

**CLEAN AIR ACT (CAA) § 112(r)(7)
&
EMERGENCY PLANNING, COMMUNITY RIGHT-TO-KNOW ACT
(EPCRA) § 312
INSPECTION REPORT**

Aberdeen Water Works

Facility Name and Address: Aberdeen Water Works 12668 391st Avenue Aberdeen, SD 57401 Contact/Telephone: Janel Ellingson, (605) 626-7074 Mailing Address: 1123 South Lincoln Street Aberdeen, SD 57401	Date of Inspection: 9/18/2023 RMP EPA ID #: 1000 0014 8716 • Program Level: 2 • Covered Substances: ○ Chlorine TRIFID #: NA NAICS: 22131 # Employees at this location: 8
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INTRODUCTION

This report presents the observations of the CAA section 112(r)(7) and EPCRA section 312 inspection conducted by EPA Region 8. The purpose of this inspection was to determine compliance with the Risk Management Plan (RMP) requirements of CAA section 112(r)(7) and the Tier II reporting requirements of EPCRA section 312.

Aberdeen Water Works (AWW) uses, handles, and/or stores more than a threshold quantity of Chlorine. Chlorine is regulated, as specified at 40 C.F.R. §§ 68.115 and 68.130.

CAA 112(r)(7) Program Elements Reviewed:

1. Applicability [68.10]
2. OCA/ACS [68.20 – 68.42]
3. Process Safety information [68.48]
4. Hazard Review [68.50]
5. Operating procedures [68.52]
6. Training [68.54]
7. Maintenance [68.56]
8. Compliance audits [68.58]
9. Incident investigation [68.60]
10. Emergency Response [68.90 – 68.96]
11. Risk Management Plan [68.150 – 68.195]

Nature of Business:

AWW uses chlorine to disinfect water for the city of Aberdeen, South Dakota. The original facility was built in 1934. In the 1950's, filters were added and the treatment areas were enlarged. In the 1980's, AWW's treatment capacity was expanded to approximately 12-18 MGD. In 2005, a new building was installed to house a softening plant and to provide office space. However, the new building does not house any of the chlorine system. That system is still housed in the original building. In 2023, a hypochlorite system was installed in the original building to replace the existing chlorine system. The hypochlorite system was abandoned, because of operational issues, and use of the chlorine system was resumed.

OBSERVATIONS

CAA § 112(r)(7) (RMP):

- 1. Requirement found at Subpart A - Management [40 CFR 68.15(c)]:** The owner or operator shall document persons responsible for implementing individual requirements of the risk management program and shall define the lines of authority through an organization chart or similar document.

- *AWW has not documented persons responsible for implementing individual requirements of the risk management program*
- *AWW has not defined the lines of authority through an organization chart or similar document.*

- 2. Requirement found at Subpart C - Prevention Program - Safety Information [40 CFR 68.48(a)(3)]:** The safety information shall include safe upper and lower temperatures, pressures, flows, and compositions for the regulated substances, processes, and equipment.

- *AWW did not provide safe upper and lower temperatures, pressures, flows, and compositions for the regulated substances, processes, and equipment.*

Note:

The EPA inspected AWW on 9/11/2017 and documented 14 possible findings re. AWW's implementation of its Risk Management Program.

Afterward, the EPA issued a Notice of Noncompliance (NON) which required that AWW address/correct the findings. The EPA also included a "Statement of Certification" (SOC) which was to be signed by an AWW representative and then returned to the EPA. The signed SOC stated that the 14 findings had been addressed/corrected.

Finding #2 above, re. 40 CFR 68.68.48(a)(3), was cited in the NON.

However, it appears that the finding was never addressed/corrected, despite the signed SOC to the contrary.

3. Requirement found at Subpart C - Prevention Program - Safety Information [40 CFR 68.48(a)(4)]: The Safety Information shall include equipment specifications for the regulated substances, processes, and equipment.

- *AWW's Safety Information did not include equipment specifications.*

4. Requirement found at Subpart C - Prevention Program - Safety Information [40 CFR 68.48(a)(5)]: The Safety Information shall include codes and standards used to design, build, and operate the process.

- *AWW's Safety Information did not include codes and standards used.*

Note:

The EPA inspected AWW on 9/11/2017 and documented 14 possible findings re. AWW's implementation of its Risk Management Program.

Afterward, the EPA issued a Notice of Noncompliance (NON) which required that AWW address/correct the findings. The EPA also included a "Statement of Certification" (SOC) which was to be signed by an AWW representative and then returned to the EPA. The signed SOC stated that the 14 findings had been addressed/corrected.

Finding #4 above, re. 40 CFR 68.68.48(a)(5), was cited in the NON.

However, it appears that the finding was never addressed/corrected, despite the signed SOC to the contrary.

5. Requirement found at Subpart C - Prevention Program - Safety Information [40 CFR 68.48(b)]: The owner or operator shall document that the process is designed in compliance with recognized and generally accepted good engineering practices (RAGAGEP).

- *AWW has not documented that the process is designed in compliance with RAGAGEP since approximately 2019*
- *Many engineering studies, existing conditions, and issues with doorways indicate that the process does not comply with RAGAGEP. These include:*

Engineering studies

- An engineer inspected AWW's chlorine system in the 1990's, and strongly urged that AWW install a chlorine scrubber. However, the scrubber was not installed.*
- The city of Aberdeen retained a consultant, G R Green, "to evaluate the WTP facility and recommend improvements to meet future demands". The evaluation resulted in a "Facility Plan", dated March of 2020, which*

recommended many repairs and updates to the entire facility. Regarding the chlorine system, the plan noted that:

- 1. Plant staff have concerns with operator safety*
- 2. The HVAC system [is] in need of repair/replacement*
- 3. The building that houses the chlorine system has structural issues*
- 4. The chlorinator room does not exit to the exterior of the building (as required by 10 State Standards)*
- 5. Plant staff noted that the chlorine feed system is old and dated*
- 6. Safety issues, concerning railings and stairs, exist in the building that houses the chlorine system*
- 7. There are safety concerns with the chlorine room ventilation system.*

Existing conditions

- iii. Chlorine monitors are not functional in the Chlorine Storage Room and in the Chlorine Feed Room*
- iv. A SCADA system was installed in 2006 and needs to be updated. Chlorine feed is manually controlled.*

Issues with doorways

Re. the entry/exit doors for the Chlorine Storage Room:

- v. The only access/exit to/from the Chlorine Storage Room is via a set of double, service doors. These doors are barred on the outside to create a tighter seal for the room's ventilation system. However,*
 - 1. The doors are approximately 10-feet-tall, heavy, and difficult to open*
 - 2. The doors are not equipped with anti-panic hardware*
 - 3. Therefore, the entry/exit doors for the Chlorine Storage Room do not comply with standards from the Chlorine Institute, as described below:*
 - 4. The Chlorine Manual, published by the Chlorine Institute, specifies in Section 7 "Engineering Design and Maintenance" that "at least two exits should be provided from each separate room . . . in which chlorine is stored, handled, or used."*
 - 5. Pamphlet 155, Water and Wastewater Operators Chlorine Handbook, published by the Chlorine Institute, specifies in Section 7.7 "Exits and Windows" that "all exit doors should open outward and should be equipped with anti-panic hardware that allows for easy opening."*

Re. the entry/exit doors for the Chlorine Feed Room:

- vi. The only access/exit to/from the Chlorine Feed Room is via a short narrow hallway. This hallway is oriented east/west. To exit the feed room, personnel must first enter the east end of the hallway via one door, then exit the west end of the hallway via a 2nd door. However,*
 - 1. The 2nd door, at the west end of the hallway, is not equipped with anti-panic hardware*
 - 2. The hallway doors lead to the production floor, not to the exterior of the building in which the feed room is located.*

3. *Therefore, the entry/exit doors from the Chlorine Feed Room do not comply with standards from the Chlorine Institute, as described below:*
4. *The Chlorine Manual, published by the Chlorine Institute, specifies in Section 7 “Engineering Design and Maintenance” that “at least two exits should be provided from each separate room . . . in which chlorine is stored, handled, or used.”*
5. *Pamphlet 155, Water and Wastewater Operators Chlorine Handbook, published by the Chlorine Institute, specifies in Section 7.7 “Exits and Windows” that “All exit doors should open outward to the outdoors and should be equipped with anti-panic hardware that allows for easy opening. Internal exit doors are not recommended.”*

Note:

The EPA inspected AWW on 9/11/2017 and documented 14 possible findings re. AWW’s implementation of its Risk Management Program.

Afterward, the EPA issued a Notice of Noncompliance (NON) which required that AWW address/correct the findings. The EPA also included a “Statement of Certification” (SOC) which was to be signed by an AWW representative and then returned to the EPA. The signed SOC stated that the 14 findings had been addressed/corrected.

Many of the issues with doorways, listed above, were cited in the NON.

However, these findings were never addressed/corrected, despite the signed SOC to the contrary.

6. Requirement found at Subpart C - Prevention Program - Hazard Review [40 CFR 68.50(d)]: The owner or operator shall update the hazard review at least once every five years or whenever a major change in the processes occurs.

- *At the time of the EPA inspection, AWW had last completed a Hazard Review (HR) on 4/19/2018*
- *An updated HR was therefore due on 4/19/2023, making the updated HR overdue by approximately 5 months*
- *However, AWW updated the HR on 9/29/2023, after the EPA inspection*
- *This updated HR was therefore overdue by approximately 5.3 months.*

7. Requirement found at Subpart C - Prevention Program - Operating Procedures [40 CFR 68.52(c)]: The owner or operator shall ensure that the operating procedures are updated, if necessary, whenever a major change occurs and prior to startup of the changed process.

- *AWW’s operating procedures have not been reviewed since 2018*

- *However, according to AWW, the operating procedures have not required changing since 2018.*

8. Requirement found at Subpart C - Prevention Program - Training [40 CFR

68.54]: The owner or operator shall ensure that each employee presently operating a process, and each employee newly assigned to a covered process, have been trained or tested competent in the operating procedures provided in § 68.52 that pertain to their duties. (For those employees already operating a process on June 21, 1999, the owner or operator may certify in writing that the employee has the required knowledge, skills, and abilities to safely carry out the duties and responsibilities as provided in the operating procedures.)

- *According to an AWW employee, no training records were available other than, possibly, those from 2017 and before*
- *However, the employees who operated the chlorine process in 2017 are no longer employed by AWW and none of their replacement employees have been trained per 40 CFR 68.54*
- *For example, a current, AWW employee stated that AWW employees are not familiar with procedures for fitting, wearing, maintaining, and replacing respirators and cartridges*
- *In fact, one bearded employee is supposed to wear a respirator during various procedures. However, the employee's beard would render the respirator useless. But, according to the employee, he has never been trained in respirator use.*
- *According to Section 8.2.1.2 (entitled "Respiratory Protection") of Pamphlet 155, Water and Wastewater Operators Chlorine Handbook, "Fit testing and regular maintenance programs for respirator equipment are required and must be documented."*
- *Employees are also not familiar with the Medical Monitoring that is required prior to respirator use.*
- *The monitoring, or lack thereof, does not comply with Pamphlet 155, Water and Wastewater Operators Chlorine Handbook, published by the Chlorine Institute.*

Note 1:

Shortly after the EPA inspection of 9/18/2023, AWW conducted training on chlorine safety and respirator use. Other training is being scheduled.

Note 2:

The EPA inspected AWW on 9/11/2017 and documented 14 possible findings re. AWW's implementation of its Risk Management Program.

Afterward, the EPA issued a Notice of Noncompliance (NON) which required that AWW address/correct the findings. The EPA also included a "Statement of Certification" (SOC) which was to be signed by an AWW representative and then returned to the EPA. The signed SOC stated that the 14 findings had been addressed/corrected.

Finding #8 above, re. 40 CFR 68.54, was cited in the NON.

However, it appears that the finding was never addressed/corrected before 9/18/2023, despite the signed SOC to the contrary.

9. Requirement found at Subpart C - Prevention Program - Maintenance [40 CFR 68.56]: The owner or operator shall prepare and implement procedures to maintain the on-going mechanical integrity of the process equipment per 40 CFR 68.56.

- *According to an AWW employee, AWW does not have a maintenance program which complies with 40 CFR 68.56*
- *Examples of noncompliance with 40 CFR 68.56 include, but are not limited to:*
 - a) *The leaking head of a chlorine tonner in 2018 or 2019 was not immediately repaired*
 - b) *Eyewash and deluge stations are not being inspected/maintained. Corrosion from the hard water supply has completely blocked the eye cups on the eyewash stations preventing water from spraying upward from the cups. According to an inspection card at one eyewash/deluge station, the last inspection on the station was completed in 2014.*
 - *Maintenance of eyewash and deluge stations does not comply with ANSI/ISEA Z358, Emergency Eyewash and Shower Equipment*
 - *According to Section 6.5.2 of ANSI/ISEA Z358, Emergency Eyewash and Shower Equipment, the owner/operator shall activate the eye/face washes at least weekly*
 - *According to Section 6.5.5 of ANSI/ISEA Z358, Emergency Eyewash and Shower Equipment, the owner/operator shall inspect annually for compliance with the standard*
 - b) *A chlorine emergency kit is still in its unopened cardboard box in the Chlorine Storage Room. The emergency kit has never been examined by AWW employees for defects, damage, etc. The cardboard box lies on the floor and has been damaged.*
 - c) *A steel, wall-mounted box in the Chlorine Storage Room is badly corroded. The box is used to store a chlorine emergency kit. However, the hinge-mounted lid of the box is difficult to open because of the corrosion.*
 - d) *Chlorine monitors in the Chlorine Storage Room and in the Chlorine Feed Room are not operational*
 - e) *Seals have not been replaced at the chlorine tonners*
 - f) *A missing windsock has not been replaced*
 - g) *Tubing has not been replaced in the Chlorine Feed Room*
 - h) *Pigtails in Chlorine Storage Room need to be replaced*
 - i) *Steel valves and piping in the Chlorine Storage Room are corroded from a chlorine leak in 2018 or 2019*
 - j) *Electrical power in the Chlorine Storage Room is provided by a power strip which dangles from an electrical outlet*
 - k) *Tags on the valves in the Chlorine Storage Room are unreadable, possibly*

- because of a chlorine leak in the room in 2018 or 2019*
- l) The SCADA system was installed in 2006 and needs to be updated. Chlorine feed is manually controlled.*
 - m) PVC pipe in the Chlorine Feed Room has been replaced but has not been painted yellow, like the adjacent pipe, to indicate that the pipe is in chlorine service*
 - n) The emergency phone has been removed from front gate. AWW employees say that the Fire Department would just “crash the gate” if the Fire Department couldn’t reach AWW by phone.*

Note:

Shortly after the EPA inspection of 9/18/2023, AWW corrected, or began to correct, findings b, d, g, h, i, and m above.

10. Requirement found at Subpart C - Prevention Program – Compliance Audits

[40 CFR 68.58]: The owner or operator shall complete Compliance Audits per 40 CFR 68.58.

- At the time of the EPA inspection, AWW had not completed any Compliance Audits (CA’s), and was therefore not in compliance with 40 CFR 68.58*
- However, AWW subsequently completed its first CA, after the EPA inspection, on 9/27/2023.*

Note:

The EPA inspected AWW on 9/11/2017 and documented 14 possible findings re. AWW’s implementation of its Risk Management Program.

Afterward, the EPA issued a Notice of Noncompliance (NON) which required that AWW address/correct the findings. The EPA also included a “Statement of Certification” (SOC) which was to be signed by an AWW representative and then returned to the EPA. The signed SOC stated that the 14 findings had been addressed/corrected.

Finding #10 above, re. 40 CFR 68.58, was cited in the NON.

However, it appears that the finding was never addressed/corrected until 9/27/2023, despite the signed SOC to the contrary.

11. Requirement found at Subpart C - Prevention Program - Incident Investigation

[40 CFR 68.60]: The owner or operator shall investigate incidents per 40 CFR 68.60 that resulted in, or could reasonably have resulted in, a catastrophic release.

- According to an AWW employee, AWW does not have an Incident-Investigation program*
- However, a chlorine leak occurred when the head of a chlorine tonner leaked in 2018 or 2019*

- *Another chlorine leak occurred when a pigtail at a chlorine tonner cracked. The leak occurred around 2011 or 2012, on Thanksgiving Day*
- *Incident Investigations were not conducted for either leak.*

Note:

The EPA inspected AWW on 9/11/2017 and documented 14 possible findings re. AWW's implementation of its Risk Management Program.

Afterward, the EPA issued a Notice of Noncompliance (NON) which required that AWW address/correct the findings. The EPA also included a "Statement of Certification" (SOC) which was to be signed by an AWW representative and then returned to the EPA. The signed SOC stated that the 14 findings had been addressed/corrected.

Finding #11 above, re. 40 CFR 68.60, was cited in the NON.

However, it appears that the finding was never addressed/corrected, despite the signed SOC to the contrary.

12. Requirement found at Subpart E – Emergency Response [40 CFR 68.93(a)]: The owner or operator of a stationary source shall coordinate response needs with local emergency planning and response organizations to determine how the stationary source is addressed in the community emergency response plan and to ensure that local response organizations are aware of the regulated substances at the stationary source, their quantities, the risks presented by covered processes, and the resources and capabilities at the stationary source to respond to an accidental release of a regulated substance.

- *AWW has not coordinated response needs with local emergency planning and response organizations per 40 CFR 68.93(a).*

13. Requirement found at Subpart G – Risk Management Plan [40 CFR 68.195(b)]: If the emergency contact information required at 68.160(b)(6) has changed since June 21, 2004, the owner or operator shall submit corrected information within one month of the change.

- *The emergency contact information changed between 5/15/2023 and 5/22/2023*
- *However, the emergency contact information has not been corrected*
- *The corrected information is therefore approximately 4 months overdue at the time of this writing.*

Note:

The EPA inspected AWW on 9/11/2017 and documented 14 possible findings re. AWW's implementation of its Risk Management Program.

Afterward, the EPA issued a Notice of Noncompliance (NON) which required that AWW address/correct the findings. The EPA also included a “Statement of Certification” (SOC) which was to be signed by an AWW representative and then returned to the EPA. The signed SOC stated that the 14 findings had been addressed/corrected.

Finding #13 above, re. 40 CFR 68.195(b), was cited in the NON, although the finding concerned another, previous change in the contact information, not the change noted above.

It appears that AWW never established a procedure to ensure that 40 CFR 68.195(b) would be complied with in the future, and not overlooked.

CAA § 112(r)(1) (General Duty Clause):

1. The city of Aberdeen retained a consultant, G R Green, “to evaluate the WTP facility and recommend improvements to meet future demands”. The evaluation resulted in a “Facility Plan”, dated March of 2020, which recommended many repairs and updates to the entire AWW facility.

In a section of the plan, entitled Trip/Fall Hazards”, the plan discussed the old plant building which houses the chlorine system. The plan noted:

Throughout the old plant building, trip/fall hazards are commonly found in older maintenance areas. For instance, the filter pipe gallery has stairs without guardrail/railings. The International Building Code (IBC) and OSHA regulations include requirements for guardrails. The IBC is more stringent, and requires guardrails to be located along open-sided walking surfaces where walkways are more than 30-inches vertically above any point below. Guardrails must be 42-inches high measured from the walking surface. OSHA standards require a toeboard (kickplate) in addition to the guardrail.

The EPA recommends that AWW install the railings, etc., where noted above.

ITEM OF NOTE

1. **The EPA is concerned that AWW may not have sufficient resources (i.e., knowledge, manpower, skills, time, training, etc.) to safely operate the chlorine system and correct the RMP/GDC findings above.**

The EPA noted that many findings from a previous inspection had not been addressed/corrected. The EPA is therefore concerned that AWW may be too overwhelmed to keep its facility safe and up to date.

According to AWW:

- a) AWW needs at least one more employee to help operate the chlorine system

- b) The current superintendent, who had retired from AWW, is filling in as a temporary superintendent until a full-time superintendent can be hired
- c) Qualified employees are difficult to find.

According to several sources, AWW's chlorine system, and the building which houses it, are:

- a) Old
- b) Unsafe
- c) In need of major remodeling/repairs/replacement/upgrades
- d) Noncompliant with many safety codes/standards.

In conclusion, the problems with the chlorine system, and with the building which houses it, have become chronic and unacceptable. The problems cannot be put off any longer. They must be dealt with before a serious accident or catastrophic incident occurs.

The EPA therefore recommends that AWW consider hiring one, or more, consulting/management firm(s)/contractor(s) that has/have the manpower and expertise to safely run the facility while:

- a) addressing/correcting the RMP/GDC findings above
- b) maintaining AWW's Risk Management Program
- c) completing necessary remodeling/repairs/replacement/upgrades
- d) creating a safe facility that complies with recognized and generally accepted good engineering practices (RAGAGEP).

EPCRA § 312:

Nothing of note from observations.

INSPECTION REPORT REVIEW RECORD		
		<i>Date:</i>
<i>Author:</i>	<i>Toxics and Pesticides Enforcement Section Inspector</i>	<i>10/28/2023</i>
<i>Final Reviewer:</i>	<i>Section Supervisor</i>	<i>10/31/2023</i>