7- PSM Audit

November 30, 1993

To: Dave Laubacher Deer Park

From: Herm Waltemate Cleveland

Sub: **Deer Park OSHA PSM Compliance Audit**

Enclosed is the final report of the Deer Park 1910.119 Process Safety Compliance Audit conducted by Dale Schillinger and myself. The OSHA Directive questionnaire, CPL 2-2.45A completed by Dale Schillinger, is being sent to Bob DesJardins.

Each of the items listed in the audit need to be addressed. A status report should be sent to my attention within 45 days. Any items not completed within that time frame should have a quarterly status report until all items have been brought to closure and documented.

Please call me if you have any questions.

H. Waltemate

DRPKOSPS.HW/JS

cc: Bob DesJardins
Ed Beeler
Glenn Higby
Ed Martinelli
Phil Donataccio

NGC 13243

cc: Bob DesJardins
Herm Waltemate
Bob Grahek
Ed Beeler
Glenn Higby

November 17, 1993

TO: Dave Laubacher

SUBJECT: **Compliance Audit (OSHA Standard 1910.119 Section (o)) of the Deer Park Plant**

At the request of the GEON Company, a Process Safety Management Audit was performed at the Deer Park plant. The audit was designed to meet the requirements as set forth in 29 CFR OSHA 1910.119 (o), Compliance Audit. In addition, general comments concerning process safety and personnel safety are included.

The audit was conducted October 18-22, 1993 by Dale Schillinger and Herm Waltemate. Primary contacts from the Deer Park plant were Bob DesJardins, Ron Paige, and Mark Reynolds.

Although reports of this nature tend to be rather negative because they focus on problems, I was impressed with the degree of control of safety and the management systems at your facility. I will mention some of these later in this report.

Contained below is the evaluation of your plant with respect to the 13 Elements of the Process Safety Management Standard that are pertinent to compliance ("Trade Secrets" is excluded - this is not an issue at your plant).

Section (a) Application

The plant needs a letter and drawing that indicate what processes of the plant are covered by the Process Safety Management Standard and what is not covered. It needs to be supported with the rationale used to arrive at these decisions. The chlorine cylinders used at the cooling tower need to be included in the Process Safety Management program.

Section (c) Employee Participation

A written program covering employee participation is needed. I left an example of a procedure with Bob DesJardins. It was suggested that the location of process safety information that must be made available to employees be included in this procedure and how employees can access the information.

Section (d) Process Safety Information

No problems with compliance were found in this area. Block flow diagrams, up-to-date piping and instrument drawings, and relief valve sizing calculations, etc., were produced to indicate compliance with this requirement.

Section (e) Process Hazards Analysis (PHA)

The process analysis and hazard evaluations appeared to be of high quality; however, some of the specific elements required in the OSHA Process Safety Management Standard were not addressed. The issues which need to be addressed are listed below.

- Establish on order of priority for PHA scheduling.
- A formal written response to the identified issues with targeted completion dates.
- Human factors must be discussed and documented. (Platforms, access to valves, ergonomic issues, etc.).
- The effect of the maximum foreseeable release.
- Qualitative severity ranking of the recommendations. (An example was given to Bob DeJardins).
- Facility siting must be discussed and documented.
- Chlorine addition at the cooling tower must be included in the PHA Program.
- Previous process incidents and accident investigations must be included in the Process Hazard Analysis. (Those that have had major repercussions or could have resulted in a significant incident.)
- List codes and standards used as a design basis.
- Document expertise (experience) of members of the review team.

- The PHAs which you have completed should be amended to include the issues discussed in this segment of the audit. At that time, please send a copy of the issues identified to Herm Waltemate so he can audit a representative sample during his next plant visit.

Section (f) Operating Procedures

A few issues were noted with OSHA PSM Standard compliance but a commendable effort has been done in this area. The procedures were up-to-date. To meet all of the criteria in the Standard, the following need to be addressed.

- Annual documentation stating that the operating procedures are current and accurate.
- Written emergency shutdown procedures are needed, in particular when manual activation of systems may be required (e.g. AMS system, deluge sprinkler system).
- The seven areas stated by OSHA where operating procedures are necessary need to be addressed (e.g. start-up after emergency shutdown - which could, in some cases, be addressed by saying it is the same procedure as start-up after routine shutdown).

Section (g) Training

The training of operating personnel is commendable. Training was done on a frequency consistent with the PSM Standard's requirements. Documentation of training was recorded and verification of training by testing and visual observation was conducted and records of these activities are available.

Section (h) Contractors

This program also met all the criteria of the OSHA PSM Standard. Contractors' safety performance is evaluated as well as their work practices at the plant. Hazard communication requirements were met. A contractor injury/illness log for the plant is also available as required.

Section (i) Pre Start-Up Safety Review

The blow down tank installation was reviewed to determine if the PSM Standard's requirements were addressed. The following are areas where upgrading would be advisable.

- Documentation of quality control inspections of equipment and materials received is needed.

- Confirm that the PHA was conducted following the OSHA Protocol and all issues are resolved (refer to comments on PHAs).

- Expand the scope of Pre Start-up Safety Reviews to include statements that operating procedures are in place, operators have been trained, PHA recommendations have been resolved and the appropriate quality control checks listed above have been performed. Each of these efforts must be documented.

Section (j) Mechanical Integrity

The mechanical integrity program has some significant strengths and a few vulnerable areas. The most significant strength was the timeliness of scheduled preventative maintenance. All items audited had the required checks and tests within the required time frame. Also, the P.M. checks appeared to be very thorough and included calibration and testing to activation of the protective device.

The upgrading that needs to be incorporated into your program is:

- In areas covered by the PSM Standard, the equipment involved in the P.M. program needs to be expanded. The AMS charge pots and the solution mix tanks are two examples. The Standard requires that any important piece of equipment, regardless of size, should be in the program.

- Job specific craftsman training must be documented.

- Present the overview of process safety training to maintenance employees. (A program has been developed.)

- The P.M. work order description of job tasks needs to be written in more detail as well as test results observed by the craftsmen performing the test. A major problem with documentation was noted when no problems were found. At present, no comments are made and the equipment is turned back to operations.

- Relief valves sent out for testing and inspection should be tested initially to confirm that there has been little change between the original set pressure and the relieving pressure when the valve is

taken out of service for inspection. Your 2 and 3-year inspection frequency is longer than common industrial practice. While it very well may be appropriate for your location, the data to support this test interval must be collected.

- The P.M. computer data base needs to include tests and inspection results and include the names of the craftsmen who performed these tests or the hard copies need to be kept for the last two inspections of a particular piece of equipment.

Section (k) Hot Work Permits

Generally, this area is in good shape. A checklist item should be added on the permit to warn of the concern for the hazard of heat conduction and welding on walls, ceilings, or roofs. This is one of the questions OSHA inspectors are instructed to ask during an inspection.

Section (l) Management of Change

This is a difficult area to control, but I was very pleased with your procedure (the best I have ever seen) and your program. I did check a few new pipelines that were installed and these had been incorporated into your piping and instrument drawings and I heard other comments about Management of Change and its importance from several of your line personnel.

Section (m) Incident Investigation

The OSHA PSM Standard is very straight forward in this area and I found that your program meets the requirements.

Section (n) Emergency Planning

The following corrections and additions would be advisable in this area.

- If the main traffic gate is to be an emergency evacuation route, it must be an unimpeded exit around the clock. The exit should be marked as such. Any gate or fence that is locked (on any routine or continuous basis) should have a sign stating "Not An Exit".

- A secondary assembly area needs to be established to cover conditions when a release may involve the maintenance shop.

- Evacuation routes need to be posted on bulletin boards or prominently identified to employees.

Section (o) Compliance Audits

This report contains the evaluation of your facility with respect to OSHA Standard 1910.119. A status report should be sent to Herm Waltemate within 60 days of receipt of this report.

Additional Comment

Emergency vent systems that use rupture discs and relief valves in series present concerns as to their operability when required to function. I would recommend that these be reviewed to ensure they are in conformance with good engineering practice.

Dale J. Schillinger

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Herm Waltemate

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/pb

Resume of Individuals Performing the Compliance Audit

Dale J. Schillinger:

Mr. Schillinger spent 17 years with Monsanto Company and 19 years with Mallinckrodt as their Corporate Safety Director. He holds a B.S. Degree in Chemical Engineering from the University of Missouri (Rolla) and has worked in plant operations, maintenance, and design engineering before starting his career in safety. He has specialized in process safety and had the responsibility for coordinating an overall strategy for compliance with the OSHA Process Safety Management Standard. He has presented several seminars within his company on OSHA Standards Compliance. He has published several articles (Loss Prevention in the Chemical Industry - Parts 1 & 2) in *Professional Safety*, a safety magazine published by the American Society of Safety Engineers.

Herman Waltemate:

Mr. Waltemate has worked for the GEON Company/BF Goodrich Company for 29 years in the area of safety. He holds a B.S. Degree in Industrial Technology from Southern Illinois University. He started work with BF Goodrich as Safety Inspector at the Calvert City Vinyl Chloride monomer plant. He was promoted to Senior Safety Engineer at the Akron chemical plant. Since that time he has worked in the Corporate Safety Department with various accident prevention responsibilities. He has been involved with several projects involving the safety design and the safety auditing of PVC operations.