollards. This is an

acceptable practice in design for a Category 1 station, or perhaps even some Category 2 stations, but is not good practice for a Category 3 retail station. A vehicle moving at only 5-10 mph will roll right over as many as two of these. There are simple ways to improve the crash protection. Most important, is to have a “cap-rail” or “tied-rail system.” With this design, all of the bollards are connected together, with a properly welded top or cap rail, or with a crash rail bolted to each individual bollard. In both cases, this connected system makes for a much more effective barrier, at minimal additional cost.



KNOCK-OVER PROTECTION

At more public fueling sites, especially those in either high traffic fleet yards, or in close proximity to road traffic, vehicular impact is a much greater possibility, even with enhanced crash protection. This can result in the complete dispenser assembly being “knocked-over” from its mounting position. Also, pull-away devices, which if improperly installed, can fail to separate, and a drive off with nozzle connection can actually “pull-over” a dispenser. A “shear valve assembly” installed properly in both the liquid supply and vapor return under the dispenser, can prevent catastrophic loss of fuel when the dispenser is knocked over, and the lines break. With knock-over protection, the devices will yield or break and separate when the cabinet tilts at a minimal angle, and the piping on both sides of the connection will immediately close with zero or minimal loss of fuel. These systems are available in the U.S., and can be found in both reconnectable designs and sacrificial designs (one time use).



HOSE SEPARATION PROTECTION

Commonly referred to as “break-aways” or “pull-aways,” these have long been a requirement, and as a whole, our industry has been very good about using them. However, they seem to be widely misunderstood. The most common in the U.S. are the type which will separate (if properly maintained and serviced) when there is load applied to the delivery hose, which pulls against the device secured to a shorter “whip-hose” section. However, these devices will ONLY work properly when the pulling force is applied in an in-line fashion, with no more than a couple of degrees of angle applied to the device. Therefore (in most applications) the device will most likely NOT separate, and either the dispenser will be pulled over, or the hose will separate from the hose end. It must be properly installed and regularly serviced to ensure it will operate as designed when needed.



ELECTRICAL CONTROL PANELS

Most Autogas stations have some type of electrical control panel (or combination of boxes) which comprises the minimum elements of control and safety. This includes motor starter relay, E-Stop button, circuit breakers, etc. However most electricians are not familiar with the specifics of both code and good practices for Autogas stations. One should always make sure that the installing electrician has VERIFIED experience in Class 1, Division 1 & 2



hazardous locations, specifically for vehicle refueling stations.

The benefits of using a central and integrated control panel are numerous.

These panels are typically built specific for each site, and are usually

considerably less expensive than having a different electrician build a different setup for each of your stations. Uniformity and consistency in design means improved safety, user recognition and ease of serviceability.

The fact that (a safety device) exists makes it compliant with the requirement for it to be there. But mere compliance should not relieve us of the responsibility to ensure that it will work properly.

There is much more to the subject than just what is presented here.

And there are many more areas of enhanced safety and security that could be discussed, including remote monitoring, security lighting, fire safety analysis, and more. But these are some of the most critical elements, and those which are often either overlooked or simply misapplied.

All of us are in this business to grow and make a stable and sustainable market. Many of us with businesses which pass from one generation to another, all of us with a responsibility to both our customer and employee's safety, and to our shareholders and the bottom line. Together, all of us can use and encourage the use among our peers, of better equipment, and better safety, together building a safe, convenient and customer-accepted market for today and well into the future.



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Your Propane Equipment Experts

HOME OFFICE & WAREHOUSE

1100 King Rd., Toledo, OH 43635

800-537-7518

INDIANA

Crawfordsville, IN 47933

800-662-3252

KENTUCKY

1344 Memphis Junction Rd., Bowling Green, KY 42101

800-448-9504

MINNESOTA

327 Marschall Road, Suite 355, Shakopee, MN 55439

800-328-6291

MISSOURI

1828 Swift Ave., Suite 350, N. Kansas City, MO 64116

800-821-3878

www.bergquistinc.com

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P.O. Box 351330

Toledo, OH 43635

*Don't miss the
Autogas Station Design
Guide inside!*

BERGQUIST BULLETIN BOARD

*Please join us in welcoming Andy Carnes
to the Bergquist team!*

We are pleased to announce the newest addition to our team, Andy Carnes. Andy will be our new Area Sales Manager covering special projects in North Carolina, South Carolina, and Georgia. He will also be splitting his time with Inside Sales in our Bowling Green, KY office.

Andy has 17 years of experience in the retail propane industry — most recently as a district manager with a major marketer. Andy also has extensive knowledge of our product line having been a good customer of Bergquist over the years.

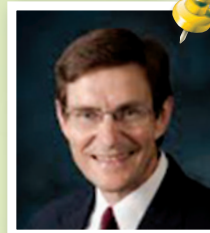
Andy and his wife, Andrea, reside in Leitchfield, KY.
Please help us welcome Andy to our team!



*Congratulations
David Perkins!*

We'd like to congratulate David Perkins as the new Propane Marketers Association of Kansas (PMAK) Board President. David is our Area Sales Manager for Kansas, western Missouri, western Arkansas, and Oklahoma.

Good work, David. It's a well-earned honor!



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