

CHEMICALS



INTEROFFICE / LAKE CHARLES

85374-85376

TO R. J. McCorquodale DATE July 1, 1988

FROM Jon C. Shepherd SUBJECT Summary of OSHA Compliance
Inspection - 6/21/88 - 6/24/88

Reason for Inspection

General Schedule Health Inspection of Chlor/Alkali production facilities (SIC code 2812) to include the Special Emphasis Program's Systems Safety Review screening elements.

Compliance Officer

Mr. Richie Hofman, CSHO - Baton Rouge Area OSHA Office

Opening Conference

6/21/88 at 9:30 A.M. - Human Resources Conference Room

Those present were: Richie Hofman, Al Bresley, Bob McCorquodale
Ken Savant, Jon Shepherd.

Mr. Hofman opened the conference by explaining the reason for his visit. The key elements would include:

- 1.) Review of OSHA Log 200 (past 5 years)
- 2.) Review of PPG programs for Hazard Communication, Hearing Conservation, Industrial Hygiene Monitoring, Medical Surveillance, Respiratory Protection, and where applicable, Training records.
- 3.) Review of Employee Medical Records.
- 4.) A walk-around inspection (w/Union representative present).
- 5.) Employee interviews
- 6.) Completion of the Systems Safety Review screening questionnaire.

Mr. Hofman indicated that he did not intend, at that time, to conduct any industrial hygiene sampling. However, he would make a final decision once the walk around and employee interviews were completed.

He requested copies of the following information.

- 1.) 1987 OSHA 200 Log.
- 2.) Hazard Communication written program.
- 3.) Hazard Communication Chemicals Inventory
- 4.) Hazard Communications training records (Note: 2 or 3 rosters, not complete list).
- 5.) Hearing Conservation Program.
- 6.) Hearing Conservation training records (see note above).
- 7.) Randomly selected employee audiograms.
- 8.) Respiratory Protection written program.
- 9.) Respiratory Protection training records (see note above).
- 10.) Any current biological monitoring results (for Mercury)
- 11.) Any current Asbestos air monitoring results

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- 12.) Any current Chlorine air monitoring results
- 13.) Any current Mercury air monitoring results
- 14.) Any current Noise monitoring results
- 15.) Any written descriptions of PPG's "Health Program".
- 16.) A process diagram or schematic for the Chlor/Alkali units.

We responded that, with one exception, the scope of the inspection was acceptable and that the records requested would be assembled without delay. (This was done and given to him by the end of the second day.) The exception involved access to employee medical records.

We explained that PPG has a strong policy regarding the confidentiality of employee medical records and access. We could let him view those files only if each employee involved signed a consent form to allow such access. It was suggested that he could select some representative number of employees, that we would ask each employee to give his/her consent, have a waiver signed, and then proceed. He agreed to this procedure. He asked Ken Savant as the Union representative to select five employees from different areas of the Chlor/Alkali units, including Maintenance. We also explained that audiometric test results were considered to be medical records and as such could not be copied for him. He agreed and said that he would limit his review to those audiograms contained in the medical records he was given access to.

That concluded the opening conference. Bob McCorquodale brought the OSHA 200 log and Recordable 5704s to the Conference Room for review.

OSHA Log 200 Review

The OSHA Log 200 for 1984 through present, along with supporting 5704s, was provided for Mr. Hofman's review. He found no problems with our Logs. He commented that this was the first time he had reviewed injury records for a company had gone back and updated the logs basis the April 1986 BLS guidelines. He commended us for this.

Medical Records Review

The employees selected by Ken Savant were:

Mike Hazi # 5085
Paul Landry # 678
Maurice Miller # 5356
Ken Savant # 915
Doug Smith # 494

Signed consent forms were obtained for each employee prior to proceeding. The review was conducted in the Manager, Employee Health's office (J. Murry Davis). Ken Savant was present. Mr. Hofman commented that the records were well organized and indicated that all medical surveillance elements were in place and up to date.

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Medical Department Tour

Mr. Hofman was then shown through the Medical Department. He asked questions regarding our audiometric test procedures and blood sample collection methods. He recommended that our staff begin following the CDC guidelines for venipuncture. He said that he would send us a copy after he returned to Baton Rouge. All other areas were in order.

Program Review

The balance of the first day of the inspection was spent reviewing the written programs listed above. Mr. Hofman seemed to be very impressed by our Safety Procedures binder. He liked the "Safety Bulletin" concept and indicated the content areas showed a well-organized program in place.

He departed the plant at 3:30 P.M.

Systems Safety Review Screening

The second day (6/22/88) of the inspection was devoted entirely to answering/discussing the screening questionnaire for Systems Safety Review Special Emphasis Program (OSHA CPL 2-2). A complete copy is attached to this summary. Plant personnel who participated in the discussions at various times were:

- Al Bresley - Emergency Response
- Bob McCorquodale - Safety Programs/Emergency Planning
- Jim Meadows - Maintenance Practices & CHAR/PHAR reviews.
- Andy Plauche - Spill Response
- Roy Sanders - Loss Prevention & Inspection Programs
- Jon Shepherd - Chemical Inventories
- Wilton Wallace - Operations Practices/Information & CHAR/PHAR reviews.
- Jim Wyche - Environmental Issues

The discussions were tape recorded, however, the sound quality is such that transcription is impractical. The tapes will be maintained in the event that a future need demonstrates that the effort is warranted.

See below "Closing Conference" for a discussion of Mr. Hofman's overall impression of the Chlor/Alkali facility (question # 19 of attached listing).

Walk Around Inspection

The third day of the inspection (6/23/88) was devoted to a walk around inspection of Chlor/Alkali Operations and support areas. Ken Savant, Union OSHA Coordinator, accompanied us for the entire day. The Company representatives were myself and Dan Grieneisen in Plant C or Howard Duhon in Plant A. Unit representatives are given below.

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Process schematics for each unit (copies attached) were given to Mr. Hofman prior to commencing the inspection.

1. Chlorine "C" (Steve Gaudet and Garland Garrett)
We began in the Control Room. The process flow was explained using the control panel schematic.

The outside tour started at the Raw Brine Storage Tanks and followed the process flow through each stage of treatment to the polished brine storage tanks. We then proceeded to the cell circuits. Steve explained the flow of brine into the cells and described how each component coming off of the cell (Cl_2 , H_2 , & Cell Liquor) was handled. The group followed the flow of Cl_2 through the coolers and blowers; examined the Neutralization system; the Acid Towers (Drying); and the Cl_2 compressor area. We walked through the H_2 compression/handling area. The final area inspected was the Glanor Repair Shop. Each stage of the renewal process was explained. The asbestos processing room was inspected (NOTE: No asbestos handling was going on).

2. Caustic "C" (Terry Smith)
As before, we began in the Control Room. The process was explained using the control panel schematic. The outside tour started at the Cell Liquor Tanks and followed the flow through the evaporators to the coolers and filtration area.
3. "C" Welding Shop
The group made an unscheduled visit to the "C" Welding Shop. All employees were at a safety meeting, so no work was in progress. We made a brief walk-through and looked at the element repair area at the east end of the shop.
4. Main Lab Building (Jim Wyche)
We made a second unscheduled stop at the Main Lab to look at the C/A Quality Control Area and the Environmental/Industrial Hygiene labs. Most employees were at lunch so no work was observed.

The group stopped for lunch.

5. Mercury Cells (Tom Narbit)
Due to time constraints and sandblasting going on in the Brine and Mercury treatment areas, the inspection was limited to the Mercury Cell circuits only. We started where the brine enters on the north side. We walked through the lower level as Tom explained the process flow and mercury containment systems. We next walked through the circuit room. Cell potentials, electrical safety procedures and the decomposers were explained. We finished in the Control Room where cell control methods were briefly discussed.

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6. Electrolyzers

Mr. Hofman decided that because of time constraints we would limit the Electrolyzers inspection to a brief walk-through. As such, he did not feel that an Operations representative was needed. We checked in through the Control Room and proceeded to Circuit # 16. We did not enter the circuit area proper, but rather observed from the west end. We next walked through the K-303 Maintenance Shop. From there we walked along the back (north) side of the Renewal Shop and entered the northwest door to the shop. Two employees were engaged in depositing a diaphragm. Mr. Hofman decided to just look in the door window of the processing and storage rooms. We walked out past the manual and automatic wash houses and looked briefly at the west end of the Circuit # 15.

7. Liquefaction (Bob Kovatich)

We started the inspection at the south end of the area at the chlorine compressors. Bob reviewed for us how the various process flows entered and exited the area passing through compression and refrigeration. We walked through the scale tank areas and north to the Tail Gas Recovery Unit. Bob explained in detail how the Sulphur chloride process works including the final sulphur chloride condensation steps prior to discharging the vents.

8. Pels (Roy Coniglio)

Mr. Hofman decided to skip the "A" Caustic walk through (we later drove past on the road east of K-306) and proceed to the Pels unit. We entered at the shipping end of the building and walked through to the Control Room. There we met Roy and Bob Green. Roy explained the process and we went outside to the evaporator/furnace area. From there we walked east to the Prill tower and past to the Pels bagging/drumming area. After walking through the bagging room we returned to the Control Room and departed.

9. Garage Paint Shop/Carpenter's Shop (Lionel Mestayer)

After returning to our vehicles we headed toward the north dock areas. As we passed the Garage, Mr. Hofman decided that he would like to briefly visit the Garage Paint Shop. We stopped, located Lionel, and walked briefly through the area. There we spoke with a painter working in the area. We walked through the Carpenter Shop, looked at parts of the dust collection system and left.

10. Complex Paint Shop/Sand Blast Yard

From the Garage we drove through the Sandblast Yard (no work going on) and stopped in the Painting Yard. We got out and walked through the area. While there Mr. Hofman examined drums and containers for labeling, etc. He requested Material Safety Data Sheets for the following:

- PPG Aquapon Polyamide Epoxy - Component A
- PPG Epoxy Thinner (#97-725)
- PPG Leptyne Thinner
- Thompson Water Sealer

(NOTE: These were provided to him the next day.)

We walked to the shop and spoke with several painters there. Mr. Hofman looked at blasting hoods and paint storage lockers.

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11. North Docks

We completed the day by driving south past the Tank Farm to the North Docks area. We paused at the Chlorine Barge Loading Dock while Mr. Hofman asked some questions regarding loading practices, etc. From there we returned to the Human Resources Building. Mr. Hofman departed the plant at approximately 4:30 P.M.

12. General Comments:

Throughout the inspection Mr. Hofman looked at or asked questions regarding:

- Respiratory Protection - including usage, storage & inspections
- Hearing Protection - including use and signs
- Emergency Procedures
- Hazard Communication
- Maintenance Procedures

Employee Interviews

Mr. Hofman conducted employee interviews during the last day of his visit (6/24/88). Four employees were selected by the Union OSHA Coordinator - Ken Savant. These were in accordance with areas/jobs Mr. Hofman indicated. The employees selected were:

T. J. DeVilbiss # 331 - "C" Chlorine Brine Treatment Operator
Warren Vidrine # 5205 - "C" Welding Shop Welder
Mark "Tony" Sonnier # 5962 - Mercury Cell Utilities Operator
Curtis Ceasar # 148 - Electrolyzers Renewal Man

While Mr. Hofman invited a PPG representative to be present during the interviews, Bob McCorquodale declined. It was felt that to do so might seem like pressure from the Company for the employees not to be open and candid. Ken Savant was present during each private interview.

Closing Conference

6/24/88 at 11:45 A.M. - Human Resources Conference Room

Present were: Richie Hofman, Bob McCorquodale, Al Bresley, Jon Shepherd, and Ken Savant.

Mr. Hofman opened the meeting by stating that he appreciated the openness and professionalism of PPG staff and Union representatives. He discussed briefly eight items which he felt required some attention on our part, but did not warrant citations. (The Safety Department has the list and has either closed or is working on resolving each item.) We asked if he wanted any follow-up communications from us. He said that it was not necessary - that he would get in touch with Ken Savant to check that action has been taken.

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He then summarized his findings on the various program areas.

1. Hazard Communication - Good written program and an excellent MSDS delivery method. He stated that the microfiche system was the best method of providing access to MSDSs that he had seen.
2. Respiratory Protection - Good program - all elements seem to be present and functioning well.
3. Hearing Conservation - Good use of hearing protection where needed. Audiograms, etc., in order.
4. Medical Surveillance - Good, thorough program.
5. Monitoring (Air) Results -
 - a. Noise - No problems.
 - b. Asbestos - Some high results, but engineering controls were good. (He commended us on the cleanliness of the Plant C Renewal Shop.)
 - c. Chlorine - No problems.
 - d. Mercury - No problems.
6. Safety/Health Program in General - Overall a good program. He was very complimentary with regard to our Safety Procedures Manual.

The last point which he covered was his intended response to question #19 on the Systems Safety Review questionnaire:

- It is apparent that PPG's management has the employee's interest at heart. All of the interviews conducted indicated that PPG has consistently worked towards improving conditions.
- The appearance of the two plant areas was very good considering the corrosive nature of a Chlor/Alkali facility. The "GEM" preventative maintenance painting program seems quite effective.
- There was no visible or detectable evidence of leaks or spills. The Liquefaction area was impressive due to the absence of any chlorine odor.
- The general maintenance and housekeeping of the facility is above average.
- There was no detectable evidence of hazardous chemicals being vented to the atmosphere.

Mr. Hofman concluded the closing conference by stating that we appear to have an excellent working relationship with the Union, and that we are to be commended for our over-all Safety and Health Program.

Bob McCorquodale expressed our appreciation for the professional manner in which the inspection was conducted, and that if there were any additional questions, we would be happy to respond to them.

Mr. Hofman departed the plant.

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Appendix B

SCREENING ELEMENTS

A written summary of answers to the following questions must appear in the case file. Not all questions will be applicable to every workplace. Conversely, any additional information which bears on process safety but which is not addressed here should also be put in the case file.

1. How many of the chemicals listed in Appendix A are involved in the operation? Produced, used, stored or handled?
2. How many of the chemicals listed in Appendix A are used in quantities equal or greater than the amounts listed?
3. What is the size of the facility (i.e., number of employees)? Number of square feet under the roof and acres in the plant? What is number of process s that involve Appendix A chemicals?
4. What is the age of the machinery or units used where Appendix A chemicals are involved?
- 2nd 5. What is the relevant history of the facility? Releases or spills of toxic chemicals? Any EPA reportable releases or spills? Previous or current inspection violations? Explosions or fires?
- 2nd 6. Are there comprehensive management programs including loss prevention, hazard evaluation, reactive materials, inspection and maintenance, plant modification, training, and emergency response?
7. Does the loss prevention program include safety and health self-audits? Frequency? Corporate, local, or contracted?
8. Is there a viable Labor/Management Safety and Health Committee? Are there regular and frequent meetings and walkthrough inspections? Are there prompt resolution of detected hazards?

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9. Are incidents (spills, leaks) investigated and are corrective actions taken? Are records made of incident investigations and subsequent corrective recommendations/actions?
10. Is there an environmental monitoring program? Scheduled or continuous monitoring with alarms for highly toxic chemicals?
11. Are there scheduled shutdowns for comprehensive maintenance? Is maintenance preventive and programmed, or reactive to breakdowns? Is there a testing and calibration schedule for critical equipment? Is there any indication that previously installed pressure relief devices have been removed, plugged, or blinded? Are there permit systems for confined space, lock-out, line breaking, hot work?
12. Is material compatibility, flammability, and reactivity considered in all aspects of design? Is there a nondestructive testing program?
13. Are the programs administered by, or is there access to, qualified safety and health professionals? Are these personnel educated, certified, licensed, and/or experienced?
14. Is there formal and periodic training conducted in operating procedures, process hazards, emergency programs, permit systems, release mitigation, PPE, and HAZCOM? Are there written PPE and respirator programs? Hands-on training and appropriate equipment available?
15. Are there exothermic chemical reactions which can "run away" if not controlled? Do the processes use catalysts, inhibitors, or initiators? Are any processes operated near auto-ignition, explosive, or flammable ranges? Are these processes purged and inerted? Are there extremely high or low temperature/pressure reactions? Are there pressurized vessels which contain highly toxic chemicals?
16. Are there environmental controls (i.e., scrubbers, flares, incinerators, destruct systems, etc.) in place to prevent toxic chemical releases? Are there redundancies incorporated in these controls?

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17. Are there utility systems that are critical to maintenance of safe operation (i.e., cooling water, electric, heating)? Do they have back-up systems incorporated in them? Are back-up systems provided for computer generated controls or other equipment which may be considered essential? Has any analytical evaluation of fail-safe been conducted (i.e., Fault Tree Analysis, HAZAN, FMEA, etc.)?
18. Are there written emergency/evacuation procedures? Are they coordinated with local authorities? Are emergency control center(s) established? Are there re-entry and clean-up procedures?
19. What is the CSHO's overall impression of the facility in regard to its potential for catastrophic release? Included in factors contributing to this impression may be those such as:
 - Results of employee and management interviews.
 - Evidence of equipment or structural corrosion.
 - Evidence of leaking equipment or chemical spills.
 - General maintenance, clean and orderly plant conditions.
 - Number and type of hazardous chemicals which are vented to the atmosphere.

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Appendix A
List of Extremely Hazardous Substances
List 1

Chemical name	Chemical Abstract Service Number	Threshold Quantity (Pounds)
Acetone cyanohydrin	75-86-5	1,000
Acetone thiosemicarbazide	1752-30-3	1,000
Acrolein	107-02-8	500
Acrylamide	79-02-8	1,000
Acrylonitrile	107-13-1	10,000
Acrylyl chloride	814-68-6	500
Adiponitrile	111-69-3	1,000
Aldicarb	116-06-3	100 ³
Aldrin	309-00-2	500
Allyl alcohol	107-18-6	1,000
Allylamine	107-11-9	500
Aluminum phosphide	20859-73-8	500 ⁴
Aminopterin	54-62-6	500
Amitron	78-53-5	500
Amitron oxalate	3734-97-2	100
Ammonia	7664-41-7	500
Ammonium chloroplatinate	16919-58-7 ⁵	10,000
Amphetamine	300-62-9	1,000
Aniline	62-53-3	1,000
Aniline, 2,4,6-trimethyl-	88-05-1	500
Antimony pentafluoride	7783-70-2	500
Antimycin A	1397-94-0	1,000 ³
Antu	86-88-4	500
Arsenic pentoxide	1303-28-2	100
Arsenous oxide	1327-53-3	500
Arsenous trichloride	7784-34-1	500
Arsine	7784-42-1	100
Azinphos-ethyl	2642-71-9	100
Azinphos-methyl	86-50-0	2
Bacitracin	1405-87-4(a) ⁵	10,000
Benzal chloride	98-87-3	500
Benzenamine, 3-(trifluoromethyl)-	98-16-8	500
Benzene, 1-(chloromethyl)-4-Nitro-	100-14-1	500
Benzenearsonic acid	98-05-5	2
Benzenesulfonyl chloride	98-09-9 ⁵	10,000
Benzotrichloride	98-07-7	100
Benzyl chloride	100-44-7	500
Benzyl cyanide	140-29-4	1,000
Bicyclo[2.2.1]heptane-2-carbonitrile, 5-chloro-6-(((methylamino)Carbonyl)oxy)im	15271-41-7	500
Bis(chloromethyl) ketone	534-07-6	2
Bitoscanate	4044-65-9	500
Boron trichloride	10294-34-5	500
Boron trifluoride	7637-07-2	500
Boron trifluoride compound with methyl ether (1:1)	353-42-4	1,000
Bromadiolone	28772-56-7	100
Bromine	7726-95-6	500
Butadiene	106-99-0 ⁵	10,000
Butyl isovalerate	109-19-3 ⁵	10,000
Butyl vinyl ether	111-34-2 ⁵	10,000

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Appendix A
 List of Extremely Hazardous Substances
 List 1—Continued

Chemical name	Chemical Abstract Service Number	Threshold Quantity (Pounds)
C.I. basic green 1	633-03-4 ⁵	10,000
Cadmium oxide	1306-19-0	100
Cadmium stearate	2223-93-0	1,000 ³
Calcium arsenate	7778-44-1	500
Camphechlor	8001-35-2	500
Cantharidin	56-25-7	100
Carbachol chloride	51-83-2	500
Carbamic acid, methyl-0-(((2,4-Dimethyl-1, 3-Dithiolan-2-yl)Methylene)Amino)-	26419-73-9	100
Carbofuran	1563-66-2	2
Carbon disulfide	75-15-10	10,000
Carbophenothion	786-19-6	500
Carvone	2244-16-8 ⁶	10,000
Chlordane	57-74-9	1,000
Chlortenvinfos	470-90-5	500
Chlorine	7782-50-5	100
Chlormephos	24934-91-6	500
Chlormequat chloride	999-81-5	1,000
Chloroacetaldehyde	107-20-0 ⁵	10,000
Chloroacetic acid	79-11-8	100
Chloroethanol	107-07-3	500
Chloroethyl chloroformate	627-11-2	1,000
Chloroform	67-66-3	10,000
Chloromethyl ether	542-88-1	1,000
Chloromethyl methyl ether	107-30-2	100 ³
Chlorophacinone	3691-35-8	100
Chloroxuron	1982-47-4	500
Chlorthiophos	21923-23-9	1,000
Chromic chloride	10025-73-7	2
Cobalt	7440-48-4 ⁴	10,000
Cobalt carbonyl	10210-68-1	100
Cobalt, ((2,2'-(1,2-ethanediy)bis (nitrilomethylidyne))bis(6-fluorophenolato))(2)	62207-76-5	100
Colchicine	64-86-8	100
Coumafuryl	117-52-2 ⁶	10,000
Coumaphos	56-72-4	100
Coumatetralyl	5836-29-3	500
Cresol, o-	95-48-7	1,000
Crimidine	535-89-7	100
Crotonaldehyde	4170-30-3	1,000
Crotonaldehyde, (E)-	123-73-9	1,000
Cyanogen bromide	506-68-3	500
Cyanogen iodide	506-78-5	1,000
Cyanophos	2636-26-2	1,000
Cyanuric fluoride	675-14-9	100
Cycloheximide	66-81-9	100
Cyclohexylamine	108-91-8	10,000
Cyclopentane	287-92-3 ⁵	10,000
Decaborane (14)	17702-41-9	500
Demeton	8065-48-3	500
Demeton-s-methyl	919-86-8	500
Dialifos	10311-84-9	100

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List of Extremely Hazardous Substances
List 1—Continued

Chemical name	Chemical Abstract Service Number	Threshold Quantity (Pounds)
Diborane	19287-45-7	100
Dibutyl phthalate	84-74-2 ⁵	10,000
Dichlorobenzalkonium chloride	8023-53-8 ⁵	10,000
Dichloroethyl ether	111-44-4	10,000
Dichloromethylphenylsilane	149-74-6	1,000
Dichlorvos	62-73-7	1,000
Dicrotophos	141-66-2	100
Diepoxybutane	1464-53-5	500
Diethyl chlorophosphate	814-49-3	1,000
Diethyl-p-phenylenediamine	93-05-0 ⁵	10,000
Diethylcarbamazine citrate	1642-54-2	100
Digitoxin	71-63-6	100 ³
Diglycidyl ether	2238-07-5	1,000
Digoxin	20830-75-5	100
Dimefox	115-26-4	500
Dimethoate	60-51-5	500
Dimethyl phosphorochloridothioate	2524-03-0	500
Dimethyl phthalate	131-11-3 ⁵	10,000
Dimethyl sulfate	77-78-1	500
Dimethyl sulfide	75-18-3	100
Dimethyl-p-phenylenediamine	99-98-9	2
Dimethyldichlorosilane	75-78-5	10,000
Dimethyldrazine	57-14-7	1,000
Dimetilan	644-64-4	500
Dinitrocresol	534-52-1	2
Dinoseb	88-85-7	100
Dinoterb	1420-07-1	500
Dioctyl phthalate	117-84-0 ⁵	10,000
Dioxathion	78-34-2	500
Dioxolane	646-06-0 ⁵	10,000
Diphacinone	82-66-6	2
Diphosphoramidate, octamethyl-	152-16-9	100
Disulfoton	298-04-4	500
Dithiazanine iodide	514-73-8	500
Dithiobiuret	541-53-7	100
Emetine, dihydrochloride	316-42-7	1,000
Endosulfan	115-29-7	2
Endothion	2778-04-3	500
Endrin	72-20-8	500
Epichlorohydrin	106-89-8	1,000
EPN	2104-64-5	100
Ergocalciferol	50-14-6	1,000 ³
Ergotamine tartrate	379-79-3	500
Ethanesulfonyl chloride, 2-chloro-	1622-32-8	500
Ethanol, 1,2-dichloro-, acetate	10140-87-1	1,000
Ethion	563-12-2	1,000
Ethoprophos	13194-48-4	1,000
Ethyl thiocyanate	542-90-5	10,000
Ethylbis(2-chloroethyl)amine	538-07-8	10,000
Ethylene fluorohydrin	371-62-0	2 ³

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List 1—Continued

Chemical name	Chemical Abstract Service Number	Threshold Quantity (Pounds)
Ethylene oxide	75-21-8	1,000
Ethylenediamine	107-15-3	10,000
Ethyleneimine	151-56-4	500
Ethylmercuro phosphate	2235-25-8 ^s	10,000
Fenamiphos	22224-92-6	2
Fenitrothion	122-14-5	500
Fensulfotthion	115-90-2	1,000
Flu netil	4301-50-2	100
Fluonne	7782-41-4	100
Fluoroacetamide	640-19-7	2 ³
Fluoroacetic acid	144-49-0	2
Fluoroacetyl chloride	359-06-8	2 ³
Fluorouracil	51-21-8	500
Fonofus	944-22-9	500
Formaldehyde	50-00-0	500
Formaldehyde cyanohydrin	107-16-4	10,000
Formetanate	23422-53-9	100
Formothion	2540-82-1	100
Formparanate	17702-57-7	100
Fosthietan	21548-32-3	500
Fuberidazole	3878-19-1	100
Furan	110-00-9	500
Gallium trichloride	13450-90-3	500
Hexachlorocyclopentadiene	77-47-4	500
Hexachloronaphthalene	1335-87-1 ^s	10,000
Hexamethylenediamine, N,N'-dibutyl-	4835-11-4	500
Hydrazine	302-01-2	1,000
Hydrocyanic acid	74-90-8	100
Hydrogen chloride	7647-01-0	500
Hydrogen fluoride	7664-39-3	100
Hydrogen peroxide (concentration greater than 52%)	7722-84-1	1,000
Hydrogen selenide	7783-07-5	50
Hydrogen sulfide	7783-06-4	50
Hydroquinone	123-31-9	500
Indomethacin	53-86-1 ^s	10,000
Indium tetrachloride	10025-97-5 ^s	10,000
Iron, Pentacarbonyl-	13463-40-6 ^s	100
Isobenzan	297-78-9	100
Isobutyronitrile	78-82-0	10,000
Isoncyanic acid, 3,4-dichlorophenyl ester	102-36-3	500
Isodrin	465-73-6	100
Isofluorophate	55-91-4	100 ³
Isophorone diisocyanate	4098-71-9	100 ³
Isopropyl chloroformate	108-23-6	1,000
Isopropyl formate	625-55-8	500
Isopropylmethylpyrazolyl dimethylcarbamate	119-38-0	500

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Appendix A
List of Extremely Hazardous Substances
List 1—Continued

Chemical name	Chemical Abstract Service Number	Threshold Quantity (Pounds)
Lactonitrile	78-97-7	1,000
Leptophos	21609-90-5	500
Lewisite	541-25-3	2 ³
Lindane	58-89-9	1,000
Lithium hydride	7580-67-8	100(b) ⁴
Malononitrile	109-77-3	500
Manganese, tricarbonyl methylcyclopentadienyl	12108-13-3	10,000
Mechlorethamine	51-75-2	2 ³
Mephostolan	950-10-7	500
Mercuric acetate	1600-27-7	500
Mercuric chloride	7487-94-7	500
Mercuric oxide	21908-53-2	500
Mesitylene	108-67-8 ⁵	10,000
Methacrolein diacetate	10476-95-6	1,000
Methacrylic anhydride	760-93-0	500
Methacrylonitrile	126-98-7	10,000
Methacryloyl chloride	920-46-7	100
Methacryloyloxyethyl isocyanate	30674-80-7	500
Methamidophos	10265-92-6	100
Methanesulfonyl fluoride	658-25-8	1,000
Methidathion	950-37-8	500
Methiocarb	2032-65-7	500
Methomyl	16752-77-5	1,00
Methoxyethylmercuric acetate	151-38-2	500
Methyl 2-chloroacrylate	80-63-7	500
Methyl bromide	74-83-9	1,000
Methyl chloroformate	78-22-1	10,000
Methyl disulfide	624-92-0	100
Methyl isocyanate	624-83-9	500
Methyl isothiocyanate	556-61-6	500 ⁴
Methyl mercaptan	74-93-1	500
Methyl phenkapton	3735-23-7	500
Methyl phosphonic dichloride	676-97-1	100 ⁴
Methyl thiocyanate	556-64-9	10,000
Methyl vinyl ketone	78-94-4	2
Methylhydrazine	60-34-4	500
Methylmercuric dicyanamide	502-39-6	500
Methyltrichlorosilane	75-79-6	10,000
Metolcarb	1129-41-5	100
Mevinphos	7786-34-7	500
Mexacarbate	315-18-4	500
Mitomycin C	50-07-7	500
Monocrotophos	6923-22-4	2
Muscimol	2763-96-4	500
Mustard gas	505-60-2	1,000
Nickel	7440-02-0 ⁵	10,000
Nickel carbonyl	13463-39-3	Any ³
Nicotine	54-11-5	100 ³
Nicotine sulfate	65-30-5	100

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Appendix A
List of Extremely Hazardous Substances
List 1—Continued

Chemical name	Chemical Abstract Service Number	Threshold Quantity (Pounds)
Nitric acid	7697-37-2	1,000
Nitric oxide	10102-43-9	100 ³
Nitrobenzene	98-95-3	10,000
Nitrocyclohexane	1122-60-7	500
Nitrogen dioxide	10102-44-0	100
Nitrosodimethylamine	62-75-9	500
Norbormide	991-42-4	100
Organorhodium complex (PMN-82-147)	0	2
Orotic acid	65-86-1 ⁵	10,000
Osmium tetroxide	20816-12-0 ⁵	10,000
Ouabain	630-60-4	100 ³
Oxamyl	23135-22-0	100
Oxetane, 3,3-bis(chloromethyl)-	78-71-7	500
Oxydisulfoton	2497-07-6	1,000
Ozone	10028-15-6	100
Paraquat	1910-42-5	2
Paraquat methosulfate	2074-50-2	2
Parathion	56-38-2	100 ³
Parathion-methyl	298-00-0	100 ³
Paris green	12002-03-8	500
Pentaborane	19624-22-7	500
Pentachloroethane	76-01-7 ⁵	10,000
Pentachlorophenol	87-86-5 ⁵	10,000
Pentadecylamine	2570-26-5	100
Peracetic acid	79-21-0	500
Perchloromethylmercaptan	594-42-3	500
Phenol	108-95-2	500
Phenol, 2,2:thiobis(4,6-dichloro-	97-18-7	100
Phenol, 2,2:thiobis[4-chloro-6-methyl-	4418-66-0	100
Phenol, 3-(1-methylethyl)-, methylcarbamate	64-00-6	500
Phenoxarsine, 10,10'-oxydi-	58-36-6	500
Phenyl dichloroarsine	696-28-6	1,000
Phenylhydrazine hydrochloride	59-88-1	1,000
Phenylmercury acetate	62-38-4	500
Phenylsilatrane	2097-19-0	500
Phenylthiourea	103-85-5	100
Phorate	298-02-2	2
Phosacetim	4104-14-7	100
Phostolan	947-02-4	100
Phosgene	75-44-5	2
Phosmet	732-11-6	2
Phosphamidon	13171-21-6	100
Phosphine	7803-51-2	500
Phosphonothioic acid, methyl-O-ethyl O-(4-(methylthio)phenyl) ester	2703-13-1	500
Phosphonothioic acid, methyl-S-(2-(bis(1-methylethyl)amino)ethyl) O-ethyl ester	50782-69-9	100
Phosphonothioic acid, methyl-O-(4-nitrophenyl) O-phenyl ester	2665-30-7	500
Phosphoric acid, dimethyl 4-(methylthio) phenyl ester	3254-63-5	500
Phosphorous trichloride	7719-12-2	1,000
Phosphorus	7723-14-0	500 ⁴

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Appendix A
List of Extremely Hazardous Substances
List 1—Continued

Chemical name	Chemical Abstract Service Number	Threshold Quantity (Pounds)
Phosphorus oxychloride	10025-87-3	500
Phosphorus pentachloride	10026-13-8	500 ⁴
Phosphorus pentoxide	1314-56-3	2 ⁴
Phylloquinone	84-80-0 ⁵	10,000
Physostigmine	57-47-6	100
Physostigmine, salicylate (1:1)	57-64-7	100
Picrotoxin	124-87-8	500
Piperidine	110-89-4	1,000
Piprotal	5281-13-0	100
Pirimifos-ethyl	23505-41-1	1,000
Platinous chloride	10025-65-7 ⁵	10,000
Platinum tetrachloride	13454-96-1 ⁵	10,000
Potassium arsenite	124-50-2	500
Potassium cyanide	151-50-8	100 ⁴
Potassium silver cyanide	506-61-6	500 ⁴
Promecarb	2631-37-0	1,000
Propargyl bromide	106-96-7	2
Propiolactone, beta-	57-57-8	500
Propionitrile	107-12-0	500
Propionitrile, 3-chloro-	542-76-7	1,000
Propyl chloroformate	109-61-5	500
Propylene glycol, allyl ether	1331-17-5 ⁵	10,000
Propylene oxide	75-56-9	10,000
Propyleneimine	75-55-8	10,000
Prothoate	2275-18-5	100
Pseudocumene	95-63-6 ⁵	10,000
Pyrene	129-00-0	1,00 ³
Pyridine, 2-methyl-5-vinyl-	140-76-1	500
Pyridine, 4-amino	504-24-5	100
Pyridine, 4-nitro-, 1-oxide	1124-33-0	500
Pyriminil	53558-25-1	1,000
Rhodium trichloride	10049-07-7 ⁵	10,000
Salcomine	14167-18-1	500
Sarin	107-44-8	2 ³
Selenium oxychloride	7791-23-3	500
Selenous acid	7738-00-8	1,000
Semicarbazide hydrochloride	563-41-7	1,000
Silane, (4-aminobutyl)diethoxymethyl-	3037-72-7	1,000
Sodium anthraquinone-1-sulfonate	128-56-3 ⁵	10,000
Sodium arsenate	7631-89-2	1,000
Sodium arsenite	7784-46-5	500
Sodium azide (Na(N3))	26626-22-8	100 ⁴³
Sodium cacodylate	124-65-2	100
Sodium cyanide (Na(CN))	143-33-9	100 ⁴
Sodium fluoroacetate	62-74-8	2
Sodium pentacychlorophenate	131-52-2	100
Sodium selenate	13410-01-0	100
Sodium selenite	10102-18-8	500
Sodium tellurite	10102-20-2	500

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Appendix A
List of Extremely Hazardous Substances
List 1—Continued

Chemical name	Chemical Abstract Service Number	Threshold Quantity (Pounds)
Strychnine	57-24-9	100 ³
Strychnine, sulfate	60-41-3	100
Sulfotep	3689-24-5	500
Sulfoxide, 3-chloropropyl octyl	3569-57-1	500
Sulfur dioxide	7446-09-5	500
Sulfur tetrafluoride	7783-80-0	100
Sulfur trioxide	7446-11-9	100 ⁴
Sulfuric acid	7664-93-9	1,000
Tabun	77-81-6	2 ³
Tellurium	13494-80-9	500
Tellurium hexafluoride	7783-80-4	2
Tepp	107-49-3	100
T ributyl	13071-79-9	500
Tetraethyllead	78-00-2	100 ³
Tetraethyltin	597-64-8	100 ³
Tetramethyl lead	75-74-1	100 ³
Tetranitromethane	509-14-8	500
Thallic oxide	1314-32-5 ⁵	10,000
Thallium sulfate	10031-59-1	100
Thallous carbonate	6533-73-9	100 ³
Thallous chloride	7791-12-0	100 ³
Thallous malonate	2757-18-8	100 ³
Thallous sulfate	7446-18-6	100
Thiocarbazine	2231-57-4	1,000
Thiocyanic acid, 2-(benzothiazolythio)methyl ester	21564-17-0 ⁵	10,000
Thiofanox	39196-18-4	100
Thiometon	640-15-3 ⁵	10,000
Thionazin	297-97-2	500
Thiophenol	108-98-5	500
Thiosemicarbazide	79-19-6	100
Thiourea, (2-chlorophenyl)-	5344-82-1	100
Thiourea, (2-methylphenyl)-	614-78-8	500
Titanium tetrachloride	7550-45-0	100
Toluene 2,4-diisocyanate	546-84-9	500
Toluene 2,6-diisocyanate	91-08-7	100
Trans-1,4-dichlorobutene	110-57-6	500
Triamiphos	1031-47-6	500
Triazofos	24017-47-8	500
Trichloro(chloromethyl)silane	1558-25-4	100
Trichloro(dichlorophenyl)silane	27137-85-5	500
Trichloroacetyl chloride	76-02-8	500
Trichloroethylsilane	115-21-9	10,000
Trichloronate	327-98-0	1,000
Trichlorophenylsilane	98-13-5	2
Trichlorophon	52-68-6 ⁵	10,000
Triethoxysilane	998-30-1	500
Trimethylchlorosilane	75-77-4	1,000
Trimethylolpropane phosphite	824-11-3	500
Trimethyltin chloride	1066-45-1	500
Triphenyltin chloride	639-58-7	500

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Appendix A
List of Extremely Hazardous Substances
List 1—Continued

Chemical name	Chemical Abstract Service Number	Threshold Quantity (Pounds)
Tris(2-chloroethyl)amine	555-77-1	1,000
Valinomycin	2001-95-8	1,000 ³
Vanadium pentoxide	1314-62-1	100 ⁴
Vinyl acetate monomer	108-05-4	1,000
Vinylcyclobutene	3048-64-4 ⁵	10,000
Warfarin	81-81-2	500
Warfarin sodium	129-06-6	1,000
Xylylene dichloride	28347-13-9	100
Zinc phosphide	1314-84-7	500 ⁴
Zinc, dichloro(4,4-dimethyl-5((((methylamino)carbonyl)oxy)imino)pentanenitrile)	58270-08-9	100

¹ Statutory reportable quantity for purposes of emergency notification under SARA section 304(a)(2).

² Indicates that the reportable quantity is subject to change when the assessment of potential carcinogenicity and/or chronic toxicity is completed.

³ The calculated threshold quantity changed after technical review as described in the text.

⁴ This material is a reactive solid. The threshold planning quantity will not become 10,000 pounds for the non-powder form.

⁵ This chemical is proposed for deletion from list. Threshold planning quantity is in the interim assigned to the category of lowest concern, 10,000 pounds.

⁶ The statutory one-pound reportable quantity for methyl isocyanate under CERCLA section 102(b) may be adjusted in a future rulemaking action.

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Appendix A
Additional Hazardous Chemicals
List 2

Chemical Name	Chemical Abstract Service Number
Acetaldehyde	75-07-0
Acetyl Peroxide	110-22-5
Acetylene	74-86-2
Allene	463-49-0
Ammonium Azide	12164-94-2
Ammonium Perchlorate	7790-98-9
Benzoyl Peroxide	94-36-0
3-Bromopropyne	106-96-7
1,2-Butadiene	590-19-2
Butadiene, Inhibited	106-19-2
Butane Mixed	106-97-8
2-Butanone Peroxide	1338-23-4
Buten-3-Yne	78-80-8
1-Butene	106-98-9
2-Butyne	503-17-3
Calcium Carbide	75-20-7
Carbon Monoxide	630-08-0
Carbonyl Sulfide	463-58-1
Cis-2-Butene	590-18-1
Collodion	9004-70-0
Cumene Hydroperoxide	80-15-9
Cyanogen	460-19-5
Cyclobutane	287-23-0
Cyclopropane	75-19-4
Cyclotetramethylenetetranitramine	2691-41-0
Cyclotrimethylenetrinitramine	121-82-4
Di-Tert-Butyl Peroxide	110-05-4
Diazodinitrophenol	87-31-0
Diborane	19287-45-7
Dichlorosilane	4109-96-0
Diethyleneglycol Dinitrate	693-21-0
1,1-Difluoroethane	75-37-6
Difluoromonoethane	75-68-3
Diisopropyl Peroxydicarbonate	105-64-6
Dimethyl Ether	115-10-6
Dimethyl Sulfide	75-18-3
Dimethylamine, Anhydrous	623-87-0
1,3-Dinitroglycerine	52326-66-6
Distearyl Peroxydicarbonate	74-84-0
Ethane	—
Ethane/Propane Mix	75-00-3
Ethyl Chloride	60-29-7
Ethyl Ether	75-08-1
Ethyl Mercaptan	109-95-5
Ethyl Nitrite	75-04-7
Ethylamine	74-85-1
Ethylene	—

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Appendix A
Additional Hazardous Chemicals
List 2 — (Continued)

Chemical Name	Chemical Abstract Service Number
Ethylene Glycol Dinitrate	628-96-6
Ethylene Oxide	75-21-8
Formaldehyde Gas	50-00-0
Furan	110-00-9
Hydrocarbon Mixture	Unassigned
A-24 (R) Hydrocarbon Propellant	
Hydrocarbon Propellant-Butane Mixture	
Hydrocarbon Propellant-Propane Mixture	
Hydrogen	1333-74-0
Hydrogen Cyanide, Anhydrous, Stabilized	74-90-8
Hydrogen Sulfide	7783-06-4
Isobutane	75-28-5
Isobutane-Butane Blend	
Isobutene	115-11-7
Isopentane	78-78-4
Isoprene	78-79-5
Isopropyl Chloride	75-29-6
Isopropylamine	75-31-0
Lead Nitroresorcinate	51317-24-9
Lead Styphanate	15245-44-0
Lithium Hydride	7580-67-8
M-Nitrotoluene	99-08-1
Mannitol, Hexanitrate	15825-70-4
Methane, Compressed	74-82-8
Methane, Refrigerated Liquid (Cryogenic Liquid)	74-82-8
Methyl Acetylene	74-99-7
Methyl Chloride	74-87-3
Methyl Formate	107-31-3
Methyl Mercaptan	74-93-1
Methyl Nitrate	598-58-3
2-Methyl-1-Butene	583-48-2
Methylamine, Anhydrous	74-89-5
Methylamine, Anhydrous	74-89-5
Methyl Cyclopropane	594-11-6
N-Butane	106-97-8
N-Butyl-4, 4-Di-(Tert-Butyl Peroxy) Valerate	995-33-5
N-Propyl Nitrate	627-13-4
Naphtha	8002-05-9
Neopentane	463-82-1
Nickel	7440-02-05
Nitrogen Triiodide	13444-85-4
Nitroglycerin	55-63-0
Nitrostarch, Dry	9056-38-6
Nitrostarch, Wet	9056-38-6
O-Nitrotoluene	88-72-2

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Appendix A
Additional Hazardous Chemicals
List 2 — (Continued)

Chemical Name	Chemical Abstract Service Number
1,3-Pentadiene	504-60-9
Pentaerythritol Tetranitrate	78-11-5
Pentane	109-66-0
Phosphine	7803-51-2
Phosphorous	7723-14-0
Propane	74-98-6
Propane-Isobutane Blend	
Propane (15.7%)-Isobutane Blend	
Propane (43.6%)-Isobutane Blend	
Propane, Refrigerated Liquid (Chryogenic Liquid)	74-98-6
Propylene	115-07-1
Propylene Oxide	75-56-9
Reformate Naphtha	68955-35-1
Silane	7803-62-5
Tert-Butyl Hydroperoxide	75-91-2
Tert-Butyl Peroxyacetate	107-71-1
Tert-Butyl Peroxybenzoate	614-45-9
Tert-Butyl Peroxypivalate	927-07-1
Tert-Butylamine	75-84-9
Tetrafluorethylene	116-14-3
Trans-2-Butene	624-64-6
Trichlorosilane	10025-78-2
Trifluorochloroethylene	79-38-9
Trimethylamine	75-50-3
Trinitrobenzoic Acid, Dry	129-66-8
Trinitrobenzoic Acid, Wet	129-66-8
Trinitroresorcinol	82-71-3
Trinitrotoluene, Wet	118-96-7
Vinyl Chloride	75-01-4
Vinyl Ethyl Ether	109-92-2
Vinyl Fluoride	75-02-5
Vinyl Isopropyl Ether	926-65-8
Vinyl Methyl Ether	107-25-5
Vinylidene Chloride	75-35-4
Zirconium Metal, Dry	7440-67-7
Zirconium Scrap	7440-67-7

SL 085395



TO Tom Brown

DATE July 6, 1988

FROM R. J. McCorquodale SUBJECT OSHA Compliance Inspection
6/21/88 - 6/24/88

The attached write-up, by Jon Shepherd, of the recent OSHA inspection, summarizes the activities of the four days. Jon did an excellent job with the write-up, plus he did a thoroughly professional job of coordinating the inspection.

As Jon stated, two inspections were made. The first, Industrial Hygiene, dealt with our Industrial Hygiene/Medical Programs for Chlor/Alkali. The cooperation and participation of all employees involved contributed to our receiving high praise from the Compliance Officer. He (Compliance Officer) stated that although we had some problems, it was obvious to him that we had a sound program and we were willing to work together (Management & Union) to resolve them.

The second, Systems Safety, dealt with our ability to prevent and respond to a Bhopal type incident. Our Management representatives (listed in Jon's write-up) were both knowledgeable and professional in their discussions. This, along with the updated Emergency Procedures Manual, indicated to the Compliance Officer that our efforts were aimed at prevention of a major release, but if one occurred we were ready to respond.

The Compliance Officer stated that his written evaluation of our Systems Safety would reflect, in his opinion, that our program was sound.

The written evaluation of our Emergency Program (Systems Safety) will be given to the Area Director (OSHA) who will write an evaluation of his own. Both evaluations will be submitted to the Dallas Office (OSHA) along with all other evaluations (inspections) made from this region. Dallas will then decide which locations to select for a detailed follow-up inspection. Based on comments from the Compliance Officer, we are not likely to be a selected location.

RJM/fb

cc: Harry Hank
John Fike
Jim Meadows
Fred Rau
Chuck Bellon
Gerry Jordan
Roger Corley

SL 085396