CLEAN AIR ACT SECTION 112(r) INSPECTION REPORT
NCWD Williams Road Treatment Plant
Niagara Falls, NY

GENERAL INFORMATION

Stationary Source	NCWD Williams Road Treatment Plant, Niagara Falls, NY
Date of Inspection	December 9, 2008
USEPA Inspectors	Dwayne Harrington, USEPA – Region II (Edison, NJ)
Contract Auditor	Neil Mulvey, Sullivan Group (Subcontractor)
Description of Activities	• Opening meeting with facility representative. • Program audit. • Closing meeting with facility representatives. Program audit consisted of the following activities: 1. Document review. 2. Field verification. Personnel interviews.

STATIONARY SOURCE INFORMATION

EPA Facility ID #	1000 0005 9492
Date of Latest Submission (used for RMP inspection)	Receipt Date: June 21, 2004 (Re-submission) Anniversary Date: June 18, 2009
Facility Location	7227 Williams Road Niagara Falls, NY 14304 (716) 283-9414
Number of Employees	*RMP*Submit* states 17 employees. Facility management reported 14 employees.

Description of Surrounding Area	The facility is located in a commercial / residential area approximately 1,800-ft. northeast of the east bank of the Niagara River, across from Grand Island, NY. There are no businesses or residences immediately bordering the facility. The nearest residential area is located approximately 800-ft. to the west.
Participants	Participants included: Dwayne Harrington, USEPA – Region II, Edison, NJ Neil P. Mulvey, USEPA Contractor – Sullivan Group Richard Coleman, Chief Operator – NCWD Williams Road Treatment Plant* John C. Austin, Maintenance Supervisor – NCWD Williams Road Treatment Plant * Lead representative for facility.

REGISTRATION INFORMATION

Process ID #	50090 (Water Treatment)
Program Level (as reported in RMP)	Program 2
Process Chemicals	Chlorine @ 16,000-lbs.
NAICS Code	22131 – Water Supply and Irrigation Systems

GENERAL COMMENTS

The Niagara County Water District (NCWD) Williams Road Treatment Plant provides potable water to 150,000 people in towns and villages located in Niagara, Erie, and Orleans Counties, using the Niagara River as the source. The 46 MGD treatment plant utilizes pre-chlorination, coagulation, flocculation, sedimentation and filtration processes to ensure the quality of water. The facility operates 24/7, 365. Two employees are on-site at all times.

The facility utilizes chlorine for disinfection. Chlorine is handled in 1-ton cylinders. The cylinders are stored and connected to the system in the scale room. The scale room includes two scales, with two 1-ton cylinders per scale. Chlorine is fed from one pair of cylinders at a time. When 1,000-lbs. of chlorine remains, valves to the second set of cylinders are manually opened. At a pre-determined scale weight an automatic

switchover occurs. Gaseous chlorine is fed through a vacuum regulator mounted directly onto the cylinder valve. Chlorine feed rate controllers are located in the feed room immediately adjacent to the scale room. Chlorine is fed to the water system at three points. Typical chlorine usage is 500-lbs./day in the summer and 250-lbs./day in the winter.

The system includes one chlorine detector in the scale room which is designed to automatically close emergency shutdown valves on the chlorine cylinders at 2 PPM. Current operations includes two automatic shutoff devices shared amongst the two pair of cylinders. When one pair of cylinders is emptied, the shutoff devices are manually removed and installed on the other pair of cylinders. A chlorine detector in the feed room is also interlocked to activate the cylinder closure valves. The chlorine detectors will also sound audible alarms.

RMP DOCUMENTATION

The facility's RMP documentation is contained in a "Risk Management Program" Manual (RMP Manual), September 2007. The RMP Manual however only contains written programs addressing Program 2 requirements since the facility mistakenly registered as a Program 2 facility. The Program Level determination was assigned by an outside consultant, who also prepared the RMP Manual.

Comments regarding select RMP elements follow:

Management System [*40 CFR 68.15*] & Registration

The chlorine system is registered as a Program 2 process. Since the facility handles an OSHA PSM regulated quantity of chlorine (i.e., is therefore OSHA PSM regulated), and does not qualify for Program 1, the chlorine system is a Program 3 process.

The RMP Manual includes a written description of the management system. The Maintenance Supervisor is designed with overall responsibility for implementation of the RMP program. Facility Management demonstrated a poor understanding of the RMP requirements and the facility's program.

The *RMP*Submit* registration lists someone no longer employed at the facility as the emergency contact.

Process Safety Information (PSI) [*40 CFR 68.65*]

PSI available for review included:

- MSDS for chlorine.
- Safe upper and lower operating parameters
- Equipment specifications

PSI information not available for review included:

- P&IDs
- Block flow or process flow diagrams
- Hazard classifications
- Relief system design and design basis.
- Process chemistry.
- Ventilation data.
- List of design codes and standards.

PSI did not include an assessment of how the existing system complies with recognized and generally accepted good engineering practices.

See the RMP Checklist for details on PSI documentation available / not available for review.

Process Hazard Analysis (PHA) [*40 CFR 68.67*]

The only PHA available for review was conducted on August 15, 2007. The hazard analysis consisted of a completed checklist provided by The Chlorine Institute. PHA team members included operations and maintenance personnel. The PHA was completed in 60-minutes. No recommendations were identified. No other PHA reports were available for review.

Standard Operating Procedures (SOPs) [*40 CFR 68.69*]

The RMP Manual describes a format for developing operating procedures. Written operating procedures available for review include:

- Start-up
- Procedures for when a leak occurs
- Procedures for Changing Chlorine Tanks on Scale #1 (5/24/04)
- Procedures for Changing Chlorine Tanks on Scale #2 (5/24/04)
- Emergency Shutdown Procedures

The written operating procedures provide step-by-step instructions on how to perform specific activities. The procedures do not, however, include the following required information:

- Operating limits and steps to correct or avoid deviation.
- Safety and health considerations.
- A description of safety systems and their functions.
- Procedures for normal operation.
- Procedures for normal shutdown.

There were no written safe work procedures available for review.

There is no record of annual review / certification of operating procedures.

Training [*40 CFR 68.71*]

The RMP Manual includes a written description of the facility's operator training program. Documentation of operator training however was incomplete. No records were available to confirm operator training regarding the equipment specific operating procedures.

Mechanical Integrity [*40 CFR 68.73*]

The RMP Manual includes a written description of the facility's mechanical integrity program. Inspection and test records available for review included tests of the chlorine cylinder emergency shutdown devices and calibration records for the chlorine detectors. There was however no written procedures describing how these tests are performed. No other inspection and test records were available for review.

Management of Change (MOC) [*40 CFR 68.75*] & Pre-Startup Review (PSR) [*40 CFR 68.77*]

Since the facility erroneously determined that they were subject to Program 2 requirements, there was no record of a written MOC / PSR procedure.

Compliance Audits [*40 CFR 68.79*]

The RMP Manual includes a written description of the facility's procedure for conducting compliance audits. Documentation included a record of a checklist-type compliance audit conducted on 8/15/07. Since the facility erroneously determined that they were subject to Program 2 requirements, this audit did not address any of the Program 3 RMP requirements. There was no record of an audit preceding the 8/15/07 audit.

Incident Investigation [*40 CFR 68.81*]

The RMP Manual includes a written description of the facility's procedure for conducting

incident investigations. Facility management stated that there have been no chlorine incidents requiring implementation of the incident investigation procedure.

Employee Participation [*40 CFR 68.83*]

Since the facility erroneously determined that they were subject to Program 2 requirements, there was no record of a written employee participation plan.

Hot Work Permit [*40 CFR 68.85*]

Since the facility erroneously determined that they were subject to Program 2 requirements, there was no record of a written hot work permit program.

Contractor Safety [*40 CFR 68.87*]

Since the facility erroneously determined that they were subject to Program 2 requirements, there was no record of a written contractor safety procedure.

Emergency Response [*40 CFR 68.90 – 68.95*]

The facility's emergency response plan was reviewed by USEPA.

FACILITY TOUR

Items noted during the facility tour follow:

- The 1-ton chlorine cylinder feed system includes a vacuum regulator and automatic shutoff device mounted directly onto the cylinder head. Due to the weight of this equipment mounted on the cylinder, the facility utilizes a clamp-type system to ensure proper and secure connections. The clamp-type system appears to be a temporary or 'home-made' device developed out of need. **The facility should determine if an industry practice or vendors can provide permanent support for connecting the vacuum regulator and automatic shutoff to the 1-ton chlorine cylinders.**

- Design includes a discharge from the vacuum regulators failure mechanism (i.e., overpressure release of chlorine) releasing at a point above a window near an entry door to the scale room. This release location creates a potential for employee exposure if chlorine is discharged due to a system upset. **The facility should evaluate and determine if the vacuum regulator discharge is to a safe location, in accordance with good engineering practices.**

- The system includes two chlorine detectors (one in scale room and one in feed room). The detectors are interlocked to automatically close ESD devices mounted on the 1-ton chlorine cylinders. The detectors are not, however, interlocked to start emergency ventilation fans in these rooms. Exhaust ventilation fans are only manually

controlled. **The facility should evaluate whether the chlorine detectors should be interlocked to activate emergency ventilation in the scale and feed rooms in the event of a chlorine release.**

FINDINGS/RECOMMENDATIONS

Management System [*40 CFR 68.15*]

- The RMP Manual includes a written description of the management system for a Program 2 process. The chlorine system is a Program 3 process. **The facility should develop a management system suitable for a Program 3 process, as required by 40 CFR 68.15.**

Registration [40 CFR 68.160(b)(7)]

- The chlorine system is registered as a Program 2 process. Since the facility handles an OSHA PSM regulated quantity of chlorine (i.e., is OSHA PSM regulated), and does not qualify for Program 1, the chlorine system is a Program 3 process. **The facility should update its *RMP*Submit* registration and properly registered the chlorine system as a Program 3 process, as required by 40 CFR 68.160(b)(7).**

- The *RMP*Submit* registration lists someone no longer employed at the facility as the emergency contact. **The facility should update its *RMP*Submit* registration by listing the correct emergency contact, as required by 40 CFR 68.195(b).**

Process Safety Information (PSI) [*40 CFR 68.65*]

- PSI information not available for review included P&IDs, relief system design and design basis, process chemistry, hazard classification, ventilation data, and a list of design codes and standards. **The facility should compile required PSI, including a P&ID of the chlorine process, as required by 40 CFR 68.65(c)(1) and (d)(1).**

- PSI did not include an assessment of how the existing system complies with recognized and generally accepted good engineering practices. **The facility should document that equipment in the chlorine system complies with recognized and generally accepted good engineering practices, as required by 40 CFR 68.65(d)(2).**

Process Hazard Analysis (PHA) [*40 CFR 68.67*]

- The only PHA available for review was conducted on August 15, 2007. The hazard analysis consisted of a completed checklist provided by The Chlorine Institute. PHA team members included operations and maintenance personnel. No recommendations were identified. No other PHA reports were available for review. **The facility should ensure that PHAs are conducted as required by 40 CFR 68.67.**

Standard Operating Procedures (SOPs) [*40 CFR 68.69*]

- Written operating procedures do not include the following required information: operating limits and steps to correct or avoid deviation; safety and health considerations, a description of safety systems and their functions, and procedures for normal operation and normal shutdown. **The facility should ensure that written operating procedures related to the chlorine process include information as required by 40 CFR 68.69(a)(1), (2), (3), and (4).**

- There is no record of annual review / certification of operating procedures. **The facility should ensure that operating procedures are certified annually, as required by 40 CFR 68.69(c).**

- There were no written safe work procedures available for review. **The facility should develop written safe work procedures, as required by 40 CFR 68.69(d).**

Training [*40 CFR 68.71*]

- There was no record of training on the chlorine system written operating procedures. **The facility should verify that operators receive training on chlorine specific written operating procedures, as required by 40 CFR 68.71(a)(1).**

- Training documentation did not include complete records of refresher training including date of training, name of instructor, and means used to verify employee understanding of training. **The facility should ensure that operator training records are complete and include identification of employee trained, name of instructor, date of training, and means used to verify operator understanding of training received, as required by 40 CFR 68.71(b) and (c).**

- There was no record of how the facility verifies operators' understanding of training received. **The facility should establish a means to confirm operator understanding of training received and a means to document operator understanding, as required by 40 CFR 68.71(c).**

Mechanical Integrity [*40 CFR 68.73*]

- The facility's mechanical integrity program was incomplete. There were no written procedures describing how completed tests are performed. No other inspection and test records were available for review. No documentation was available regarding the following mechanical integrity items:

  - List of equipment included in inspection and test program.
  - Description of inspection / test and frequency.
  - Training requirements for maintenance personnel.
  - Inspection / test procedures.

- Procedures for addressing equipment deficiencies.
- Quality assurance procedures.

The facility should ensure that its mechanical integrity program includes all of the requirements per 40 CFR 68.73.

Management of Change (MOC) [*40 CFR 68.75*] & Pre-Startup Review *[40 CFR 69.77]*

- Since the facility erroneously determined that they were subject to Program 2 requirements, there was no record of a written MOC / PSR procedure. **Since the facility is subject to Program 3 requirements, the facility should develop and implement procedures for management of change and pre-startup review, as required by 40 CFR 68.75 and 68.77.**

Compliance Audits [*40 CFR 68.79*]

- Documentation included a record of a checklist-type compliance audit conducted on 8/15/07. Since the facility erroneously determined that they were subject to Program 2 requirements, this audit did not address any of the Program 3 RMP requirements. **The facility should ensure that RMP Program 3 compliance audits are conducted, as required by 40 CFR 68.79.**

- There was no record of an audit preceding the 8/15/07 audit. **The facility should ensure that RMP compliance audits are conducted at least every three years and copies of the two most recent compliance audit reports are available on file for review, as required by 40 CFR 68.79.**

Employee Participation *[40 CFR 68.83]*

- Since the facility erroneously determined that they were subject to Program 2 requirements, there was no record of a written employee participation plan. **The facility should develop and implement an employee participation plan, as required by 40 CFR 68.83.**

Hot Work Permit [*40 CFR 68.85*]

- Since the facility erroneously determined that they were subject to Program 2 requirements, there was no record of a written hot work permit program. **The facility should develop and implement a written hot work permit program, as required by 40 CFR 68.85.**

Contractor Safety [*40 CFR 68.87*]

- Since the facility erroneously determined that they were subject to Program 2 requirements, there was no record of a written contractor safety procedure. **The facility should develop and implement a contractor safety procedure, as required by 40 CFR 68.87.**