

U.S. Department of Labor

Occupational Safety and Health Administration
36 Triangle Park Drive
Cincinnati, OH 45246
Phone: 513-841-4132 Fax: 513-841-4114



Citation and Notification of Penalty

To:

Haverhill Chemicals LLC
P. O. Box 180
1019 Haverhill-Ohio Furnace Road
Haverhill, OH 45636

Inspection Number: 966352**Inspection Date(s):** 04/05/2014 - 10/01/2014**Issuance Date:** 10/01/2014**Inspection Site:**

1019 Haverhill-Ohio Furnace Road
Haverhill, OH 45636

The violation(s) described in this Citation and Notification of Penalty is (are) alleged to have occurred on or about the day(s) the inspection was made unless otherwise indicated within the description given below.

This Citation and Notification of Penalty (this Citation) describes violations of the Occupational Safety and Health Act of 1970. The penalty(ies) listed herein is (are) based on these violations. You must abate the violations referred to in this Citation by the dates listed and pay the penalties proposed, unless within 15 working days (excluding weekends and Federal holidays) from your receipt of this Citation and Notification of Penalty **you either call to schedule an informal conference (see paragraph below) or** you mail a notice of contest to the U.S. Department of Labor Area Office at the address shown above. Please refer to the enclosed booklet (OSHA 3000) which outlines your rights and responsibilities and which should be read in conjunction with this form. Issuance of this Citation does not constitute a finding that a violation of the Act has occurred unless there is a failure to contest as provided for in the Act or, if contested, unless this Citation is affirmed by the Review Commission or a court.

Posting - The law requires that a copy of this Citation and Notification of Penalty be posted immediately in a prominent place at or near the location of the violation(s) cited herein, or, if it is not practicable because of the nature of the employer's operations, where it will be readily observable by all affected employees. This Citation must remain posted until the violation(s) cited herein has (have) been abated, or for 3 working days (excluding weekends and Federal holidays), whichever is longer.

Informal Conference - An informal conference is not required. However, if you wish to have such a conference you may request one with the Area Director during the 15 working day contest period. During such an informal conference you may present any evidence or views which you believe would support an adjustment to the citation(s) and/or penalty(ies).

If you are considering a request for an informal conference to discuss any issues related to this Citation and Notification of Penalty, you must take care to schedule it early enough to allow time to contest after the informal conference, should you decide to do so. Please keep in mind that a written letter of intent to contest must be submitted to the Area Director within 15 working days of your receipt of this Citation. The running of this contest period is not interrupted by an informal conference.

If you decide to request an informal conference, please complete, remove and post the Notice to Employees next to this Citation and Notification of Penalty as soon as the time, date, and place of the informal conference have been determined. Be sure to bring to the conference any and all supporting documentation of existing conditions as well as any abatement steps taken thus far. If conditions warrant, we can enter into an informal settlement agreement which amicably resolves this matter without litigation or contest.

Right to Contest – You have the right to contest this Citation and Notification of Penalty. You may contest all citation items or only individual items. You may also contest proposed penalties and/or abatement dates without contesting the underlying violations. **Unless you inform the Area Director in writing that you intend to contest the citation(s) and/or proposed penalty(ies) within 15 working days after receipt, the citation(s) and the proposed penalty(ies) will become a final order of the Occupational Safety and Health Review Commission and may not be reviewed by any court or agency.**

Penalty Payment – Penalties are due within 15 working days of receipt of this notification unless contested. (See the enclosed booklet and the additional information provided related to the Debt Collection Act of 1982.) Make your check or money order payable to “DOL-OSHA”. Please indicate the Inspection Number on the remittance. You can also make your payment electronically on www.pay.gov. On the left side of the pay.gov homepage, you will see an option to Search Public Forms. Type “OSHA” and click Go. From the results, click on **OSHA Penalty Payment Form**. The direct link is:

<https://www.pay.gov/paygov/forms/formInstance.html?agencyFormId=53090334>.

You will be required to enter your inspection number when making the payment. Payments can be made by credit card or Automated Clearing House (ACH) using your banking information. Payments of \$50,000 or more require a Transaction ID, and also must be paid using ACH. If you require a Transaction ID, please contact the OSHA Debt Collection Team at (202) 693-2170.

OSHA does not agree to any restrictions or conditions or endorsements put on any check, money order, or electronic payment for less than the full amount due, and will process the payments as if these restrictions or conditions do not exist.

Notification of Corrective Action – For each violation which you do not contest, you must provide ***abatement certification*** to the Area Director of the OSHA office issuing the citation and identified above. This abatement certification is to be provided by letter within 10 calendar days after each abatement date. Abatement certification includes the date and method of abatement. If the citation indicates that the violation was corrected during the inspection, no abatement certification is required for that item. The abatement certification letter must be posted at the location where the violation appeared and the corrective action took place or employees must otherwise be effectively informed about abatement activities. A sample abatement certification letter is enclosed with this Citation. In addition, where the citation indicates that ***abatement documentation*** is necessary, evidence of the purchase or repair of equipment, photographs or video, receipts, training records, etc., verifying that abatement has occurred is required to be provided to the Area Director.

Employer Discrimination Unlawful – The law prohibits discrimination by an employer against an

employee for filing a complaint or for exercising any rights under this Act. An employee who believes that he/she has been discriminated against may file a complaint no later than 30 days after the discrimination occurred with the U.S. Department of Labor Area Office at the address shown above.

Employer Rights and Responsibilities – The enclosed booklet (OSHA 3000) outlines additional employer rights and responsibilities and should be read in conjunction with this notification.

Notice to Employees – The law gives an employee or his/her representative the opportunity to object to any abatement date set for a violation if he/she believes the date to be unreasonable. The contest must be mailed to the U.S. Department of Labor Area Office at the address shown above and postmarked within 15 working days (excluding weekends and Federal holidays) of the receipt by the employer of this Citation and Notification of Penalty.

Inspection Activity Data – You should be aware that OSHA publishes information on its inspection and citation activity on the Internet under the provisions of the Electronic Freedom of Information Act. The information related to these alleged violations will be posted when our system indicates that you have received this citation. You are encouraged to review the information concerning your establishment at www.osha.gov. If you have any dispute with the accuracy of the information displayed, please contact this office.



NOTICE TO EMPLOYEES OF INFORMAL CONFERENCE

An informal conference has been scheduled with OSHA to discuss the citation(s) issued on 10/01/2014. The conference will be held by telephone or at the OSHA office located at 36 Triangle Park Drive, Cincinnati, OH 45246 on _____ at _____.

Employees and/or representatives of employees have a right to attend an informal conference.

CERTIFICATION OF CORRECTIVE ACTION WORKSHEET

Inspection Number: 966352

Company Name: Haverhill Chemicals LLC
Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636
Issuance Date: 10/01/2014

List the specific method of correction for each item on this citation in this package that does not read "Corrected During Inspection" and return to: **U.S. Department of Labor – Occupational Safety and Health Administration, 36 Triangle Park Drive, Cincinnati, OH 45246**

Citation Number _____ and Item Number _____ was corrected on _____
By (Method of Abatement): _____

Citation Number _____ and Item Number _____ was corrected on _____
By (Method of Abatement): _____

Citation Number _____ and Item Number _____ was corrected on _____
By (Method of Abatement): _____

Citation Number _____ and Item Number _____ was corrected on _____
By (Method of Abatement): _____

Citation Number _____ and Item Number _____ was corrected on _____
By (Method of Abatement): _____

Citation Number _____ and Item Number _____ was corrected on _____
By (Method of Abatement): _____

I certify that the information contained in this document is accurate and that the affected employees and their representatives have been informed of the abatement.

Signature

Date

Typed or Printed Name

Title

NOTE: 29 USC 666(g) whoever knowingly makes any false statements, representation or certification in any application, record, plan or other documents filed or required to be maintained pursuant to the Act shall, upon conviction, be punished by a fine of not more than \$10,000 or by imprisonment of not more than 6 months or both.

POSTING: A copy of completed Corrective Action Worksheet should be posted for employee review



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 1 Item 1 Type of Violation: **Serious**

29 CFR 1910.119(d)(3)(i)(F): Information pertaining to the equipment in the process did not include design codes and standards that were employed.

(a) The 2011 Process Hazard Analysis (PHA) did not include process safety information related to the temperature, pressure and directional flow limitations of Teflon expansion joints made by Ethylene that were used in the reactor dump lines.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

11/19/2014

Proposed Penalty:

\$7000.00



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

The alleged violations below have been grouped because they involve similar or related hazards that may increase the potential for injury or illness.

Citation 1 Item 2 a Type of Violation: **Serious**

29 CFR 1910.119(e)(3)(i): The process hazard analysis did not address the hazards of the process.

(a) The employer's 2011 Process Hazard Analysis (PHA) did not address or evaluate the hazards present due to contact with hot process chemicals, such as phenol, BPA, acetone and hydrochloric acid at approximately 130 degrees F, in the event of failure of the expansion joint, such as the Ethylene expansion joint located below Stage 1 Reactor R-109 to the dump line to Outlet Reaction Buffer Drum Tank D-101 or other expansion joints used in the facility.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

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11/19/2014

Proposed Penalty:

\$7000.00



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 1 Item 2 b Type of Violation: **Serious**

29 CFR 1910.119(e)(3)(ii): The process hazard analysis did not address the identification of any previous incident which has a likely potential for catastrophic consequences in the workplace:

(a) The 2011 Process Hazard Analysis (PHA) did not address the identification of six previous incidents with expansion joint failures in BPA that occurred between 2008 and 2010 as having potential for catastrophic consequences despite previous PHAs identifying this equipment as having incidents requiring action and the number of failures that included one where an expansion joint blew out while steaming equipment that occurred on December 4, 2010. The PHA review group still did not consider the incidents to have the potential for a catastrophic event. Since that time there have been six additional leaks or blow-outs of these joints leading up to April 4, 2014, when an expansion joint blowout while steaming equipment caused a catastrophic consequence. Further there have been an additional 21 instances of replacement of expansion joints per maintenance work orders since 2011.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

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11/19/2014



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 1 Item 2 c Type of Violation: **Serious**

29 CFR 1910.119(e)(3)(vi): The process hazard analysis did not address human factors.

(a) The 2011 process hazard analysis did not address human factors associated with steaming the dump line from Stage 1 Reactor R-109 to Outlet Reaction Buffer Drum Tank D-101, for clearing plugged lines with steam in that a human factor evaluation would have noted that the sight glass was located approximately three feet below the operator's eye level, or 33 inches above the catwalk floor, and therefore the position of the equipment impacted the ability to rapidly escape from a leak of hot process chemicals, such as phenol, BPA, acetone and hydrochloric acid.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

11/19/2014



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 1 Item 3 Type of Violation: **Serious**

29 CFR 1910.119(f)(1)(iii)(E): The employer did not develop and implement written operating procedures that provided clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and did not address any special or unique hazards:

(a) The employer's reactor shutdown procedure for BPA Reactors (SJP R-101-b) which was revised on 7/23/2002, did not address the hazards of expansion joint failure due to steaming of the reactor dump line when Step 5(a) of that procedure requires steaming the dump line from the reactors (e.g., R-109) to Drum D-101 prior to draining the reactor and Step 5(c) of that procedure requires steaming the same dump line to clear it after draining.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

11/19/2014

Proposed Penalty:

\$7000.00

U.S. Department of Labor
Occupational Safety and Health Administration

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Issuance Date: 10/01/2014



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 1 Item 4 Type of Violation: **Serious**

29 CFR 1910.119(h)(2)(i): The employer, when selecting a contractor, did not obtain and evaluate information regarding the contract employer's safety performance and program:

(a) The employer did not have copies of the Sunoco Contractors Prequalification Package for the maintenance contractor, CB&I Stone and Webster Construction, Inc., that had been retained after the facility was purchased from Sunoco on November 1, 2011, and had not evaluated the safety performance and program of the contractor themselves.

(b) The pipe inspection contractor, Mistras Group, Inc., safety performance and program was not evaluated by Haverhill prior to the award of their contract.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

10/28/2014

Proposed Penalty:

\$5000.00

See pages 1 through 4 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 1 Item 5 Type of Violation: **Serious**

29 CFR 1910.119(j)(2): The employer did not establish and implement written procedures to maintain the on-going integrity of process equipment.

(a) The employer did not establish and implement written procedures for maintaining the mechanical integrity of the process for Haverhill in-house maintenance employees and contracted maintenance employees to follow for performing routine job tasks that were not classified as preventive or predictive maintenance, such as but not limited to replacement of Teflon expansion joints made by Ethylene that failed and fabrication of pipe spools of Teflon lined pipe that were out of alignment.

(b) The employer did not implement written procedures for maintaining the mechanical integrity of the process as found in API Recommended Practice 574 and the employer's Mechanical Integrity Program for inspection of expansion joints (HAV-MI-PRO-0507) in that;

1. Expansion joints were not regularly inspected;
2. Expansion joints that were insulated did not have all of the insulation removed for inspection and were not inspected unless visible leaks were detected through the insulation;
3. Expansion joint safety shields were not used for personnel protection.

(c) The employer did not establish and implement written procedures for maintaining the mechanical integrity of Teflon lined piping in the Phenol and BPA units, as they did not perform non-destructive testing on lined piping, and did not follow the manufacturer's recommendations for flange bolt torquing, retorquing, hydrotesting, annual retorquing and pressure testing of Restoflex PTFE Lined Piping Products.

(d) The employer's vibration analysis program HAV-MI-PRO-0509 did not contain written procedures for performance of vibration analysis on rotating equipment in the Phenol processing unit and the logistics unit.

(e) The employer's HAV-PSM-PRO-008, Predictive/Preventive Maintenance Procedure PPM #101 did not contain written procedures for performing daily inspections of pumps in areas of the facility such as the logistics unit and the phenol processing unit.



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

(f) The employer did not establish and implement written procedures for performing internal inspections on pumps located in the Phenol processing unit and the logistics unit (HAV-PSM-PRO-008, Predictive/Preventive Maintenance Procedure PPM #101).

(g) The employer did not establish and implement written procedures for conducting external pumps inspections in the Phenol processing unit and the logistics unit.

(h) The employer did not establish and implement written procedures for increasing or decreasing inspection intervals of process equipment, such as but not limited to piping, pressure vessels, pumps, and pressure relief valves.

(i) Procedures that provide clear instructions for safely conducting activities associated with draining the Primary Reactors including Reactor R-109, in that the existing procedures (SJP G-26-a, SJP R-101-b) did not address the special hazards of leaking expansion joints in the reactor dump lines and the need for safety shields surrounding the expansion joints in the event they did leak or fail and the corresponding precautions necessary to prevent employee exposure to hot process chemicals, such as phenol, BPA, acetone and hydrochloric acid.

(j) The employer did not establish and implement written procedures for the installation and maintenance of expansion joint covers used for personnel protection.

(k) The employer did not establish and implement written procedures for contractors who were hired to patch the glass linings of reactor vessels.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

See pages 1 through 4 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.

U.S. Department of Labor
Occupational Safety and Health Administration

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Issuance Date: 10/01/2014



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Date By Which Violation Must be Abated:
Proposed Penalty:

11/19/2014
\$5000.00

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Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 1 Item 6 Type of Violation: **Serious**

29 CFR 1910.119(j)(3): The employer did not train each employee involved in maintaining the ongoing integrity of process equipment in the procedures applicable to the employee's job tasks to ensure that the employee can perform the job tasks in a safe manner:

(a) Haverhill in-house maintenance employees and contracted maintenance employees were not provided with the training necessary to perform their job duties effectively and were not provided with written procedures for maintaining the ongoing integrity of the process that were not classified as preventive or predictive maintenance, such as but not limited to replacement of Teflon expansion joints made by Ethylene that failed and fabrication of pipe spools of Teflon lined pipe that were out of alignment.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

11/19/2014

Proposed Penalty:

\$7000.00



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 1 Item 7 Type of Violation: **Serious**

29 CFR 1910.119(j)(4)(i): The employer did not perform inspection and tests on process equipment.

(a) The employer did not inspect Ethylene expansion joints in accordance with API Recommended Practice 574 and the employer's Mechanical Integrity Program for inspection of expansion joints (HAV-MI-PRO-0507).

(b) The employer did not follow the manufacturer's recommendations for flange bolt torquing, retorquing, hydrotesting, annual retorquing and pressure testing of Restoflex Plastic Lined Piping Products which were used in the BPA and Phenol units.

(c) The employer did not perform vibration analysis on rotating equipment in the Phenol processing unit and the logistics unit (HAV-MI-PRO-0509).

(d) The employer did not perform daily inspections of pumps in areas of the facility such as the logistics unit and the phenol processing unit (HAV-PSM-PRO-008, Predictive/Preventive Maintenance Procedure PPM #101).

(e) The employer did not perform internal inspections on pumps located in the Phenol processing unit and the logistics unit (HAV-PSM-PRO-008, Predictive/Preventive Maintenance Procedure PPM #101).

(f) The employer did not conduct external pumps inspections in the Phenol processing unit and the logistics unit.

(g) The employer did not increase or decrease inspection intervals of process equipment, such as but not limited to piping, pressure vessels, pumps, and pressure relief valves in accordance with API recommendations.

(h) Visual external piping checklists did not include inspecting welds on large diameter piping.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation

See pages 1 through 4 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.

U.S. Department of Labor
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Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

11/19/2014

Proposed Penalty:

\$7000.00

See pages 1 through 4 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 1 Item 8 Type of Violation: **Serious**

29 CFR 1910.119(j)(4)(ii): Inspections and testing procedures performed on process equipment to maintain its mechanical integrity did not follow recognized and generally accepted good engineering practices (RAGAGEP):

- (a) The employer did not inspect or test Resistoflex PTFE lined piping used in the facility unless it was obviously leaking or clogged.
- (b) Intervals on valves were not inspected per API 570.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

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Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 1 Item 9 Type of Violation: **Serious**

29 CFR 1910.119(j)(4)(iii): The frequency of inspections and tests of process equipment was not consistent with applicable manufacturers' recommendations and good engineering practices (REGAGAP), and more frequently if determined to be necessary by prior operating experience.

- (a) The employer did not ensure annual visual inspections of the Safety Instrumented Systems for phenol 2 and 3 were performed on a periodic basis according to ANSI/ISA 84 section 16.3.2 which states that SIS systems must periodically visually inspected to ensure there are no unauthorized modifications and observable deterioration to system components. (HAV-PH2-PRO-025)
- (b) The employer did not ensure the inspection frequencies for pumps located in the phenol processing area and the logistics department were based on CCPS Guidelines for Mechanical Integrity Systems 2006 ed. which states on page 172 that pumps are required to have vibration analysis performed weekly to quarterly, rotational checks performed weekly to monthly, analysis of gear box and bearing lubricant performed monthly to semi-annually.
- (c) The employer did not conduct internal inspections of vessel 3301-E, a crude acetone column located in the Phenol 2 unit that is approximately 200 feet tall, with 97 thickness management locations (TML) for testing on the vessel and 32 of the testing points were past due for inspection every 10 years according to API 510. (Haverhill document HAV-MI-PRO-0591 states that ultrasonic inspections shall be made either internal or external.)
- (d) The employer did not conduct internal inspections of vessel 3307-E, a phenol finishing column located in the Phenol 2 unit, that is approximately 62 feet tall and is lined with stainless steel cladding, with 71 TML testing locations on the vessel and 34 of the testing points were past due for inspection every 10 years according to API 510.
- (e) The employer did not conduct internal inspections of vessel 3307-E, a hydrocarbon removal column located in the Phenol 2 unit, that is approximately 134 feet tall and is lined with stainless steel cladding, with 127 TML testing locations on the vessel and 17 of the testing points were past due for inspection every 10 years according to API 510.

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Company Name: Haverhill Chemicals LLC

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(f) The employer did not conduct internal inspections of vessel 3301-D, a phenol resin bed located in the Phenol 2 unit and is approximately 18 feet tall, unclad, with 21 TML testing locations on the vessel and 1 of the testing points on the shell was past due for inspection every 10 years according to API 510.

(g) The employer did not ensure that approximately 1000 piping inspections, for piping segments and inspection points containing the Class I flammable chemicals acetone, cumene hydrogen peroxide and cumene, were conducted at intervals according to API 570 and Haverhill Mechanical Integrity piping procedures.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

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Citation 1 Item 10 Type of Violation: **Serious**

29 CFR 1910.119(j)(4)(iv): The employer did not document each inspection and test that was performed on process equipment. The documentation shall identify the date of the inspection, the name of the person who performed the inspection, the identifier of the equipment inspected, a description of the inspection and the result of the inspection.

(a) On or about April 3, 2014 no inspection records were kept of required inspections, such as visual inspections and pressure testing, of the newly installed Teflon expansion joint made by Ethylene as described in HAV-MI-PRO-0507 Mechanical Integrity Guide-Expansion Joints.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

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Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 1 Item 11 Type of Violation: **Serious**

29 CFR 1910.119(j)(5): The employer shall correct deficiencies in equipment that are outside acceptable limits (defined by the process safety information in paragraph (d) of this section) before further use or in a safe and timely manner when necessary means are taken to assure safe operation:

(a) On or about April 3, 2014, before the four inch Teflon expansion joint made by Ethylene was replaced at the bottom of Stage 1 Reactor R-109 to the dump line to Outlet Reaction Buffer Drum Tank D-101, the misaligned pipes were not repaired prior to placing the reactor back in service, to prevent employee exposure to 130 degree F process chemicals, such as phenol, BPA and HCl, in case of expansion joint blow out.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

11/19/2014

Proposed Penalty:

\$7000.00

See pages 1 through 4 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 1 Item 12 Type of Violation: **Serious**

29 CFR 1910.119(j)(6)(ii): Appropriate checks and inspections were not performed to assure that equipment was installed properly and consistent with design specifications and the manufacturer's instructions.

(a) On or before April 3, 2014 the employer did not perform appropriate checks and inspections, such as but not limited to ensure the Teflon expansion joint made by Ethylene below Stage 1 Reactor R-109 to the dump line to Outlet Reaction Buffer Drum Tank D-101 was installed properly and consistent with manufacturer specifications, in that the Ethylene expansion joint was installed without a liner sleeve, with cut limit links, with lateral misalignment of the piping and was not fitted with an adequate safety shield.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

11/19/2014

Proposed Penalty:

\$7000.00



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 1 Item 13 Type of Violation: **Serious**

29 CFR 1910.119(j)(6)(iii): The employer shall assure that maintenance materials, spare parts and equipment are suitable for the process application for which they will be used.

(a) On or about April 3, 2014 the Teflon expansion joint made by Ethylene installed at the discharge dump line from bottom of Stage 1 Reactor R-109 to the dump line to Outlet Reaction Buffer Drum Tank D-101 was not suitable for the piping where it was used because:

1. The expansion joint was dimensionally too short.
2. The expansion joint was installed into a piping system where thermal pipe growth from steaming resulted in lateral deflection forces on the expansion joint that resulted in its misalignment beyond the manufacturers limits for lateral misalignment of 0.67 inches.
3. The dump line piping system was not fitted a device or a work practice (condensate bleed) to ameliorate pressure liquid momentum surges (e.g. water hammer).
4. The failed R-109 expansion joint would experience temperatures and pressures exceeding the manufacturers recommended limits if subject to available steaming pressures of 75 psig and 150 psig.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

11/19/2014

Proposed Penalty:

\$7000.00



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

The alleged violations below have been grouped because they involve similar or related hazards that may increase the potential for injury or illness.

Citation 1 Item 14 a Type of Violation: **Serious**

29 CFR 1910.132(a): Protective equipment was not used when necessary whenever hazards capable of causing injury and impairment were encountered:

(a) On or about April 4, 2014, an employee was not wearing personal protective equipment, such as safety goggles, rubber boots, chemical resistant rain suit with the hood over his hard hat and chemical resistant pants (Haverhill PPE Required Per Job Task Matrix) when an expansion joint failed and the employee was exposed to approximately 130 degree process chemicals, such as phenol, BPA, hydrochloric acid and acetone.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

10/21/2014

Proposed Penalty:

\$7000.00



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 1 Item 14 b

Type of Violation: **Serious**

29 CFR 1910.132(d)(1)(i): The employer did not assess the workplace to determine if hazards were present, or likely to be present, and did not select and have each affected employee use the types of Personal Protective Equipment (PPE) that would protect the affected employee from the hazards identified in the workplace hazard assessment:

(a) The employer did not address PPE to be used when employees were exposed to the hazards of working with Teflon expansion joints made by Ethylene in the BPA Reaction Building, such as but not limited to a face shield, safety goggles, rubber boots, long chemical resistant coat with the hood up over the hard hat and chemical resistant pants (Haverhill PPE Required Per Job Task Matrix) when employees were exposed to the possibility of expansion joint failure resulting in the release of 130 degree F mixture of chemicals under pressure which contained phenol, BPA, acetone and hydrochloric acid.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

10/21/2014

U.S. Department of Labor
Occupational Safety and Health Administration

Inspection Number: 966352
Inspection Date(s): 04/05/2014 - 10/01/2014
Issuance Date: 10/01/2014



Citation and Notification of Penalty

Company Name: Haverhill Chemicals LLC

Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636

Citation 2 Item 1 Type of Violation: **Other-than-Serious**

29 CFR 1910.119(h)(2)(vi): The employer did not maintain copies of OSHA 300 logs for contractors nested in the facility to perform maintenance and repairs,

(a) The employer did not have copies of the OSHA 300 Logs for the maintenance contractor, CB&I Stone and Webster Construction, Inc.

(b) The employer did not have copies of the OSHA 300 Logs for the pipe inspection contractor, Mistras Group, Inc.

In accordance with 29 CFR 1903.19(d), abatement certification is required for this violation (using the CERTIFICATION OF CORRECTIVE ACTION WORKSHEET), and in addition, documentation demonstrating that abatement is complete must be included with your certification. This documentation may include, but is not limited to, evidence of the purchase or repair of the equipment, photographic or video evidence, or written records.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

10/28/2014

Proposed Penalty:

\$1000.00

William Wilkerson

William Wilkerson
Area Director

See pages 1 through 4 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.

U.S. Department of Labor
Occupational Safety and Health Administration
36 Triangle Park Drive
Cincinnati, OH 45246
Phone: 513-841-4132 Fax: 513-841-4114



INVOICE / DEBT COLLECTION NOTICE

Company Name: Haverhill Chemicals LLC
Inspection Site: 1019 Haverhill-Ohio Furnace Road, Haverhill, OH 45636
Issuance Date: 10/01/2014

Summary of Penalties for Inspection Number	966352
Citation 1, Serious	\$94000.00
Citation 2, Other-than-Serious	\$1000.00
TOTAL PROPOSED PENALTIES	\$95000.00

To avoid additional charges, please remit payment promptly to this Area Office for the total amount of the uncontested penalties summarized above. Make your check or money order payable to: "DOL-OSHA". Please indicate OSHA's Inspection Number (indicated above) on the remittance. You can also make your payment electronically on www.pay.gov. On the left side of the pay.gov homepage, you will see an option to Search Public Forms. Type "OSHA" and click Go. From the results, click on **OSHA Penalty Payment Form**. The direct link is <https://www.pay.gov/paygov/forms/formInstance.html?agencyFormId=53090334>. You will be required to enter your inspection number when making the payment. Payments can be made by credit card or Automated Clearing House (ACH) using your banking information. Payments of \$50,000 or more require a Transaction ID, and also must be paid using ACH. If you require a Transaction ID, please contact the OSHA Debt Collection Team at (202) 693-2170.

OSHA does not agree to any restrictions or conditions or endorsements put on any check, money order, or electronic payment for less than the full amount due, and will cash the check or money order as if these restrictions or conditions do not exist.

If a personal check is issued, it will be converted into an electronic fund transfer (EFT). This means that our bank will copy your check and use the account information on it to electronically debit your account for the amount of the check. The debit from your account will then usually occur within 24 hours and will be shown on your regular account statement. You will not receive your original check back. The bank will destroy your original check, but will keep a copy of it. If the EFT cannot be completed because of insufficient funds or closed

account, the bank will attempt to make the transfer up to 2 times.

Pursuant to the Debt Collection Act of 1982 (Public Law 97-365) and regulations of the U.S. Department of Labor (29 CFR Part 20), the Occupational Safety and Health Administration is required to assess interest, delinquent charges, and administrative costs for the collection of delinquent penalty debts for violations of the Occupational Safety and Health Act.

Interest: Interest charges will be assessed at an annual rate determined by the Secretary of the Treasury on all penalty debt amounts not paid within one month (30 calendar days) of the date on which the debt amount becomes due and payable (penalty due date). The current interest rate is one percent (1%). Interest will accrue from the date on which the penalty amounts (as proposed or adjusted) become a final order of the Occupational Safety and Health Review Commission (that is, 15 working days from your receipt of the Citation and Notification of Penalty), unless you file a notice of contest. Interest charges will be waived if the full amount owed is paid within 30 calendar days of the final order.

Delinquent Charges: A debt is considered delinquent if it has not been paid within one month (30 calendar days) of the penalty due date or if a satisfactory payment arrangement has not been made. If the debt remains delinquent for more than 90 calendar days, a delinquent charge of six percent (6%) per annum will be assessed accruing from the date that the debt became delinquent.

Administrative Costs: Agencies of the Department of Labor are required to assess additional charges for the recovery of delinquent debts. These additional charges are administrative costs incurred by the Agency in its attempt to collect an unpaid debt. Administrative costs will be assessed for demand letters sent in an attempt to collect the unpaid debt.

William Wilkerson

William Wilkerson

Area Director

October 1, 2014

Date