Rulison Municipal Utilities

Risk Management Plan

Rulison Municipal Utilities operates Water and Wastewater Treatment Facilities on contiguous properties.

The Wastewater Treatment Facility is a 12.0 MGD conventional activated sludge facility with single stage nitrification, phosphorus removal, and anaerobic digestion. Disinfection is by chlorination followed by dechlorination. Specific processes incorporate the use of certain regulated substances. The disinfection process utilizes chlorine, followed by sulfur dioxide addition for de-chlorination. The maximum intended inventory of chlorine is 8,000 lbs. However, there can not be more than 4000 lbs in use at one time. The maximum intended inventory of sulfur dioxide is 2250 lbs. A by-product of anaerobic digestion is the production of methane, and other gases, commonly known as digester gas. Digester gas is collected and stored for use as fuel to power pumps, blowers, and heating systems. The maximum storage capacity for digester gas is 47,710 cubic feet, or 1,891 lbs.

The Water Treatment Facility also has a treatment capacity of 12.0 MGD. The water treatment process includes softening, filtration, and disinfection. Disinfection is by chlorination. The Water Treatment Facility may pre-chlorinate or post-chlorinate. The maximum intended inventory of chlorine is 4000 pounds. No other regulated substances are used at the Water Treatment Facility.

The maximum intended inventory of chlorine at the Wastewater and Water Treatment Facilities exceeds the EPA Threshold Quantity (TQ) of 2,500 lbs. Therefore, Rulison Municipal Utilities must develop and implement a Risk Management Plan, in compliance with 40 CFR part 68. The inventories of other regulated substances do not exceed the TQs for those substances and are not included as a part of the plan.

**If a leak should occur**

In the event of a minor, controllable chlorine leak, Rulison Municipal Utilities personnel will follow routine maintenance procedures in making required repairs. If the leak is significant or uncontrollable, the Grand Valley Fire Department will be contacted to carry out Emergency Response procedures, per the facility Emergency Action Plan.

A large leak, developing in a full one ton cylinder stored outside of the chlorination building or room would be considered a worst case scenario. All of the contents of the cylinder would be released as a toxic gas within the span of approximately ten minutes. There are no passive mitigation measures in this case. Under worst case weather conditions, the chlorine would travel 1.3 miles before dispersing enough to no longer pose a hazard to the public. Accidental release prevention and emergency response policies are described in Rulison Municipal Utilities Process Safety Management Program and Emergency Action Plan.

**Safety Features Built into the System**

One of the key safety features of the chlorination process at both the Water Treatment Facility and the Wastewater Treatment Facility is the piping system. This system operates under a vacuum condition, preventing accidental release of chlorine gas into the atmosphere. If the integrity of the piping system is compromised, the loss of vacuum automatically terminates the release of chlorine gas from the system.

The ventilation system at both facilities is also integral to the safety of the chlorination process. The System, which can be operated either automatically or manually, has the inlet vent at floor level because chlorine gas is heavier than air. A chlorine gas detector triggers warning devises and activates the ventilation system, if atmospheric levels of chlorine gas are detected at one part per million or greater.

Personal protective equipment is stored remotely to provide safe access in the event that the atmosphere around the chlorine building becomes contaminated. Emergency repair kits are stored at the Wastewater Treatment Facility in the DAF building and at the Water Treatment Facility in the Lime Room. The kits are painted bright yellow with clear labeling. These kits are routinely demonstrated in safety training sessions to insure proper knowledge regarding the equipment and its use. The repair devices are properly maintained and replenished as required to insure availability in the event of an emergency.

If the automatic chlorine detection equipment fails, leaks are detected through routine inspection using ammonia. In the presence of chlorine, ammonia produces a white vapor. Chlorine odors can be detected at levels as low as 0.5 mg/l and an audible hissing can be detected in more serious cases.

Training programs are in place, providing instruction regarding the proper use of personal protective equipment as well as procedures for routine maintenance and repairs.

If a leak is considered to be minor, a team of at least two trained facility personnel will make the appropriate repairs. All pertinent personal protective equipment will be used as required.

On August 1, 1994 a minor leak at the Wastewater Treatment Facility resulted in the release of approximately 44 lbs of chlorine gas. This release did not result in any on-site or off-site death, injury, property damage, environmental damage, evacuations, or sheltering in place. This is the only incident involving a chlorine release in the past 15 years and does not qualify as a reportable release as defined by 40 CFR 68.42 (a).

Rulison Municipal Utilities has an Emergency Action Plan, which has been coordinated with the City of Rulison Fire Department. In the event of an uncontrollable leak, the plan requires that the individual, having discovered the leak, remove themselves from the effected area and immediately report the condition to emergency responders and his/her supervisor. Each employee is trained to be aware of potentially dangerous conditions.

The supervisor will initiate the alarm for evacuation and will attempt to notify other department supervisors as to the nature of the alarm. Each department supervisor will be responsible to observe the windsock on top of the chlorine storage building and determine the best evacuation route as specified in the Emergency Action Plan. If an alarm sounds during weekday shifts, each employee should stop work activities, shut down equipment, wear clothing appropriate for the weather conditions, and leave on foot to the designated area. Employees unable to communicate with their supervisor should observe the windsock and follow an evacuation route upwind. Evacuation route maps are posted in several notable areas throughout the facility.

The Rulison Fire Department will be responsible for rescues as required. An employee requiring medical services shall be treated at Rulison General Hospital. Both have been notified as to the possibility of an emergency, by letter. The local emergency planning committee has been notified of the potential hazards of chlorine. In the worst case scenario, as described above, the Garfield County Emergency Management Agency will conduct evacuation efforts.

No changes in process management are anticipated. No safety improvements are scheduled or have been determined to be necessary at this time.