Erie County Sewer Management: Developing an Effective Worker Safety Program

by James Lavelle

Headlines We Never Want to See and Strive to End:

City Worker Crushed to Death at Sewage Plant in Brooklyn – Brooklyn NY, January 2009

A conveyor belt being used temporarily to remove grit from sewage tipped over while being relocated and crushed a wastewater treatment plant worker.

Falls Police Rule Fatal Bike Crash Was an Accident – Niagara Falls, NY, July 2011

A Niagara Falls man struck his head and was killed after riding his bicycle into a manhole which was left uncovered by contractors.

Two Dead in Tarrytown Manhole Accident – Tarrytown, NY, September 2010

A Tarrytown firefighter was overcome by fumes while attempting to rescue a Department of Public Works employee who had collapsed while investigating a sewer backup in a 15-foot manhole. Both men died as a result of the incident.

The tragedies referenced here are deaths that occurred to various employees and citizens in New York State as a result of the inherently dangerous conditions faced by sewer workers on a daily basis. Every day employees of the Erie County Division of Sewerage Management (DSM or the Division) work in situations that, without the proper safety measures in place, could be some of the most dangerous of any industry, as portrayed in the above headlines. Whether performing maintenance work within a 100-year-old pumping station, working on an extremely hot incinerator, entering any of the hundreds of confined spaces scattered throughout the county, repairing a sewer line in a 15-foot-deep trench, or working in the sewer district’s busy roadways, the potential for disaster is always present for both our employees as well as the public. Add to these examples the fact that sewer workers are in a business where there are human health concerns associated with the materials they come in contact with directly or incidentally every day. It should come as no surprise that having an adequate safety program is a must in this industry.

Development of the DSM Safety Program

The safety program began with a collective goal among DSM staff members who believe that, “All employees can return home safely every night.” Believing in this goal is great, but achieving this objective is sometimes complicated and cannot be reached overnight. The DSM’s safety program was not started and mastered one afternoon at a round table in a conference room. It has taken dedication for many years to reach the point where it is now. The DSM intends to continuously improve its safety program with the goal of eliminating all accidents. While in reality this may not be obtainable, if for no other reason than human nature, it certainly is the ultimate goal.

The stability of the DSM safety program comes from the full commitment of everyone within the Division, which starts at the top with the Commissioner and Deputy Commissioner, all the way through the staff, laborers and seasonal employees. Management and the various unions are able to work together to accomplish this common goal of promoting employee safety. Funding for personal protective equipment (PPE) and various safety devices and equipment is approved through the Sewer Districts’ Board of Managers. It is the board’s responsibility to approve the appropriate budgets for operations and maintenance (O&M). This overall and thorough commitment is essential for the safety program to succeed.

Although early phases of the program were primarily established around preventative measures, an incident in December 2006 changed the approach the Division took on safety. In violation of the DSM’s trenching and shoring policies, an employee working in an unprotected trench was buried when one of the walls collapsed on him. Luckily, after being quickly dug out by his co-workers, the

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employee survived with minimal injuries (see Chris Baldwin’s story, page 49). Coincidentally, around the same time, another person working for a private contractor a few miles away was not so lucky. The DSM never wants to be in the position of using the word “luck” when referring to an employee’s safety, nor come anywhere near the disaster that almost occurred here. This event spurred a movement which placed more responsibility on DSM’s Training Coordinator as well as its supervisors to put even more emphasis on employee safety and accident prevention. This event opened a lot of eyes, especially of those employees who believed that an accident like this could never happen.

In 2008, DSM’s Training Coordinator retired and, in 2009, the Division changed the position to that of Safety Manager, whose responsibility would be not only to make sure that employees are properly trained in safe practices, but oversee the entire safety program. Previous to the safety manager role, the field supervisors were primarily responsible for the safety of the worksite. However, with various jobs being performed in numerous locations throughout the day, it was impossible for them to check on crews while also performing their daily work. At this same time, the sewer districts were expanding dramatically with the merging of older sewer districts operated by other municipalities, thereby compounding the problem. The Safety Manager’s sole focus is on the health and safety of all employees, providing an invaluable resource for the DSM supervisors and additional field oversight.

**Aspects of DSM Safety Program**

For over 30 years, the DSM has had an active Safety Committee which now typically consists of 10 to 12 members. The committee requires a two-year commitment after which most members are replaced with staff that has shown a very high interest in safety and the committee. By changing members every two years, more employees are able to serve on the committee and, therefore, more individuals take a sense of pride and ownership in the safety program. The committee is chaired by the Safety Manager and generally has one representative from varying job titles, including sewer district

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Another adjustment for plant maintenance came after evaluating the procedures for replacing air filters in the VPSA (vacuum pressure swing adsorption) unit. In the past, employees would utilize an extension ladder to access the filter unit (top), which was later adapted with the construction of a permanent catwalk (bottom).

managers, treatment plant operators, lab staff, engineers, sewer maintenance workers, and so on. Union representatives are an integral part of the committee as well. The role of the Safety Committee has always been to discuss the safety of the Division’s employees and bring issues and suggested corrective actions to management’s attention. The committee acts as a liaison between the employees and management, as some employees may find it easier to bring up a safety issue to one of their peers (a Safety Committee member) than to a supervisor. All concerns presented to management by the committee are taken seriously and a solution is always reached.

The DSM management has worked directly with consultants from the New York State Department of Labor (NYSDOL) to establish approved written safety programs and to ensure overall compliance with applicable safety regulations. Beyond the required written programs, as mandated by state regulations, such as the Confined
Space Entry and Hazard Communication, the Division has an extensive list of policies and procedures targeted toward keeping the employees healthy and safe. Many of these policies and procedures were written using industry best practices; however, some have been based on events that occurred within the Division that resulted in some type of negative outcome – generally, some type of injury or damage to property. These policies have proven to be a very successful complement to the other written safety programs.

Employee Involvement and Tracking Incidents: While the Safety Committee may be effective in identifying ways to develop a safer workplace, all individuals in the Division must be part of the solution. A positive attitude toward one’s well-being is often the most effective tool of any safety program, but it can also be the most difficult to promote. The DSM has found that the best way to promote a positive attitude throughout the Division is to take a proactive approach to employees’ recommendations – allowing the employees to be involved in the problem-solving process of resolving any unsafe conditions. Although their recommendations may not be the definitive solution to an issue, their hands-on experience may play a key role in the result. It is also important to realize that even with a positive attitude for personal well-being, some accidents still happen. Therefore, it is very important to track all accidents, incidents and near misses (Figure 1). After tracking these numbers for a few seasons, trends become evident. For example, slips and falls during winter months may be common at certain locations; the goal is to realize this trend and to take a proactive approach to prevent these accidents. This may mean ordering more salt, plowing roads and walkways better or placing floor mats at building entrances.

This is the point where the accident investigation becomes crucial, where the Safety Manager looks further into the accidents and tries to answer the question: how do we prevent this type of injury from recurring? Following the hierarchy of safety controls, the DSM always seeks to eliminate the problem. If elimination is not feasible, the DSM continues to follow a step ladder for resolution: from substitution of the hazard, to implementation of engineering controls, to administrative controls and, finally, to issuing or changing equipment/procedures to minimize risk. The same goes for injuries to specific body parts. For example, if 2011 yields a high number of back injuries, the focus in 2012 targets reduction of back injuries through training, changes in procedures or techniques, or possible equipment modifications.

Site Visits: Routine site visits, often unannounced by the Safety Manager to various job sites and facilities, also play a strong role in shaping this safety program. A main reason why site visits are beneficial is that the Safety Manager has authority to stop any unsafe activities, and these decisions are backed fully by the Division’s upper-level management. Additionally, the Safety Manager is available to answer questions and provide recommendations while on the job sites. This also gives the Safety Manager a better feel for how well the program is being accepted and followed.

Accountability: If it is found that an accident was the result of a safety violation, the employee is held accountable for his or her actions. Failure to follow proper safety policies may result in discipline, even if no injury or damages occur. Again, the Division does not rely on luck. Depending on the severity of the violations, the result can be anything from formal counseling, verbal/written warnings, suspension or termination. Without such discipline, the employees may feel as though they can complete their work in a careless manner without repercussions, putting themselves and their co-workers at risk.

Close Coordination: Another essential aspect of the Division of Sewerage Management’s safety program comes from direct coordination between supervisors and the Safety Manager while planning projects. By reviewing plans ahead of time, the DSM is able to begin the jobs knowing that the work will be continued on page 42
perform trained employees on many essential safety certification. Example, Renewal Training Contact (RTC) hours are requested for all training topics. These credits are then applied toward Wastewater Treatment Plant Operator and Voluntary Collections System certification renewals.

It has become essential not only to train employees on the mandated topics, but in doing so, train specific to the job tasks in ways to keep the attention of the training participants. For example: a general Hazard Communications training strictly done by viewing a general presentation may not be effective in keeping an employee interested in the training. Covering the basics with PowerPoint is fine, but the goal of our program is to take the training a step further and focus specifically on the hazards encountered by employees every day. Furthermore, to keep the employees involved, the experts have employees explain or show how their daily work tasks involve these hazards (the use of certain chemicals, etc.) and discuss proper methods based on their actual exposure risks. This has proven to be much more effective in actual retention of the information as opposed to “talking at them,” a criticism of prior training activities.

The DSM uses hands-on methods for other topics such as trenching and shoring. While there is a presentation component to the training, it is believed that simply sitting in a classroom is not the most effective way to teach an employee how to safely execute a trench in order to make a sewer repair. Therefore, the DSM requires employees to go outside, set up a work zone, safely dig and enter a trench with DSM equipment, and simulate a repair on a pipe. Employee feedback from hands-on training has proven to be far more positive than that of classroom training. This allows less experienced employees to learn from the more experienced veterans, and veterans often learn new techniques from watching each other.

When planning upcoming training, it is essential not only to train on the mandated annual safety topics, but on non-mandated training, often just as important. With so many safety topics available in training, it is necessary to target the topics important to your facility. Reviewing accident trends and the types and causes of the high frequency accidents is an effective way to determine which non-mandated training topics to choose. The nice thing about non-mandated training is that there is a lot of freedom on presentation of the materials. Although the DSM has much of its training provided through a grant, a lot of additional training has been done in-house.

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Combating Complacency: Regardless of how well jobs are planned and how well employees are protected from injuries, complacency remains the biggest struggle within a safety program. Many employees arrive to work and perform the same work activities on a daily basis. The DSM takes a few steps which help to eliminate complacency before it results in injuries.

- Changing job assignments periodically. The DSM employees generally perform the exact same job tasks day after day. A break in the “normal” work will often get the employees thinking about new hazards that may be introduced due to change in their work environment.
- Annual Training sessions and weekly “tailgate talks” help to refresh the employees on the appropriate safe methods required to complete a task. The tailgate talks focus on specific topics that may be applicable to the upcoming work, seasonal conditions or potential hazards.
- Routine site visits by the Safety Manager keep the employees “on their toes” and their minds focused on the safe methods of completing job assignments, not just completing the job as fast as possible.
- All employees are given full support from the supervisors and management to ensure that they are always given the means to a safe work environment. This support allows the employees a voice in the safety program and reinforces that it is unacceptable to be put into an unsafe situation. This counteracts such sentiments by employees everywhere as: “I was lucky I wasn’t injured at work today,” or, “I’ll just take a shortcut to get this done quickly.”

Working Safe Mindset: The mindset of working safely is everywhere at DSM. Safety is discussed at virtually all meetings within the Division. The Division’s slogan for safety reads, “Think Safety,” and this is printed on t-shirts and sweatshirts worn by members of the department. A recently implemented measure was the issuance of 5-in-1 safety jackets to the employees. These jackets are fluorescent green and can be worn full for winter or broken down for a spring jacket, a rain jacket or a vest (all of which meet minimum ANSI 107-2004 Class II or III standards). The idea of the jackets is not only to keep DSM employees warm, dry and visible in roadways, but also to eliminate common excuses for employees not wearing reflective garments. As a safety manager, one commonly hears employees state that they did not have time to get a jacket, or the vest would not fit over their jacket, and so on. These jackets provide virtually no excuses for not wearing a reflective garment and remind the staff to always, “think safety.”

DSM Employee Training

A suitable training program is essential in all industries, but a strong commitment to training has proven to be invaluable to the DSM’s safety program. The DSM receives a majority of its training through a NYSDOL Hazard Abatement Board Grant which is issued to the Western New York Council on Occupational Safety and Health (WNYCOSH). This council provides the training to the DSM staff according to the training topics requested annually by DSM. Training for DSM staff serves a double purpose for many of its employees. Not only do the employees receive training on many essential safety topics, but they also receive credits toward their professional certifications. For example, Renewal Training Contact (RTC) hours are requested for all training topics. These credits are then applied toward Wastewater Treatment Plant Operator and Voluntary Collections System certification renewals.

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by supervisors or the Safety Manager. Some examples of non-mandated training performed periodically for DSM staff include: heat and cold stress, bugs and poisonous plants, slips, trips and falls, and ergonomics, to name a few.

Each year, the DSM schedules training specifically for its supervisors. Generally, the training is geared toward supervisory skills and dealing with employees in unique circumstances. For example, the Division recently held Reasonable Suspicion training for all supervisors. This trained supervisors on how to identify employees who may be under the influence of drugs or alcohol and how to effectively deal with these situations.

Weekly tailgate talks are an effective form of training used. Every week a general safety topic is discussed by all DSM staff within their work groups. The person giving the talk is rotated among the staff, letting all participate. The topics to be discussed are displayed in a prepared book which incorporates appropriate safety topics. The topics are arranged based on the time of year and the common work activities and hazards associated with the particular season. Scheduled topics can be revised as accidents happen or work activities change so that employees can be re-trained on safe working methods based on changes as they occur. One example is as the summer approaches, employees may come in contact with poison ivy or the current plant of concern, the giant hogweed; therefore, one tailgate talk would discuss the locations of the plants, their effects and what to do if you come in contact with them. If they do nothing else, these talks are good reminders for the staff of the hazards they may face each day.

Many times an individual employee exhibits a need for retraining. An employee experiencing multiple “similar” injuries is a sign that person may need additional attention. In such cases, the Safety Manager will schedule training with this employee to refresh him or her on proper lifting techniques, proper housekeeping methods, or whatever the issue may be. Documentation of this enhanced and personalized training is then entered in the employee’s personal file to show the county has done its due diligence.

Evaluation of the Safety Program

In order to fully understand the effectiveness of your organization’s safety program, it is essential to evaluate the program on a routine basis. As effective as a safety program might be, it is still extremely important to undertake a critical review in order to always make improvements and strive for even better results.

It is essential to accurately track all incidents, accidents and near misses for a critical assessment. Every year the DSM completes an annual report, part of which focuses on safety and training. The numbers that stand out most from the safety portion are the number of recordable accidents and the workers’ compensation figures. The result of a good year for the DSM safety program is a decrease in both; a bad year is just the opposite (Figure 2).

Setting goals can be one of the most effective ways to track progress within a safety program. A major part of the DSM’s program evaluation process involves reviewing the goals set at the beginning of the year and determining where the Division stands in reaching them. Did we fall short of our goals, did we just reach our goal, or did we go far beyond our expectations? When DSM does not reach its goal, it must determine the potential flaws in the program and make adjustments to reach goals in the future. At the same time, reaching goals in any given year is not enough – it must remain a continuous trend for the
safety program to be legitimately considered successful.

Safe Return Home

It has taken many years of dedication to reach the point where the safety program is now, but DSM intends on continuously improving the program with the goal of eliminating all accidents. By approaching worker safety from several different angles and making a concerted effort to make the safety mindset ubiquitous in all of our activities, DSM firmly believes that it has taken great strides in developing a comprehensive safety program.

In a time when funding is scarce, an established yet improving safety program also positively affects budgets. By taking a proactive approach in accident prevention, the Division has been able to decrease accidents and, therefore, reduce loss time and workers’ compensation costs. It has been recognized that although significant time is spent on training and safety activities, this investment in DSM employees is crucial.

While the number of recordable injuries continues to trend downward, DSM will never be fully satisfied with its safety program. At the time of the December 2006 trench collapse, the DSM’s metrics were showing decreases in its incident rates; however, that event further solidified that more work was needed. By continually evaluating its practices and taking forward action on imperfections, DSM firmly believes that all employees can return home safely every night.

James Lavelle is the Safety Manager of Sewerage Management, Erie County Division of Sewerage Management, in Buffalo, NY. He can be reached at: James.Lavelle@erie.gov. Collaborating on this article was Joseph Fieg, PE, the Deputy Commissioner of the Erie County Division of Sewerage Management.

References