

SSH Audit

December 17, 1992

TO: MIKE BRECKENRIDGE PLAQUEMINE

FROM: HERM WALTEMATE CLEVELAND

SUB: PLAQUEMINE SAFETY AUDIT
December 1-4, 1992

Attached is the final report of the safety audit conducted at the Plaquemine plant.

With the shutting down of the resin production area, several of the plant safety procedures will be required to be revised or some may be deleted. The revised safety procedures will need to reflect the requirements for compounding. Also with only two individuals in the plant during the off-shifts, the emergency procedures must be revised accordingly.

The demolition of the resin production areas will present some unique safety problems. During the audit we did review and did agree on the approach to take for the demolition.

In the following chart, I have compared the Plaquemine Plant recordable, Lost Time (Including restricted cases) and C-DAW incidence rates with BLS Chemical and Allied Products, CMA and the BFG Geon Vinyl Division.

	<u>BLS</u>	<u>CMA</u>	<u>GEON VINYL</u>	<u>PLAQ.</u>
<u>1989</u>				
Rec. IR	6.40	4.04	3.86	4.90
Lost Time IR	*3.00	*1.82	*1.72	*.70
C-DAW IR	**	.81	.92	.70
<u>1990</u>				
Rec. IR	5.90	3.97	3.25	3.59
Lost Time IR	*2.90	*1.84	*1.20	.72
C-DAW IR	**	.75	.34	0
<u>1991</u>				
Rec. IR	5.70	3.89	2.26	4.38
Lost Time IR	*2.80	*1.86	*.91	.88
C-DAW IR	**	.72	.26	.88
<u>1992</u>				
Rec. IR	**	3.79	1.91	1.02
Lost Time IR	**	*1.73	*.37	0
C-DAW IR	**	.68	.09	0

* Include restricted work cases

** Not available

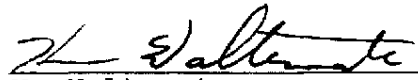
NGC 12636

The Plaquemine plant was rated with 1 item - Needs Attention and 40 items - Satisfactory.

The report format is laid out for you to write in your abatement program and indicate the status as Completed, In-Progress, or Incomplete. A progress report giving the status of the items requiring attention is due January 30, 1993 and each quarter thereafter until all items have been corrected. For your convenience, I have included the word processing disc on which you can enter your response.

The report includes the following:

- I. Positive Observations
- II. Previous Safety Audits
- III. 1992 Items which Need to be Corrected
- IV. Plant Inspection tour
- V. House Keeping Evaluation
- VI. Plant Safety Audit Rating


H. Waltemate

PLQ92AUD.HW

cc: G. Higby
R. Grahek/M. Marshall
E. Martinelli/W. Patient
C. Mattia
L. Larson
M. Comeaux

PLAQUEMINE SAFETY AUDIT
December 1-4, 1992

I. Positive Observations

1. The HAZWOPER training conducted by LSU for the plant was well done and effective in getting this training completed.
2. The fire fighting equipment was in excellent condition. All equipment was inspected as required and in good condition.
3. The system established for tracking corrective action items is an excellent system and is effective in bringing items to closure.
4. The completion of previous audit items was impressive. 24 items were considered completed, 3 were withdrawn and one was in-progress. Some of these items were from 1985.

II. Previous Safety Audits

(20) Determine the release pressure of the corrugated-steel wall panels. Panels above head-level heights can be converted to blow-out panels by replacing existing fasteners with FABCO fasteners, as long as the steel panels do not weigh more than about 7.0 psf. Provide 1 sq.ft. of relief panel for each 100 cu.ft. of room volume. Release pressure of the panels should be 25 to 30 psf.

Plant Response

[illegible]

4

III. Items To Be Corrected

With the recent shutdown of the resin manufacturing units, several safety procedures will need to be revised to reflect a compound operation. The following procedures should be revised on a priority basis:

- ## Plant Response

5

SA-1992-2

The GVD recently issued a new safety standard SA-135 Management of Change. This safety standard has a 3/1/93 implementation date for compound operations.

A safety procedure on Management of Change needs to be prepared for your plant. I have sent to the plant copies of the Niagara Falls and Avon Lake procedures on this subject.

**Plant
Response**

_____ Complete _____ In-Progress _____ Incomplete

SA-1992-3

With some of the recent major fires and explosions, the importance of a safe exit from the workplace is brought out. All of your exits need to be properly identified and illumination provided as required by OSHA Standard 1910.37(q)(6). Each of your fence line gates need to be marked as an exit, emergency exit, not an exit or be identified with its actual character (function). The fence line emergency exits need to be unimpeded and be identified in your plant evacuation procedure.

**Plant
Response**

_____ Complete _____ In-Progress _____ Incomplete

SA-1992-4

In 1991 we had a potential for a serious accident at the Terre Haute plant when the kneader closure bolt on a Buss Extruder failed and was projected out with great force nearly striking a supervisor. The design of the newer Buss Extruders has been modified to prevent this accident.

You need to construct a metal guard to cover this closure bolt or verify that your Buss has the modified design. The design of this guard can be obtained through Mike DeMent of Terre Haute.

Plant
Response

_____ Complete _____ In-Progress _____ Incomplete

SA-1992-5

Trailer restraints are an excellent device for preventing accidents when driving a forklift truck into a trailer. GVD has revised SA-131 and requires that trailer restraints be provided with all new loading dock installations and convert all existing loading locks by January 1994.

The warehouse docks need to be equipped with trailer restraints.

Plant
Response

_____ Complete _____ In-Progress _____ Incomplete

SA-1992-6

There has been a recent concern with explosions involving powders shipped in bulk bags. I have become aware of six explosions involving bulk bags. Because of this, we had George Petino of Hazard Research Corporation inspect our Louisville compound operation and make recommendations on the safe handling of powder in bulk bags. (A copy of his report has been forwarded to you in a separate letter).

George is recommending that powder be shipped in Super-Sacks (bulk bags) with conductive liners if the following criteria are present:

- a. Volume resistivity greater than 10^{+12} ohm-cm
- b. relaxation time greater than 1.0 second
- c. Minimum spark ignition energy $\leq$ 500 millijoules

During the audit, I observed Paraloid Modifier, Kane Modifier and 71083 Acrylic Process Aid stored in your warehouse in non-grounded bulk bags. Each of these materials should be reviewed with regard to the criteria and grounded bags be required if the three criteria are met. In reviewing my files, Paraloid Modifier has a 10^{+16} ohm-cm volume resistivity and a 20 millijoule minimum spark ignition energy. I do not have information on the relaxation time.

Plant
Response

_____ Complete _____ In-Progress _____ Incomplete

SA-1192-7

Over the past two years the GVD has had a series of fires or problems from the hot buns, chips and start-up flux powder from the Buss Lines.

The Terre Haute plant has developed a procedure for the safe handling of this material. It includes screening the start-up flux powder and utilizing metal dumpsters. I left with you, copies of the narrative reports on the 9/17/89 fire at Terre Haute, the 2/27/90 fire at Avon Lake and the 7/12/92 Shawinigan Fire. I have also left a copy of the Terre Haute procedure.

You need to consider implementing this procedure at Plaquemine.

Plant Response

_____ Complete _____ In-Progress _____ Incomplete

PLAQUEMINE SAFETY AUDIT

DECEMBER 1-4, 1992

IV. HOUSEKEEPING EVALUATION

Ground Silos	8 Exceeds Requirements
Overhead Silos	8 Exceeds Requirements
Compound Warehouse	7 Exceeds Requirements
Maintenance	7 Exceeds Requirements
Laboratory	7 Exceeds Requirements
Stores	7 Exceeds Requirements
Compounding	6 Meets Requirements
Shipping Warehouse	5 Meets Requirements

V. PLAQUEMINE SAFETY AUDIT PLANT INSPECTION TOUR

December 1, 1991

1. Dispose of old chain hoist on the upper level finishing area.
2. Chain slings in the upper level of the finishing area are required to be inspected annually or more frequent. Refer to OSHA Std. 1910.187(d)(3).
3. Bottom stair next to the top level in the stair tower is bent and needs to be repaired.
4. Outside speaker is not bolted securely and could fall during a strong wind.
5. If HPW unit in the compound area has a 3000 psi rating, BFG GVD Safety Standard SA-114 needs to be reviewed and all requirements met.
6. Fire hose needs to be pressure tested on an annual basis.
7. The inside of the pulley/belt on the rotor roter needs to be guarded. Refer to OSHA Std. 1910.219(5)(9).
8. The flimsy 3 step ladder in the mixing area should be replaced.
9. The scaffold in the mixing area should be removed and put in storage.
10. 3-ton chain hoist is placed on a 2-ton trolley and beam. A 2-ton chain hoist is the maximum allowable.
11. Bolts missing in flange below HPR-5L causing a powder leak.
12. A crossover stairs needs to be provided on the M Line pipe outside the door.
13. Two exit signs in the raw materials warehouse have lights not working. Refer to OSHA Std. 1910.37(q)(6).
14. Emergency light in the raw materials warehouse not working.
15. Partial bags of powder in the raw materials warehouse should be sealed closed or put into a container.

NGC 12646

16. Electrical cord on low voltage light in raw materials warehouse needs repair.
17. An electrical outlet needs to be provided to the "Big Joe" battery charger to eliminate the need for an extension cord. Refer to OSHA Std. 1910.305(g)(1).
18. The head knocker near the battery charger needs to be removed.
19. The hot lines at the Buss need to be insulated.
20. The kneader bolt on the Buss should be guarded. A near miss occurred at Terre Haute.
21. Nose tread is missing on the stairs near CLR-3M.
22. Electrical cord on low voltage light needs repair.
23. Wooden pallets present a serious fire hazard and need to be stored 50' from any building.
24. Door near the warehouse dock needs to have an exit sign. Refer to OSHA Std. 1910.37(q)(1).
25. The spill containment for the diesel fuel needs to be drained.

December 2, 1992

1. A few other steps are bent in the compounding stair tower and need repair. All need to be checked.
2. Fire alarm pull station appears to have been activated. The system needs to be checked.
3. The 440 volt feed on the welder has been taped. A proper splice needs to be made. Refer to OSHA Std. 1910.255(d)(9)(iii).
4. The compressed gas cylinders of oxygen must be stored 20' from flammable cylinders or a noncombustible barrier provided. Refer to OSHA Std. 1910.253(b)(4)(iii).
5. Top hat on top of silo has a large crack in the resin feed line and is allowing resin to leak.
6. Cover missing on electrical box on the stairs going to the silos. Refer to OSHA Std. 1910.305(b)(2).
7. Control box for resin transfer has fallen out of the support bracket.

December 3, 1992

1. Ladder cage to platform to silos is bent and needs to be repaired.
2. There are 4 angle iron/channel iron that need to be removed on the RR compound loading area as they can be bumped.
3. Also 2 head knockers on the other rack that should be removed.
4. Ground cable broken on one of the structures.
5. Inside silo TK-4, six of the old bolts need to be removed as they are tripping hazards. TK-1 also has two.
6. Light globe missing on light on rack used for washing RR cars.
7. Nipple on airline has a severe leak on the rack used for washing RR cars.

VJ. - BFGOODRICH CHEMICAL SAFETY PROGRAM RATING

LOCATION: Plaquemine Plant

DATE OF AUDIT: December 1-4, 1992

RATING ORGANIZATION AND ADMINISTRATION

S Management and Supervision Involvement
S Compliance with Previous Audits
S Preparation and Compliance with Job Procedures
S Procurement and Startup of New Equipment

EDUCATION, TRAINING AND MOTIVATION

S Contractor Training
S Safety Counseling
S Accident Prevention Achievement Recognition
S Fire Preparedness
S Supervisor Training
S Employee Safety Training
S Hot Work Training
S Lockout Training
S Vessel Entry Training
S Forklift Trailer Entry Training
S New Employee Indoctrination
S Safety Meetings
S First Aid
S Off-The-Job Safety

GENERAL HAZARD CONTROL

S Quality of Housekeeping Program
S Housekeeping Conditions
S Internal Safety Audit
S Equipment Guarding
S Safety Equipment
S Hoisting Equipment
S Electrical Equipment
S Forklift Trailer Entry
S Community Emergency Planning
S Forklift Operations
S Cardinal Rule Audit System

PROCESS HAZARD CONTROL

S Relief Valve and Rupture Disc Inspection
S Plant Evacuation
S Disaster Preparedness
S Hot Work System
S Lockout System
S Vessel Entry System
S Maintenance Work Order System
S Dust Hazard Control
NA Management of Change (Refer to 1992-2)

ACCIDENT INVESTIGATION AND ANALYSIS

S Accident Investigation by Supervisor
S Management Systems Investigation
S Corrective Action Follow-Up System

The Status of the Individual Components Will be Indicated by:

S - The program Element
is Satisfactory

NA - The Program Element
Needs Attention

TOTAL SATISFACTORY: 40

TOTAL NEEDS ATTENTION: 1

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NGC 12649

II. Audit Findings

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G. EMPLOYEE SAFETY

30. Lockout/Tagout Program (Regulatory)

During our review of the facility's lockout/tagout program, we noted the program does not:

- a. Address training requirements.
[29 CFR 1910.147(c)(7)(i)]
 - * This item has been addressed by developing a policy statement which describes the components of our lockout/tagout program. Complete
- b. Specify the employer's manner of enforcing the program. [29 CFR 1910.147(c)(4)(ii)]
 - * This item has been addressed by developing a policy statement which describes the components of our lockout/tagout program. Complete
- c. Specify how the employer will conduct and certify a periodic inspection of the energy control program.
[29 CFR 1910.147(c)(6)(i) and .147 (c)(6)(ii)]
 - * This item has been addressed by developing a policy statement which describes the components of our lockout/tagout program. Complete
- d. Address the requirements specific to the plug and cord connected electrical equipment exclusion. [29 CFR 1910.147(a)(2)(iii)(A)]
 - * This item has been addressed in our revised safety procedure for Lockout, SA-2, effective 5/91. Complete
- e. Require tagout devices substantial enough to prevent inadvertent or accidental removal and capable of withstanding the environment to which they are exposed.
[29 CFR 1910.147(c)(5)(ii)(c)(2) and .147(c)(5)(ii)(g)(1)]
 - * This item has been addressed in our revised safety procedure for Lockout, SA-2, effective 5/91. Complete

II. Audit Findings

31. Means of Egress (Regulatory)

The facility does not maintain self-closing fire doors in the closed position in the Dispersion Resin area, Building 515, and the Latex area, Building 502, to avoid undue danger to employees from fire, smoke, or fumes in case of fire or other emergency. [29 CFR 1910.37(b)(3)]

- * Our practice has been to allow some fire doors to be chained open for ventilation purposes provided a fusible link is installed in the chain in accordance with BOCA Code 916.5. Further investigation of the BOCA Code confirms that this practice is not allowable for fire doors that protect enclosed egress routes. Fire doors that protect enclosed stairwells will be kept in the closed position.

7/15/91

32. Tank Car Unloading (Regulatory/Company Policy)

During tours of the railcar unloading area and observing railcar unloading, we noted the following:

- a. Numerous bond wires were detached at the elevated vinyl chloride unloading stations.
[29 CFR 1910.106(f)(3)(v)]

- * Bond wires have been reattached. Added to plant PM schedule.

Complete

- b. Facility personnel did not block both sides of the railcar's wheels with a pair of metal chocks when unloading a railcar of ethyl acrylate or attach a bonding clamp to the railroad car before any connection was made. [SA 108]

- * This requirement is included in the railcar unloading procedure. Addressed by Latex manager.

Complete

- c. An employee was observed working on a resin railroad car without being properly tethered to the overhead cable line. [BFGoodrich Company Policy]

- * Our safety procedure which covers this activity requires that employees be protected from falling by using safety harnesses where feasible while loading and unloading railcars and tank trucks. A safety harness is not required when sampling or inspecting these containers.

N/A

II. Audit Findings

33. Lift Truck Inspection (Regulatory)

On December 4, 1990, three of the six lift truck drivers in Distribution did not complete a daily inspection checklist. [29 CFR 1910.178(q)(7)]

* Completion of a daily inspection checklist is required. This is an enforcement issue and has been addressed by the Distribution manager.

Complete

34. Machine Guarding (Regulatory)

In reviewing areas at the facility where machinery is used, we noted:

- a. The safety switch on the access door to the bag compactor in Building 541 pre-weight area is stuck in the closed position. [29 CFR 1910.212]

* This item was repaired and will be added to the plant PM schedule.

Complete

- b. The safety trip cord to the safety trip switch has excessive slack reducing its effectiveness to operate. [29 CFR 1910.212]

* This item was repaired.

Complete

35. General Safety Tour (Regulatory/Good Management Practice)

During a tour of the facility, we observed the following:

- a. The roof on Building 541 has numerous water leaks, which has resulted in wet floors. [29 CFR 1910.22(a)(2)]

* Roof leaks have been repaired. Water on the floor caused by roof leaks will be barricaded as they occur.

Complete

- b. Several employees were observed not wearing sideshields. [29 CFR 1910.133]

* 29 CFR 1910.133 does not require the use of side shields. This is a GVD policy requirement. Non-conformance to this policy has been addressed by our safety council. Employees found without proper eye protection have been counselled. On-going enforcement issue.

Complete

II. Audit Findings

- c. Electrical equipment on the Buss line are not identified with markings sufficiently durable to withstand the environment to which they are exposed. [29 CFR 1910.303(f)]
 - * The Buss line is a new installation and construction was not complete at the time of the audit. All electrical equipment has been properly identified. Complete
- d. Structural steel in compounding Building 541 has an accumulation of potentially explosive dust. [Good Management Practice]
 - * Interior walls have been installed in Building 541 to reduce dust accumulation. An AR for additional dust control measures has been prepared and approved. It has been put on hold until next year due to capital spending restrictions. 9/30/92
- e. The 6" mill incline conveyor does not have ventilation to remove smoke/fumes. [Good Management Practice]
 - * Neither the 6" nor the 9" mill incline conveyors have point source ventilation to remove fumes. The need to add ventilation is being evaluated. 8/31/91
- f. During a vessel entry in Building 513, the standby did not have the "Rescue Bag" positioned at the vessel. [Good Management Practice]
 - * Practice has been to have the rescue bag available in the vicinity of the vessel. We will revise the procedure to require that the bag be positioned at the vessel. 7/31/91.
- g. The flammable liquids storage cabinet in the lab is not grounded or vented to the outside. [Good Management Practice]
 - * Cabinet has been grounded and vented. Complete

II. Audit Findings

36. Contractor Safety Tour (Regulatory/Good Management Practice)

During a tour of the facility to observe contractors' adherence to safety requirements, we observed contractors:

- a. Not wearing eye protection, or in some cases, wearing eye protection without the required sideshields.
[29 CFR 1910.133]

* 29 CFR 1910.133 does not require sideshields. We require that contractors wear approved safety glasses. Insuring that they do is an ongoing enforcement issue.

Complete

- b. Using scaffolds without guardrails. [29 CFR 1910.28]
- c. Using ladders without safety feet, using ladders that were not lashed to prevent slipping, or using the top section of sectional ladders, without safety feet, as the base section. [29 CFR 1910.25]
- d. Not wearing hearing protection. [29 CFR 1910.95(i)(2)]
- e. Working in Compounding (Building 541) without having the lock-out device key with the individual who applied the lock-out device, and without tag devices indicating the identity of the person applying the lock-out device. [29 CFR 1910.147(c)(5)(ii)(d)]
- f. Working from elevated positions without proper fall protection. [Good Management Practice]
- g. Riding in a pick-up truck while standing on the truck bed. [Good Management Practice]

* Contractors are required to comply with BFG safety procedures covering activities referenced in items b. - g. Our contractor safety procedure has been revised and reissued. We have instituted a contractor evaluation system for documentation and compliance feedback purposes. This will give us a better mechanism for selecting contractors for future project work.

Complete

37. Contractor Safety Training (Company Policy)

The facility does not have, at the front gate, an up-to-date list of contractors who have been briefed in applicable plant safety requirements to ensure that contractors entering the facility have been trained. Currently, contractors, upon entering the facility, are asked whether they have received training.
[Chemical Division Safety Standard, SA 119]

* The security guard maintains an alphabetical list of all contractor employees who have received Safety Orientation. The system will be revised to provide a better means of verifying that each contractor employee has received safety training within the most current 6 month period.

8/31/91

II. Audit Findings

38. Hot Work Procedures (Company Policy)

In reviewing the facility procedure SA-1A, we noted the procedure does not:

- a. Require a written plan before hot work is authorized to begin that includes a listing of other options to performing the work without an open flame.
[SA 123:Hot Work Permit Procedure]

* This item has been included in our revised Safety Procedure, SA-1 for Hot Work, effective 6/1/91.
Written plans are presently being prepared as required. Complete

- b. Clearly specify the need for continuous lower explosion limit (LEL) monitoring in a Hazardous Class I area. [SA 123:Hot Work Permit Procedure]

* This item has been included in our revised Safety Procedure, SA-1 for Hot Work, effective 6/1/91.
Continuous LEL monitoring is currently being utilized. Complete

- c. Clearly specify the need for a LEL reading of the atmosphere inside a container before any hot work can begin on the inside or the outside of that container.
[SA 123: Hot Work Permit Procedure]

* This item has been included in our revised Safety Procedure, SA-1 for Hot Work, effective 6/1/91. Complete

39. Confined Space Entry (Company Policy)

The plant procedure SA-4F requires isolation of steam lines by inserting a line blank or by removing a portion of the line. This procedure is in conflict with another section of procedure SA-4F that allows high energy lines (steam) to be isolated by a closed/locked valve and a danger tag.
[SA-4F:Confined Space Entry Procedure]

* This conflict has been eliminated in our revised Safety procedure, SA-4 for Confined Space Entry, effective 6/1/91. Complete

40. Storage and Handling of Organic Peroxide Initiators (Company Policy)

The facility does not calibrate the temperature continuous recorder or alarm systems for the organic peroxide initiator storage freezers. [SA 134:Storage and Handling of Organic Peroxide Initiators Procedure]

* The calibration of the temperature continuous recorder and alarm systems for the organic peroxide initiator storage freezers has been added to our PM schedule. Complete

II. Audit Findings

41. Electrical and Process Control Room Pressurization (Company Policy)

In reviewing control room pressurization, we noted:

- a. The facility does not have secondary pressurization systems. [SA 103:Electrical and Process Control Room Pressurization Procedure]

- * The Suspension and Latex electrical and process control rooms have secondary pressurization systems consisting of a separate blower that is energized if the primary blower fails. The Dispersion electrical and process control room does not have a totally separate secondary system. A secondary system will be designed and installed. Until then, in the event of loss of pressurization, the process will be shut down.

3/31/92

- * The compound area has primary pressurization only. This is a Class II area and does not require secondary pressurization.

Complete

- b. The facility does not have alarms to indicate a drop in room pressurization below 0.1 inches of water. [SA 103:Electrical and Process Control Room Pressurization Procedure]

- * The Suspension and Latex systems have control room alarms in the event room pressurization drops below 0.1 inches of water. Alarms will be installed in Dispersion and Compound.

9/30/91

- c. Building 541 (Motor Control Center) does not have a working manometer to measure room pressurization. [SA 103:Electrical and Process Control Room Pressurization Procedure]. All alarms will be added to the PM schedule.

- * Manometer was repaired and will be added to the weekly safety checklist.

Complete

42. Powered Hand Trucks (Company Policy)

Powered hand trucks in Building 515 are not equipped with handles with emergency stop buttons, which will immediately reverse the direction of travel. [SA 102:Powered Hand Trucks Procedure]

- * Hand truck handles have been modified.

Complete

II. Audit Findings

43. OSHA Recordkeeping (Good Management Practice)

The facility does not document the methodology used to determine that a standard threshold shift is not due to occupational noise exposure.

* The plant nurse in conjunction with the plant physician is now evaluating and documenting the investigation of standard threshold shifts. Included in this assessment are the employee's hearing baseline, noise levels in his work area, and off-the-job activities.

Complete

44. Access to Employee Exposure and Medical Records (Good Management Practice)

The facility does not have documentation to confirm that they have informed an employee first entering into employment, and at least annually thereafter, of the following:

- a. The existence, location, and availability of employee exposure and medical records;
- b. The person responsible for maintaining and providing access to records; and
- c. Each employee's rights of access to these records.

* Items a.-c. have been addressed by developing a form that employees are asked to review and sign when first entering into employment and annually thereafter.

Complete

II. Audit Findings

H. INDUSTRIAL HYGIENE

45. Hazard Communication Program (Regulatory/Company Policy)

In reviewing the plant's hazard communication program and through tours of the plant and interviews with plant employees, we noted the following:

- a. A technician in the Paste area had not received hazard communication training prior to initial assignment. (Other employees could not recall having hazard communication training.) In addition, training records did not include content of the training or when the training occurred. [29 CFR 1910.1200(h)(1)(i-iii) and (h)(2)(i-iv)]
 - * Our written program requires that hazard communication training be conducted upon initial assignment and annually thereafter. We will review training records and assure that all employees have received hazard communication training in 1991. 12/31/91
- b. The written hazard communication program lists the National Fire Protection Association (NFPA) as being the warning system utilized to convey hazard warning to employees. Six of eight employees interviewed could not explain the system. [29 CFR 1910.1200(e)(1)(i-ii)]
 - * The NFPA labelling system is used for bulk storage labelling. New Jersey Right To Know labelling is used for all other materials. Knowledge and understanding of these systems is an ongoing training and review issue. Training content will be assessed and revised to enhance trainee awareness and understanding. 12/31/91
- c. The written program does not define the NFPA labeling system which is used for hazard warning. [29 CFR 1910.1200(e)(1)]
 - * The written program does have a general definition for the NFPA labelling system. The program will be revised to include a more detailed definition. 8/31/91

11. Audit Findings

- d. Several products were identified that were not on the Hytox Computer system or plant inventory.
[29 CFR 1910.1200(g)(1)]

* This item refers to two drums of lubricating oil found adjacent to Building 524. They have been added to the plant inventory and steps were initiated to have them added to the Hytox system. The plant has plans to add a "Buyer" position. This position will provide more control over the entry of new chemicals into the plant.

9/30/91

- e. A total of eight employees in Compounding, Large Poly, Paste Poly, Lab, Waste Treatment Plant, Maintenance, and Utilities could not readily use the BFGoodrich MSDS system without having access to BFGoodrich product code names and could not correctly locate information when asked. [BFGoodrich Company Policy]

* The BFGoodrich MSDS system catalogs chemicals by an "AN" number, a number assigned by the Hytox System. Part of the MSDS sets available to all employees is an MSDS index which catalogs chemicals by AN number, product name, chemical name and BFG code number. Training in the use of the MSDS system is conducted annually. MSDS are available on all chemicals and can be provided by the supervisor if an employee can't find it.

Complete

46. Acrylonitrile Training Program (Regulatory)

In reviewing acrylonitrile training programs at the plant, we noted the following:

- a. Not all appropriate employees have received annual training; and [29 CFR 1910.1045(o)(1)(ii)]

* Annual training for appropriate employees was scheduled for November and December, 1990. Completed in December 1990.

Complete

- b. Annual training records were not available for all years in which the training was conducted.
[29 CFR 1910.1045(o)(1)(ii)]

* Some historical records were discovered after the audit. A personnel change occurred in 1990 and the location of all training records was not communicated to the person now responsible for maintaining them. Our training recordkeeping system will be overhauled.

12/31/91

11. Audit Findings

47. Respiratory Protection Program (Regulatory/Good Management Practice)

In reviewing the plant's respiratory protection program and through interviews with employees and tours of areas where respirators are used and stored, we noted the following:

- a. Employees are allowed to have facial hair (e.g., sideburns, beards) when being fit tested and when wearing air-purifying negative pressure respirators. [29 CFR 1910.134(e)(5)(i)]

- * A facial hair policy will be developed, communicated and implemented

9/1/91

- b. Numerous respirator units were found face down, in plastic bags that were not sealed, and in an unclean condition. [29 CFR 1910.134(b)(6), .134 (b)(7), and .134(f)(5)(i) and (ii)]

- * Upon investigation, the units described here were obsolete and spare parts for respirators in Compound. They were disposed of or were stored in the proper manner.

Complete

- c. The breathing air system does not have low pressure alarms, and no records were available to verify that Grade D breathing air is supplied. [29 CFR 1910.134(d)(1) and .134(d)(2)(ii)]

- * The plant breathing air system is currently supplied by two oil-free, centrifugal compressors. It is equipped with local and computer console low pressure alarms and a five minute reserve capacity for egress purposes. We will request breathing air quality certification from the compressor manufacturers

8/31/91

- d. Respirators are not selected according to the guidance of American National Standard Practices for Respiratory Protection Z88.2-1969, which bases respiratory selection on hazard potential, efficiency of collection, immediate danger to life and health levels, and warning properties of contaminants to which the employee is exposed. [29 CFR 11910.134(c)]

- * The current selection criteria for respiratory protection omitted one type of respiratory protection. It has been revised.

Complete

II. Audit Findings

e. The respiratory protection program is outdated in that it does not reflect current job responsibilities for program administration. [Good Management Practice]

* Written program will be revised and reissued to reflect current job responsibilities for program administration.

8/1/91

f. Fit testing records do not indicate the manufacturer or model number of the masks being tested. [Good Management Practice]

* Fit testing recordkeeping form has been revised to include manufacturer and model number.

Complete

48. Hearing Conservation Program
(Regulatory/Company Policy/Good Management Practice)
In reviewing the facility's hearing conservation program and during tours of the facility, we noted the following:

a. Several employees were observed not wearing hearing protection in areas that required hearing protection. [29 CFR 1910.95(i)(2)(ii)]

* The employees involved were contractors in Building 513. Contractors are required to comply with BFG Safety Procedures. This is an on-going enforcement issue and is being addressed through a new contractor evaluation process.

Complete.

b. Noise Reduction Ratings (NRR) have not been calculated or evaluated for hearing protectors used in the plant. [29 CFR 1910.95(1)(2)]

* Noise reduction ratings have been calculated for hearing protectors in use in the plant.

Complete

c. The current Noise Standard and Hearing Conservation Amendment was not present at the dispensary for the physician's use. [29 CFR 1910.95(1)(2)]

* The current Noise Standard and Hearing Conservation Amendment is now available in the dispensary.

Complete

11. Audit Findings

- d. Data on file for the measurement of sound pressure levels inside the audiometric booth are incorrect. This makes exhaustive calibration also suspect. [29 CFR 1910.95(h)(1-5)]

* The audiometric technician who performed the calibration was consulted. He verified the sound pressure level measurements are correct and are in compliance with 29 CFR 1910.95(h)(1-5).

Complete

- e. The Hearing Conservation/Noise Method (dated March 1982) lists employee sound exposure threshold at 90 dBA instead of the current BFGoodrich policy of 85 dBA. [BFGoodrich Company Policy]

* Our recognized employee sound level exposure threshold is 85 dBA in accordance with current BFGoodrich policy. The "Hearing Conservation/Noise Method" dated March 1982, referred to in this item is BFG Corporate Industrial Hygiene method 9.80. It lists both the OSHA threshold of 90 dBA and BFG's threshold of 85 dBA.

Complete

- f. The nurse does not have a current list of hearing protection devices (HPD) issued with calculated noise reduction ratings for use in counseling employees on the effectiveness of HPDs. [Good Management Practice]

* The nurse now has a listing of hearing protection devices used in the plant with noise reduction ratings for use in counselling employees.

Complete

- g. Employee overexposures are not forwarded to the employee's medical file. [Good Management Practice]

* Our environmental technician has been maintaining monitoring records in his work area. Copies will be sent to the dispensary for inclusion in employee medical files

8/1/91

49. Monitoring Program

(Regulatory/Company Policy/Good Management Practice)

During our review of the plant's monitoring programs, we noted the following:

- a. The asbestos procedure does not use 0.2 fibers per cubic centimeter time weighted average (TWA) for permissible employee exposure limit. [29 CFR 1910.1001(c)(1) and 29 CFR 1926.58]

II. Audit Findings

- * The asbestos removal procedure will be updated to reflect a 0.2 fiber per cubic centimeter time weighted average. 8/31/91

- b. Vinyl Chloride samples are not being analyzed at an American Industrial Hygiene Association (AIHA) accredited laboratory or a laboratory that is equivalent by demonstrated means.
[BFGoodrich Company Policy]

- * Vinyl chloride samples are analyzed at BFGoodrich's industrial hygiene laboratory at Brecksville in accordance with a method validated by Andrew Fairlee and John Born in 1985. Pam Lane is our current contact at Brecksville. Complete

- c. Hazard rankings are not utilized for developing a sampling regimen. [BFGoodrich Company Policy]

- * Hazard rankings will be included in Job Exposure Surveys to be completed. 9/30/91

- d. The environmental technician performing industrial hygiene sample collection could not explain or demonstrate the use of the primary standard calibration device. [Good Management Practice]

- * New calibration and monitoring equipment has been ordered. The environmental technician will be trained in its use. 9/30/91

- e. The primary standard for calibrating personal sampling pump flow was not a calibrated burette.
[Good Management Practice]

- * The primary standard for calibrating personal sampling pump flow is a calibrated vessel. It was purchased specifically for the pump flow rates we use for personal sampling. New equipment has been ordered for sampling and calibration. 9/30/91

II. Audit Findings

- f. Sampling and analytical methods for vinyl chloride and acrylonitrile (NIOSH Method S-156) are not readily available at the facility to ensure that correct analytical techniques are utilized. In addition, the internal BFGoodrich sampling and analytical method for acrylonitrile is not current. [Good Management Practice]
- * Current sampling and analytical methods for vinyl chloride and acrylonitrile have been obtained. Complete
- g. Vinyl chloride samples collected in 1989 and 1990 show 31 out of 284 samples above the permissible exposure limit (PEL); however, no trend analysis is being plotted on personal samples. [Good Management Practice]
- * Past personal sample results have been trended; new results will be trended annually. Complete
- h. Gas chromatography results show averages above the PEL as well as high standard deviation in two locations in Building 513 for November. [Good Management Practice]
- * Two continuous monitoring points in Building 513 measure vinyl chloride concentrations in the main ventilation stack and above the building waste water sump. These points are measured to alert employees to potential fugitive emission problems so corrective action can be taken. Complete
- i. Sampling and analytical methods used for polyvinyl chloride (PVC) dust were not signed or dated. [Good Management Practice]
- * The methods referenced here were written and used in the mid 1970's when we were doing nuisance dust monitoring. We no longer do this based on measured exposures and engineering improvements. These methods have been discarded. Complete
50. Records Retention (Company Policy)
The plant does not have a records retention policy that includes preservation of employee medical and exposure records. [BFGoodrich Company Policy]
- * We use the Corporate Records Retention Policy. Copies have been provided to the nurse and the safety department to insure compliance. Complete.

II. Audit Findings

51. Laboratory Safety Standard (Good Management Practice)

The plant laboratory has not developed a chemical hygiene plan to comply with 29 CFR 1910.1450, which becomes effective on January 31, 1991.

- * The laboratory is in compliance with the Laboratory Safety Standard as of 1/91.

Complete

I. LOSS PREVENTION AND EMERGENCY RESPONSE

52. Fire Prevention Plan (Regulatory)

During our review of the facility's fire prevention plan and fire prevention training records, we noted the following:

- a. The plan does not include a list of major workplace fire hazards and their proper handling and storage procedures, potential ignition sources, control procedures and the type of fire protection equipment of systems that can control them. [29 CFR 1910.38(b)(2)(i)]
- b. Housekeeping procedures are not detailed to minimize fire risks and ease evacuation. [29 CFR 1910.38(b)(3)]
- c. Maintenance procedures for equipment and systems installed on heat producing equipment are not detailed to prevent accidental ignition of combustible materials. [29 CFR 1910.38(b)(5)]
- * All of the fire prevention elements referenced in items a. - c. exist and will be formally documented and consolidated into a single written plan.
- d. Three hundred and two out of 331 BFGoodrich employees and contractors have not received instruction in the fire prevention program. [29 CFR 1910.38(b)(4)]

9/30/91

- * Fire prevention training for all employees will be conducted.

11/1/91

53. Fire Protection Training (Regulatory)

In reviewing training records and interviewing personnel, we noted that 323 out of 331 BFGoodrich employees and contractors did not receive annual fire extinguisher training to respond to incipient fires in the workplace. [29 CFR 1910.157(g)]

- * Fire Protection Training for all employees will be conducted.

11/1/91

II. Audit Findings

54. Fire Response Policy (Regulatory)

The facility does not have a policy describing the fire brigade organization, function, and training requirements. [29 CFR 1910.156(b)(1)]

* All of the elements required by 29 CFR 1910.156(b)(1) exist. They will be documented in a policy statement.

9/1/91

55. Emergency Response Plan (Regulatory/Good Management Practice)

In reviewing the Emergency Response Manual and through interviews with personnel, we noted the following:

- a. The facility does not have an Emergency Response Plan that specifically addresses hazardous substances and wastes. [29 CFR 1910.38(a)(5)(i)]
- b. Decontamination procedures and requirements were not detailed in the Emergency Response Manual. [29 CFR 1910.120(q)(2)(vii)]
- c. Emergency equipment is not addressed in the Emergency Response Manual. [29 CFR 1910.120(q)(2)(xi)]
- d. A regular inspection and maintenance program for emergency response equipment and personal protection equipment has not been written and is not being performed. [Good Management Practice]

* The Emergency Response Manual is currently undergoing a major revision to incorporate all aspects of our Emergency Response Plan. An action plan will be developed to assure the items referenced in items a. - d. audit are addressed and completed.

11/1/91

56. Emergency Response Plan Training (Regulatory)

Our examination of training records and personal interviews noted the following:

- a. Forty-seven employees did not receive first responder training in 1990. [20 CFR 1910.120(q)(6)(i)]

* We will incorporate the requirements for first responder awareness level training into our hazard communication training program (see 45a.).

12/31/91

I. Audit Findings

- b. The facility did not train hazardous materials specialists in 1989 or 1990 in the standard annual 24-hour course designed to certify designated employees to implement the Emergency Response Plan and beyond the hazardous materials technician's standard to develop site safety and control plans. [29 CFR 1910.120(q)(6)(iii) and (iv)]

* The Pedricktown plant invests approximately 1200 manhours annually in emergency response evaluation, training and drilling at the operations level and above. The subject matter covers all aspects identified in 29 CFR 1910.120(q)(6)(iii) and (iv). The majority of this training has been conducted using internal resources focusing on plant specific materials. We will assess the formal training needs and identify how many and who should receive it.

12/31/91

57. CMA Responsible Care Process Safety (Company Policy)
The facility does not have a written plan to identify resources and time frames to move towards the implementation of CMA Responsible Care Process Safety practices in their long-term strategic plan.
[Process Safety Code of Management Practices]

* Written plan was finalized in April, 1991.

Complete

58. Instrument Calibration and Maintenance Programs
(Good Management Practice)
The facility does not have a written program to describe the processes or procedures for calibrating and maintaining the facility's LEL instruments and plant-wide vinyl chloride monomer (VCM) and ammonia leak detection gas chromatographs.

* Calibration and maintenance procedure for LEL instruments, and area monitoring systems will be documented in a written program .

10/1/91

J. PRODUCT RESPONSIBILITY

Based on the sample of activities reviewed, no exceptions were noted.