

~~CONFIDENTIAL~~
Safety

December 10, 1992

To: Tim Patterson Deer Park
 Dave Laubacher

From: Herm Waltemate Cleveland

DEER PARK SAFETY AUDIT
November 9-12, 1992

Attached is the final report of the Safety Audit conducted at the Deer Park Plant.

I was highly impressed with the overall safety program of the plant and the widespread involvement of employees. The plant safety program is the best I have ever audited. I would like to see the GVD use the Deer Park plant as a "BENCHMARK" and urge the other plants to attain that level. I would also urge the Deer Park plant to become an OSHA STAR plant.

In the following chart, I have compared the Deer Park 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>DEER PARK</u>
<u>1989</u>				
Rec. IR	6.40	4.04	3.86	0
Lost Time IR	*3.00	*1.82	*1.72	*0
C-DAW IR	**	.81	.92	0
<u>1990</u>				
Rec. IR	5.90	3.97	3.25	1.09
Lost Time IR	*2.90	*1.84	*1.20	*0
C-DAW IR	**	.75	.34	0
<u>1991</u>				
Rec. IR	5.70	3.89	2.26	1.96
Lost Time IR	*2.80	*1.86	*.91	*0
C-DAW IR	**	.72	.26	0
<u>1992</u>				
Rec. IR	**	3.79	1.97	.88
Lost Time IR	**	*1.73	*.37	*0
C-DAW IR	**	.68	.10	0

* Include restricted work cases

** Not available

The Deer Park plant was rated with 2 items - Needs Attention and 41 items - Satisfactory.

NGC 13124

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 15, 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

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

DEER PARK SAFETY AUDIT
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I. Positive Observations

1. I was highly impressed with the Reactor Area from an overall safety and housekeeping aspect. The workers of this area have accepted ownership, have set a high standard for safety and housekeeping.
2. The training records for various training programs are well organized and documented. The use of photographs enhances the documentation.
3. The plant PM program is the best I have seen. You should be in a good position to meet the requirements of BFG GVD Safety Standard SA-136 Mechanical Integrity and OSHA Standard 1910.119 Section (j).
4. The supervisor audit system for Cardinal Rules has been established and appears to be effective. The documentation shows the frequency on which they are done.
5. I was favorably impressed with the system for releasing equipment to maintenance in hazardous locations. The system is well organized and all instruments used for testing were in good shape.
6. The new Emergency Communication Manual is well done and should be extremely valuable if an emergency should occur.

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II. Previous Safety Audit

1990-4 The BFG Chemical Division issued a Safety Standard SA-134 Safety Requirements for the Storage and Handling of Organic Peroxide Initiators with an effective date of May 31, 1990. This standard requires such items as an emergency backup system, a spare empty online freezer separation as well as other requirements.

You need to provide separation for the catalyst freezer in the reactor area.

Comment: This item was held pending the modernization project. Steps need to be taken to comply with BFG GVD SA-134 and NFPA standards.

Plant
Response

_____ Complete _____ In-Progress _____ Incomplete

1990-5

BFGoodrich GVD Safety Standard SA-132 requires all bottom nozzles on VCM storage tanks be blanked on the tank nozzle flange or the valve be equipped with an automatic and remote actuated shutoffs. The recently installed nozzle on your VCM sphere needs to be modified to meet these requirements.

Comments: This nozzle was installed for future expansion. This outlet on the sphere needs to be brought into compliance with SA-132.

**Plant
Response**

_____ **Complete** _____ **In-Progress** _____ **Incomplete**

1990-6

There are two areas of concern in the PVC Bagging/Compounding Areas. The first concern involves the manhandling (dumping) of all bags of raw material and the manual palletizing of PVC resin bags. The handling of bags is a high injury task within the GVD. I would recommend that consideration be given to installing a robot for the palletizing of PVC Resin and that a Manipulator be provided for handling the raw materials in bags.

The second area of concern involves dust in the lower levels of the compounding tower. More effort needs to be made to contain the dust inside the process and more effort needs to be made in cleanup. In my opinion the disposal of empty bags in this area is a major contributor to the dust problem. Consideration should be given to installing the Ohio Blow Pipe bag disposal system.

The Terre Haute plant has a Manipulator, a robot and the Ohio Blow Pipe bag disposal system. A visit to that location would be worthwhile.

Comments: This item was held pending future expansion. You should proceed and bring this area to closure.

**Plant
Response**

_____ Complete _____ In-Progress _____ Incomplete

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III. Items to be Corrected

SA-1992-1

A review of all exits needs to be conducted. Exit signs with 6" letters and suitable illumination needs to be provided where required. Doors to exit stairways need to be maintained closed.

Plant
Response

_____ Complete _____ In-Progress _____ Incomplete

SA-1992-2

OSHA has issued 29 CFR 1910.119 Management of Highly Hazardous Chemicals and a compliance directive covering this standard. The plant needs to review all of these requirements and take steps to comply with each.

The following three items need to be addressed:

- i) Operating procedures must reflect current operating practices and be annually certified that they are current and accurate.
- ii) The directive comments on the potential hazards such as pipework in risk of impact. The two piperacks crossing roadways, should be reviewed. This should include the support structure.
- iii) A written procedure for controlling the lifting of equipment over hazardous material process lines needs to be prepared. This item is also in the OSHA Directive on 29 CFR 1910.119 Management of Highly Hazardous Chemicals.

Plant
Response

_____ Complete _____ In-Progress _____ Incomplete

SA-1992-3

During the plant inspection tour several extension cords were noted, most of these had metal boxes as the female outlet and some cords were found with taped repairs. Extension cords should not be used in place of fixed wiring and should be used only on a temporary basis. Repairs on cords must be equivalent to the insulation.

Plant
Response

_____ Complete _____ In-Progress _____ Incomplete

SA-1992-4

Lockout clips have become available for locking out 110/220 volt circuit breakers. You should obtain these lockout clips from the manufacturer of your electrical panels and require individual circuits be locked out when work is to be performed on them.

Plant
Response

_____ Complete _____ In-Progress _____ Incomplete

SA-1992-5

BFG GVD Safety Standard SA-132 has a requirement that all pipe connections to a vessel containing VCM be 1-1/2" or larger. The two 3/4" steam sweep lines on the recovery tank need to be revised.

Plant
Response

_____ Complete _____ In-Progress _____ Incomplete

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IV. Plant Safety Inspection

Office Building

1. Three doors to the stairwell are propped open with stops. These doors need to be maintained closed. Refer to OSHA Standard 1910.37(b)(3).
2. The posted letter on "Employee Access to Medical Records" is Dated 1989. This letter should be updated annually. Refer to OSHA Standard 1910.20(g)(1).
3. Vacuum cleaner in closet with the ground prong broken off. Refer to OSHA Standard 1910.304(f)(4).
4. Several extension cords with metal boxes in various offices. Outlets with permanent wiring needs to be provided and metal boxes are not to be used on extension cords. Refer to OSHA Standard 1910.303(b)(2) and 1910.305(g)(1)(i).

Reactor Process Area

1. Heat tracing inside the ammonia cylinder shelter should be insulated or guarded. All equipment in excess of 140°F should be insulated, guarded or posted.
2. Steam trap behind the ammonia storage shelter also needs to be insulated or guarded.
3. Low voltage light in operator shelter has a spot covered with tape. Refer to OSHA Standard 1910.303(c).
4. Steam utility outlet needs to be insulated to a minimum height of 7'.
5. Tape on electrical cord of reactor light. Refer to OSHA Standard 1910.303(c).
6. Wood chisel wedged under the switch to agitator in pigment makeup area.
7. The exit signs from the upper level of the reactor area needs to be lighted. Refer to OSHA Standard 1910.37(q)(6).
8. The control room needs to have lighted exit signs installed. Refer to OSHA Standard 1910.37(q)(1) & (6).

9. The inside release on the east door of the catalyst freezer is not functioning.
10. The two pipracks crossing roadways should be reviewed for guarding. Refer to OSHA Standard 1910.119 Directive.
11. A written policy for controlling the lifting of equipment over hazardous process lines need to be prepared. Refer to OSHA Standard 1910.119 Directive.
12. Operating procedures need to be certified annually that they are current and accurate. Refer to OSHA Standard 1910.119(f)(3).
13. Handrail in the blend tank area without the 1-1/2" to 3" clearance. Refer to OSHA Standard 1910.23(e)(6).
14. Light in blend tank area with globe missing. Refer to OSHA Standard 1910.303(b)(2).
15. Electrical cord in Arrowhead water area with taped splice and plastic box for female outlet. Refer to OSHA Standard 1910.303(b)(2) & (c).

Contractor Area

1. Metal outlet box installed on extension cord. Refer to OSHA Standard 1910.303(b)(2).
2. Three oxygen cylinders stored with two acetylene cylinders and secured with a rope. Refer to OSHA Standard 1910.102(a) and 1910.253(b)(4)(iii).

Laboratory

1. The four "Moisture Lamps" should be identified with a "Hot" sign.
2. The brabender should also be labeled "Hot".
3. The exit sign needs to be lighted. Refer to OSHA Standard 1910.37(q)(6).

Warehouse/Compound Area

1. All of the exit signs in these areas need to be lighted. Refer to OSHA Standard 1910.37(q)(6).
2. Fire extinguisher near east door blocked with a mop bucket.

Refer to OSHA Standard 1910.157(c)(1).

3. Extension cords with metal boxes as the female outlet was noted in five (5) situations. Refer to OSHA Standard 1910.303(b)(2).
4. An outlet to eliminate extension cord to the contractor refrigerator needs to be provided. Refer to OSHA Standard 1910.305(g)(1)(i).
5. The two extension cords in the Dryer Control Room to the SCC bench needs to be replaced with outlets. Refer to OSHA Standard 1910.305(g)(1)(i).
6. Globe broken on light outside on the top level.
7. Electrical adapter with a splice was observed. Refer to OSHA Standard 1910.303(c).

Maintenance Shop

1. Compressed gas cylinder of hydrogen stored with oxygen. Refer to OSHA Standard 1910.253(b)(4)(i) & (iii).
2. The exit signs need to be lighted. Refer to OSHA Standard 1910.37(q)(6).
3. Ground prong was removed from extension cord. Refer to OSHA Standard 1910.304(f)(4).
4. Argon cylinder in weld shop needs to be secure with a chain instead of wire. Refer to OSHA Standard 1910.101(b).
5. Yellow extension cord needs repair.

Forklift Shop

1. Fire extinguisher access needs to be maintained clear. Refer to OSHA Standard 1910.157(c)(1).
2. Exit sign needs to be lighted and the lettering is required to be 6". Refer to OSHA Standard 1910.37(q)(6) & (8).

Engineering Stores

1. Exit signs need to be lighted and the lettering is required to be 6". Refer to OSHA Standard 1910.37(q)(6) & (8).
2. Cord to vacuum cleaner needs repair.

3. Flexible cord with metal box to air conditioner needs to be replaced with wiring in conduit and the outlet box mounted. Refer to OSHA Standard 1910.305(g)(1)(i).
4. Exit access was partially blocked. An access of 28" is required and a cabinet restricted the width to 26-1/2". Refer to OSHA Standard 1910.37(d)(6).

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V. HOUSEKEEPING EVALUATION

REACTOR AREA	9 - NEAR PERFECTION
ENGINEERING STORES	8 - EXCEEDS REQUIREMENTS
SUBSTATION	8 - EXCEEDS REQUIREMENTS
VCM STORAGE	8 - EXCEEDS REQUIREMENTS
LABORATORY	8 - EXCEEDS REQUIREMENTS
RESIN LOADING	7 - EXCEEDS REQUIREMENTS
WAREHOUSE	7 - EXCEEDS REQUIREMENTS
MAINTENANCE SHOP	6 - MEETS REQUIREMENTS
COMPOUNDING TOWER	8 - MEETS REQUIREMENTS
CONTRACTOR AREA	8 - MEETS REQUIREMENTS

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VI. - BFGOODRICH CHEMICAL SAFETY PROGRAM RATING

LOCATION: Deer Park

DATE OF AUDIT: November 9-12, 1992

<u>RATING</u>	<u>ORGANIZATION AND ADMINISTRATION</u>
S	Management and Supervision Involvement
S	Compliance with Previous Audits
S	Preparation and Compliance with Job Procedures
S	Procurement and Startup of New Equipment
	<u>EDUCATION, TRAINING AND MOTIVATION</u>
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
	<u>GENERAL HAZARD CONTROL</u>
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
	<u>PROCESS HAZARD CONTROL</u>
S	Relief Valve and Rupture Disc Inspection
S	Plant Evacuation
S	Mill Drills
S	Disaster Preparedness
S	Hot Work System
S	Lockout System
S	Vessel Entry System
S	Maintenance Work Order System
S	Dust Hazard Control
NA	SA-132 VCM Storage (Refer to 1990-5 and 1992-5)
NA	SA-134 Initiator Storage (Refer 1990-4)
	<u>ACCIDENT INVESTIGATION AND ANALYSIS</u>
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: 41

TOTAL NEEDS ATTENTION: 2