FINAL

ECI PROJECT NO. EPA 03123.10
TDD 02-04-05-001

CLEAN AIR ACT SECTION 112(r) INSPECTION REPORT

Surpass Chemical Company, Inc.
Bridge Street Plant
Albany, NY

Stationary Source	Surpass Chemical Company, Inc. – Bridge Street Plant
Date of Inspection	July 1, 2004
USEPA	Ellen Banner, USEPA – Region II
Contractor	Neil Mulvey, Environmental Compliance Inc.
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. 3. Personnel interviews.

STATIONARY SOURCE INFORMATION

EPA Facility ID #	1000-0011-5706
Date of Initial Submission	June 17, 1999 Anniversary Date – 6/17/04 Re-submission dated June 11, 2004
Facility Location	3 Bridge Street Albany, NY 12204 Albany County Tel. (518-434-8101
Number of Employees	15 employees
Description of Surrounding Area	Commercial / Industrial

Participants	The following individuals participated in this inspection: USEPA Ellen Banner – USEPA, Region II, Edison, NJ Neil Mulvey – Environmental Compliance Inc. (Contractor to USEPA) The following Surpass Chemical Company personnel participated in the inspection: Thomas Russell* – Health, Safety & Compliance Manager Todd Vanderheyden – Facility Manager / Operator * Primary Contact for Inspection.

REGISTRATION INFORMATION

Process ID #	1 (Mfg. Sodium Hypochlorite)
Program Level (as reported in RMP)	Program 3
Process Chemicals	Chlorine @ 180,000-lbs. (CAS No. 7782-50-5)
NAICS Code	325188 (Other Basic Inorganic Chemical Manufacturing)

GENERAL COMMENTS

Surpass Chemical Company has two locations in Albany, NY located approximately one mile apart. Corporate offices and product blending and packaging operations are located at 1254 Broadway. A chemical manufacturing facility is located at 3 Bridge Street. The registered facility is at 3 Bridge Street.

The Bridge Street facility is located in a commercial/industrial area and occupies approximately two acres. See Attachment 1 for a facility site plan. Reference the following photographs:

SCC-1	View of front of Surpass Chemical Company Bridge Street facility (north side of building)
SCC-2	View of corner of Bridge Street facility (northeast corner)
SCC-3	View from top of chlorine rail car (looking north)
SCC-4	View from top of chlorine rail car looking at rear property line (looking east)

The Bridge Street facility handles chlorine for the production of liquid sodium hypochlorite bleach. Chlorine is received in rail tank cars and is consumed directly from the rail cars for production. The facility is designed to accommodate two chlorine rail cars. One rail car is used at a time. The hyprochlorite bleach production operation is a batch process, utilizing approximately 6,523-lbs. of chlorine per batch. The operation involves the reaction of chlorine with a cold purified solution of sodium hydroxide in water that takes place in either of two cylindrical fiberglass reinforced plastic (FRP) reaction tanks with loose fit FRP covers. Each tank is 8-ft. in diameter, 14.5-ft. high, with a 5,400-gallon design capacity. These tanks (#10A and #11A are located in the bleach plant. Chemical raw material feeds to these reaction tanks are controlled by a system of manual and automatic valves, pumps, and their control devices.

The reaction is exothermic and the heat generated is removed during the reaction. A roof mounted 150-ton recirculating bleach liquor cooling system with heat exchanger, or a roof mounted 65-ton auxiliary backup cooling system with heat exchanger will provide the cooling necessary for bleach liquor control. Both the reaction speed and end point are dependent upon and controlled by the flow of chlorine to the process. The chlorine flow is controlled by automatically controlled chlorine valves. Chlorine flow from the rail car is propelled by the rail car pressure. Nitrogen padding can be used to augment low rail car pressure if necessary. The chlorine rail car is disconnected from the process when not in use. See Attachment 2 for a flow diagram of the process. See Attachment 3 for a piping and instrument diagrams (P&IDs) of the chlorine transfer system.

At the time of the audit, there were two chlorine rail cars on site, each with approximately 180,000-lbs. of chlorine. The facility RMP registration is for 180,000-lbs. of chlorine (i.e., one rail car).

RMP DOCUMENTATION

RMP documentation is based on original OSHA Process Safety Information (PSM) documentation. The facility retained a consultant to assist in RMP/PSM program development.

OSHA performed a comprehensive PSM inspection during the period May through August, 2003, following a May 13, 2003 chlorine release. The inspection resulted in five citations for non-compliance and a civil penalty totaling $4,500.00. See Attachment 4 for a copy of the "Citation and Notification of Penalty."

Facility personnel interviewed were familiar with RMP requirements and the content of the facility's RMP program and procedures.

Comments regarding select RMP elements follow:

Management System

Mr. Russell described personnel responsibilities for RMP program development and implementation. However, there was no written description of the management system available for review.

Process Safety Information (PSI)

The facility has detailed documentation regarding PSI. The written PSI description is dated 6/20/03. PSI documentation includes:

- A detailed process description
- Maximum intended inventory
- Toxicity, exposure, reactivity, corrosivity, thermal stability, and physical data
- Process chemistry
- Material and energy balances
- Safe upper and lower limits
- Evaluation of the consequences of deviations
- Equipment specifications
- Electrical classification
- Relief system design data
- Ventilation system data
- Design codes and standards
- Description of safety systems
- P&IDs

See Attachment 5 for the PSI description.

Process Hazard Analysis (PHA)

The initial PHA was performed on 6/9/99. The PHA was revalidated on 6/9/04. The PHA revalidation consisted of a review of the initial PHA. The revalidation was led by Mr. Vanderheyden. PHA documentation (see Attachment 6) includes the "What-If?", consequence, safety system description, and recommendation. Only 21 potential failure scenarios were identified for the entire process. Given the complexity of the process, a more comprehensive analysis of failure scenarios seems necessary. There is no documentation on the resolution of either the initial or revalidated PHA recommendations.

Standard Operating Procedures (SOPs)

The facility has written SOPs for the process. See Attachment 7 for an index of written SOPs. Attachment 7 also includes a copy of an SOP for the Chlorine Tank Car Angle Valve Closure System. The SOPs are detailed and include step-by-step procedures and safety precautions. The facility has records of annual SOP certifications (see Attachment 7 for 3/4/04 annual certification).

Training

The facility has a written description of its operator training program dated 1/00 (see Attachment 8). The operator training program includes written tests and scores to confirm employees' understanding of training received. The training program includes details regarding on-the-job training and verification of training received. The training program does not specifically address a review of written SOPs and P&IDs.

Mechanical Integrity

The facility has a written mechanical integrity program. Records of daily and monthly equipment inspection checklists were reviewed. Documentation included records of monthly tests of the chlorine detectors, including calibration.

Management of Change (MOC)

The facility has a written MOC procedure dated 1/4/00. Several MOC reviews were reviewed and found to be in accordance with the MOC program. See Attachment 9 for a copy of a completed MOC review.

Compliance Audits

The facility has a written procedure for conducting compliance audits. Compliance audits were conducted in April, 1999 and in March, 2003. See Attachment 10 for a copy of the March, 2003 audit report. The audit report is incomplete and does not list findings or resolution.

Incident Investigation

The facility has a written incident investigation procedure dated 1/4/00. See Attachment 11 for a copy of the incident report for the May 13, 2003 chlorine release.

Employee Participation

The facility has a written employee participation procedure dated 3/20/03. Files included documentation of implementation of employee participation, including review of the PHA and findings.

Hot Work Permit

The facility has a written hot work permit procedure, dated 12/99, including a permit form. Evidence of suitable implementation was reviewed.

Contractor Safety

The facility has a written contractor safety procedure, dated 11/2/99. The program does not describe procedures for pre-selection review. The facility stated that outside contractors are not frequently used to work on the covered process.

Emergency Response

Reviewed by USEPA inspector.

FACILITY TOUR

Observations during the facility tour include:

- At the time of the audit, there were two chlorine rail cars on site, each with approximately 180,000-lbs. of chlorine. The facility RMP registration is for 180,000-lbs. of chlorine (i.e., one rail car). **The facility should correct the RMP registration and list the maximum potential on-site inventory of chlorine.**

- There are several chlorine detectors located throughout the process, including near the chlorine rail cars and near the FRP batch tanks. The detectors are interlocked to automatically shutdown chlorine flow from the rail cars upon detection of a chlorine leak. Manually activated emergency shutdown buttons are also available for emergency stops. The system includes both audible and visual alarms. Reference the following photographs:

SCC-5	Chlorine detector S-04, located between FRP batch tanks T-10A and T-11A
SCC-6	Chlorine detector control panel
SCC-7	Nitrogen system serving emergency stop for angle valve for chlorine rail cars
SCC-8	Manual emergency stop button for rail car angle valve (i.e., chlorine supply valve)
SCC-9	Top of chlorine rail car; shows nitrogen operated angle valve for emergency stop and shows chlorine detector at the five-six o'clock position

- Chlorine feed lines to the FRP batch reaction vessels are labeled for ease of identification. (Reference photographs SCC-10 and SCC-11, showing chlorine feed lines to vessels T-10A and T-11A). A root cause of the May 13, 2003 chlorine release, as noted in the incident investigation report (see Attachment 11), was operator error regarding the safe position of the manual valve over tank T-10A. As noted in photograph SCC-12, the manual valves over the reaction vessels are not labeled / numbered. **Given the recent incident, the facility should consider placing labels or numbers on key valves in the process to ensure proper identification and position. Valve identification / numbering should be consistent with written SOPs and P&IDs.**

FINDINGS/RECOMMENDATIONS

- Mr. Russell described personnel responsibilities for RMP program development and implementation. However, there was no written description of the management system available for review. **The facility should develop a written description of the RMP management system.**

- The facility has excellent PSI documentation, including a piping and instrument diagram (P&ID) (see Attachment 3). The P&ID, however, does not include detail on other raw materials used in the covered equipment, namely sodium hydroxide used in the FRP batch tanks. **The P&IDs should be updated to include raw materials used in the covered process in order to ensure proper evaluation and identification of potential failure scenarios.**

- The initial PHA was performed on 6/9/99. The PHA was revalidated on 6/9/04. Given the complexity of the process and the consequences of the 5/13/03 chlorine release, a more comprehensive analysis of failure scenarios seems necessary. There is no documentation on the resolution of either the initial or revalidated PHA recommendations. **The facility should consider performing an updated PHA, facilitated by a trained and qualified team leader. The facility should document resolution of both initial and revalidated PHA recommendations.**

- The facility has a written description of its operator training program. The training program does not specifically address a review of written SOPs and P&IDs. **The training program should be revised to explicitly address training on written SOPs and a review of the system P&IDs, to ensure the training is process specific.**

- The facility has a written procedure for conducting compliance audits. Compliance audits were conducted in April, 1999 and in March, 2003. The March, 2003 audit report is incomplete and does not list findings or resolution. **The facility should develop improved documentation of the March, 2003 audit to include a list of findings, corrective actions, and their resolution.**

- The initial compliance audit was conducted in April, 1999. The second compliance audit was conducted in March, 2003. Compliance audits are required at least every three-years. The second compliance audit was due in April, 2002. **The facility should ensure that compliance audits are conducted at least every three-years, per the requirements of §68.79(a).**

- The May 13, 2003 report of chlorine release does not identify members of the incident investigation team. **The facility should modify the report and incident investigation procedures to include identification of incident investigation team members, per the requirements of §68.81(c).**

- There was no documentation available on the resolution of the findings of the May 13, 2003 chlorine release. **The facility should document the resolution of the findings of the May 13, 2003 chlorine incident investigation.**

- The facility has a written contractor safety procedure. The program does not describe procedures for pre-selection review. **The facility should modify its contractor safety program to ensure pre-selection review is performed, per the requirements of §68.87(b)(1). The facility should ensure that the contractor program is understood and followed as required.**

LIST OF ATTACHMENTS

1. Site Plan – Surpass Chemical Company, Inc., Albany, NY.
2. Process Flow Diagram – Chlorine Transfer System – Surpass Chemical Company, Albany, NY.
3. Piping and Instrument Diagram – Chlorine Transfer System, Revised 3/03, Surpass Chemical Company, Albany, NY.
4. Citation and Notification of Penalty, US Department of Labor, OSHA, Issuance Date, 8/28/03.
5. Section 2 – Process Safety Information, Surpass Chemical Company, 6/20/03.
6. What-If Analysis Chlorine, 6/9/04.
7. Section 4 – Operating Procedures Index & OP7 – Chlorine Tank Car Angle Valve Closure System.
8. Section 5 – PSM Training.
9. Management of Change Record Form, revision date 2/22/03.
10. PSM Compliance Audit, March 24-26, 2003.
11. Chlorine Incident May 13, 2003 Investigation Report.
12. RMP Re-submission, letter to RMP Reporting Center, dated 6/11/04.