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**Environmental,
Health, and Safety
Audit of the
Geon Vinyl
Division Facility,
Pedricktown, NJ**

Attorney-Client Privilege

**Final Report to
The BFGoodrich Company**

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Acorn Park
Center for
Environmental Assurance

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I. Introduction

A. Purpose

This report summarizes the results of an environmental, health, and safety compliance audit conducted at The BFGoodrich Company's Geon Vinyl Division facility in Pedricktown, New Jersey. The objectives of the audit were to:

- Verify the facility's compliance with applicable federal, state, and local laws and regulations;
- Verify the facility's compliance with company, division, and facility policies, procedures, and standards;
- Determine whether facility activities are consistent with good environmental, health, and safety management practices and whether systems are in place and functioning; and
- Help identify actual and potential environmental, health, and safety risks.

The objective of this report is to communicate the audit team's findings and observations to The BFGoodrich Company management. The audit team consisted of two Arthur D. Little staff members (one of whom served as the team leader), three BFGoodrich staff members, and one member from Clayton Environmental Engineering. This report is not meant to imply legal certification of compliance or noncompliance.

B. Scope

The functional scope of the audit included issues within each of the following functional areas:

- Air Pollution Control -- including federal regulations issued pursuant to the Clean Air Act and related state requirements.
- Water Pollution Control -- including federal regulations issued pursuant to the Clean Water Act, drinking water management, and related state requirements.
- Solid and Hazardous Waste Management -- including federal regulations issued pursuant to the Resource Conservation and Recovery Act and related state requirements; and management of PCBs and asbestos including federal regulations issued pursuant to the Toxic Substances Control Act and related state requirements.
- Spill Control and Emergency Planning -- including oil and chemical spill prevention and control and selected requirements of the Comprehensive Environmental Response, Compensation, and Liability Act and the Superfund Amendments and Reauthorization Act.
- Industrial Hygiene, Employee Safety, Fire Safety and Loss Prevention -- including medical practices as well as regulatory requirements issued pursuant to the Occupational Safety and Health Act.

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- Selected requirements of the Hazardous Materials Transportation Act, Toxic Substances Control Act, and the Food, Drug, and Cosmetic Act, as applicable to the facility.
- Overall environmental, health, and safety management systems.

C. Approach

The fieldwork portion of the audit was conducted from December 3-7, 1990. The period under review was January 1, 1989 through December 7, 1990.

The audit was based on:

- Physical inspections of the facility;
- Examination of selected environmental, health, and safety administrative and operating records made available by facility staff at the audit team's request;
- Interviews and discussions with key facility and corporate management and staff; and
- Verification procedures designed to assess the facility's application of, and adherence to, environmental, health, and safety laws and regulations, and corporate and plant policies and procedures. In addition, we reviewed the facility with respect to the audit team's view of good industry practice.

The process by which this audit was conducted is consistent with the general state of the art of environmental, health, and safety auditing and the best professional judgment of the audit team members. The audit followed an audit protocol developed for BFGoodrich based upon established audit procedures. It should be understood that the audit consisted of evaluating a sample of practices and was conducted in a short span of time relative to the review period. Efforts were directed toward sampling major facets of environmental, health, and safety performance during the period under review, but it is important to recognize that this method is intended to uncover major program deficiencies, and this audit may not have identified all potential problems.

D. Report Format

Because of the nature of the audit and the broad scope of applicable regulatory requirements, this report focuses on exceptions to regulatory requirements or The BFGoodrich Company standards and observations with respect to our view of good environmental, health, and safety management practices. Where we identified an exception to a regulatory or BFGoodrich standard, specific references to laws and regulations or company policies and procedures are provided. In other cases, we identified situations which do not relate to specific regulatory or BFGoodrich requirements but which, in the judgment of the audit team, represent deviations from good environmental, health, and safety management practices or potential liabilities.

I. Introduction

Section II includes the audit team's overall audit opinion and specific audit findings by functional area. Within each functional area, the report lists specific exceptions to governmental requirements, exceptions to BFGoodrich policies and procedures, and observations related to the management systems in place to ensure ongoing compliance. Each exception or observation is identified as an exception to a regulatory requirement (*Regulatory*), an exception to a BFGoodrich policy or procedure (*Company Policy*), or an observation with respect to the audit team's view of good environmental, health, and safety management practice (*Good Management Practice*).

A. Overall Opinion

On the basis of our review, the audit team believes that the environmental, health, and safety programs and practices that we reviewed generally meet applicable governmental and The BFGoodrich Company policies and procedures, except as noted below. This opinion is based upon our professional judgment and the application of established audit procedures. The individual areas where we found deficiencies in the environmental, health, and safety programs and practices are described in the following sections of this report.

B. Air Pollution Control**1. Community Right-to-Know Survey (*Regulatory*)**

New Jersey Form DEQ-094 (Community Right-to-Know Survey for 1989), required to be filed by March 1, 1990, was not filed until May 16, 1990. (Plant personnel believe an extension was granted, but the facility could not provide documentation.) [NJSA 34:5A1]

2. Air Permit Recordkeeping (*Good Management Practice*)

In a random sample of 28 of 153 air permits, seven permits (for stacks 038, 027, 101, 102, 109, 136, and 147) had expiration dates different from the dates on the stack log listing of November 11, 1990 provided by the State of New Jersey.

3. Asbestos Removal Procedures (*Good Management Practice*)

The asbestos removal procedures for the facility, SA-39B, dated January 1984, do not incorporate the latest NESHAP regulations, revised June 21, 1984, concerning asbestos demolition and renovation applicability and notification requirements.

C. Water Pollution Control**4. Discharge Monitoring Reports (DMRs) (*Regulatory*)**

During our review of monthly DMRs from January through October 1990, we noted the following:

- a. Monitoring results for CN⁻, Cr⁺⁶, bis (2- ethylhexyl) phthalate, and acrolein were not reported for the first quarter 1990.
- b. Monitoring results for toxicity-bioassay were not reported for the second quarter 1990.
- c. There were five total dissolved solids (TDS), one vinyl chloride, two temperature, and one fecal coliform maximum daily limit exceedances for outfall 001.

[Permit No. NJ0004286, Part IV, A.1]

II. Audit Findings**Confidential to Counsel****5. NJPDES Permit Renewal (*Regulatory*)**

The facility did not submit the NJDPES permit renewal application (dated September 16, 1989) to the department 180 days prior to the expiration date (February 28, 1990) of the existing permit. [NJAC 7:14A-2.1(g)(5)]

6. Groundwater Monitoring Reports (GMRs) (*Regulatory*)

During our review of the State of New Jersey, Department of Environmental Protection (DEP) compliance evaluation inspection and sampling report, we noted the following exceedances for the third quarter 1990 report:

- a. Iron in wells 1, 2, 3, 4, 7, 8, 9, and 10.
- b. Manganese in wells 7, 8, 9, and 10.
- c. Sodium in wells 7, 8, 9, and 10.
- d. TDS in wells 3, 7, 8, 9, and 10.
- e. Chlorides in wells 9 and 10.
- f. Sulfates in wells 3, 7, 8, and 9.
- g. Volatile organics in wells 2, 3, and 4.
- h. Ammonia nitrogen in wells 1, 2, 3, 4, 7, 8, 9, and 10.

[Permit No. NJ0004286, Table 2]

7. Emergency Plan Report (*Regulatory*)

The facility has not submitted an emergency plan report to the department. [NJAC 7:14A-3.12(a)]

8. Release Reduction Policy (*Company Policy*)

The facility does not have a written policy to reduce releases to air, water, and land. [Responsible Care Waste and Release Reduction Code]

D. Drinking Water Management

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

E. Spill Control and Emergency Planning**9. Inspection Procedures and Records (*Regulatory*)**

In reviewing the facility's SPCC and DPCC plans and through interviews with personnel, we noted the following:

- a. Visual inspections of bulk storage tanks containing petroleum products and hazardous substances to look for weak points, leaks, and potential problem areas were not conducted in 1989. [40 CFR 112.7(e)(2)(vi), NJAC 7:1E-4.14(a)(5), and SPCC and DPCC plans]
- b. Annual inspections of bulk storage tank secondary containment systems were not documented in 1989 or 1990. [40 CFR 112.7(e)(8), NJAC 7:1E-4.8(g) and (i), and SPCC and DPCC plans]

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- c. The facility does not have a regular program for inspecting key areas where oil and hazardous substances are stored, transferred, or used to detect leaks. [NJAC 7:1E-4.8(i) and DPCC plan]
- d. Visual inspections of flexible hose lines were not documented during 1989 and 1990. [NJAC 7:1E-4.8(i) and DPCC plan]
- e. The facility does not conduct monthly inspections of container storage areas for oil spills or leaks. [SPCC plan]
- f. The facility does not integrity test bulk oil storage tanks. [40 CFR 112.7(e)(2)(vi) and SPCC plan]

10. Secondary Containment Systems (Regulatory/Good Management Practice)

During tours of process areas, the boiler house, tank farm, and tank truck and railcar unloading, we noted the following:

- a. Secondary containment systems for the vinyl chloride tanks, ethyl acrylate tanks, and the Nos. 2 and 6 fuel oil tanks are not made of or lined with impermeable materials. (The No. 2 fuel oil tank is currently not in use; however, when the co-generation plant goes into operation, this tank will be placed into service.) [NJAC 7:1E-4.7(c)(3) and Good Management Practice]
- b. The vinyl chloride tank secondary containment system's dike has been decreased by approximately two feet in order to reveal and paint two pipes. The secondary system may not currently have sufficient volume to contain a spill. [NJAC 7:1E-4.7(c)(2)]
- c. The secondary containment system at Building 521 for the sulfuric acid, sodium hydroxide, diesel, and gasoline storage tanks has an electrical ground rod that extends about 20 feet below the surface. Spills may drain down the rod contaminating the underlying soil. [NJAC 7:1E-4.7(c)(1)]
- d. The secondary containment systems for the two No. 2 fuel oil tanks located east of Building 539 contains approximately three inches of rainwater. [Good Management Practice]
- e. The drum pad accumulation area at Building 541 and the laboratory satellite accumulation area are not valved to prevent spills at the point of discharge from reaching sumps. [Good Management Practice]

11. Tank Truck and Railcar Unloading (Regulatory/Good Management Practice)

During our review of the tank truck and railcar unloading areas and observation of operations, we noted the following:

- a. Tank truck and railcar unloading areas for vinyl chloride, styrene, methyl acrylate, and methyl methacrylate are not supplied with secondary containment systems to prevent spills from entering the stormwater drainage systems. Spills may drain to the stormwater control basin and/or south to spill control dike (SCD) #1. [NJAC 7:1E-4.15(a)]

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- b. Vinyl chloride, styrene, methyl acrylate, and methyl methacrylate unloading areas are not paved or surfaced with impermeable materials. [NJAC 7:1E-4.15(c)]
- c. Vinyl chloride pumps are not curbed. [Good Management Practice]
- d. Tank truck flexible hoses used for methyl acrylate unloading are placed across the railroad tracks. Railcars may inadvertently cut these hoses. [Good Management Practice]

12. Discharge Prevention, Containment, and Countermeasures Plan (DPCC) (Regulatory)

During our review of the DPCC plan, we noted the following:

- a. The general site plan of the facility does not show the location of the diesel and gas storage tanks at Building 521 or the No. 2 fuel oil tank west of Building 514. [NJAC 7:1E-4.5(b)(4)]
- b. The plan does not indicate methods whereby the department may gain access to detailed plans of the facility during business hours and all other times in case of an emergency. [NJAC 7:1-4.5(e)]
- c. The plan does not describe the time required to remove the largest probable spill from each secondary containment system. [NJAC 7:1-4.7(c)(7)]

13. Discharge Cleanup and Removal (DCR) Plan (Regulatory)

During our review of the amended DCR plan, which was submitted as part of the NJDEP permit renewal application, we noted that:

- a. Clean Ventures, the discharge cleanup organization with which the facility has a contract (blanket P.O.), is not listed on the plan. [NJAC 7:1E-4.21(a)(1) and (2)]
- b. The plan does not have procedures for notifying management, government agencies, and cleanup personnel or contractor(s) in the event of a discharge. [NJAC 7:1E-4.21(a)(4)]
- c. The current facility manager and a 24-hour telephone number are not on the plan. [NJAC 7:1E-4.21(a)(7)]
- d. The plan does not contain methods of disposal and disposal sites used for hazardous substances or contaminated soil, debris, and liquids gathered during cleanup and removal operations. [NJAC 7:1E-4.21(a)(8)]

14. Spill Prevention Control and Countermeasures (SPCC) Plan Review
(Regulatory)

The facility's SPCC plan has not been reviewed or evaluated within the last three years. The plan was last reviewed and certified by a Professional Engineer on February 1, 1985. [40 CFR 112.5(b)]

15. Incompatible Materials Storage *(Regulatory)*

The facility is storing sulfuric acid, sodium hydroxide, and diesel, which are incompatible with each other, in the same secondary containment system at Building 521. [NJAC 7:1-4.7(c)(6)]

16. Pipes for Hazardous Substances *(Regulatory)*

In-facility pipes are not marked by lettering, color banding, or color coding to indicate the products transferred through them. [NJAC 7:1E-4.18(a)]

17. Spill Control Equipment *(Regulatory)*

The facility does not store sorbent materials and/or other materials to contain and clean up small spills that may be expected to occur in the ordinary operation of the facility (e.g., tank truck and railcar unloading, latex area, poly area). Spill control equipment is stored in a small shed, west of Building 524, which is kept locked and is only accessible by personnel at the waste treatment plant. [NJAC 7:1E-4.8(e)]

18. Sump Management *(Good Management Practice)*

During our inspection of sumps at the facility, we noted the following:

- a. The poly sump, large poly sump, and the utilities sump are not provided with high level alarms. (The latex sump high level alarm is not audible nor is it connected to the control room.)
- b. Facility sumps, which may receive flammable material spills, are not explosion proof.
- c. Facility sumps are not provided with a mechanism to detect high levels of organics in the process wastewater. Wastewater with high organic concentration may disrupt wastewater treatment plant (WTP) operation.

19. Spill Reporting *(Good Management Practice)*

The facility does not have a procedure to ensure that spills are reported to the HS&E Department when the amount of the spilled material exceeds its reportable quantity. Currently, spills in the facility are reported to the waste treatment plant based on operator judgment (i.e., will the spill adversely affect the waste treatment plant). The spill is then reported to the HS&E Department, via the WTP, either monthly on the monthly spill report sheets or immediately, if the spill is determined by the waste treatment plant personnel to adversely affect treatment operations. Therefore, spills which exceed their reportable quantity but do not adversely affect WTP operations may go unreported to WTP personnel, and spills which are reported and exceed their reportable quantity may be reported to the HS&E Department monthly (on monthly report forms) rather than immediately.

II. Audit Findings

20. Emergency Planning Procedures *(Good Management Practice)*

Waste treatment plant (WTP) personnel operate the command post during an emergency at the facility. Except during the weekday day shift, only one person operates the WTP; therefore, in the event of an emergency, no one is present at the WTP until someone can be called on site, which may take one to two hours. During this time, WTP operations may be disrupted as a result of high levels of organics getting into the system or other unforeseen causes. Disruption of WTP operations may require shutting down the plant until the situation is corrected.

F. Solid and Hazardous Waste Management

21. Hazardous Waste Accumulation Area *(Regulatory)*

In reviewing the drum storage pad located at the Building 541 warehouse, we noted the following:

- a. Three drums of waste solvent, 41 drums of unknown material, 19 drums of waste methyl acrylate, and six boxes of vinyl chloride monomer (VCM) filters were not labeled with the words "Hazardous Waste" or with the accumulation start date. [NJAC 7:26-9.3(a)(3)]
- b. Three drums of waste were severely corroded. [NJAC 7:26-9.3(a)(2) and 9.4(d)(2)]
- c. The storage pad was not supplied with fire control or spill control equipment. [NJAC 7:26-9.3(a)(4) and 9.6(c)]
- d. The storage pad is not inspected weekly. [NJAC 7:26-9.3(a)(2) and 9.4(d)(5)]

22. Hazardous Waste Training *(Regulatory/Good Management Practice)*

In reviewing the facility's training records and documentation, we noted the following:

- a. The facility does not have a job title for each position related to hazardous waste management. [NJAC 7:26-9.4(a)(6)(i)]
- b. The facility does not have job descriptions for person(s) responsible for hazardous waste management. [NJAC 7:26-9.4(a)(6)(iii)]
- c. The facility does not have records that person(s) responsible for hazardous waste management have received training. [NJAC 7:26-9.4(g)(6)(iv)]
- d. The facility does not perform semi-annual drills with local authorities to test emergency response capabilities at the facility as it relates to hazardous waste incidences. [NJAC 7:26-9.4(g)(8)]
- e. The facility does not have a written hazardous waste management training program. [Good Management Practice]

23. Contingency Plan (Regulatory)

The DPCC plan, which has been identified by the facility to be used as a hazardous waste contingency plan, does not contain:

- a. A description of actions facility personnel will take in the event of a hazardous waste spill, fire, or release. [NJAC 7:26-9.7(c)]
- b. A description of the arrangements agreed to by local police departments, fire departments, hospitals, contractors, and local emergency response teams. [NJAC 7:26-9.7(c) and (e)]
- c. A list of names of all persons qualified to act as emergency coordinators. [NJAC 7:26-9.7(f)]
- d. A list of emergency equipment. [NJAC 7:26-9.7(g)]
- e. An evacuation procedure. [NJAC 7:26-9.7(h)]

24. Hazardous Waste Oil Tank (Regulatory)

The waste oil tank at Building 524 is not emptied (to no more than 1% volume left in the tank) every 90 days. [NJAC 7:26-9.3(b)(5)]

25. Preparedness and Prevention (Regulatory)

The facility has not made arrangements to familiarize police and fire departments and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, and places where facility personnel normally work and to familiarize local hospitals of the properties of hazardous waste handled at the facility and the types of injuries which could result from hazardous waste spills or fires. [NJAC 7:26-9.6(f)(1) and (4)]

26. Non-Hazardous Solid Waste Disposal (Regulatory)

The facility does not have a permit to dump construction debris, crushed drums, and railroad ties in an area south of the ethyl acrylate tank. [NJAC 7:26 - 1.1(a)(5)]

27. Annual Report (Regulatory)

The facility did not report on the 1989 Hazardous Waste Generator Annual Report the hazardous wastes (e.g., tank truck drippings, line clean-out, spills, catalyst from latex area) treated on site in the wastewater treatment plant. (Note: Dispersion stripping discharge water, which contains approximately 10 ppm vinyl chloride, will need to be reported on the 1990 Hazardous Waste Generator Annual Report. This waste, as of September 25, 1990, is a hazardous waste because of the toxic characteristic leachate procedure (TCLP).) [NJAC 7:26-7.4(g)(2)]

28. Waste Inventory (Company Policy)

The facility has not developed a quantitative inventory of all wastes generated. [Responsible Care Waste Code]

II. Audit Findings**29. Hazardous Waste Management Procedures and Activities (Good Management Practice)**

In reviewing the facility's procedures and programs for managing hazardous and non-hazardous waste, we noted:

- a. The facility does not have a consolidated list containing inventory, service raw materials, and products used or produced on site and whether these materials are hazardous or non-hazardous wastes when disposed.
- b. There is no written hazardous waste management program in place to prevent hazardous waste from inadvertently entering the non-hazardous waste disposal system. For instance, facility personnel manage liquid wastes by disposing in the WTP and non-aqueous wastes by placing in dumpsters.
- c. The facility is treating captured tank truck drippings, hose clean-outs and spills without determining compliance with generator and landban requirements.

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)]
- b. Specify the employer's manner of enforcing the program. [29 CFR 1910.147(c)(4)(ii)]
- 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)]
- d. Address the requirements specific to the plug and cord connected electrical equipment exclusion. [29 CFR 1910.147(a)(2)(iii)(A)]
- 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)]

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)]

II. Audit Findings

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

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)]

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.
- b. The safety trip cord to the safety trip switch has excessive slack reducing its effectiveness to operate.

[29 CFR 1910.212]

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)]
- b. Several employees were observed not wearing sideshields. [29 CFR 1910.133]
- 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)]
- d. Structural steel in compounding Building 541 has an accumulation of potentially explosive dust. [Good Management Practice]
- e. The 6" mill incline conveyor does not have ventilation to remove smoke/fumes. [Good Management Practice]
- f. During a vessel entry in Building 513, the standby did not have the "Rescue Bag" positioned at the vessel. [Good Management Practice]

II. Audit Findings

- g. The flammable liquids storage cabinet in the lab is not grounded or vented to the outside. [Good Management Practice]

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]
- 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]

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]

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.
- b. Clearly specify the need for continuous lower explosion limit (LEL) monitoring in a Hazardous Class I area.
- 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]

II. Audit Findings

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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]

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]

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. *Class I areas have secondary*
- b. The facility does not have alarms to indicate a drop in room pressurization below 0.1 inches of water. *All do except 541 + 0.1*
- 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]

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]

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.

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.

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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)]
- 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)]
- c. The written program does not define the NFPA labeling system which is used for hazard warning. [29 CFR 1910.1200(e)(1)]
- d. Several products were identified that were not on the Hytox Computer system or plant inventory. [29 CFR 1910.1200(g)(1)]
- e. At 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]

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
- b. Annual training records were not available for all years in which the training was conducted.

[29 CFR 1910.1045(o)(1)(ii)]

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)]
- 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)]

- 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)]
- 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)]
- e. The respiratory protection program is outdated in that it does not reflect current job responsibilities for program administration. [Good Management Practice]
- f. Fit testing records do not indicate the manufacturer or model number of the masks being tested. [Good Management Practice]

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)]
- b. Noise Reduction Ratings (NRR) have not been calculated or evaluated for hearing protectors used in the plant. [29 CFR 1910.95(j)(1)]
- c. The current Noise Standard and Hearing Conservation Amendment was not present at the dispensary for the physician's use. [29 CFR 1910.95(l)(2)]
- 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)]
- 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]
- 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]
- g. Employee overexposures are not forwarded to the employee's medical file. [Good Management Practice]

49. Monitoring Program (Regulatory/Company Policy/Good Management Practice)

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

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- 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]
- 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]
- c. Hazard rankings are not utilized for developing a sampling regimen. [BFGoodrich Company Policy]
- 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]
- e. The primary standard for calibrating personal sampling pump flow was not a calibrated burette. [Good Management Practice]
- 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]
- 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]
- 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]
- i. Sampling and analytical methods used for polyvinyl chloride (PVC) dust were not signed or dated. [Good Management Practice]

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]

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.

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)]
- 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)]

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)]

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)]

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]

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. [29 CFR 1910.120(q)(6)(i)]

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- 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)]

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]

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.

J. Product Responsibility

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