

U.S. Department of Labor
Occupational Safety and Health Administration
200 N. High Street
Room 620
Columbus, OH 43215
Phone: 614-469-5582 Fax: 614-469-6791



Citation and Notification of Penalty

To:
Dover Chemical Corporation
and its successors
3676 Davis Road
Dover, OH 44622

Inspection Number: 451379
Inspection Date(s): 05/29/2012 - 11/19/2012
Issuance Date: 11/26/2012

Inspection Site:
3676 Davis Road
Dover, OH 44622

7012 2210 0001 2128 0032

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 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.

OSHA does not agree to any restrictions or conditions or endorsements put on any check or money order for less than the full amount due, and will cash the check or money order as if these restrictions, conditions, or endorsements 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 11/26/2012. The conference will be held at the OSHA office located at 200 N. High Street, Room 620, Columbus, OH 43215 on _____ at _____. Employees and/or representatives of employees have a right to attend an informal conference.

CERTIFICATION OF CORRECTIVE ACTION WORKSHEET

Inspection Number: 451379

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622
Issuance Date: 11/26/2012

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, 200 N. High Street, Room 620, Columbus, OH 43215**

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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 1 a Type of Violation: **Serious**

29 CFR 1910.23(a)(5): Every pit and trapdoor floor opening, infrequently used, shall be guarded by a floor opening cover of standard strength and construction. While the cover is not in place, the pit or trap opening shall be constantly attended by someone or shall be protected on all exposed sides by removable standard railings:

a. In building #1 grinding on July 31, 2012, there was a pit that was partially covered. The cover was not secured, had been displaced prior to employee pedestrian travel near the cover and during forklift travel onto/over the cover.

Date By Which Violation Must be Abated:	Corrected During Inspection
Proposed Penalty:	\$3300.00

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

29 CFR 1910.23(a)(8)(i): Every floor hole into which persons can accidentally walk shall be guarded by either: A standard railing with standard toeboard on all exposed sides:

a. As of and prior to July 22, 2012, on the second floor of building #17 near the chlorination filter for 20 reactor, there were a series of connected floor holes without a standard railing to prevent an employee from stepping into this space. This condition poses a same level trip/fall hazard.

ABATEMENT NOTE: The employer may comply with 29 CFR 1910.23(a)(8)(ii) and provide a cover, in lieu of the standard railing as delineated above.

Date By Which Violation Must be Abated:	12/14/2012
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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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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

29 CFR 1910.23(b)(1)(i): Every wall opening from which there is a drop of more than four feet shall be guarded by one of the following: Rail, roller, picket fence, half door, or equivalent barrier:

a. On August 6, 2012, on the second floor at the west side of building #46, an employee was observed working near an unguarded wall opening, thereby exposing him to a fall hazard of greater than ten feet.

Date By Which Violation Must be Abated: Corrected During Inspection
Proposed Penalty: \$5500.00

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

29 CFR 1910.24(e): "Angle of stairway rise." Fixed stairs shall be installed at angles to the horizontal of between 30 degrees and 50 degrees:

a. On August 27, 2012, the stairs to the fourth railcar unloading station outside of building #6 associated with the 1P chlorination process were fabricated with too steep an angle. When accessing the fourth rail car, employees were subjected to climbing a fixed stair case with a 55 degree angle for the second tier of risers.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated: 12/14/2012
Proposed Penalty: \$4400.00

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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 4 a Type of Violation: **Serious**

29 CFR 1910.67(c)(2)(i): Lift controls shall be tested each day prior to use to determine that such controls are in safe working condition:

a. On August 27, 2012, outside building #2 near F storage, the employer failed to ensure a test of lift controls for an extensible boom JLG aerial lift was performed prior to use.

Date By Which Violation Must be Abated: 12/14/2012
Proposed Penalty: \$3300.00

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

29 CFR 1910.67(c)(2)(ii): Only trained persons shall operate an aerial lift:

a. On August 27, 2012, outside building #2 near F storage, the employer failed to ensure that employees were trained on the usage of aerial lifts prior to operation. Maintenance department employees used the lift for performing assigned maintenance tasks.

Date By Which Violation Must be Abated: 12/14/2012

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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 5 a Type of Violation: **Serious**

29 CFR 1910.119(d): Process Safety Information. In accordance with the schedule set forth in paragraph (e)(1) of this section, the employer shall complete a compilation of written process safety information before conducting any process hazard analysis required by the standard. The compilation of written process safety information is to enable the employer and the employees involved in operating the process to identify and understand the hazards posed by those processes involving highly hazardous chemicals. This process safety information shall include information pertaining to the hazards of the highly hazardous chemicals used or produced by the process, information pertaining to the technology of the process, and information pertaining to the equipment in the process:

- a. The employer did not have a completed compilation of written process safety information (PSI) (as required for hazards of the chemicals, technology of the process and equipment in the process) for managers, engineers, operators, contractors and maintenance employees involved in operating and maintaining the process to understand the hazards of the process and equipment involving or affecting highly hazardous chemicals. The employer had not compiled and managed PSI for covered equipment; prepared files for each piece of equipment; populated those files with process safety information (PSI) required by 1910.119(d)(1)-(3), information utilized to document RAGAGEP compliance required by 1910.119(d)(3)(ii) and other process information, such as records of equipment operating conditions.
- b. The PSI package/binder for the 40R reactor process had not been updated since 1999. A process hazard analysis revalidation was performed for chlorination department in 2007. PSI affecting changes were made associated with the relief device system which formerly vented to a drum filled with water.
- c. The PSI package/binder for the 44R reactor process had not been updated since 2001. A process hazard analysis revalidation was performed for phosphites department in 2008. PSI affecting changes were made with a 2011 PCI3 piping circuitry project installation referred to as Main Street and with a 2011 vessel change and piping replacement project that increased production capability for this

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(d) continued:

process. The replacement vessel was installed in October 2011. There was no information in the 44R equipment file for this new vessel. Appropriate information had not been populated into equipment files, or PSI files to maintain the information and have it available for use.

d. The PSI package/binder for the 72R reactor process had not been updated since 2005. Significant equipment changes have occurred in phosphites since that time, some of which resulted in a change of process chemistry for this reactor process. Appropriate information was not populated into equipment files, or PSI files to maintain the information and have it available for use.

e. PSI for the 133T PCI3 storage tank was unavailable following multiple changes, including new piping installation, replacement piping installation for repair and relief device design upgrade appropriate information. Required information was not populated into equipment files, or PSI files to maintain the information and have it available for use. Relief device design information was not available in the vessel equipment file, or PSI file(s).

f. The PSI package/binder for the 35R reactor process had not been updated since 1999. This vessel had been part of a reactor system with the 36R reactor. Following its disconnection from the 36R reactor and beginning operations as a singly operating reactor, equipment files and/or PSI files were not updated with process information regarding chemistry changes, relief device design basis evaluation, isometric drawings used for installation verification related to the changes and pre-installation tests and inspections.

Abatement note: One method of abatement is to establish individual equipment files, comprehensively compile them in one location, populate the files with all PSI and PSM required information, then make them available to all groups (operators, maintenance, project engineers, contractors, inspectors) on site who need PSI access.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	01/28/2013
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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

29 CFR 1910.119(d)(1)(iv): Process safety information. Information pertaining to the hazards of the highly hazardous chemicals in the process shall consist of at least the following: Reactivity data:

Information regarding reactivity hazards was not compiled for processes; such as but not limited to:

- a. Chlorination 40R reactor process: only addresses polymerization.
- b. Phosphites 51R reactor process: did not address PCl_3 water reactivity hazards, phosphites chemicals (Doverphos 10, aka DP10, etc.) water reactivity hazards and polymerization.
- c. Chlorination 20R reactor process: only addresses polymerization.
- d. Chlorination chlorine unloading process: did not address water reactivity hazards (infiltration into process during unloading activities).
- e. Chlorination 18/19 reactor systems process: only addresses polymerization.
- f. Chlorination 49R reactor process: did not address reactivity.
- g. Chlorination 1R/2R reactor process: only addresses polymerization.
- h. Chlorination 4R/5R reactor process: only addresses polymerization.
- i. Chlorination 45R reactor and 1P acid absorber system process: only addresses polymerization.
- j. Phosphites 75R reactor process: did not address phosphites chemicals (Doverphos 10, aka DP10, etc.) water reactivity hazards.
- k. Phosphites 34R reactor process: did not address phosphites chemicals (Doverphos 10, aka DP10, etc.) water reactivity hazards and polymerization.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(d)(1)(iv) continued:

I. Phosphites 35R reactor process: did not address phosphites chemicals (Doverphos 10, aka DP10, etc.) water reactivity hazards.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated: 01/28/2013

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

29 CFR 1910.119(d)(1)(vii): Process safety information. Information pertaining to the hazards of the highly hazardous chemicals in the process: This information shall consist of at least the following: Hazardous effects of inadvertent mixing of different materials that could foreseeably occur:

Information regarding the hazardous effects of inadvertent mixing was not compiled for processes, such as but not limited to:

- a. Chlorination 40R reactor process.
- b. Chlorination 20 reactor (also known as R032-01) process.
- c. Chlorination chlorine unloading process.
- d. Chlorination 18R/19R reactor process.
- e. Chlorination 49R reactor process.
- f. Chlorination 4R/5R reactor process.
- g. Chlorination 1R/2R reactor process.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(d)(1)(vii) continued:

- h. Chlorination 45R reactor and 1P acid absorber system process.
- i. Phosphites 51R reactor process.
- j. Phosphites 75R reactor process: only addresses PCI3 and water.
- k. Phosphites 34R reactor process.
- l. Phosphites 35R reactor process.
- m. Phosphites 72R reactor process.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

01/28/2013



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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 6 a Type of Violation: **Serious**

29 CFR 1910.119(d)(2)(i)(A): Process safety information. Information concerning the technology of the process shall contain at least the following: A block flow diagram or simplified process flow diagram (see Appendix B to this section):

Information compiled did not include a block flow diagram, or process flow diagram, for processes, which include, but are not limited to:

- a. Chlorination 40R reactor process: did not include a block flow diagram or process flow diagram.
- b. Chlorination 20 reactor process: did not include a block flow diagram or process flow diagram.
- c. Chlorination 18/19R reactor process: did not include a block flow diagram or process flow diagram.
- d. Chlorination 49R reactor process: did not include a block flow diagram or process flow diagram.
- e. Chlorination 4R/5R reactor process: did not include a block flow diagram or process flow diagram.
- f. Chlorination 1R/2R reactor process: did not include a block flow diagram or process flow diagram.
- g. Chlorination 45R reactor and 1P acid absorber system process: did not include a block flow diagram or process flow diagram.

Information compiled in block flow diagrams, or process flow diagrams was not accurate for the following processes:

- h. Chlorination chlorine unloading and vaporizers process: PSI was inaccurate regarding the little vaporizers (#4, #5, #6, #7 and #8) discussed in the process description and contained in the process diagram.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(d)(2)(i)(A) continued:

i. 35R reactor process: block flow diagram is inaccurate in that it depicts equipment that is no longer interconnected.

j. 72R reactor process: block flow diagram is inaccurate in that it depicts equipment that is no longer interconnected

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	01/28/2013
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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

29 CFR 1910.119(d)(2)(i)(B): Process safety information. Information pertaining to the technology of the process: Information concerning the technology of the process shall include at least the following: Process chemistry:

Information regarding current process chemistry was not compiled for processes, including but not limited to:

- a. Chlorination - 20 (#32) reactor system process: The process description contained information for ultraviolet chlorination process that was not part of the current process.
- b. Phosphites 34R reactor process: Process chemistry included reactions for products no longer made, and the transesterification reaction process chemistry was not completely included.
- c. Phosphites 35R reactor process: Process chemistry included reactions for products no longer made and did not include discussion of current chemistry.
- d. Phosphites - 72R reactor process: Process chemistry included reactions for products no longer made and did not include discussion of current chemistry.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

01/28/2013

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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 7 a Type of Violation: **Serious**

29 CFR 1910.119(d)(2)(i)(C): Process safety information. Information concerning the technology of the process shall contain at least the following: Maximum intended inventory:

Information was not compiled regarding maximum intended inventory for processes, including but not limited to:

- a. Chlorination 40R reactor process.
- b. Chlorination 20 reactor process.
- c. Chlorination 18R/19R reactor process.
- d. Chlorination 49R reactor process.
- e. Chlorination 4R/5R reactor process.
- f. Chlorination 45R reactor and 1P acid absorber system process.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	01/28/2013
Proposed Penalty:	\$5500.00

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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

29 CFR 1910.119(d)(3)(i)(G): Process safety information. Information pertaining to the equipment in the process shall include: Material and energy balances for processes built after May 26, 1992:

Information was not compiled regarding material and energy balances for processes, including but not limited to:

- a. The 44R reactor process (phosphites department): This process was put into place in January 2001.
- b. The 75R reactor process (phosphites department): This process was put into place in 2009.
- c. The 35R reactor process (phosphites department): The process chemistry was changed in response to the Main Street installation being disconnected from the 36R reactor and the 36R reactor process conversion to run 9228.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

12/29/2012



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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 8 a Type of Violation: **Serious**

29 CFR 1910.119(d)(2)(i)(D): Process safety information. Information concerning the technology of the process shall contain at least the following: Safe upper and lower limits for such items as temperatures, pressures, flows or compositions:

Information regarding the safe upper and lower limits for critical operating parameters, such as but not limited to temperature, pressure, process flows, and compositions were not provided for processes, including but not limited to:

- a. Chlorination 40R reactor process.
- b. Chlorination 18R/19R reactor process.
- c. Chlorination 49R reactor process.
- d. Chlorination 4R/5R reactor process.
- e. Chlorination 1R/2R reactor process.
- f. Chlorination 45R reactor and 1P acid absorber system process.
- g. Phosphites 51R reactor process.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

h. Phosphites 72R reactor process: limits addressed were for the 34R reactor process, not the 72R reactor process.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	01/28/2013
Proposed Penalty:	\$7000.00

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

29 CFR 1910.119(d)(2)(i)(E): Process safety information. Information concerning the technology of the process shall contain at least the following: An evaluation of the consequences of deviations, including those affecting the safety and health of employees:

Information regarding the consequences of deviation was not compiled for processes, including but not limited to:

- a. Chlorination 40R reactor process.
- b. Chlorination 20 reactor process.
- c. Chlorination 18R/19R reactor process.
- d. Chlorination 49R reactor process.
- e. Chlorination 4R/5R reactor process.
- f. Chlorination 1R/2R reactor process.
- g. Chlorination 45R reactor and 1P acid absorber system process.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(d)(2)(i)(E) continued:

- h. Phosphites 51R reactor process.
- i. Phosphites 34R reactor process.
- j. Phosphites 35R reactor process.
- k. Phosphites 72R reactor process.
- l. Phosphites 44R reactor process.
- m. Phosphites 75R reactor process.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

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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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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

29 CFR 1910.119(d)(3)(i)(A): Process Safety Information. Information pertaining to the equipment in the process shall include: Materials of construction:

- a. Chlorination 1C and 1P: materials of construction was not addressed for instruments and replacement materials, such as, but not limited to, meters, gauges, pump seals and gaskets.
- b. Chlorination 20 reactor process: materials of construction was not addressed for the 54R reactor, the 488 pump, the 162 filter, and an unnumbered exchanger.
- c. Phosphites department: materials of construction was not addressed for instruments, controls and replacement materials, such as but not limited to, meters, gauges, pump seals and gaskets.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	01/28/2013
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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

29 CFR 1910.119(d)(3)(i)(B): Process Safety Information. Information pertaining to the equipment in the process shall include: Piping and instrument diagrams (P&ID's):

- a. Chlorination process safety information (PSI) was not accurate in that the chlorine knockout pot (T-598-04) removed in 2012 was still located on P&IDs. Additionally, the knockout pot had been located on both P&ID 4-PID-202-6 and 4-PID-203-6, with three different designations (T-420-04, T-598-04 and T-587-04).
- b. PSI for the chlorination 40R reactor process was not accurate in that the piping and instrument diagram (P&ID) identification or page number provided, 16-95-1, was from a format that was no longer used by the employer, and could not be used to cross reference an active P&ID to the process equipment or relief device. Additionally this P&ID was not part of the PSI file.
- c. PSI for the phosphites 72R reactor process was incorrect. P&IDs compiled in the PSI package/binder were not for the 72R process, but showed the 34R reactor instead of the 72R reactor.
- d. PSI for the 36R reactor was inaccurate. P&ID 23-PID-056-27: the xylene feed was not shown for the 36R reactor. Additionally equipment data, such as pump flow rates and pressure and vessel capacities were not listed.
- e. PSI for the 36R reactor was inaccurate. P& ID 23-PID-084-27: the xylene feed was not shown for the 32R reactor.
- f. P&ID 10-PID-008-35 was not accurate in that it showed equipment that was removed from service (a PCP storage tank) and did not list data for equipment, such as relief device pressure settings and tank capacities.
- g. P&ID 22-PID-302-27 was not accurate in that it showed equipment that was removed from service (a PCI3 storage tank.)

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(d)(3)(i)(B) continued:

- h. P&ID 1-PID-176-17 was not accurate in that it did not indicate where chlorine feed lines went, where the feed lines linked to another P&ID, and did not show equipment that had been removed from service (X-076-1 Ultraviolet.)
- i. P&ID 23-PID-082-27 was not accurate in that dual valves were missing for flow into the R-034-23 reactor (one each for DP10 flow, catalyst and alcohol flow) and the DP10 flow meter was missing.
- j. P&ID 4-PID-202-6 was not accurate in that it showed equipment (a knockout pot) that was removed and replaced with piping circuitry.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	01/28/2013
Proposed Penalty:	\$7000.00



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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

29 CFR 1910.119(d)(3)(i)(D): Process Safety Information. Information pertaining to the equipment in the process shall include: Relief system design and design basis:

Relief system design and design basis information was not compiled, documented and maintained for the following processes and process equipment, including but not limited to:

- a. Chlorination department, 40R reactor: relief system design and design basis information for the reactor had not been maintained and kept up to date. PSI compiled for the 40R process involved a list of eight relief devices (cross referenced to piece of equipment) with information for each device. The information only included the result (the set points for pressure), the fire, and the two phase flow scenario used in the basis. There was no documentation of calculations for the design, and no evaluation for piping or safe venting location associated with these relief devices. Four of the devices listed in the PSI were not identified by type (rupture disk, pressure relief valve, etc.). Additionally, the piping and instrument diagram (P&ID) identification or page number was from a format that was no longer used by the employer and could not be used to cross reference this information on an active P&ID for the process equipment or relief device.
- b. Phosphites department, 133T phosphorous trichloride (PCl₃) storage tank: none.
- c. Chlorination department, 200T bromine storage tank: none.
- d. Chlorination department, 20 reactor system: none.
- e. Chlorination department, Chlorine unloading and vaporizer process: none.
- f. Chlorination department, 18R/19R reactor process: none.
- g. Chlorination department, 49R reactor process: none.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(d)(3)(i)(D) continued:

- h. Chlorination department, 4R/5R reactor process: the relief device design and design basis information for the #77 exchanger (5R condenser), #82 exchanger (jacket heater), #119 exchanger, 4R reactor and 5R reactor sizing calculations were not documented and maintained.
- i. Chlorination department, 1R/2R reactor process: none.
- j. Chlorination department, 45R and 1P acid absorbers system process: none.
- k. Phosphites department, 51R reactor process: none.
- l. Phosphites department, 34R reactor process: none.
- m. Phosphites department, 35R reactor process: none.
- n. Phosphites 72R reactor process: none.
- o. Phosphites 44R reactor process: none.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	12/29/2012
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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 12 a Type of Violation: **Serious**

29 CFR 1910.119(d)(3)(i)(E): Process safety information. Information pertaining to the equipment in the process: Information pertaining to the equipment in the process shall include: Ventilation system design:

a. In the phosphites department, there is no compiled information for ventilation system(s) design for the building #27, the building #28 control room and the MCC room ventilation systems.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
Proposed Penalty:	\$7000.00

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

29 CFR 1910.119(d)(3)(i)(F): Process Safety Information. Information pertaining to the equipment in the process shall include: Design codes and standards employed:

Information was not compiled for the following process equipment regarding design codes and standards employed, including but not limited to:

a. Chlorination 40R reactor process: the design codes and standards employed for the vessels associated with this process were not listed.

b. Chlorination 20 reactor process: the design codes and standards employed for the vessels were not listed.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(d)(3)(i)(F) continued:

- c. Chlorination 18R/19R reactor process: the design codes and standards employed for the vessels were not listed.
- d. Chlorination 49R reactor process: the design codes and standards employed for the vessels were not listed.
- e. Chlorination 4R/5R reactor process: the design codes and standards employed for the vessels and non-chlorine piping were not listed.
- f. Chlorination 1R/2R reactor process: none.
- g. Chlorination 45R reactor and 1P Acid Absorber system process: the design codes and standards employed for the vessels were not listed.
- h. Phosphites 75R reactor process: none listed.
- i. Phosphites 34R reactor process: the design codes and standards employed for the vessels are not listed.
- j. Phosphites 35R reactor process: the design codes and standards employed for the vessels were not listed.
- k. Phosphites 44R reactor process: the design codes and standards employed for the vessels were not listed.
- l. Phosphites 72R reactor process: none listed.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

01/28/2013

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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

29 CFR 1910.119(d)(3)(i)(H): Process Safety Information. Information pertaining to the equipment in the process shall include: Safety systems (e.g. interlocks, detection or suppression systems):

Information regarding safety systems for the following process equipment was not compiled, such as but not limited to:

- a. Chlorination 40R reactor process: The only process safety information (PSI) listed was venting the reactor into a drum filled with water which was not current.
- b. Chlorination 49R reactor process: none listed.
- c. Chlorination 4R/5R reactor process: The only process safety information (PSI) listed was venting the reactor into a drum filled with water which was not current.
- d. Phosphites 35R reactor process: not accurate, not updated following process change.
- e. Phosphites department: the safety systems information, such as DCS interlocks, alarms and detection systems were not compiled for each process. Additionally design information was not compiled for safety systems.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

01/28/2013



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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

29 CFR 1910.119(d)(3)(ii): Process Safety Information. The employer shall document that equipment complies with recognized and generally accepted good engineering practices:

The employer did not document, compile and maintain information regarding recognized and generally accepted good engineering practices (RAGAGEP) compliance for the following process equipment, including but not limited to:

- a. Chlorination department: The 4R reactor did not meet RAGAGEP, in that the U-1 data sheet was missing.
- b. Phosphites department: 133T tank did not meet RAGAGEP, in that the U-1 data sheet is missing.
- c. Chlorination department: 2R reactor did not meet RAGAGEP, in that the vessel U-1 data sheet was missing.
- d. Phosphites department: 38R receiver did not meet RAGAGEP, in that the vessel U-1 data sheet was missing.
- e. Chlorination department: 45R receiver did not meet RAGAGEP, in that the vessel U-1 data sheet was missing.
- f. Phosphites department: E-105 (the 35R primary condenser) did not meet RAGAGEP in that the vessel U-1 data sheet was missing.
- g. Phosphites department: E-373 (the 72R condenser) did not meet RAGAGEP, in that the vessel U-1 data sheet was missing.
- h. Phosphites department: E-375 (the 72R alcohol preheater) did not meet RAGAGEP in that the vessel U-1 data sheet was missing.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(d)(3)(ii) continued:

- i. Chlorination department: 58R receiver did not meet RAGAGEP in that the vessel U-1 data sheet was missing.
- j. Phosphites department: The 36R reactor did not meet RAGAGEP, in that relief system design and design basis selected for the reactor resulted in incorrect sizing of the pressure relief valve. The worst case scenario basis used for this design was prompt firefighting. The fire scenario was used for the other reactors in building 27. The use of the prompt firefighting scenario resulted in relief device sizing that is approximately 60% of the fire sizing calculation; thus the relief valve was undersized. Additionally, a rupture disk was installed that exceeded the designated pressure set point for this relief system design.
- k. Phosphites department: The 133T phosphorous trichloride (PCl₃) storage tank did not meet RAGAGEP, in that the relief device (pressure relief valve) was not designed to vent to a safe location. In the event of actuation, the relief device would vent to an aqueous scrubber that has not been evaluated and documented to safely contain a designated worst case basis scenario for this device. Phosphorous trichloride properties include water reactivity with a highly exothermic, rapidly expanding evolution of acidic gas.
- l. Chlorination department: The 200T Bromine storage tank did not meet RAGAGEP, in that the relief device (pressure relief valve) was not designed to vent to a safe location. In the event of actuation, the relief device would vent to a caustic scrubber that had not been evaluated and documented to safely contain a designated worst case scenario for this device. Bromine interacting with 25% sodium hydroxide solution would result in a highly exothermic reaction event.
- m. Process piping, including but not limited to the following phosphites and chlorination department processes, did not meet RAGAGEP, in that an inappropriate design code (ASME 31.1) was compiled in PSI as design code for process piping: Chlorination 20 reactor process, Chlorination 18R/19R reactor process, Chlorination 49R reactor process, Chlorination 45R reactor and 1P acid absorber system process, 34R reactor process, 35R reactor process and 44R reactor process.

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

Inspection Number: 451379
Inspection Date(s): 05/29/2012 - 11/19/2012
Issuance Date: 11/26/2012



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(d)(3)(ii) continued:

n. Phosphites department: The 32R reactor did not meet RAGAGEP, in that a rupture disk was installed that exceeded the designated pressure set point for the relief design.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	01/28/2013
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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

29 CFR 1910.119(e)(3)(i): Process hazard analysis. The process hazard analysis shall address: The hazards of the process:

Process hazards were not addressed during process hazard analysis, such as but not limited to:

- a. Phosphites department 2008 PHA: The employer did not identify, evaluate and control polymerization reactions of poly-available alcohols used in processes when it conducted the PHA.
- b. Phosphites department 2008 PHA: The employer did not identify, evaluate and control water reactivity of phosphites chemicals (DP10, etc.) and PCl₃ when it conducted the PHA.
- c. Phosphites department 32R 9228 process PHA: The employer did not fully evaluate and control equipment failure as a mode for fire or as an ignition source, such as with a high temperature in a pump boiling xylene and being deemed as no hazardous consequence.
- d. Phosphites department PHAs (32R/36R 9228 and 2008 revalidation): The employer did not fully identify, evaluate and control the hazards associated with nitrogen as a widely used process chemical that poses the ability to displace oxygen, as a potential agent for creating an overpressure in a vessel and the potential loss of nitrogen when used to protect process chemicals from water infiltration.
- e. Phosphites department 32R 9228 process PHA: The employer did not fully identify, evaluate and control the hazards associated with elevated temperature. When dealing with the cause of overheating a reactor, the outcome of no hazardous consequence and operational and quality issues only were associated with vigorous boiling of reactor contents with additional internal pressure. The PHA team did not fully identify or control the hazard.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	01/28/2013
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 15 Type of Violation: **Serious**

29 CFR 1910.119(e)(3)(iv): Process hazard analysis. The process hazard analysis shall address: Consequences of failure of engineering and administrative controls:

The consequences of engineering and administrative control failure were not addressed during process hazard analysis, such as but not limited to:

- a. Phosphites and chlorination PHA revalidation: the PHA team(s) failed to identify consequences of failure of engineering and administrative controls by using the engineering control as the safeguard to remedy the same failed control. When temperature control failure was considered, the safeguard mentioned was the temperature control itself.
- b. Phosphites and chlorination PHA revalidation: the PHA team(s) failed to identify consequences of failure of engineering and administrative controls by stating that pressure events, high temperature events and safety device releases were of operational concern or environmental consequence only.
- c. Phosphites and chlorination PHA revalidation: the PHA team(s) failed to identify consequences of failure of engineering and administrative controls by stating that preventive or predictive maintenance programs for assuring integrity of process equipment and safety systems were production and product quality concerns.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	01/28/2013
Proposed Penalty:	\$7000.00



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 16 Type of Violation: **Serious**

29 CFR 1910.119(e)(3)(v): Process hazard analysis. The process hazard analysis shall address:
Facility siting:

a. The employer did not address the hazards associated with overpressure events and toxic chemical releases from the covered processes and operations related to facility siting. Facility siting hazards include, but are not limited to flammable vapors, hydrochloric acid gas, chlorine gas, bromine gas and phosphorous trichloride releases which could affect employees, such as but not limited to, control room occupants, operation building(s) occupants and those in office buildings.

ABATEMENT NOTE: One way of addressing these hazards is by performing a comprehensive facility siting study and promptly addressing all findings.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
Proposed Penalty:	\$7000.00



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 17 Type of Violation: **Serious**

29 CFR 1910.119(e)(3)(vi): Process hazard analysis. The process hazard analysis shall address: Human factors:

- a. Phosphites and chlorination PHA: the team(s) did not address the human factor of shift changeover. The employer had not addressed this appropriately in the PHA or by implementing a formal shift change procedure for informational exchange.
- b. Phosphites and chlorination PHA: the team(s) did not address off shift supervisory availability and the lack of formal maintenance work order use for repair on off shifts.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	01/28/2013
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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 18 a Type of Violation: **Serious**

29 CFR 1910.119(f)(1)(i)(A): The employer shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements: Initial startup:

Written operating procedures without clear instructions for initial startup included, but were not limited to:

- a. In the chlorination department 1C building #17, the initial startup procedures do not reflect the practices utilized within the 1C chlorination department, 1C-21, *20 Reactor Operating Procedures* (#32 reactor) regarding removed UV lights.
- b. In the phosphites plant building #27, the initial startup procedure PHOS SOPM 150, *General Start Up* fails to address the 32R reactor process, addresses two removed tanks (224T and 261T) and lacks specificity regarding starting pumps as needed.
- c. In the chlorination department 1P building #6, the initial startup procedure 1P-03, *General Plant Start Up and Operating Instructions* lacks specificity.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated: 02/27/2013
Proposed Penalty: \$7000.00



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 18 b Type of Violation: **Serious**

29 CFR 1910.119(f)(1)(i)(B): The employer shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements:
Normal operations:

a. In the chlorination department 1C building #17, 1C-21, *20 Reactor Operating Procedures* (# 32 reactor) did not match the practice utilized by plant operators.

In the phosphites plant building #27, the employer failed to develop and implement specific written procedures for normal operations, for the following processes:

b. For the 34R reactor process, there were no normal operation procedures.

c. For the 35R reactor process, there were no normal operation procedures.

d. For the 72R reactor process, there were no normal operation procedures.

e. For the 36R reactor process, there were no normal operation procedures for the production of the DNPP intermediary.

f. For PHOS SOPM 408, *9228 Production in 36R (PCL3 PROCESS)*, the procedure did not reflect the current practice regarding the removed 224T tank as the PCL3 charging supply. Main Street is used for PCL3 charging of the 36R reactor.

g. PHOS SOPM 303, *44R Doverphos DP10 Production* the procedure did not reflect the current practice regarding the removed from service 238T tank as a phenol source and the removed from service 261T tank as the PCL3 charging supply. Main Street is used for PCL3 charging.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(i)(B) continued:

In the Chlorination department 1P building #6, the employer failed to develop and implement specific written procedures for normal operations, for the following process:

h. For 1P-03E, #40 *Reactor Operating Procedure* lacked specificity for proper temperature to begin chlorine line bleed down and charge completion.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated: 02/27/2013

Citation 1 Item 18 c Type of Violation: **Serious**

29 CFR 1910.119(f)(1)(i)(G): The employer shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements: Startup following a turnaround, or after an emergency shutdown:

a. In the chlorination department 1C building #17, 1C-27, 18 & 19 *Reactors Shut Down Procedure* failed to address restart after emergency shutdown. 1C-26, 20 *Reactor Shut Down Procedure* lacked specificity for restart following emergency shutdown.

b. In the phosphites plant building #27, the startup following a turnaround or emergency shutdown, such as SOPM 152, *Power Failure Emergency Shutdown*, did not address the 32R reactor process.

c. In the chlorination department 1P building #6, the following procedures failed to address restart following emergency shutdown: 1P-03B, #1 and #2 *Reactor Shutdown Procedures*; 1P-03C, #4 *Reactor Operating Procedure* and 1P-03D, #5 *Reactor Operating Procedure*.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated: 02/27/2013

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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 19 a Type of Violation: **Serious**

29 CFR 1910.119(f)(1)(i)(D): The employer shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements: Emergency shutdown including the conditions under which emergency shutdown is required, and the assignment of shutdown responsibility to qualified operators to ensure that emergency shutdown is executed in a safe and timely manner:

- a. In the chlorination department 1C building #17, the employer failed to develop and implement written emergency shutdown procedures that included shutdown conditions and assignments of responsibility.
- b. In the phosphites plant building #27, the employer failed to develop and implement written emergency shutdown procedures for conditions other than power failure and PHOS SOPM 152, *Power Failure Emergency Shutdown*, emergency shutdown procedures failed to include emergency shutdown conditions and assignments of responsibility.
- c. In the chlorination department 1P building #6, the employer failed to develop and implement written emergency shutdown procedures that included shutdown conditions and assignments of responsibility.
- d. In chlorination department 1C, there were two emergency shutdowns for power failure procedures for 20R reactor with conflicting instructions.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 19 b Type of Violation: **Serious**

29 CFR 1910.119(f)(1)(i)(E): The employer shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements:
Emergency Operations:

- a. In the chlorination department 1C building #17, the employer failed to develop and implement written emergency operation procedures.
- b. In the phosphites plant building #27, the employer failed to develop and implement written emergency operation procedures.
- c. In the chlorination department 1P building #6, the employer failed to develop and implement written emergency operation procedures.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

02/27/2013



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 19 c Type of Violation: **Serious**

29 CFR 1910.119(f)(1)(i)(F): The employer shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements:
Normal shutdown:

- a. In the phosphites plant building #27, PHOS SOPM 151, *General Shutdown Procedure* failed to address the 32R reactor. Information in the procedure did not match the practice, as equipment had been removed without updating the procedure (224T and 261T tanks).

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

12/29/2012



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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 20 a Type of Violation: **Serious**

29 CFR 1910.119(f)(1)(iii)(A): The employer shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements: Properties of, and hazards presented by, the chemicals used in the process:

- a. In the chlorination department 1C building #17, the employer failed to develop and implement written procedures that address chemical properties and hazards associated with, but not limited to; liquid chlorine, bromine, hydrochloric acid (HCL), and chlorine gas.
- b. In the phosphites plant building #27, the employer failed to develop and implement written procedures that address chemical properties and hazards associated with, but not limited to; polymerization of alcohols, water reactivity of PCl_3 and water reactivity of phosphites (DP10, DP4, etc.), phenol, phosphorus trichloride (PCl_3), hydrochloric acid, tributylamine (TBA) and xylene.
- c. In the chlorination department 1P building #6, the employer failed to develop and implement written procedures that addressed chemical properties and hazards associated with, but not limited to; liquid chlorine, bromine, hydrochloric acid, and chlorine gas.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated: 02/27/2013
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 20 b Type of Violation: **Serious**

29 CFR 1910.119(f)(1)(iii)(B): The employer shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements: Precautions necessary to prevent exposure, including engineering controls, administrative controls, and personal protective equipment:

For the phosphites plant building #27, the employer did not provide specific written procedures to ensure employees would not be exposed to workplace related hazards, including but not limited to:

- a. PHOS SOPM 100, *Personal Chemical Safety Precautions* was not specific to the type of personal protective equipment (PPE) required and did not accurately reflect information ascertained from the PPE hazard assessment.
- b. PHOS SOPM 152, *Power Failure Emergency Shutdown* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.
- c. PHOS SOPM 201, *Unloading Trucks Raw Materials* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.
- d. PHOS SOPM 205, *Unloading PCL3 From Railcars* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.
- e. PHOS SOPM 206, *Changing Filter for 44Rx and 75Rx* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.
- f. PHOS SOPM 207, *Replacing Dirty TCP in 508T/510T* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.
- g. PHOS SOPM 295, *Charging Used (Distilled) Phenol back to Reactors* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(iii)(B) continued:

- h. PHOS SOPM 297, *Trouble-Shooting in Process Batches* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.
- i. PHOS SOPM 305, *Unloading Phosphorus Trichloride (PCL3) from ISO Containers and Tank Trucks* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.
- j. PHOS SOPM 402, *Plate and Frame Filter Operation* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.
- k. PHOS SOPM 405, *Carbon (Acid) Tower Operation* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.
- l. PHOS SOPM 407, *Carbon Tower Operation* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.
- m. PHOS SOPM 409, *9228 Production in 36R (PCL3 Process)* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.
- n. PHOS SOPM 410, *9228 Production in 32R* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.

For the Chlorination department 1C building #17, the employer did not provide specific written procedures to ensure employees would not be exposed to workplace related hazards, including but not limited to:

- o. 1C-10, *Personal Chemical Safety Precautions* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.
- p. 1C-18, *49 Reactor Shutdown Procedure* did not address PPE required for leaks.

See pages I 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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(iii)(B) continued:

q. 1C-19, *63 Reactor Shutdown Procedure* did not address PPE required for leaks.

r. 1C-26, *20 Reactor Shutdown Procedure* did not address PPE required for leaks.

s. 1C-27, *18 & 19 Reactors Shutdown Procedure* did not address PPE required for leaks.

t. 1C-31, *Unloading Raw Material-Tank Trucks* does not address PPE required for leaks.

For the Chlorination department 1P building #6, the employer did not provide specific written procedures to ensure employees would not be exposed to workplace related hazards, including but not limited to:

u. 1P-01, *Personal Chemical Safety Precautions* was not specific to the type of PPE required and did not accurately reflect information ascertained from the PPE hazard assessment.

v. 1P-03B, *#1 and 2 Reactor Shutdown Procedures* did not address PPE.

w. 1P-03C, *#4 Operating Procedure* did not address PPE.

x. 1P-03D, *#5 Reactor Operating Procedure* did not address PPE.

y. 1P-03F, *#45 Reactor Operating Procedure* did not address PPE.

z. 1P-05, *Emergency Shutdown Procedures* did not address PPE.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(iii)(B) continued:

- aa. 1P-08, *Bromine Unloading* did not address PPE.
- bb. 1P-10, *Unloading Caustic-Tank Trucks* did not address PPE.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

02/27/2013

Citation 1 Item 21 Type of Violation: **Serious**

29 CFR 1910.119(f)(1)(iv): The employer shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements: Safety systems and their functions:

Written operating procedures did not include safety systems and their functions, including but not limited to rupture disks, pressure relief valves, interlocked controls, and DCS controls for the following procedures:

- a. PHOS SOPM 410, *Production of 9228 in 32R*.
- b. PHOS SOPM 303, *44R Doverphos DP10 Production*.
- c. PHOS SOPM 206, *Changing Filter for 44Rx and 75Rx*.
- d. PHOS SOPM 208, *Charging Phenol to 75Rx*.
- e. PHOS SOPM 301, *51R Doverphos DP4 Production*.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(iv) continued:

- f. PHOS SOPM 304, *75R Doverphos DP4 Production*.
- g. PHOS SOPM 310, *Hipure Unit Operation*.
- h. PHOS SOPM 404, *Charging Reactors*.
- i. PHOS SOPM 409, *9228 Production in 36R (PCL3 process)*.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
Proposed Penalty:	\$7000.00

Citation 1 Item 22 Type of Violation: **Serious**

29 CFR 1910.119(f)(3): The operating procedures shall be reviewed as often as necessary to assure that they reflect current operating practice, including changes that result from changes in process chemicals, technology, and equipment, and changes to facilities. The employer shall certify annually that these operating procedures are current and accurate:

The employer did not certify annually that the following standard operating procedures (SOPs) for chlorination 1C were current and accurate, including but not limited to:

- a. 1C-10, *Personal Chemical Safety Precautions*.
- b. 1C-11, *Chlorine Bleed Down Procedure*.
- c. 1C-16, *49 Reactor Operating Procedure*.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(3) continued:

- d. 1C-17, *8 Reactor Operating Procedure.*
- e. 1C-18, *49 Reactor Shutdown Procedure.*
- f. 1C-19, *63 Reactor Shutdown Procedure.*
- g. 1C-24, *18 Reactor Operation.*
- h. 1C-26, *20 Reactor Shut Down.*
- i. 1C-27, *18 & 19 Reactors Shut Down Procedure.*
- j. 1C-29, *Emergency Shutdown: Power Failure.*
- k. 1C-31, *Unloading Raw Material-Tank Trucks.*
- l. 1C-32, *Storage of Raw Material.*
- m. 1C-38, *Operator Training.*
- n. 1C-39A, *Computer Operation.*
- o. 1C-40, *Instrument Lists.*
- p. 1C-42, *Production Formulas.*
- q. 1C-45, *Method for Reclaiming Chloroform/Carbon Tetrachloride Solvent (CHCl₃/CCl₄).*

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(3) continued:

- r. 1C-46, *Chlorinating Fresh Batches in 20R or 49R.*
- s. 1C-47, *Feed Batch Chlorination for C24-28 products.*

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
Proposed Penalty:	\$7000.00

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



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 23 a Type of Violation: **Serious**

29 CFR 1910.119(g)(1)(i): Each employee presently involved in operating a process, and each employee before being involved in operating a newly assigned process, shall be trained in an overview of the process and in the operating procedures as specified in paragraph (f) of this section. The training shall include emphasis on the specific safety and health hazards, emergency operations including shutdown, and safe work practices applicable to the employee's job tasks:

a. Employees in the chlorination and phosphites departments did not receive adequate training in the process, operating procedures, specific safety and health hazards, emergency operations and safe work practices for their individual process areas. The training program consisted of a review of inadequate procedures and an on-the-job training program without any guidance documents for training content in required areas of operator training.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated: 02/27/2013
Proposed Penalty: \$7000.00



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 23 b Type of Violation: **Serious**

29 CFR 1910.119(g)(2): Refresher training. Refresher training shall be provided at least every three years, and more often if necessary, to each employee involved in operating a process to assure that the employee understands and adheres to the current operating procedures of the process. The employer, in consultation with the employees involved in operating the process, shall determine the appropriate frequency of refresher training:

- a. The employer did not provide refresher training for operations employees involved with chlorination and phosphites department processes.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

02/27/2013



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 24 Type of Violation: **Serious**

29 CFR 1910.119(i)(2)(ii): The pre-startup safety review shall confirm that prior to the introduction of highly hazardous chemicals to a process: Safety, operating, maintenance, and emergency procedures are in place and are adequate:

For the installation of the new PCL3 supply piping circuit for building #27 (known as Main Street) and connection to 44R, 51R, and 36R reactors, the following operating procedures and maintenance procedures were not in place and adequate:

- a. PHOS SOPM 409, *9228 Production in 36R (PCL3 Process)* did not address the new piping circuit.
- b. PHOS SOPM 303, *44R Doverphos DP10 Production* did not address the new piping circuit.
- c. PHOS SOPM 150, *General Start Up* did not address the new piping circuit.
- d. PHOS SOPM 152, *Power Failure Emergency Shutdown* did not address the new piping circuit.
- e. PHOS SOPM 151, *General Shutdown* did not address the new piping circuit.
- f. Maintenance procedures for piping circuits/systems, preventive maintenance procedures for pumps, and valve inspection procedures were not in place prior to the installation of Main Street.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
Proposed Penalty:	\$5500.00



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 25 Type of Violation: **Serious**

29 CFR 1910.119(i)(2)(iii): The pre-startup safety review shall confirm that prior to the introduction of highly hazardous chemicals to a process: for new facilities, a process hazard analysis has been performed and recommendations have been resolved or implemented before startup; and modified facilities meet the requirements contained in management of change, paragraph (I):

The employer did not resolve hazard analysis findings and recommendations for the pre-startup safety review (PSSR) associated with installation of the new PCL3 supply piping circuit for building #27 (aka Main Street) and connection to 44R, 51R, and 36R reactors:

- a. Recommendation 8 involved valve inspection to determine valve predictive maintenance replacement for the feed line into Main Street.
- b. Recommendation 10 involved preventive maintenance for feed pumps regarding bearing wear indication and was not resolved.
- c. Recommendation 16 involved preventive maintenance for feed pumps regarding vibrational analysis and was not resolved.
- d. Recommendation 26 involved verifying pump preventive maintenance and was not resolved.
- e. Recommendation 15 involved operating procedures for PCL3 pump operation, operating procedures were not noted in the Dover PSSR checklist, were not noted in the Dover PSSR checklist actions to be completed section and these procedures are not included in the phosphites control room operating procedures binder.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(i)(2)(iii) continued:

f. For the 247T tank/72R reactor conversion project, a process hazard analysis was not performed prior to start-up in 2005. Process safety information was compiled, a management of change was initiated but a hazard analysis was not performed prior to the introduction of PCI3 into this new process.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated: 02/27/2013
Proposed Penalty: \$7000.00

Citation 1 Item 26 Type of Violation: **Serious**

29 CFR 1910.119(j)(2): Written procedures. The employer shall establish and implement written procedures to maintain the on-going integrity of process equipment:

The employer did not establish and implement written procedures for maintaining the mechanical integrity of process equipment, including but not limited to:

- a. The employer did not establish and implement written procedures regarding new equipment (would include used equipment as well) installation for vessels; to include reactors, heat exchangers, condensers and other pressure vessels covered by this part.
- b. The employer failed to implement an inspection plan for pumps, relief systems/devices and vessels. The employer failed to establish and implement a comprehensive schedule, dictate the type of inspections/tests to be performed, document the analysis and evaluation of results, and document inspection findings per company written procedures.
- c. The employer did not establish and implement a piping and valve inspection program.
- d. The employer did not establish and implement a preventive and predictive maintenance program for pumps.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(j)(2) continued:

- e. The employer did not have vessel repair procedures to document glass lining repairs, such as tantalum patch installation and did not provide contractor vessel repair employees with guidelines for performance, documentation and acceptance/turnover criteria.
- f. The employer did not have and had not implemented an insulation repair/installation procedure for piping and vessels.
- g. The employer had not implemented a relief device maintenance and inspection program, including documenting files to uniquely identify each device, compiling a list of equipment protected by the device, documenting inspection and testing for valves/disks, documenting weekly inspections of downstream or upstream valves, maintaining device design and design basis information, cover the evaluation/inspection of actuated devices and perform predictive tests prior to replacement of equipment.
- h. The employer had not established and implemented a flexible hose inspection program for predictive and preventive maintenance on piping circuitry with flexible hose service.
- i. The employer had not established and implemented a written program for design, inspection, maintenance and calibration for controls, instrumentation and safety systems.
- j. The employer had not established and implemented a written procedure for resolving inspection findings, such as but not limited to TMLs under minimal thickness for piping and/or vessels, corrosion repair and welding repair to designate the process for maintaining the vessel status as out of service, unless proper fitness for service is determined, or data has been resolved.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 27 Type of Violation: **Serious**

29 CFR 1910.119(j)(3): Training for process maintenance activities. The employer shall train each employee involved in maintaining the on-going integrity of process equipment in an overview of that process and its hazards and in the procedures applicable to the employee's job tasks to assure that the employee can perform the job tasks in a safe manner:

a. The employer did not have a mechanical integrity training program for employees involved in process maintenance activities, such as maintenance mechanics, electricians, instrument technicians and management responsible for equipment inspection, testing and maintenance. Employees performed multiple process maintenance activities, including maintenance of equipment, installation of new equipment, testing and evaluation of equipment, repair of pumps, identification of replacement parts and equipment inspection/testing information review.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 28 Type of Violation: **Serious**

29 CFR 1910.119(j)(4)(i): Inspections and tests shall be performed on process equipment:

Inspections had not been performed on the following process equipment vessels, including but not limited to:

- a. E-201 (the 34R condenser).
- b. E-384 (the 34R alcohol preheater).
- c. E-375 (the 72R alcohol preheater).
- d. E-373 (the 72R alcohol condenser).
- e. E-105 (the 35R primary condenser).
- f. E-210/new E-099 (review for initial in-service inspection for initial corrosion rates).
- g. E-208/new E-094 (review for initial in-service inspection for initial corrosion rates).
- h. An internal inspection had not been performed for the 72R reactor.
- i. An internal inspection had not been performed for the 75R reactor.
- j. An internal inspection had not been performed for R-032-01, also known as the 20 reactor (chlorination).
- k. An internal inspection had not been performed for the 19R reactor.
- l. An internal inspection had not been performed for the 18R reactor (the 19 reactor scrubber).

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(j)(4)(i) continued:

- m. An internal inspection had not been performed for the 41R reactor.
- n. An internal inspection had not been performed for the 52R reactor.
- o. An internal inspection had not been performed for the 58R reactor.
- p. An internal inspection had not been performed for the 133T PCI3 storage tank.

Inspections had not been performed on the following process piping, including but not limited to:

- q. Process piping in building #27 (phosphites).
- r. Process piping in building #35S (35B).
- s. Process piping in building #35N (35A).
- t. Process piping in buildings #6 and #17 (chlorination 1P and 1C).

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
Proposed Penalty:	\$7000.00



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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 29 a Type of Violation: **Serious**

29 CFR 1910.119(j)(4)(ii): Inspection and testing procedures shall follow recognized and generally accepted good engineering practices:

Inspection and testing did not follow RAGAGEP for the following process equipment that includes but is not limited to:

- a. 72R reactor: A September 2011 inspection did not document the certification of the inspector, data was not documented in a manner that would allow consistent location on the vessel for future thickness measurements, corrosion rates were not calculated from the data, and the data was not compared to required thickness or minimum thickness values for this vessel.
- b. 75R reactor: A September 2011 inspection did not document the certification of the inspector, data was not documented in a manner that would allow consistent location on the vessel for future thickness measurements, corrosion rates were not calculated from the data, thickness measurements were taken for the jacket only (not the vessel shell) and the data was not compared to required thickness or minimum thickness values for this vessel.
- c. 2R reactor: A January 2010 internal inspection did not document the certification of the inspector. A January 2009 inspection did not include thickness measurements for nozzles.
- d. 1R reactor: A December 2009 internal inspection did not include spark (holiday) testing of the glass lining for the inner chamber of this vessel. The December 2009 inspection and the previous May 2008 inspection did not provide for an evaluation or testing of the weld from the jacket to the surface of the reactor chamber.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(j)(4)(ii) continued:

e. 4R reactor: A 2002 internal inspection did not document the certification of the inspector, corrosion rates were not calculated from thickness measurement data and the data was not compared to required thickness or minimum thickness values for this vessel. For a May 2008 external inspection, corrosion rates were not calculated from thickness measurement data and the data was not compared to required thickness or minimum thickness values for this vessel. For an August 2010 internal inspection, calculations for required thickness or minimum thickness were not provided with the calculated values and thickness measurement data was not documented in a manner that would allow consistent location on the vessel for future thickness measurements.

f. 5R reactor: An August 2010 inspection did not include calculations for required or minimum thickness values and thickness measurements were not taken for nozzles.

g. 34R reactor: A January 2011 inspection did not document specific thickness measurements taken for the bottom jacket head on the knuckle radius and on the crown. This data was not documented in a manner that would allow consistent location on the vessel for future thickness measurements and calculations for required thickness or minimum thickness were not provided with the calculated values.

h. R-032-01 (20 reactor -chlorination): A May 2008 inspection did not document the calculations for the calculated required or minimum thickness values for the reactor.

i. 19R reactor thickness measurements taken during a May 2008 inspection did not include nozzle thickness measurements. Additionally, the inspection record did not document calculated required or minimum thickness values for the reactor for which a reactor inner chamber bottom head thickness measurement taken was below the manufacturer's minimum thickness value.

j. 18R reactor for thickness measurements taken during an August 2011 inspection: The data was not documented in a manner that would allow consistent location on the vessel for future thickness measurements, and calculations for the calculated required or minimum thickness values for the reactor were not documented.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(j)(4)(ii) continued:

k. 35R reactor for thickness measurements taken during an October 2010 inspection: The data was not documented in a manner that would allow consistent location on the vessel for future thickness measurements. Additionally for an August 2010 inspection, specific thickness measurements were summarized rather than being comprehensively documented for each thickness measurement location.

l. 38R receiver for thickness measurements taken during an August 2010 inspection: The data was not documented in a manner that would allow consistent location on the vessel for future thickness measurements, corrosion rates were not calculated from thickness measurement data, the data was not compared to required thickness or minimum thickness values for this vessel and thickness measurements were not taken for the vessel inner chamber shell.

m. 39R reactor for thickness measurements taken during an August 2010 inspection: The data was not documented in a manner that would allow consistent location on the vessel for future thickness measurements, calculations for the calculated required or minimum thickness values for the reactor were not documented, corrosion rates were not calculated from thickness measurement data, the data was not compared to required thickness or minimum thickness values for this vessel and specific thickness measurements were summarized rather than being comprehensively documented for each thickness measurement location.

n. 40R reactor for thickness measurements taken during a May 2008 inspection: The data for the inner chamber shell, top and bottom heads was not documented in a manner that would allow consistent locations on the vessel for future thickness measurements and corrosion rates were not calculated with inner chamber thickness measurement data.

o. 41R reactor: An August 2011 inspection did not document the calculations for the recalculated required or minimum thickness values for the reactor.

p. 48R reactor: A January 2011 inspection did not include nozzle thickness measurements.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(j)(4)(ii) continued:

- q. 51R reactor: A May 2008 internal inspection did not include spark (holiday) testing of the glass lining for the inner chamber of this vessel. The May 2008 inspection and an August 2011 inspection did not provide for the evaluation or testing of the weld from the jacket to the surface of the reactor chamber, or thickness measurement testing for nozzles.
- r. 52R reactor: An August 2011 inspection report did not include and document calculations for required or minimum thickness values used to reduce the manufacturer's minimum required thickness. Additionally the results section of the report was inaccurate in that it reported all jacket thickness measurements above the manufacturer's tolerances, when three data points for thickness data were below the manufacturer's stated minimum thickness value.
- s. 58R reactor: An August 2011 inspection did not include thickness measurements for the vessel inner chamber, the nozzles, and the welded connections between the jacket and the exterior reactor surface were not evaluated. Additionally calculations for conservative value minimum thickness were not provided or documented.
- t. 133T storage tank: An August 2010 inspection did not compare each thickness measurement to previous measurements and required thickness values or minimum thickness values, for the determination of corrosion rates and remaining vessel life. Additionally, data was not documented in a manner that would allow consistent location on the vessel for future thickness measurements.
- u. For 29 piping inspections in chlorination and one piping inspection performed on the supply line to the 133T storage tank performed September 2011, inspection and testing did not meet RAGAGEP in that the piping inspector was not API 570 certified or otherwise qualified.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 29 b Type of Violation: **Serious**

29 CFR 1910.119(j)(4)(iii): The frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations and good engineering practices, and more frequently if determined to be necessary by prior operating experience:

- a. 38R receiver: An internal inspection had not been performed on the 38R vessel (the 38 receiver) since September 1994.
- b. 45R reactor inspection and tests (thickness testing) were not performed in a frequency consistent with good engineering practices. Thickness testing had not been performed since testing that resulted in a February 2011 thickness measurement that was 0.001 inches above the manufacturer's minimum thickness. Since the reported corrosion rate was 0.001 inches per year, good engineering practices (API 510) would require the next thickness measurement be taken by February 2012.
- c. 40R reactor: The 2 inch rupture disk (Carbonne Graphilor) vessel relief device was due for replacement in 2010. There was no documentation of replacement. PSI for the 40R reactor process lists a pressure relief valve for the vessel, a pressure relief valve for the jacket and a rupture disk for the jacket. There is no information for these devices having been properly maintained, inspected, recertified or replaced.
- d. R32-01 (20 reactor chlorination): A 3 inch pressure relief valve (Crosby JLT-JOS-15J) was past due for testing/inspection and two 3 inch rupture disks were past due for inspection and replacement.
- e. 18R reactor a 4 inch rupture disk was past due for inspection and replacement.
- f. 19R reactor a 4 inch rupture disk was past due for inspection and replacement.
- g. 49R reactor a 3 inch pressure relief valve (Crosby) is past due for testing/inspection and two 3 inch rupture disks were past due for inspection and replacement.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(j)(4)(iii) continued:

- h. 4R reactor: A 2 inch x 2 inch pressure relief valve (Consolidated) was past due for testing/inspection and a 2 inch rupture disk (Carbone Graphilor) was past due for inspection and replacement.
- i. 5R reactor: A 2 inch rupture disk (Carbone Graphilor) was past due for inspection and replacement.
- j. 58R reactor: A 4 inch rupture disk (Carbone Graphilor) was past due for inspection and replacement.
- k. 41R reactor: A 3 inch rupture disk was past due for inspection and replacement.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated: 02/27/2013

Citation 1 Item 29 c Type of Violation: **Serious**

29 CFR 1910.119(j)(4)(iv): The employer shall document each inspection and test that has been performed on process equipment. The documentation shall identify the date of the inspection or test, the name of the person who performed the inspection or test, the serial number or other identifier of the equipment on which the inspection or test was performed, a description of the inspection or test performed, and the results of the inspection or test:

Inspections and tests were not documented for process equipment, including but not limited to:

- a. 35R reactor: For an August 2010 equipment inspection, the employer did not document the testing equipment or methodology for thickness testing, complete specific testing data was not maintained, the date of testing, and serial number, the U-1 information or other specific identifying information was not documented. The employer did not have the information in a complete inspection report, or in an equipment and/or inspection file.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(j)(4)(iv) continued:

- b. 5R reactor: For a May 2008 inspection, complete specific testing data was not maintained, the equipment serial number, board number, U-1 or data plate information was not documented, the employer did not document the testing equipment or methodology for thickness testing and glass liner testing and/or a description of the inspection or test performed. For an August 10, 2010 inspection, the employer did not document the testing equipment or methodology for thickness testing and glass liner testing. Due to the lack of specific identifier(s) for the May 2008 inspection, thickness data for a new 5R reactor was compared to a reactor that was replaced in 2009.
- c. 1R reactor: For a December 2009 inspection, the employer did not document the testing equipment or methodology for thickness testing and glass liner testing and/or a description of the inspection or test performed.
- d. 72R reactor: A September 2011 inspection did not document the testing equipment or methodology for thickness testing, the equipment serial number, board number, U-1 or data plate information was not documented and/or a description of the inspection or test performed was not documented.
- e. 75R reactor: A September 2011 inspection, the equipment serial number, board number, U-1 or data plate information was not documented, the employer did not document the testing equipment or methodology for thickness testing, and/or a description of the inspection or test performed.
- f. 40R reactor: For a May 2008 inspection, specific thickness measurement testing data for each thickness measurement location was not documented for this vessel. The report summary lists ranges of values and the Corrosion Monitoring Report data table is not populated with the thickness measurement for each thickness monitoring location.
- g. 45R reactor: For a February 2011 inspection, specific thickness measurement testing data for each thickness measurement location was not documented for this vessel. The report summary lists single values and the Corrosion Monitoring Report data table was not populated with the thickness measurement for each thickness monitoring location.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(j)(4)(iv) continued:

h. 133T storage tank: For a 2002 inspection, no documentation exists. This inspection is referenced in an August 2010 inspection and used in remaining life calculations for this vessel.

i. For the following equipment inspections the employer did not document the testing equipment or methodology for thickness testing and/or a description of the inspection or test performed: 4R reactor August 2010 and December 2002, 34R reactor January 2011, 19R May 2008, 2R reactor December 2009, 18R reactor August 2011, 20 reactor (Chlorination R-032-01) May 2008, 38R receiver October 2010, 51R August 2011, 52R January 2011 and 58R August 2011.

j. Relief device testing, inspection, recertification and replacement was not documented for the following phosphites department vessels: 34R reactor - rupture disk, 35R reactor - rupture disk, 48R phenol receiver - rupture disk, 51R reactor- rupture disk and pressure relief valve, 72R reactor - rupture disk, 133T storage tank - rupture disk and pressure relief valve, 308T knockout pot - rupture disk, and 425T receiver - rupture disk.

k. A 2008 piping inspection of the PCI3 loading line was not documented.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

02/27/2013



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 30 Type of Violation: **Serious**

29 CFR 1910.119(j)(5): Equipment deficiencies. 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. 35R for an August 2010 inspection: The glass lining repair was not documented. Additionally, a thickness measurement (TML #N5) that was below retirement thickness taken during an October 2010 inspection was not resolved.
- b. 2R for a December 2009 inspection: Gasket repair, exterior corrosion treatment and vessel recoating were not documented.
- c. 1R for a December 2009 inspection: Required repairs, including the installation of an appropriately marked rupture disk, repair of a leak, installation of an appropriate pressure relief valve for the vessel jacket, exterior corrosion treatment and vessel recoating were not documented.
- d. 4R for a May 2008 inspection: Rupture disk replacement was not documented.
- e. 34R for an October 2010 inspection report associated with an August 2010 inspection: A thickness measurement in the vessel shell top head (TML #D2) that was at retirement thickness was not resolved. Additional inspection reports for January 2011, February 2011 and August 2011 do not resolve this data. Additionally, the center top head flange gasket repair from the August 2011 inspection and the top head 36 inch flange gasket repair from the January 2011 inspection deficiency corrections were not made and/or documented to address leaks.
- f. 20 reactor (chlorination) also known as R-032-01 for a May 2008 inspection: A thickness measurement in the vessel shell bottom head (TML #E3) that was below the manufacturer's minimum thickness from the U-1 data report was not resolved. Appropriate recalculated minimum thickness values were not documented for the associated inspection report.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(j)(5) continued:

- g. 19R for a May 2008 inspection: A thickness measurement in the vessel shell bottom head (TML #E2) that was below the manufacturer's minimum thickness values from the U-1 data report was not resolved.
- h. 18R for an August 2011 inspection: The correction of deficiencies noted related to paint failure and exterior corrosion was not documented.
- i. 40R for a May 2008 inspection: A thickness measurement data point in the vessel shell top head that was below calculated minimum thickness was not resolved.
- j. 41R for an August 2011 inspection: The correction of deficiencies noted related to jacket failure (oil service) were not documented.
- k. 45R for a February 2011 inspection: The correction of deficiencies noted related to corrosion, scale, pitting and metal wastage were not documented.
- l. PCI3 piping loading line for a 2008 inspection referenced in *Phosphites PHA Recommendation 212*: The correction of deficiencies for the replacement and/or repair of PCI3 piping was not documented.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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 31 a Type of Violation: **Serious**

29 CFR 1910.119(j)(6)(i): In the construction of new plants and equipment, the employer shall assure that equipment as it is fabricated is suitable for the process application for which they will be used:

Equipment was not suitable for new process applications, including but not limited to:

- a. A rupture disk was installed for 32R reactor during the 2012 reactor installation project, with an inappropriate pressure set point for relief.
- b. A rupture disk was installed for 36R reactor during the 2012 reactor installation project, with an inappropriate pressure set point for relief.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	12/14/2012
Proposed Penalty:	\$7000.00



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 31 b Type of Violation: **Serious**

29 CFR 1910.119(j)(6)(ii): Appropriate checks and inspections shall be performed to assure that equipment is installed properly and consistent with design specifications and the manufacturer's instructions:

- a. The employer did not have a quality assurance program to assure that repair and replacement of parts, materials and equipment were of suitable construction for the chemical service, design basis and process operating parameters.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated: **02/27/2013**

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 32 a Type of Violation: **Serious**

29 CFR 1910.119(l)(1): The employer shall establish and implement written procedures to manage changes (except for "replacements in kind") to process chemicals, technology, equipment, and procedures; and, changes to facilities that affect a covered process:

The employer did not implement management of change (MOC) process for chemical, technology, equipment, procedural and facility changes that include, but are not limited to:

- a. The MOC process was not implemented and documented for the 20 reactor UV light removal project in the chlorination department.
- b. The MOC process was not implemented and documented for 400T tank when it was returned to service for a different process chemical use.

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

Inspection Number: 451379
Inspection Date(s): 05/29/2012 - 11/19/2012
Issuance Date: 11/26/2012



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(l)(1) continued:

- c. The MOC process was not documented and fully implemented for the Main Street PCI3 piping supply line for phosphites.
- d. The MOC process was not documented for the PCI3 storage tank (T133) relief device tie-in to the phosphites department aqueous scrubber.
- e. The MOC process was not documented for the bromine storage tank (T200) relief device tie-in to the chlorination department caustic scrubber.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	01/28/2013
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 32 b Type of Violation: **Serious**

29 CFR 1910.119(l)(2)(ii): Management of Change. The procedures shall assure that the following considerations are addressed prior to any change: Impact of change on safety and health:

Prior to a change, the impact of change on safety and health was not considered for the following management of change (MOC) processes, including but are not limited to:

- a. MOC-12-049: The MOC for replacing damaged PVC lines did not adequately address the impact on safety and health, in that it did not address the impact of potential runaway reaction temperatures or other scenarios resulting in venting to the scrubber, exceeding the replacement material specifications for the scrubber vent lines that connect the phosphites reactors to the building wet scrubber process equipment.
- b. MOC-12-058: The MOC process for replacing the 34R demister with a spool piece did not address safety and health impact.
- c. The MOC for the 247T conversion to a production reactor did not address the impact of converting the tank to a reactor on employee safety and health.
- d. Phosphites department 44R process: The MOC RFC 11-005 did not address the impact on safety and health for increasing vessel capacity regarding the impact on relief device protection by certifying the design and design basis documentation, evaluating safety systems and pipe pressure testing documentation.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

01/28/2013

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 32 c Type of Violation: **Serious**

29 CFR 1910.119(l)(2)(iii): Management of change. The procedures shall assure that the following considerations are addressed prior to any change: Modifications to operating procedures:

Modifications to operating procedures were not considered for management of change (MOC) processes that include but are not limited to:

- a. RFC-11-044, Charge PCL3 from Main Street into 44R, 51R, and 36R did not consider modifications to the 36R reactor process utilizing PCL3, PHOS SOPM 409, *9228 Production in 36R (PCL3 Process)*.
- b. RFC-11-044, Charge PCL3 from Main Street into 44R, 51R, and 36R did not consider modifications to PHOS SOPM 150, *General Start Up*.
- c. RFC-11-044, Charge PCL3 from Main Street into 44R, 51R, and 36R did not consider modifications to PHOS SOPM 152, *Power Failure Emergency Shutdown*.
- d. RFC-11-044, Charge PCL3 from Main Street into 44R, 51R, and 36R did not consider modifications to PHOS SOPM 151, *General Shutdown*.
- e. MOC-12-058, replace 34R off gas demister to 13 column with a spool piece did not consider operating procedures for the 34R reactor process and associated equipment.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

01/28/2013



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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 33 a Type of Violation: **Serious**

29 CFR 1910.119(l)(4): Management of change. If a change covered by this paragraph results in a change in the process safety information required by paragraph (d) of this section, such information shall be updated accordingly:

Process safety information was not updated for management of change (MOC) processes that include, but are not limited to:

- a. Phosphites department: Alteration of the former 35R/36R system process to a stand-alone 35R reactor process impacted process safety information (PSI), including but not limited to process chemistry, relief system design and design basis, material and energy balance and safety systems. PSI was not updated following this change.
- b. PSI was not updated following 32R and 36R connection to Main Street. P&IDs were not updated to reflect new piping, including connection to xylene for 9228 production.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
Proposed Penalty:	\$7000.00



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 33 b Type of Violation: **Serious**

29 CFR 1910.119(l)(5): If a change covered by this paragraph results in a change in the operating procedures or practices required by paragraph (f) of this section, such procedures or practices shall be updated accordingly:

Operating procedures were not updated as a result of management of change (MOC) processes including but not limited to:

- a. Changes were not made to the phosphites department operating procedures for 36 R reactor, PHOS SOPM 409, *9228 Production in 36R (PCL3 Process)*, following the MOC process, RFC-11-044, charge PCL3 from Main Street into 44R, 51R, and 36R. PHOS SOPM 409 still contains instructions for charging 44R reactor with the day tank and not Main Street (the PCL3 supply piping circuit for building #27 phosphites.)
- b. Changes were not made to the phosphites department operating procedures for 44R reactor, PHOS SOPM 303, *44R Doverphos DP10 Production*, following the management of change process, RFC-11-044, charge PCL3 from Main Street into 44R, 51R, and 36R. PHOS SOPM 303 still contains instructions for charging 44R reactor with the day tank and not Main Street (the PCL3 supply piping circuit for building #27 phosphites.)
- c. Changes were not made to the phosphites department operating procedure, PHOS SOPM 150, *General Start Up* following the management of change process, RFC-11-044, Charge PCL3 from Main Street into 44R, 51R, and 36R. PHOS SOPM 150 still contains instructions for padding 224T and 261T (the former PCI3 day tanks) and no mention of main street (the PCL3 supply piping circuit for building #27 phosphites.)
- d. Changes were not made to the phosphites department operating procedure, PHOS SOPM 152, *Power Failure Emergency Shutdown*, following the management of change process, RFC-11-044, Charge PCL3 from Main Street into 44R, 51R, and 36R. PHOS SOPM 152 still contains instructions for stopping additions to 224T and 261T (the former PCI3 day tanks) and no mention of main street (the PCL3 supply piping circuit for building #27 phosphites.)

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(l)(5) continued:

e. Changes were not made to the phosphites department operating procedure, PHOS SOPM 151, *General Shutdown* following the management of change process, RFC-11-044, Charge PCL3 from Main Street into 44R, 51R, and 36R. PHOS SOPM 151 still addresses tanks 224T and 261T (the former PCI3 day tanks) and no mention of actions related to main street (the PCL3 supply piping circuit for building #27 phosphites.)

f. Changes were not made, or procedures implemented, for transesterification reaction processes associated with 34R reactor following the management of change process, MOC-12-158, replace 34R off gas demister to the 13 column with a spool piece. There were no normal operating procedures in place for this reactor.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated: 02/27/2013

Citation 1 Item 34 Type of Violation: **Serious**

29 CFR 1910.119(m)(5): The employer shall establish a system to promptly address and resolve the incident report findings and recommendations. Resolutions and corrective actions shall be documented:

a. The employer had not established a system to develop recommendations from incident investigations and track the recommendations to completion. The employer did not track incident report findings and recommendations to completion that included but are not limited to 13 recommendations related to a fire event from phosphine gas generation, eight recommendations related to a damaged hose event, eight recommendations related to a pump leak and six recommendations related to the loading of a bleach tote.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated: 02/27/2013
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 35 Type of Violation: **Serious**

29 CFR 1910.147(c)(4)(ii): The energy control procedures did not clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be utilized for the control of hazardous energy, including but not limited to Items A-D of this section:

a. As of and prior to May 29, 2012, the employer had not developed, implemented, utilized and documented specific procedures for maintenance mechanics, maintenance electricians and other employees performing covered duties under this part. Employees performed activities that necessitated control of hazardous energy involved with vessels, exchangers, motors, pumps, conveyors, hammermills, piping, hot oil systems, heaters, dust collectors, filters, scrubbers and drumming operations. Available energy requiring control included mechanical energy, stored gravitational energy, thermal energy, and stored energy associated with materials (including process reactants, intermediaries, final products, catalysts and unwanted byproducts.)

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
Proposed Penalty:	\$7000.00



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 36 Type of Violation: **Serious**

29 CFR 1910.178(c)(2)(iv): Power-operated industrial trucks designated as DY, EE, or EX may be used in locations where volatile flammable liquids or flammable gases are handled, processed or used, but in which the hazardous liquids, vapors or gases will normally be confined within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown of such containers or systems, or in the case of abnormal operation of equipment; also in locations in which hazardous concentrations of gases or vapors are normally prevented by positive mechanical ventilation but which might become hazardous through failure or abnormal operation of the ventilating equipment; or in locations which are adjacent to Class I, Division 1 locations, and to which hazardous concentrations of gases or vapors might occasionally be communicated unless such communication is prevented by adequate positive-pressure ventilation from a source of clear air, and effective safeguards against ventilation failure are provided:

a. As of and prior to July 31, 2012, in building #27 in a designated Class 1, Division 2, Group D classified area, a non-rated fork lift industrial truck type LP was being used for the purpose of moving pallets and other materials.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	12/14/2012
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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 37 Type of Violation: **Serious**

29 CFR 1910.219(c)(2)(i): All exposed parts of horizontal shafting seven (7) feet or less from floor or working platform, excepting runways used exclusively for oiling, or running adjustments, shall be protected by a stationary casing enclosing shafting completely or by a trough enclosing sides and top or sides and bottom of shafting as location requires:

a. On August 23, 2012, in the 1P chlorination building #6, an exposed horizontal shaft was not completely enclosed on the 40R reactor circulation pump motor.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	12/06/2012
Proposed Penalty:	\$5500.00

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 38 a Type of Violation: **Serious**

29 CFR 1910.303(b)(2): Installation and use. Listed or labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling:

a. On May 30, 2012, in the phosphites control room, an extension cord had been cut and hardwired into a wall mounted electrical service box.

Date By Which Violation Must be Abated:	Corrected During Inspection
Proposed Penalty:	\$5500.00

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 38 b Type of Violation: **Serious**

29 CFR 1910.305(g)(1)(iv)(A): Unless specifically permitted otherwise in paragraph (g)(1)(ii) of this section, flexible cords and cables may not be used: As a substitute for the fixed wiring of a structure:

- a. On the May 30, 2012, in the control room of the phosphites plant, there was a junction box with a conductor entering an opening. The conductor was not protected from abrasion, and was not provided strain relief protection.
- b. On May 30, 2012, in the phosphites control room, an extension cord had been cut and hardwired into a wall mounted electrical service box.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated: 12/06/2012

Citation 1 Item 39 Type of Violation: **Serious**

29 CFR 1910.304(g)(5): Grounding path. The path to ground from circuits, equipment, and enclosures shall be permanent, continuous, and effective:

- a. On the August 29, 2012, in building #2 shipping and storage near the S9228 hammer mill there was an energized extension cord powering a portable radio. The ground on the extension cord was not present.
- b. On the August 29, 2012, in building #2 shipping department near the shipping office, there was an energized industrial fan with a missing ground prong, posing an electrocution hazard.

Date By Which Violation Must be Abated: Corrected During Inspection
Proposed Penalty: \$5500.00

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 1 Item 40 Type of Violation: **Serious**

29 CFR 1910.305(b)(1)(i): Conductors entering cutout boxes, cabinets, or fittings shall be protected from abrasion, and openings through which conductors enter shall be effectively closed:

- a. On the May 30, 2012, in the control room of the phosphites plant, there was a junction box with a conductor entering an opening. The conductor was not protected from abrasion, and was not provided strain relief protection.
- b. On August 23, 2012, in the building #6 1P chlorination behind 2 BC vaporizer, the conduit had been damaged resulting in exposed energized conductors under stress and exposed to abrasion. Employees pass this area to check equipment and work on the motor powered by the electrical power supply that was exposed by the damaged conduit.

Date By Which Violation Must be Abated: Corrected During Inspection
Proposed Penalty: \$5500.00

Citation 1 Item 41 Type of Violation: **Serious**

29 CFR 1910.305(b)(1)(ii): Unused openings in cabinets, boxes, and fittings shall be effectively closed:

- a. On the 30th of May 2012, in the control room of the phosphites plant there was a junction box with an unused opening mounted adjacent to the North door.
- b. On July 27, 2012, in the office building walkway outside of the main lobby mens restroom, there was a subpanel box that was not dead front. The main circuit was open without a breaker or other enclosure and live parts were visible. This was labeled main lower lobby in pen above the cabinet. The main switch or circuit was empty exposing a high voltage conductor.

Date By Which Violation Must be Abated: Corrected During Inspection
Proposed Penalty: \$5500.00

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 2 Item 1 Type of Violation: **Willful**

29 CFR 1910.119(d)(3)(i)(A): Information pertaining to the equipment in the process shall include:
Materials of construction:

Pipe specifications as part of process safety information are not addressed in the facility. Piping and piping components material documentation, as part of an evaluation or design basis are not maintained. A systematic approach defining circuitry and identifying the material of construction relating to each defined piping circuit does not exist. The documentation for materials of construction for piping and piping component replacement does not exist for the following equipment, including but not limited to:

- a. Chlorination 40R reactor process: materials of construction were not addressed for piping and piping components.
- b. Chlorination 20 reactor process: materials of construction were not addressed for piping and piping components.
- c. Chlorination chlorine unloading and vaporizers process: materials of construction were not addressed for piping and piping components.
- d. Chlorination 18R/19R process: materials of construction were not addressed for piping and piping components.
- e. Chlorination 49R reactor process: materials of construction were not addressed for piping and piping components.
- f. Chlorination 4R/5R process: materials of construction were not addressed for piping and piping components.
- g. Chlorination 4R/5R process: materials of construction were not addressed for piping and piping components.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(d)(3)(i)(A) continued:

- h. Chlorination 45R reactor and Acid Absorber system process: materials of construction were not addressed for piping and piping components.
- i. Phosphites 51R reactor process: materials of construction were not addressed for piping and piping components.
- j. Phosphites 34R reactor process: materials of construction were not addressed for piping and piping components.
- k. Phosphites 72R reactor process: materials of construction were not addressed for piping and piping components.
- l. Phosphites 44R reactor process: materials of construction were not addressed for piping and piping components.
- m. Phosphites Main Street PCI3 piping feed into phosphites department connecting PCI3 storage to reactors: materials of construction were not documented for piping and piping components.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
Proposed Penalty:	\$70000.00

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 2 Item 2 Type of Violation: **Willful**

29 CFR 1910.119(e)(5): The employer shall establish a system to promptly address the team's findings and recommendations; assure that the recommendations are resolved in a timely manner and that the resolution is documented; document what actions are to be taken; complete actions as soon as possible; develop a written schedule of when these actions are to be completed; communicate the actions to operating, maintenance and other employees whose work assignments are in the process and who may be affected by the recommendations or actions:

The employer did not resolve, and/or act on, PHA findings and recommendations, did not resolve them in a timely manner or did not document the resolution for the following PHA recommendations that include, but were not limited to:

- a. For the 2008 Phosphites PHA, Recommendation 1, "Consider PM on automated N2 valve," had not been appropriately resolved. Preventive and predictive maintenance mechanical integrity programs for valves, including the automated N2 valve, had not been implemented.
- b. For the 2008 Phosphites PHA, Recommendation 2, "Consider improving human factors (such as labeling) if labeling present – verify its accuracy and legibility" had not been appropriately resolved. "Labeling" or marking equipment, such as valves and pumps, with equipment identification numbers was not complete for Phosphites.
- c. For the 2008 Phosphites PHA, Recommendation 5, "Verify rupture disc design basis considers runaway reaction," was not resolved. The employer could not produce documentation for the credited action used to resolve this finding.
- d. For the 2008 Phosphites PHA, Recommendation 7, "Consider PM on reactor agitators" was not appropriately resolved. The employer did not have effective preventive and predictive maintenance mechanical integrity programs for reactor agitators, such as gasket replacement, flange tightening procedures and replacement part quality assurance.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(e)(5) continued:

- e. For the 2008 Phosphites PHA, Recommendation 11, "Consider including phenol condensing and vacuum systems in operator training" was not appropriately resolved. The employer did not have adequate operator training programs and there is no documented training curriculum, or program regarding phenol condensing and vacuum systems.
- f. For the 2008 Phosphites PHA, Recommendation 13, "Consider including in the procedure to cool batch upon loss of vacuum. Include a time frame for how long vacuum had to be down, and what temperature to cool to" was not resolved. Operating procedures in Phosphites department do not include consequences of deviation, such as vacuum loss, and they did not include corrective actions to take, such as cooling the reactor.
- g. For the 2008 Phosphites PHA, Recommendation 14, "Verify if PCV has an established PM frequency. Consider establishing a PM if it did not exist" was not appropriately resolved. The employer did not have documented comprehensive preventive and predictive maintenance (mechanical integrity) programs for valves.
- h. For the 2008 Phosphites PHA, Recommendation 15, "Consider establishing piping specifications (include valves, flanges and gaskets)" was not resolved. The company did not have piping specifications for covered processes in phosphites (except for connecting piping circuits for newly installed 32R and 36R reactor projects from 2012.)
- i. For the 2008 Phosphites PHA, Recommendation 16, "Verify vessels are on an inspection frequency (include internal heaters as part of the inspection) Vessels should include tanks, reactors, scrubbers, absorbers, and heat exchangers" was not resolved. There had been no scrubber, absorber or heat exchanger inspection and tests. There has been on tank inspection that was not compliant and many of the reactor inspections performed are also not compliant.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(e)(5) continued:

- j. For the 2008 Phosphites PHA, Recommendation 20, “Consider including in operating procedures what tasks to perform during an upset of the absorber. Include stopping PCI3 charge when switching from absorber to scrubber” was not appropriately resolved. Phosphites operating procedures do not address this deviation and corrective actions are not addressed as well. Additionally, the employer took credit for closing this PHA item in June 2012 which was not in a timely manner – were the corrective action adequate.
- k. For the 2008 Phosphites PHA, Recommendation 22, “Verify PPE requirements exist in the sampling procedure of DP10/DP4” was not appropriately resolved. The resolution suggests SOPM 301 and 303 had the content added properly. For SOPM 301, the content was added but was not specific for gloves. For SOPM 303, the content was not added. Additionally in SOPM 301 and 303, there were no sampling procedures contained.
- l. For the 2008 Phosphites PHA, Recommendation 25, “Verify high level switch is functional in 238 Tank” was not resolved.
- m. For the 2008 Phosphites PHA, Recommendation 42, “Verify PM frequency on vacuum pump” was not appropriately resolved. The resolution takes credit for “experiential data” (predictive maintenance) where the company does not have an “experiential data” record, program or database for pumps. The documented work order system used for pump PMs is not adequate as a pump mechanical integrity program regarding oil/lubrication analysis, i.e. “experiential data.”
- n. For the 2008 Phosphites PHA, Recommendation 43, “Verify procedure requires checking the oil periodically on the vacuum pump” was not resolved but was closed with “no hazardous consequence identified.” The same PHA cause 5.12.1, “vacuum pump failure” results in Recommendations 13 and 43 for which recommends PMs as recommendation resolution. Pump failure can result in elevated temperatures in pump components that can be ignition sources.



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(e)(5) continued:

- o. For the 2008 Phosphites PHA, Recommendation 45, "Consider installing high temperature alarms on the primary and secondary absorbers" and Recommendation 46, "Consider pump run indication on all absorber pumps" were not appropriately resolved. The same PHA causes 8.2.1 and 8.5.1, "pump failure" result in Recommendation 47 which discusses rotating equipment (pumps) PM for resolution. Pump failure can result in elevated temperatures in pump components that can be ignition sources.
- p. For the 2008 Phosphites PHA, Recommendation 47, "Verify acid absorbers are on a PM frequency" was not appropriately resolved. Preventive and predictive maintenance programs for mechanical integrity were not compliant.
- q. For the 2008 Phosphites PHA, Recommendation 48, "verify operating procedures include actions to be taken to avoid or correct process deviations, high temp, etc. (for example the absorption system, meter failures, and conditions in the tails tower)" was not resolved. Operating procedures for Phosphites processes did not include consequences of deviation and corrective actions.
- r. For the 2008 Phosphites PHA, Recommendation 49, "verify procedure includes turning off water supply when not sending acid to the absorber" was not resolved. Operating procedures PHOS SOPM 303 and PHOS SOPM 301 did not address this instruction.
- s. For the 2008 Phosphites PHA, Recommendation 53, "Consider installing pH indication with alarm on the absorbers in the old scrubber system" was not resolved.
- t. For the 2008 Phosphites PHA, Recommendation 54, "Consider including in the operating procedure operating limits of the system (such as addition rates of PCl_3 and N_2 sparging set points)" was not appropriately resolved. Nitrogen set points are not included in Phosphites operating procedures. Phosphorous trichloride (PCl_3) flow rates were included but they were not stated as operating limits with consequences noted, corrective actions dictated for returning to normal flow rate conditions, or as a set point for initiating emergency operations associated with the flow rate.

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



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29 CFR 1910.119(e)(5) continued:

- u. For the 2008 Phosphites PHA, Recommendation 63, “consider low and high pressure alarm on T133” was not resolved for the main PCl_3 storage tank.
- v. For the 2008 Phosphites PHA, Recommendation 65, “Consider including Nitrogen pressure regulator on a PM frequency” was not resolved for the main PCl_3 storage tank.
- w. For the 2008 Phosphites PHA, Recommendation 66, “Consider having conservation vents on a PM frequency (including T133, T-290, and all storage tanks (raw & finished product))” was not resolved for the main PCl_3 storage tank.
- x. For the 2008 Phosphites PHA, Recommendation 67, “Consider having conservation vents on a PM frequency (including T133, T-290, and all storage tanks (raw & finished product))” was not appropriately resolved as pressure indication is “local” and not available in the control room.
- y. For the 2008 Phosphites PHA, Recommendation 68, “Consider including hoses on an annual hose inspection program” was not resolved. Piping circuit inspection and testing, including flexible hoses, for phosphites department equipment has not occurred.
- z. For the 2008 Phosphites PHA, Recommendation 71, “Consider including in the procedure to cool batch upon loss of vacuum. Include a time frame for how long vacuum has to be down, and what temperature to cool to or require switching to N_2 sparge” was not resolved. Cause, 4.13.1, “Vacuum pump failure” is the source for the recommendation finding of the PHA team. Pump failure could result in elevated temperatures in pump components that could be ignition sources.
- aa. For the 2008 Phosphites PHA, Recommendation 81, “Consider including in procedures actions to be taken on loss of agitation to break vacuum before restarting the agitator” was not appropriately resolved. Consequences for agitator stoppage were not developed in operating procedures.
- bb. For the 2008 Phosphites PHA, Recommendation 98, “Consider improving level indication in the product tanks and alarm” was not appropriately resolved. The resolution did not address instrumentation/alarms but an incomplete labeling project.

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29 CFR 1910.119(e)(5) continued:

cc. For the 2008 Phosphites PHA, Recommendation 116, “Consider including the 13 column on an inspection frequency – include the packing and rupture disc” was not appropriately resolved. The employer did not have effective preventive and predictive maintenance mechanical integrity programs for relief devices.

dd. For the 2008 Phosphites PHA, Recommendation 129, “Consider ensuring employees are retrained on hazards of the process at least every 3 years (more often if desired by the employee)” was not appropriately resolved. The employer did not have an operator refresher training program.

ee. For the 2008 Phosphites PHA, Recommendation 143, “Consider developing spare parts list for critical equipment” was not resolved. The employer did not have a comprehensive critical equipment list, a spare parts list or any type of quality assurance program for spare parts, materials and equipment.

ff. For the 2008 Phosphites PHA, Recommendation 149, “Consider PM on Pinch heat exchanger and include frequency” was not resolved. Exchanger leaks pose a reactivity hazard for phosphite department process chemistries.

gg. For the 2008 Phosphites PHA, Recommendation 153, “Consider checking the system for leaks on a routine frequency (i.e. annual)” was not resolved appropriately. Mechanical integrity testing recommended here was ignored and described as a production issue.

hh. For the 2008 Phosphites PHA, Recommendation 154, “Verify PM and change out frequency for the rupture discs” was not resolved. Resolution takes credit for rupture disc design and burst indicator. Rupture discs were not covered by an effective preventive and predictive maintenance mechanical integrity program.

ii. For the 2008 Phosphites PHA, Recommendation 155, “Verify location of rupture disc on the bottom of the first stage evaporator” was not appropriately resolved. The resolution takes credit for a safety interlock that does not meet RAGAGEP. Dover did not have documented design basis information and mechanical integrity programs for safety interlocks.

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29 CFR 1910.119(e)(5) continued:

- jj. For the 2008 Phosphites PHA, Recommendation 157, "Consider PM on Rototherm" was not resolved. Pressure vessels within the boundaries of the covered process require preventive maintenance mechanical integrity testing and inspection.
- kk. For the 2008 Phosphites PHA, Recommendation 159, "Consider ensuring operators are trained on all shutdown modes, how and when to activate, results of activating various shutdown modes" was not resolved appropriately and in a timely manner. An adequate training program was not in place for Phosphites operators.
- ll. For the 2008 Phosphites PHA, Recommendation 160, "Consider reviewing steps needed to activate emergency shutdown. Does the computer ask 'Are you sure?'" was not resolved.
- mm. For the 2008 Phosphites PHA, Recommendation 59, "Verify a PM on the scrubber which includes the scrubber pump and blowers" was not appropriately resolved. Preventive and predictive maintenance mechanical integrity programs for pumps were not in place.
- nn. For the 2008 Phosphites PHA, Recommendation 163, "Verify oil seal pumps are on a scheduled PM" was not resolved. Preventive and predictive maintenance mechanical integrity programs for pumps were not in place.
- oo. For the 2008 Phosphites PHA, Recommendation 173, "Consider PM / tube inspection on the condenser in order to prevent water in the Rototherm" was not resolved. Inspections for condensers in Phosphites department had not been performed.
- pp. For the 2008 Phosphites PHA, Recommendation 182, "Consider PM on DP4 product tank heater" was not appropriately resolved. Preventive maintenance and internal inspection address water introduction and DP4 hydrolytic phosphine gas generation.
- qq. For the 2008 Phosphites PHA, Recommendation 183, "Verify PM on storage tanks pumps (for example, DP4, DP10, etc.)" was not resolved. The company credited that consequences were "employee safety issues" for resolution and chose not to address process equipment mechanical integrity maintenance for pumps.

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Company Name: Dover Chemical Corporation
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29 CFR 1910.119(e)(5) continued:

- rr. For the 2008 Phosphites PHA, Recommendation 208, "Consider developing an inadvertent mixing matrix for all products and raw materials" was not appropriately resolved. Considered closed in September 2011 without development, the resolution stated that this recommendation "should be done" but was "not a PSM/PHA consequence of interest."
- ss. For the 2008 Phosphites PHA, Recommendation 210, "Verify PM on loading and unloading transfer pumps" was not resolved. The employer did not implement this recommendation and the resolution states that employee exposure to leaks "is a day-to-day plant safety concern."
- tt. For the 2008 Phosphites PHA, Recommendation 211, "Verify reviewing PCl₃ Off Loading procedures with operators (utility) for accuracy" was not resolved. Operator refresher training was not compliant.
- uu. For the 2008 Phosphites PHA, Recommendation 212, "Verify mechanical integrity of the PCl₃ loading line" was not appropriately documented. The resolution was marked closed with an October 2008 action end date and the following statement in the "Resolution" field of the PHA Recommendation tracking document: "One section was found with thinned walls and recommended for replacement. This work is scheduled."
- vv. For the 2008 Phosphites PHA, Recommendation 213, "Consider inspection of outlet valve on T-133 on an annual basis and determine appropriate change out frequency for the valve" was not appropriately resolved. The company closed this recommendation with the resolution regarding "employee exposure to PCl₃ as a result of leaks" being a plant safety concern and maintenance procedures. Predictive maintenance procedures, as recommended here, were intended to prevent employee exposure to PCl₃.
- ww. For the 2008 Phosphites PHA, Recommendation 215, "Consider changing material of construction for acid carbon bed PVC lines and valves" was not appropriately resolved. Employee safety and the Responsible Care program were stated to resolve the recommendation without evaluating the appropriateness of PVC for the chemical service and any potential upset condition(s).

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29 CFR 1910.119(e)(5) continued:

xx. For the 2008 Phosphites PHA, Recommendation 217, "Consider PM on pump to acid column" and Recommendation 218, "Consider implementing a formal vibrational analysis of pumps" was not resolved. The company took credit for resolving these preventive and predictive maintenance mechanical integrity program related recommendations as only being of consequence for "production delay."

yy. For the 2008 Phosphites PHA, Recommendation 232, "Consider redesigning the vent system for T-161, T-162, and T-173 to eliminate release of material to the atmosphere" was not resolved and completely unaddressed.

zz. For the 2008 Phosphites PHA, Recommendation 236, "Consider PM on PCl₃ lines and establish frequency" was not resolved. The company credited exposure to a PCl₃ leak as normal plant safety concern being the resolution to this recommendation.

aaa. For the 2008 Phosphites PHA, Recommendation 245, "Verify operator training on increased absorber capacity" was not resolved. The employer credited resolution for this recommendation, required of the MOC/PSSR process, as an operational concern.

bbb. For the 2008 Phosphites PHA, Recommendation 250, "Consider PCL₃ shutdown on high acid temperature in absorber" was not appropriately resolved. Cited as an operational problem/issue, high acid temperature in the absorber is a potential indication of process deviation.

ccc. For the 2008 Phosphites PHA, Recommendation 253, "Verify proper ventilation in the acid building when working on the system equipment" was not appropriately resolved. There were no maintenance procedures for ventilation systems.

ddd. For the 2008 Phosphites PHA, Recommendation 254, "Consider training operators on hazards associated with too much nitrogen or xylene and insure that the steps to take if this happens is covered in the procedure" was not resolved. The company resolved this operator training and procedures that include consequences of deviation with steps for deviation correction recommendation by crediting this as an operational issue.

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Company Name: Dover Chemical Corporation
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29 CFR 1910.119(e)(5) continued:

eee. For the 2008 Phosphites PHA, Recommendation 255, "Verify PM on pumps (510 & 508 tank)" was not appropriately resolved. The company resolved this by crediting "maintenance item" when an effective preventive and predictive maintenance mechanical integrity program for pumps does not exist.

fff. For the 2008 Phosphites PHA, Recommendation 258, "Verify the procedure has consequences of deviation for running and not running stripper/scrubber. Train operators on all aspects" was not resolved. There are no operating procedures in Phosphites that include consequences of deviation and the employer resolved this recommendation citing that this is an operational problem/issue only.

ggg. For the 2008 Phosphites PHA, Recommendation 259, "Consider installation of hastelloy control valve on TCP stripper" was not resolved. Without considering the benefits of this material or adequacy of current material of construction for this valve, the company resolved the finding by citing this is an operational problem/issue only.

hhh. For the 2008 Phosphites PHA, Recommendation 276, "Consider displaying alarms by priority, and identify critical safety alarms. Review alarms to reduce nuisance or redundant alarms" was not resolved.

iii. For the 2008 Phosphites PHA, Recommendation 277, "Consider reviewing calculations that operators are required to perform and identify methods to reduce errors, Identify any that are critical and require an independent check" was not appropriately resolved. The resolution credits product quality and economic loss for resolution when incorrect batch charging can result from errors in calculation. Incorrect batch charging can result in upset or process release.

jjj. For the 2008 Phosphites PHA, Recommendation 280, "Consider including safe operating limits and consequences of deviation in the SOPs" was not appropriately resolved. The company credits resolution to 'max rate of addition' to SOPs which are not indicated as safe operating limits but simple metering flow rates and no consequences of deviation exist in these procedures.

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Company Name: Dover Chemical Corporation
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29 CFR 1910.119(e)(5) continued:

kkk. For the 2008 Phosphites PHA, Recommendation 282, "Verify if a building blast integrity study has been completed for bldg.27 & control room – especially control room window" was not resolved. This type of facility siting study has not occurred.

lll. For the 2008 Phosphites PHA, Recommendation 284, "Consider installing barriers for PCl_3 railcar to protect it from vehicular traffic" was not resolved.

mmm. For the 2008 Phosphites PHA, Recommendation 291, "Verify that bottom valve on PCl_3 tanks is set up on a PM" was not appropriately resolved. The company credited putting the tank on a work order PM within the defective FDMS maintenance tracking and planning program. The company does not have an effective preventive and predictive maintenance mechanical integrity program for valves and piping circuitry.

nnn. For the 2007 Chlorination PHA, Recommendation 3, "Consider PM or replacement schedule on check valves from air compressor to chlorine railcars" was not resolved. The company claimed credit for resolution adding backup air supply equipment and stating that the outcome would be "only a small fire."

ooo. For the 2007 Chlorination PHA, Recommendation 6, "Consider thickness measurement testing on lines. Consider the following systems; chlorine feed lines, bromine lines, acid lines, caustic lines, chloroform/ CCL_4 lines, reactor feed and discharge" was not resolved. The company credited quotes "being received" from a testing company and having performed the "first phase" of testing. Piping circuit inspection and testing is incomplete, inspections and tests performed were not RAGAGEP compliant and there were no documented repairs associated with resolving inspection findings.

ppp. For the 2007 Chlorination PHA, Recommendation 7, "Consider PM (functional check) on low pressure shutoff valves on chlorine lines at the reactor" was not resolved. The employer claimed credit stating "May do in shutdown" and a quarterly preventive maintenance program for this item. A specific procedure was not in place regarding chlorination for this task, and on a facility wide basis, there was no valve predictive/preventive maintenance inspection and testing (MI) program.

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29 CFR 1910.119(e)(5) continued:

qqq. For the 2007 Chlorination PHA, Recommendation 9, "Consider including in the procedure an item to cap chlorine hoses when system is disconnected (to avoid moisture/rain contact)" was not resolved. The company claimed credit for a task, pipe inspection performance that was not related to closing an open hose.

rrr. For the 2007 Chlorination PHA, Recommendation 12, "Consider including a check list in the procedure for connection of chlorine railcar (this should include verifying # of pipe threads connected to the angle valves, valve is closed prior to unplugging line, correct gasket is selected from warehouse, etc)" was not resolved.

sss. For the 2007 Chlorination PHA, Recommendation 14, "Consider installing a two bolt flange for hose connections on chlorine railcars as recommended by the chlorine institute" was not resolved.

ttt. For the 2007 Chlorination PHA, Recommendation 15, "Consider a local audible alarm for high chlorine near the chlorine railcar unloading areas" was not resolved.

uuu. For the 2007 Chlorination PHA, Recommendation 21 "Consider installing a pressure gauge downstream of the valve that is down stream of the after filter to allow pressure check the chlorine railcar and vent to process" was not resolved. Per the "Comment" field in the PHA Recommendations tracking spreadsheet, the employer intends to resolve this recommendation with a "procedure for PM/replacement" of check valves. This procedure had not been developed.

vvv. For the 2007 Chlorination PHA, Recommendation 23, "Consider a high level probe on T-200 Bromine tank" and Recommendation 24, "Consider automated shut-off valve to close on high level of T-200" were not appropriately resolved. The resolution did not address reducing over-pressurization risk but relied on remedy that allows for a release to a caustic scrubber.

www. For the 2007 Chlorination PHA, Recommendation 26, "Consider high pressure alarm on Bromine Tank" and Recommendation 27, "Consider automated shut-off valve on Bromine tank to close on high pressure" were not appropriately resolved. The resolution did not address reducing over-pressurization risk but relied on remedy that allows for a release to a caustic scrubber.

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xxx. For the 2007 Chlorination PHA, Recommendation 28, "Verify pressure relief on T-200 Bromine tank and include PSV on PM schedule" actions to close were not completely documented.

yyy. For the 2007 Chlorination PHA, Recommendation 32, "Insure vessel is on the plant tank inspection/replacement schedule. Consider the following vessels; T-200 Bromine tank, HCL storage tanks, Caustic storage tanks, T302, T303, T304, Reactors, Reactor coolers/exchangers (e.g., E-296) and condensers, weak acid system tanks" was not appropriately resolved. The actions to close were not completely performed and documented.

zzz. For the 2007 Chlorination PHA, Recommendation 34, "Consider developing a T-200 Bromine Tank clean-out procedure" was not appropriately resolved. The procedure was not developed, a lockout/tagout procedure specific for this tank does not exist and the employer credited "a standard procedure" being "considered under ISO for additional guidance in the future" as resolving this recommendation.

aaaa. For the 2007 Chlorination PHA, Recommendation 39, "Consider alternate level indication other than manometers and sight glass include high level alarms on storage tanks in chlorination" was not resolved.

bbbb. For the 2007 Chlorination PHA, Recommendation 43, "Consider containment sump pump external to acid storage tank dike to tie into non-failed tanks" was not resolved.

cccc. For the 2007 Chlorination PHA, Recommendation 49 "Consider installing a BDI (burst disc indicator) on all rupture discs, especially the aeration tower" was not resolved.

dddd. For the 2007 Chlorination PHA, Recommendation 50, "Consider developing PM for conservation vents on tanks (e.g. T-330, T-114, etc.)" was not appropriately resolved. Preventive and predictive valve maintenance programs do not exist and tank safeguards credited with resolution do not address conservation vent failure.

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29 CFR 1910.119(e)(5) continued:

eee. For the 2007 Chlorination PHA, Recommendation 51, "Consider including valves/bolts in mechanical integrity program (QA)" was not appropriately resolved. The employer credits the line breaking procedure with resolution of assuring appropriate valves and bolts for replacement parts. The employer does not have a quality assurance program to assure appropriate replacement parts for equipment, such as valves and fasteners (i.e. bolts.)

fff. For the 2007 Chlorination PHA, Recommendation 53, "Consider automating valves for HCL loading. (i.e., 1 switch to position valves – with visual check of position)" was not resolved. The employer credits pH meter placement with resolving this item.

gggg. For the 2007 Chlorination PHA, Recommendation 56, "Consider PM (to include calibration) for flow meters" was not resolved.

hhhh. For the 2007 Chlorination PHA, Recommendation 58, "Consider improving human factors such as labeling of valves and painting of lines" was not resolved. The employer credits an incomplete activity with resolving this item.

iiii. For the 2007 Chlorination PHA, Recommendation 65, "Consider developing a job specific procedure for changing HCL carbon beds (reference unofficial operator procedures)" was not resolved in an adequate and timely manner. The employer credits an operating procedure that does not exist for resolution in July 2012.

jjjj. For the 2007 Chlorination PHA, Recommendations 73, "Consider alarming the chlorine monitor (audible – local) near the bleach tanks and perimeter of facility" and 74, "Consider relocating the chlorine monitors to provide a more accurate reading of chlorine levels when emitted from any source, like a stack or railcar (or add more)" were not resolved appropriately, or in a timely manner.

kkkk. For the 2007 Chlorination PHA, Recommendation 76, "Verify PM on chlorine monitors" was not appropriately resolved. Preventive and predictive maintenance programs do not exist for instrumentation.

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29 CFR 1910.119(e)(5) continued:

llll. For the 2007 Chlorination PHA, Recommendation 84, "Consider PM on heat exchanger (plate and frame) used for heating chloroform" was not resolved. The employer credited the mechanical integrity program which does not include performance of inspections and tests on heat exchangers.

mmmm. For the 2007 Chlorination PHA, Recommendation 85, "Consider installing check valve on chloroform unloading line to prevent leaks is valve left open" was not appropriately resolved. The employer credits a spill containment dike with a leak prevention recommendation resolution.

nnnn. For the 2007 Chlorination PHA, Recommendation 86, "Consider pressure indication on the chloroform unloading line" was not appropriately resolved. The employer credits normal operating pressures with a recommendation regarding instrumentation installation to indicate pressures outside designated operational limits.

oooo. For the 2007 Chlorination PHA, Recommendation 90, "Consider installing a maximum temperature set point on the hot oil heater feeding chlorez finishing" was not appropriately resolved. The employer credited written operating procedures when Chlorination operating procedures do not designate set points for dictating procedural movement into emergency operations, or emergency shutdown.

pppp. For the 2007 Chlorination PHA, Recommendation 91, "Verify safety systems exist on heater controls to prevent inadvertent high heat" resolution was not documented.

qqqq. For the 2007 Chlorination PHA, Recommendation 85, "Consider proper frequency of PM on evaporators in chlorez finishing" was not appropriately resolved. The employer credits adding the recommendation item to the plant's mechanical integrity program which does not appropriately address this process equipment.

rrrr. For the 2007 Chlorination PHA, Recommendation 97, "Consider PM on glycol cooling system in chlorez finishing (feeding condensers)" was not appropriately resolved. Condensers are not appropriately addressed with mechanical integrity inspection and testing in Chlorination department areas.

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29 CFR 1910.119(e)(5) continued:

ssss. For the 2007 Chlorination PHA, Recommendation 102, "Consider tube inspections of condensers in chlorez finishing" was not appropriately resolved. Condensers are not appropriately addressed with mechanical integrity inspection and testing in Chlorination department areas.

tttt. For the 2007 Chlorination PHA, Recommendation 103, "Consider inspections of evaporators in chlorez finishing" was not appropriately resolved. Evaporators are not appropriately addressed with mechanical integrity inspection and testing in Chlorination department areas.

uuuu. For the 2007 Chlorination PHA, Recommendation 112, "Consider including agitator inspection during reactor inspection" and Recommendation 133, "Consider PM on the reactor agitators" were not appropriately resolved. Procedures for testing and inspection of reactors do not specifically address agitator inspection and documentation.

vvvv. For the 2007 Chlorination PHA, Recommendation 115, "Consider PM for temperature indication, control on reactors" was not appropriately resolved. The employer credits "temperature indication and operator training" with resolving this item. Preventive and predictive maintenance mechanical integrity programs do not exist for instrumentation.

wwww. For the 2007 Chlorination PHA, Recommendation 116, "Consider alarming temperature indicator on high temperature for chlorination reactors in the control room" was not appropriately resolved. The employer credits operator training for resolving this item.

xxxx. For the 2007 Chlorination PHA, Recommendation 117, "Consider interlocking high temperature to chlorine feed" was not appropriately resolved. The employer discusses "high feed rate" in the resolution of this recommendation regarding high temperature.

yyyy. For the 2007 Chlorination PHA, Recommendation 123, "Consider PM (functional test) on the emergency shutdown valve" was not resolved in a timely manner (not resolved until December 2011.)

zzzz. For the 2007 Chlorination PHA, Recommendation 128, "Consider inspection of the chlorine vaporizers" was not appropriately resolved. Vaporizers are not appropriately addressed with mechanical integrity inspection and testing in Chlorination department areas.

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29 CFR 1910.119(e)(5) continued:

aaaaa. For the 2007 Chlorination PHA, Recommendation 132, "Consider creating standard pipe specifications. Consider the following services; reactor lines (feed & discharge), chlorine, bromine, HCL, caustic, chlorez, utilities (water, air, etc.), and chloroform/CCL4" was not resolved. The employer credited resolution by stating "Create pipe specs by end of year" without taking the credited action.

bbbbb. For the 2007 Chlorination PHA, Recommendation 152, "Verify PM on PSV and rupture disc for all reactors" was not appropriately resolved. The employer credits scheduling rather than actual performance of necessary task for resolving this item.

ccccc. For the 2007 Chlorination PHA, Recommendation 161, "Consider PM on pressure gauge on the chlorine addition lines for the chlorination reactors. (Change gauge frequency)" was not appropriately resolved. The employer credited allowing the gauge to fail as adequate resolution. Predictive maintenance for instrumentation does not exist in the Chlorination department.

ddddd. For the 2007 Chlorination PHA, Recommendation 163, "Consider developing a start-up/shut-down checklist procedure for each reactor in the chlorination unit" was not resolved.

eeeee. For the 2007 Chlorination PHA, Recommendation 165, "Consider PMs on the reactor recirculation pumps. Consider 1, 2, 4, 5, 8, 18, 19, 20, 45, 49, and 58" was not appropriately resolved. The employer credited "MI program PMs" when an effective mechanical integrity program for pumps does not exist.

fffff. For the 2007 Chlorination PHA, Recommendation 181, "Consider installing a charge meter for the Chloroform/CCl4 feed line to RXTR 20 (RXTR 49)" was not resolved.

ggggg. For the 2007 Chlorination PHA, Recommendation 182, "Consider updating SOP to include consequences of high Chloroform/CCl4 concentration in R20 and R49 and steps to take to avoid/mitigate" was not resolved.

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29 CFR 1910.119(e)(5) continued:

hhhhh. For the 2007 Chlorination PHA, Recommendation 183, "Consider interlocking wax charge valve to not allow charging during chlorine addition" was not resolved.

iiii. For the 2007 Chlorination PHA, Recommendation 184, "Consider installing a CCL4 pump shut-off button in the area of #20 reactor" was not resolved.

jjjj. For the 2007 Chlorination PHA, Recommendation 186, "Consider interlock to shut chlorine feed on loss of recirculation" was not appropriately resolved.

kkkkk. For the 2007 Chlorination PHA, Recommendation 186, "Consider PM on back pressure control valve" was not resolved.

llll. For the 2007 Chlorination PHA, Recommendation 194, "Consider requesting from supplier PM reports for N2 system" was not appropriately resolved. The employer did not document mechanical integrity for system and obtain this documentation.

mmmm. For the 2007 Chlorination PHA, Recommendation 195, "Consider a low cooling water pressure alarm in the control room" was not resolved.

nnnn. For the 2007 Chlorination PHA, Recommendation 210, "Consider installing a CCL4 pump shut-off button in the area of #49 reactor" was not resolved.

oooo. For the 2007 Chlorination PHA, Recommendation 211, "Consider interlocking chlorine feed to reactor temperature (need to consider initial heat up and loss of reactor temperature with full chlorine flow)" was not appropriately resolved. The employer credits operator training and "ample temperature indication" for resolving this item.

pppp. For the 2007 Chlorination PHA, Recommendation 214, "Consider installing local pressure indication on the sample return line of #49 reactor" was not resolved.

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29 CFR 1910.119(e)(5) continued:

qqqqq. For the 2007 Chlorination PHA, Recommendation 219, "Consider PM on #8 Reactor Temperature Controller" was not appropriately resolved. Preventive and predictive mechanical integrity maintenance programs are not effective for reactors and instrumentation in the Chlorination department.

rrrrr. For the 2007 Chlorination PHA, Recommendation 221, "Consider installing local pressure indicator on the sample return pot for #8 and #18 reactor" was not resolved.

sssss. For the 2007 Chlorination PHA, Recommendation 223, "Consider annual PM on filter bags above receiver in chlorez finishing" was not resolved.

ttttt. For the 2007 Chlorination PHA, Recommendation 236, "Consider PM on valve or alternative valve type for 18 Reactor charging valve to prevent leak through to 19R" was not appropriately resolved. The employer resolution allows for operator training to recognize a leaking valve and does not require 1910.119(j)(4) inspections and tests.

uuuuu. For the 2007 Chlorination PHA, Recommendation 238, "Consider installing a check valve in the line from #19 reactor to #18 reactor" was not resolved.

vvvvv. For the 2007 Chlorination PHA, Recommendation 241, "Consider level control on air blow tanks" was not resolved.

wwwww. For the 2007 Chlorination PHA, Recommendation 250, "Consider level alarms (high/low) on HAVEG tank in the control room" was not resolved.

xxxxx. For the 2007 Chlorination PHA, Recommendation 251, "Consider alarm and run light on the absorber system circulating pump" was not resolved.

yyyyy. For the 2007 Chlorination PHA, Recommendation 252, "Consider consequences of deviation chart to control acid concentration in the absorber system" was not resolved. The employer credited "an approved" control upgrade project with the resolution of this operating procedure requirement under 1910.119(f).

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29 CFR 1910.119(e)(5) continued:

zzzzz. For the 2007 Chlorination PHA, Recommendation 257, "Consider a system to capture liquids or gases coming through the water legs to the drains of the weak acid system" was not resolved.

aaaaa. For the 2007 Chlorination PHA, Recommendation 260, "Consider a better throttling valve for the air blow process" was not resolved.

bbbbb. For the 2007 Chlorination PHA, Recommendation 263, "Consider high level indication/alarm on air blow tanks" was not resolved.

ccccc. For the 2007 Chlorination PHA, Recommendation 266, "Consider PM on automatic shutoff valves for Powell system" was not resolved and appropriately documented.

ddddd. For the 2007 Chlorination PHA, Recommendation 268, "Consider PM on all powell system regulators and automatic valves" was not resolved and appropriately documented.

eeeee. For the 2007 Chlorination PHA, Recommendation 282, "Consider procedure for cutting off the building 6 basement sump pumps in the event of a leak" was not resolved.

ffffff. For the 2007 Chlorination PHA, Recommendation 283, "Consider filling the basement full of concrete" was not appropriately resolved. The employer credits operator training with the resolution for this item.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
Proposed Penalty:	\$70000.00



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

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

Citation 2 Item 3 a Type of Violation: **Willful**

29 CFR 1910.119(f)(1)(ii)(A): The employer shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements: Consequences of deviation:

In the building #27 phosphite production plant, the employer did not have written operating procedures that clearly provide instructions associated with consequences of deviation. The following procedures were found to be without consequences of deviation:

- a. PHOS SOPM 101, *Unloading Phosphorous Trichloride (PCl3) From ISO Containers and Tank Trucks*
- b. PHOS SOPM 150, *General Start Up*
- c. PHOS SOPM 151, *General Shut Down*
- d. PHOS SOPM 152, *Power Failure Emergency Shutdown*
- e. PHOS SOPM 200, *Unloading Railcars-Raw Materials*
- f. PHOS SOPM 201, *Unloading Trucks Raw Materials*
- g. PHOS SOPM 204, *Operation of 383 Tank*
- h. PHOS SOPM 205, *Unloading PCl3 From Railcars*
- i. PHOS SOPM 206, *Changing Filter for 44Rx and 75Rx*

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(ii)(A) continued:

- j. PHOS SOPM 207, *Replacing Dirty TCP in 508T/510T*
- k. PHOS SOPM 208, *Charging Phenol to 75Rx*
- l. PHOS SOPM 220, *Storage of Raw Materials*
- m. PHOS SOPM 295, *Charging Used (Distilled) Phenol Back to Reactors*
- n. PHOS SOPM 297, *Trouble-Shooting In Process Batches*
- o. PHOS SOPM 298, *Batch Transfer*
- p. PHOS SOPM 299, *Batch Release*
- q. PHOS SOPM 301, *51R Doverphos DP4 Production*
- r. PHOS SOPM 303, *44R Doverphos DP10 Production*
- s. PHOS SOPM 304, *75R Doverphos DP4 Production*
- t. PHOS SOPM 310, *Hi-Pure Unit Operation*
- u. PHOS SOPM 401, *#23 Hot Oil System Operation*
- v. PHOS SOPM 402, *Plate and Frame Filter Operation*
- w. PHOS SOPM 403, *Acid Absorber / Jet Tank / Fume Scrubber System Operation*
- x. PHOS SOPM 404, *Charging Reactors*
- y. PHOS SOPM 405, *Carbon (Acid) Tower Operation*

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(ii)(A) continued:

- z. PHOS SOPM 406, *Carbon Tower Washout / Neutralization Procedure*
- aa. PHOS SOPM 407, *Carbon Tower Operation*
- bb. PHOS SOPM 409, *9228 Production in 36R (PCl3 Process)*
- cc. PHOS SOPM 410, *Production of 9228 in 32R*
- dd. PHOS SOPM 411, *12 lb Nitrogen Pad to 35R Between Batches*
- ee. PHOS SOPM 800, *Tank Capacities*
- ff. NPP-70, *Phenol Recovery Charging 399 Tank from 135 Tank*

In the building #17 chlorination 1C production department, the employer did not have written operating procedures that clearly provided instructions associated with consequences of deviation. The following procedures were found to be without consequences of deviation:

- gg. 1C-11, *Chlorine Bleed Down Procedure*
- hh. 1C-16, *49 Reactor Operating Procedure*
- ii. 1C-17, *8 Reactor Operating Procedure*
- jj. 1C-18, *49 Reactor Shutdown Procedure*
- kk. 1C-19, *63 Reactor Shutdown Procedure*
- ll. 1C-20, *Absorber Startup & Operation*
- mm. 1C-21, *20 Reactor Operating Procedure (#32 Reactor)*

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(ii)(A) continued:

- nn. 1C-22, *19 Reactor Operation*
- oo. 1C-23, *58 Reactor Operation*
- pp. 1C-24, *18 Reactor Operation*
- qq. 1C-26, *20 Reactor Shut Down*
- rr. 1C-27, *18 & 19 Reactor Shut Down*
- ss. 1C-29, *Emergency Shutdown Power Failure*
- tt. 1C-31, *Unloading Raw Material-Tank Trucks*
- uu. 1C-32, *Storage of Raw Material*
- vv. 1C-45, *Method for Reclaiming Chloroform/Carbon Tetrachloride Solvent (CHCl₃/CCl₄)*
- ww. 1C-46, *Chlorinating Fresh Batches in 20R or 49R*
- xx. 1C-47, *Feed Batch Chlorination for C24-C28 Products*
- yy. 1C-48, *By-Passing 20 Reactor Isolation Devices*

In the building #6 chlorination 1P production department, the employer did not have written operating procedures that clearly provided instructions associated with consequences of deviation. The following procedures were found to be without consequences of deviation:

- zz. 1P-002, *Aeration Tower and Scrubber Operation*
- aaa. 1P-003, *Brominations*

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(ii)(A) continued:

- bbb. 1P-02, *Utility Plant Start Up and Operation*
- ccc. 1P-025, *Absorber Start Up and Operation*
- ddd. 1P-03, *General Plant Start Up and Operating Instructions*
- eee. 1P-03A, *1 and 2 Reactor Start Up and Operating Instructions*
- fff. 1P-03B, *1 and 2 Reactor Shutdown*
- ggg. 1P-03C, *4 Reactor Operating Procedure*
- hhh. 1P-03D, *5 Reactor Operating Procedure*
- iii. 1P-03E, *40 Reactor Operating Procedure*
- jjj. 1P-03F, *45 Reactor Operating Procedure*
- kkk. 1P-04, *General Plant Shutdown*
- lll. 1P-05, *Emergency Shutdown Procedures*
- mmm. 1P-06, *Unloading Raw Material Railcars*
- nnn. 1P-07, *Unloading Chlorine Railcars*
- ooo. 1P-08, *Bromine Unloading*
- ppp. 1P-09, *Unloading Raw Materials-Tank Truck*
- qqq. 1P-09A, *Handling Instructions for C-14 and C-18 Alpha Olefins*

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(ii)(A) continued:

rrr. 1P-10, *Unloading Caustic Tank Trucks*

sss. 1P-11, *Storage of Raw Materials*

ttt. 1P-14, *Acid Loading Tank Truck and Railcar*

uuu. 1P-14A, *Acid Loading Tank Truck (Driver Responsibility)*

vvv. 1P-15, *Loading Tank Trucks-Bleach*

www. 1P-20, *Chlorine Bleed Down Procedure*

xxx. 1P-22, *Air Blow Tanks*

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:
Proposed Penalty:

02/27/2013
\$70000.00

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 2 Item 3 b Type of Violation: **Willful**

29 CFR 1910.119(f)(1)(ii)(B): The employer shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements: Steps required to correct or avoid deviation:

In the building #27 phosphites production plant, the employer did not have written operating procedures that clearly provided instructions associated with steps required to correct or avoid deviation. The following procedures were found to be without steps required to correct or avoid deviation:

- a. PHOS SOPM 101, *Unloading Phosphorous Trichloride (PCl3) From ISO Containers and Tank Trucks*
- b. PHOS SOPM 150, *General Start Up*
- c. PHOS SOPM 151, *General Shut Down*
- d. PHOS SOPM 152, *Power Failure Emergency Shutdown*
- e. PHOS SOPM 200, *Unloading Railcars-Raw Materials*
- f. PHOS SOPM 201, *Unloading Trucks Raw Materials*
- g. PHOS SOPM 204, *Operation of 383 Tank*
- h. PHOS SOPM 205, *Unloading PCl3 From Railcars*
- i. PHOS SOPM 206, *Changing Filter for 44Rx and 75Rx*
- j. PHOS SOPM 207, *Replacing Dirty TCP in 508T/510T*

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(ii)(B) continued:

- k. PHOS SOPM 208, *Charging Phenol to 75Rx*
- l. PHOS SOPM 220, *Storage of Raw Materials*
- m. PHOS SOPM 295, *Charging Used (Distilled) Phenol Back to Reactors*
- n. PHOS SOPM 297, *Trouble-Shooting In Process Batches*
- o. PHOS SOPM 298, *Batch Transfer*
- p. PHOS SOPM 299, *Batch Release*
- q. PHOS SOPM 301, *51R Doverphos DP4 Production*
- r. PHOS SOPM 303, *44R Doverphos DP10 Production*
- s. PHOS SOPM 304, *75R Doverphos DP4 Production*
- t. PHOS SOPM 310, *Hi-Pure Unit Operation*
- u. PHOS SOPM 401, *#23 Hot Oil System Operation*
- v. PHOS SOPM 402, *Plate and Frame Filter Operation*
- w. PHOS SOPM 403, *Acid Absorber / Jet Tank / Fume Scrubber System Operation*
- x. PHOS SOPM 404, *Charging Reactors*
- y. PHOS SOPM 405, *Carbon (Acid) Tower Operation*
- z. PHOS SOPM 406, *Carbon Tower Washout / Neutralization Procedure*

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(ii)(B) continued:

- aa. PHOS SOPM 407, *Carbon Tower Operation*
- bb. PHOS SOPM 409, *9228 Production in 36R (PCl3 Process)*
- cc. PHOS SOPM 410, *Production of 9228 in 32R*
- dd. PHOS SOPM 411, *12 Lb Nitrogen Pad to 35R Between Batches*
- ee. PHOS SOPM 800, *Tank Capacities*
- ff. NPP-70, *Phenol Recovery Charging 399 Tank from 135 Tank*

In the building #17 chlorination 1C production department, the employer did not have written operating procedures that clearly provided instructions associated with steps required to correct or avoid deviation. The following procedures were found to be without steps required to correct or avoid deviation:

- gg. 1C-11, *Chlorine Bleed Down Procedure*
- hh. 1C-16, *49 Reactor Operating Procedure*
- ii. 1C-17, *8 Reactor Operating Procedure*
- jj. 1C-18, *49 Reactor Shutdown Procedure*
- kk. 1C-19, *63 Reactor Shutdown Procedure*
- ll. 1C-20, *Absorber Startup & Operation*
- mm. 1C-21, *20 Reactor Operating Procedure (#32 Reactor)*
- nn. 1C-22, *19 Reactor Operation*

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(ii)(B) continued:

oo. 1C-23, *58 Reactor Operation*

pp. 1C-24, *18 Reactor Operation*

qq. 1C-26, *20 Reactor Shut Down*

rr. 1C-27, *18 & 19 Reactor Shut Down*

ss. 1C-29, *Emergency Shutdown Power Failure*

tt. 1C-31, *Unloading Raw Material-Tank Trucks*

uu. 1C-32, *Storage of Raw Material*

vv. 1C-45, *Method for Reclaiming Chloroform/Carbon Tetrachloride Solvent (CHCl₃/CCl₄).*

ww. 1C-46, *Chlorinating Fresh Batches in 20R or 49R*

xx. 1C-47, *Feed Batch Chlorination for C24-C28 Products*

yy. 1C-48, *By-Passing 20 Reactor Isolation Devices*

In the building #6 Chlorination 1P production department, the employer did not have written operating procedures that clearly provided instructions associated with steps required to correct or avoid deviation. The following procedures were found to be without steps required to correct or avoid deviation:

zz. 1P-002, *Aeration Tower and Scrubber Operation*

aaa. 1P-003, *Brominations*

bbb. 1P-02, *Utility Plant Start Up and Operation*

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(ii)(B) continued:

- ccc. 1P-025, *Absorber Start Up and Operation*
- ddd. 1P-03, *General Plant Start Up and Operating Instructions*
- eee. 1P-03A, *#1 and 2 Reactor Start Up and Operating Instructions*
- fff. 1P-03B, *#1 and 2 Reactor Shutdown*
- ggg. 1P-03C, *#4 Reactor Operating Procedure*
- hhh. 1P-03D, *#5 Reactor Operating Procedure*
- iii. 1P-03E, *#40 Reactor Operating Procedure*
- jjj. 1P-03F, *#45 Reactor Operating Procedure*
- kkk. 1P-04, *General Plant Shutdown*
- lll. 1P-05, *Emergency Shutdown Procedures*
- mmm. 1P-06, *Unloading Raw Material Railcars*
- nnn. 1P-07, *Unloading Chlorine Railcars*
- ooo. 1P-08, *Bromine Unloading*
- ppp. 1P-09, *Unloading Raw Materials-Tank Truck*
- qqq. 1P-09A, *Handling Instructions for C-14 and C-18 Alpha Olefins*
- rrr. 1P-10, *Unloading Caustic – Tank Trucks*

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(f)(1)(ii)(B) continued:

sss. 1P-11, *Storage of Raw Materials*

ttt. 1P-14, *Acid Loading Tank Truck and Railcar*

uuu. 1P-14A, *Acid Loading Tank Truck (Driver Responsibility)*

vvv. 1P-15, *Loading Tank Trucks-Bleach*

www. 1P-20, *Chlorine Bleed Down Procedure*

xxx. 1P-22, *Air Blow Tanks*

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:

02/27/2013



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 2 Item 4 Type of Violation: **Willful**

29 CFR 1910.119(o)(4): The employer shall promptly determine and document an appropriate response to each of the findings of the compliance audit, and document that deficiencies have been corrected:

- a. For the May 2011 compliance audit, the employer had not corrected audit finding PSI-1 (1910.119(d)(1)) regarding engineering specifications for guidelines on corrosivity and materials of construction. Process safety information (PSI) in these areas had not been developed. The employer did not have fully developed guidelines on corrosivity for process equipment and materials of construction information, such as piping specifications had not been documented.
- b. For the May 2011 compliance audit, the employer had not corrected audit finding PSI-2 (1910.119(d)(1)) regarding the hazardous effects of inadvertent mixing for process chemicals. Prior to the initiation of this inspection, the employer had not developed a guideline for inadvertent mixing as part of process safety information to correct this audit finding.
- c. For the May 2011 compliance audit, the employer had not corrected audit finding PSI-3 (1910.119(d)(2)) regarding updating information pertaining to technology of the processes. The employer had not reviewed and then updated process safety information as a corrective action for this audit finding.
- d. For the May 2011 compliance audit, the employer had not corrected audit finding PSI-4 (1910.119(d)(3)) regarding compiling process safety information for materials of construction, electrical classification, rupture disks and pressure relief valves. Materials of construction information were not in place, electrical classification information was not complete and ruptured disk/pressure relief device information is also not complete.
- e. For the May 2011 compliance audit, the employer had not corrected audit finding PSI-5 (1910.119(d)(3)) regarding safety systems. The employer had not compiled process safety information for safety systems such as alarms, interlocks and permissives.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(o)(4) continued:

- f. For the May 2011 compliance audit, the employer had not corrected audit finding PSI-6 (1910.119(d)(3)(ii)) regarding recognized and generally accepted good engineering practices (RAGAGEP) documentation for equipment. The employer had not evaluated equipment and compiled information for equipment RAGAGEP compliance.
- g. For the May 2011 compliance audit, the employer had not corrected audit finding OP-1 (1910.119(f)(1)) regarding resolution of operating procedure content. Written operating procedures were not compliant.
- h. For the May 2011 compliance audit, the employer had not corrected audit finding OP-2 (1910.119(f)(3)) regarding certification of operating procedures. Operating procedures were not reviewed, then certified as current and accurate.
- i. For the May 2011 compliance audit, the employer had not corrected audit finding PSSR-2 (1910.119(i)) regarding tracking and documenting action item completion for pre-startup safety review (PSSR). PSSR action items were not tracked, completed and documented by the employer.
- j. For the May 2011 compliance audit, the employer had not corrected audit finding MI-1 (1910.119(j)) regarding identifying all equipment to be included in the mechanical integrity program. The employer had not completed the documentation of a list of all equipment to be included in the mechanical integrity program, also known as the critical equipment list.
- k. For the May 2011 compliance audit, the employer had not corrected audit finding MI-2 (1910.119(j)(2)) regarding establishing mechanical integrity programs. The employer had not implemented effective mechanical integrity programs.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(o)(4) continued:

- l. For the May 2011 compliance audit, the employer had not corrected audit finding MI-3 (1910.119(j)(4)) regarding inspection and testing. The employer had equipment operating without any inspection and testing, with overdue inspection and testing and with inspection and testing that did not meet RAGAGEP.
- m. For the May 2011 compliance audit, the employer had not corrected audit finding MI-4 (1910.119(j)(5)) regarding inspection and testing reported deficiency corrective action documentation. The employer had equipment operating with noted deficiencies that had not been adequately resolved, corrected and documented.
- n. For the May 2011 compliance audit, the employer had not corrected audit finding MOC-4 (1910.119(l)(5)) regarding management of change (MOC) process safety information updates and procedure updates. Written operating procedure updates were not comprehensively occurring following MOC processes and reviews.
- o. For the May 2011 compliance audit, the employer had not corrected audit finding II-1 (1910.119(m)(5)) regarding a system addressing investigation findings corrective actions. Incident investigation findings were not corrected and documented for completion.
- p. For the May 2011 compliance audit, the employer had not corrected audit finding CA-2 (1910.119(o)(4)) regarding resolving 2007 compliance audit findings. The 2007 compliance audit findings were not completely corrected.
- q. For the May 2011 compliance audit, the employer had not corrected audit finding PHA-2 (1910.119(e)(5)) regarding completion of outstanding process hazard analysis (PHA) recommendations from 2008. PHA recommendations from 2008 were not completely resolved.
- r. For the December 2007 compliance audit, the employer had not corrected finding 8 (1910.119(m)(5)) regarding a system addressing investigation findings corrective actions. Incident investigation findings were not corrected and documented for completion.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(o)(4) continued:

- s. For the December 2007 compliance audit, the employer had not corrected finding 17 (1910.119(l)(5)) regarding updating management of change process safety information updates. Process safety information updates were not comprehensively occurring following MOC processes and review.
- t. For the December 2007 compliance audit, the employer had not corrected finding 18 (1910.119(f)(1)(i-ii)) regarding operating procedures containing safe operating limits, consequence of deviation and corrective actions for deviations. Operating procedures currently did not contain this information.
- u. For the May 2007 compliance audit, the employer had not corrected audit finding 19 (1910.119(f)(3)) regarding certification of operating procedures. Operating procedures were not reviewed, then certified as current and accurate.
- v. For the May 2007 compliance audit, the employer had not corrected audit finding 23 (1910.119(e)(5)) regarding process hazard analysis (PHA) recommendation timely completion and proper documentation. Recommendations for 2008 PHA items were unresolved.
- w. For the May 2007 compliance audit, the employer had not corrected audit finding 26 (1910.119(i)(2) and (l)(5)) regarding documentation and completion of PSSR/MOC action items. PSSR action items were not adequately tracked to completion and some action items were unresolved.
- x. For the May 2007 compliance audit, the employer had not corrected audit findings 38 and 39 (1910.119(g)(1)) regarding operator and maintenance training. Operator and maintenance employee training programs were not compliant.
- y. For the 2007 compliance audit, the employer had not corrected audit finding 41 (1910.119(g)(2)) regarding operator refresher training performance. Operator refresher training was not performed.
- z. For the 2007 compliance audit, the employer had not corrected audit finding 43 (1910.119(j)(1)(i-vi)) regarding written vessel and tank inspection program for scheduled inspections. Inspections for all vessels and tanks were not adequate, timely and performed to RAGAGEP.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(o)(4) continued:

- aa. For the 2007 compliance audit, the employer had not corrected audit finding 44 (1910.119(j)(1)(i-vi)) regarding written piping circuit and flexible hose inspection program. This program did not exist and the only piping circuit testing and inspection was not performed to RAGAGEP.
- bb. For the 2007 compliance audit, the employer had not corrected finding 45 (1910.119(j)(1)(i-vi)) regarding relief device procedure development, completion of overdue inspections and program implementation. This program was inadequate, inspections were not properly documented, devices were not properly installed to the design basis and procedures for establishing predictive data were not established.
- cc. For the 2007 compliance audit, the employer had not corrected finding 46 (1910.119(j)(1)(i-vi)) regarding emergency shutdown systems and area monitors. Procedures for inspection, maintenance and deficiency resolution were not in place for this type of equipment.
- dd. For the 2007 compliance audit, the employer had not corrected finding 47 (1910.119(j)(1)(i-vi)) regarding critical equipment and instrumentation list, to include development of a preventive maintenance schedule and PSI development. The list, schedule and PSI had not been developed.
- ee. For the 2007 compliance audit, the employer had not corrected finding 49 (1910.119(j)(3)) regarding maintenance training. The employer did not provide a documented maintenance training program for mechanical integrity and PSM requirements.
- ff. For the 2007 compliance audit, the employer had not corrected finding 50 (1910.119(j)(4)(ii)) regarding qualified contractors performing code inspections. Qualified piping inspections had not occurred to address this finding.
- gg. For the 2007 compliance audit, the employer had not corrected finding 51 (1910.119(j)(3)(iv)) regarding work order use for future predictive maintenance activities. The work order system had not improved and predictive maintenance programs did not exist.

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

29 CFR 1910.119(o)(4) continued:

hh. For the 2007 compliance audit, the employer had not corrected finding 52 (1910.119(j)(5)) regarding equipment deficiency correction and documentation procedures. The mechanical integrity program was deficient in this area.

ii. For the 2007 compliance audit, the employer had not corrected finding 53 (1910.119(j)(6)(ii)) regarding parts and equipment quality assurance. Although there were checklist items for MOC and PSSR forms, the facility had no functional quality assurance program in place.

jj. For the 2007 compliance audit, the employer had not corrected finding 54 (1910.119(d)(3)(ii)) regarding development of a critical equipment list for use in documenting design code/basis information and documenting RAGAGEP compliance. The equipment list had not been developed and equipment file information did not provide RAGAGEP compliance.

kk. For the 2007 compliance audit, the employer had not corrected findings 56 and 57 (1910.119(d)(3)) regarding PSI for instrument specifications, pipe specifications, process & instrumentation diagrams, relief system design basis, design codes and standards and safety systems were not corrected. PSI was not compiled and completely documented for these areas.

ABATEMENT DOCUMENTATION REQUIRED FOR THIS ITEM

Date By Which Violation Must be Abated:	02/27/2013
Proposed Penalty:	\$70000.00

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: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 3 Item 1 Type of Violation: **Other-than-Serious**

29 CFR 1910.132(d)(2): The employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment:

a. In the phosphites plant building #27, the employer failed to identify, assess, and certify the hazard assessment associated with celite 545 (crystalline silica) and tributylamine (TBA) had been completed.

Date By Which Violation Must be Abated:	12/14/2012
Proposed Penalty:	\$.00



Citation and Notification of Penalty

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622

Citation 3 Item 2 Type of Violation: **Other-than-Serious**

29 CFR 1910.178(l)(6): Certification. The employer shall certify that each operator has been trained and evaluated as required by this paragraph (l). The certification shall include the name of the operator, the date of the training, the date of the evaluation, and the identity of the person(s) performing the training or evaluation:

The employer failed to certify that employees received training following two accidents/ near misses:

- a. On November 6, 2011, at dock #1 in the building #2 shipping department, an employee operating a tow motor ran over a patched spot of floor resulting in a small section of the floor breaking.
- b. On August 24, 2011, at the building #2 shipping dock #3 truck loading/unloading areas, an employee was using a yard dog to move an ICS trailer; the door swung open resulting in damage to a parked freightliner in dock #3.

Date By Which Violation Must be Abated: 12/06/2012
Proposed Penalty: \$.00



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INVOICE / DEBT COLLECTION NOTICE

Company Name: Dover Chemical Corporation
Inspection Site: 3676 Davis Road, Dover, OH 44622
Issuance Date: 11/26/2012

Summary of Penalties for Inspection Number	451379
Citation 1, Serious	\$265000.00
Citation 2, Willful	\$280000.00
Citation 3, Other-than-Serious	\$.00
TOTAL PROPOSED PENALTIES	\$545000.00

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.

OSHA does not agree to any restrictions or conditions or endorsements put on any check or money order 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.



Deborah J. Zubaty
Area Director