

Leak Prevention

Tank -nically Speaking

by Marcel Moreau

Marcel Moreau is a nationally recognized petroleum storage specialist whose column, *Tank-nically Speaking*, is a regular feature of LUSTLine. As always, we welcome your comments and questions. If there are technical issues that you would like to have Marcel discuss, let him know at marcel.moreau@juno.com

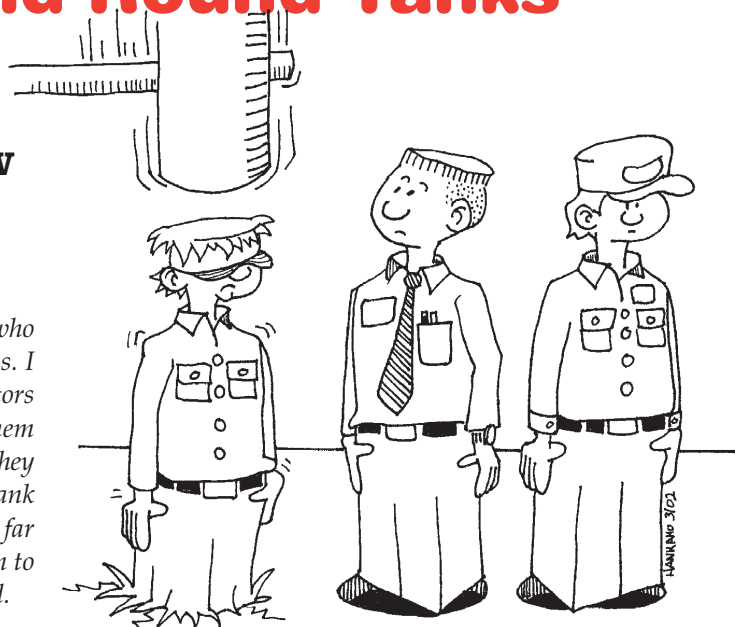
Of SQUARE PEGS and Round Tanks

OR...

What If Tank Operators Knew How to Operate Tanks?

Author's Note

This article focuses on the large majority of tank operators who have but a poor understanding of their storage tank systems. I know that there are some competent, professional tank operators out there, and I do not mean to offend them by lumping them together with tank operators who haven't a clue about what they are doing with respect to operating and maintaining their tank systems. The point of this article, however, is that there are far too few competent tank operators today, and the road we seem to be taking to address this problem is, I fear, unlikely to succeed.



Who's in Charge?

We all know the scenario: The UST inspector walks into the UST facility and asks the clerk about leak detection, overfill prevention, corrosion protection. He/she gets a blank stare.

"Where's the tank paperwork?" inquires the inspector.

"I dunno, let me check the wastebasket..." replies the attendant.

The alarm light is red. The alarm history indicates that the alarm has been active for months. The rectifier's off. There's water in the sumps, spill containers are full of crud, a broken-off gauge stick is jammed in the fill pipe, keeping the overfill device open. Sound familiar?

In May 2001, the U.S. General Accounting Office published a study of the challenges still faced by EPA's underground storage system regulatory program. One of the issues highlighted in this report is operation and maintenance. "Tank operation and maintenance problems increase the risk of contamination," states the report on page 8. "EPA and states

attribute operations and maintenance problems to insufficient training for all staff implementing tank requirements, including owners, operators, installers, removers, and inspectors," states the report on page 10. (For the full report, go to www.gao.gov and look up report GAO-01-464.)

The UST program in the U.S. depends heavily on proper operation and maintenance of leak detection, spill containment, overfill prevention, and corrosion protection systems to keep releases in check. The technologies now used almost universally to meet these varied requirements were used only sporadically as recently as a dozen years ago. Despite the complexity of some of these systems, the fact is that none of these technologies are part of the core curriculum of any high school or university in the country. So where are people who are responsible for these systems supposed to learn about them? There are a few specialized schools and seminars available, but the vast majority of people who are directly responsible for USTs today

learn "on the job." Having spoken with many of these people in seminars that I have given across the country, I can say that all too often this learning technique is woefully inadequate.

Changes Afoot?

This question of who's in charge reflects the disturbing situation more than 17 years after a national program was born and 13 years after detailed federal regulations were published. The rationale that this is a "new" program is untenable. The harsh reality is that if we keep doing things the way we've been doing them, we're going to keep getting the results we're getting.

There are moves afoot to change things. There is a bill simmering in the Senate (#1850, Chafee) that would mandate that states develop and implement a strategy for training operators of underground storage tanks. Some states (e.g., FL, CA, OR) have begun programs designed to

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increase operator knowledge. (See sidebar on page 7.) But UST operator education programs seem to be based on the overly simplistic analysis that if ignorance is the problem, then training is the solution. This approach attempts to treat the symptom but does not address the root cause of the problem. This approach disregards two fundamental facts about today's tank operator population:

- There is huge turnover in the personnel that are generally regarded as tank operators.
- For most tank operators today, keeping the storage systems up to snuff is an afterthought to the job description, if it appears on the job description at all.

Let's look at how each of these fundamental facts points to the futility of training existing tank operators as a solution to the problem.

Personnel Turnover

Personnel turnover in the convenience store industry, which represents a large portion of the motor fuel facilities in this country, is a well-known phenomenon. The convenience store industry statistics for 2001 indicate that the average turnover rate is 102 percent per year. This means that, on average, a convenience store worker keeps his job for just under a year. This is not the place to discuss the reasons for this, but I think it is safe to say that this situation is not likely to change in the foreseeable future.

So what does this tell us about the challenge of educating tank operators? It tells us that the training effort required would be enormous because of the hundreds of thousands of people involved. It tells us that the effort will be neverending because a very large percentage of these people will be gone within a year. It tells us that employers are going to be unwilling to make any significant investment in training employees who will soon be out the door. It tells us that attempting to teach essentially temporary employ-

ees the intricacies of storage tank systems and storage tank regulations is a futile endeavor.

Job Description

And what if by some miracle tank operators did know what to do? How much time would they devote to doing it? Very few people today are hired as tank operators. The job titles typically read something like store manager, operations manager, maintenance supervisor, environmental manager, health and safety supervisor, and so on. Some of these job descriptions include items like making sure there is an adequate supply of fuel available. Some may even include items like maintaining tank paperwork. But very few of these job descriptions have tank operation and management as a prominent component.

These job descriptions do include a multitude of other responsibilities that are typically more urgent (e.g., the cash register person didn't show up today, so I have to fill in...), more apparent (e.g., light bulbs need replacing, floor needs cleaning, toilet is overflowing...), or more likely to affect the bottom line (e.g., the cigarette rack is almost empty, the beer cooler is on the fritz, and the beer is getting warm...). How many of today's tank operators have tank compliance status as a significant component of their job performance review?

Storage systems are out of sight (buried, in fact!) and they are typically a complete mystery to the hapless operator. And we know from the generally low level of inspection and enforcement efforts (the GAO report cited above also states that 22 states do not inspect all of their tanks on a regular basis) that noncompliance with tank rules rarely has significant consequences. The end result of all this? Tank operation and management is a low priority.

I firmly believe that the class of people that are generally considered tank operators today never asked to be tank operators, will never be adequately trained to competently operate tank systems, and will never devote the time or energy to tank operation that is required. Attempting to turn today's store managers and maintenance supervisors into

professional tank managers is a hopeless task. Simply put, we are trying to jam square pegs into round holes.

Who Should Be in Charge?

Why not create a new lot of round pegs that will actually fit into the round holes—a trained class of professionals who are interested in storage tank systems and are able to demonstrate that they have adequate knowledge—and put them in charge of storage systems? Let the store managers and operations managers focus on doing what they know how to do and let storage tank operators do what they know how to do.

Are there any parallel situations? I think so.

Not so very long ago, raw sewage was discharged into the nation's waterways. There was little or nothing in the way of sewage treatment. This was eventually found to be unacceptable, and we designed sophisticated plants to treat sewage. These plants needed people to operate them, but this was not something that could be done by any Tom, Jane, or Harry off the street because it required specialized knowledge. So we created schools for sewage treatment plant operators and trained and certified a class of people to handle a vital and technically sophisticated operation.

Not so very long ago, underground storage systems were little more than steel cylinders thrown in the ground with a few pipes and a basic pump connected to them. This led to unacceptable pollution, so today's storage systems are vastly more complex and sophisticated (for reasons that are economic as well as environmental), as are the regulations governing them. Yet we still expect that people off the street will be able to successfully operate these systems. Is it any wonder that they so often fail?

I believe that what we need to create is a class of technically proficient professional tank operators who make a career out of properly managing tank systems. Managing a few storage systems at a typical facility is not a full-time occupation. A single professional tank operator, depending on the technology used at a UST

facility and the competency of the on-site personnel, should be able to manage quite a few storage facilities. This would decrease the number of people who need to be trained by a factor of 10 to 100. These people will have invested significant time and perhaps money in obtaining their qualifications, so they should, in theory at least, have significantly lower turnover rates than typical convenience store personnel. These factors should in turn significantly decrease the overall training effort required.

The Certified, Professional Tank Operator

Professional tank operators could market their services in various ways. Some could become employees of companies with many tank systems. They would have the official job description of keeping the company's tank systems properly maintained and in compliance. Some could become independent consultants hired by small tank owners to do the same job. Some could work within tank installation and maintenance firms to provide an additional service to the firm's traditional customers. Some could work with or within government agencies or the military to manage those tank populations. A small mom-and-pop tank owner who wanted to manage her own tank could be free to do so, but only if she could prove through the certification process that she was a competent tank operator.

The fundamental difference in this proposal from the usual understanding of tank operator is that the certified operator is not the person who is on site every day. The certified operator is the person who understands the characteristics of the storage systems at each facility for which he or she takes responsibility, knows what needs to be done to keep the facility in compliance, sees to it that these things get done, and maintains all of the required paperwork.

Duties of the professional operator would also include providing basic training to on-site personnel on how to operate the UST (e.g., "You have a 10,000 gallon tank but don't ever try to put more than 8,500 gallons into it.") and how to respond to alarms or other malfunctions (e.g., "If this red light comes on, call me right

away."). The presence of the professional operator can greatly reduce the level of training required for on-site personnel as well as provide a direct means of delivering very focused site-specific information to these people. This would be very efficient, effective, and economical for the employer.

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To create this class, we need only tweak existing regulations slightly to require that each regulated storage system have a "certified" tank operator and define the requirements for certification. Seed money might then be provided (and time allowed) to create the schools (perhaps within the existing vocational/technical school system, or an Internet course for those who are already well versed in tank management) to educate and certify a population of professional tank operators. The key here would be to create high enough standards and an evaluation tool (e.g., an examination) that is effective enough to reasonably ensure that only truly knowledgeable people obtain certification. The certification process must be used to raise the bar of competency, for if the certification process merely blesses the status quo, we will merely perpetuate the current situation.

Enforcement of the requirement that every tank system have a professional tank operator could be simplified by a system whereby certified tank operators would attach a tag (with their name and contact information on it) to storage systems for which they are responsible. After some fixed date, it would become illegal to deliver fuel to storage tanks that do not have a certified tank

operator tag attached to the fill pipe. If a professional tank operator ceased to be responsible for a storage system, he or she would provide reasonable notice to the tank owner and then remove the tag. The tank owner would need to find a replacement professional operator to continue to receive fuel. Any such changes in professional tank operator would need to be tracked in the state UST database.

As in the existing regulatory scheme, professional tank operators could be held liable for the regulatory shortcomings of the facilities for which they are responsible. Therefore, it would behoove a professional tank operator to drop from his client list an uncooperative owner who did not want to perform required maintenance or leak detection activities. Frequent changes in tank operator could be tracked in a state UST database and might be a signal that a facility is in need of a visit from a state inspector.

To keep professional tank operators honest, each state could organize a volunteer board consisting of industry-related people who oversee the conduct of certified tank operators. Such a board has been operating in Maine for 15 years to oversee the certified tank installer population. Complaints brought by state UST inspectors or other sources are heard before the board and the board can impose disciplinary action, including fines, suspension, or even revocation of certification. This system can respond to problems in a much more timely and efficacious manner than traditional enforcement tools.

Postscript

Of course, this program must go hand in hand with vastly upgraded UST enforcement and inspection programs. Professional tank operators will have a difficult time marketing their services to tank owners unless UST inspections are routine and deficiencies result in meaningful penalties. But think how many more inspections an inspector could conduct if someone who actually knew all the details of the storage system and could quickly produce all of the required paperwork greeted him or her at each facility. Imagine a world where violations became the exception rather than the rule... ■