SALISBURY PLANT

EVALUATION
OF
OSHA COMPLIANCE ISSUES

November 15-16, 1989

by Mike Buczynski

Action Items Updated
March 29, 1990

Corporate Medical Department

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ygiene

MEMO

To: Jack Heath January 2, 1990

From Mike Buczynski cc: Robert Gilligan, M.D.

Subject: **Industrial Hygiene Program - Salisbury**

I visited the **Salisbury** facility on **November 15 and 16** for the purpose of evaluating the industrial hygiene needs identified by the Industrial Hygiene Questionnaire. The Industrial Hygiene Questionnaire concentrated on compliance issues in the following six areas:

1) Hazard Communication
2) Respiratory Protection
3) Noise - Hearing Conservation
4) Chemical Exposure
5) Substance Specific Standards
6) Access to Exposure and Medical Records

GENERAL INFORMATION

The Salisbury facility is operated by the P&P Vinyls Division of Occidental Chemical Corporation. It is located in a rural, light industrial area north of Salisbury. The single building facility contains approximately 110,000 square feet of space.

The plant employs approximately 135 persons, operating on a seven day per week schedule in the calendering operation and on a five day per week schedule in the converting operation.

Manufacturing operations consist of calendering and "converting" (printing, laminating, embossing) of PVC resins into PVC products for uses such as wall coverings, window shades, luggage and dashboards.

Occidental Chemical Corporation
CORPORATE MEDICAL DEPARTMENT

Calendering

Solid PVC resin supplied mostly by other OCC facilities is stores in three rooftop silos vented through baghouses. Resin is mechanically blended with various plasticizers, stabilizers, color additives and fillers while being heated in ribbon blenders, followed by a Banbury mixer. The semi-molten mixture is milled and extruded, then processed through an inverted L calender into PVC sheet products which are sold as rolls. Approximately 30 percent of the calender output is used at the Salisbury facility, the rest is sold. Calender output is approximately 12 million pounds per year.

Vent gases from the blending and calendering operations are emitted directly to the atmosphere, as the formally used electrostatic precipitators have been shut down with the approval of the state.

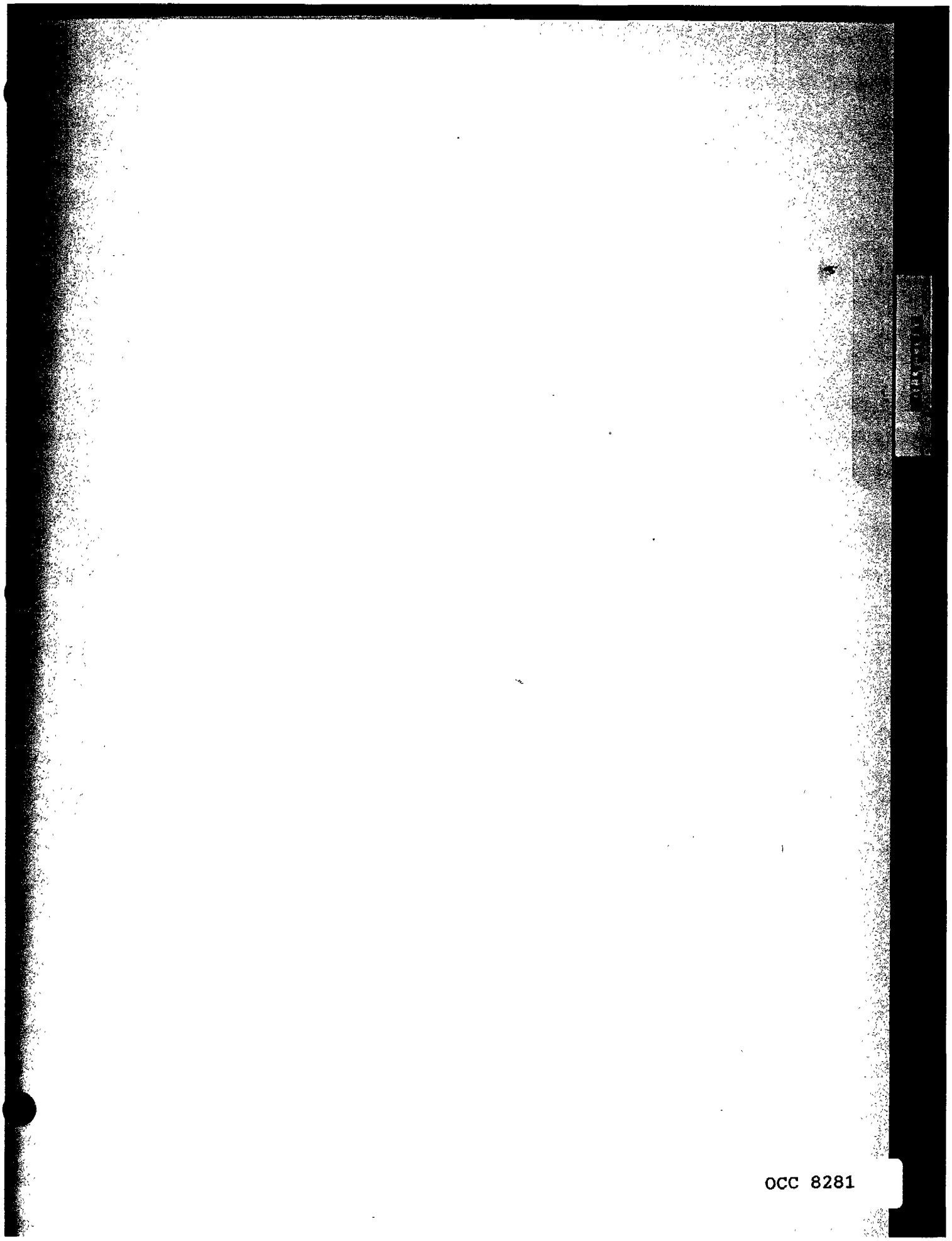
Converting

"Conversion" operations are conducted in four multi-stage (four or six printing stations) production lines involving alternating printing and drying stages. Inks used in the printing process are manufactured on-site from purchased wet pigments and solvents. Volatilized solvents from the drying stages are vented directly to the atmosphere.

In addition to printing, films are laminated on hot roll laminators, and top coated (clear coating for scratch resistance) on similar hot roll equipment. Two general types of top coating materials are in use. Glase is a water-based material which is dried with hot air. A new ultraviolet light (UV) cure topcoat (urethane acrylate) is also in use. For it, a UV curing station was installed in 1988.

Print plant/conversion output is approximately 16 million linear yards per year. All product shipment is via truck.

cc: B. Driscoll
T. Jennings
S. Kemp
D. Lull
M. Sracic
S. Walston
R. Zelley



SALISBURY PLANT

Evaluation of
OSHA Compliance Issues

HAZARD COMMUNICATION

The plant has a written HazCom program and an up-to-date chemical inventory. A complete set of approximately 700 MSDSs is kept in the main office, and employee interviews revealed that employees know where they are kept if needed.

With the volume of MSDS changes that are received, the MSDS master file is updated on a monthly basis. Barry Seldomridge is responsible for and controls the updates, as well as tracking any new MSDSs and chemicals received, to insure completeness.

Employees are trained annually on hazard communication. This training includes videos on the subject. Most labels were observed to be legible and in good condition. The Hazardous Materials Information System (HMIS) is the main labelling system used.

A product code (or batch code) is used internally as an alternate labelling system. This is acceptable for all chemicals as long as they do not leave the premises with only batch code information.

Action Plan: Conduct a monthly inspection of labels to insure that they are proper, in good condition, and legible.

Target Date: Steve Walston is conducting the monthly inspection immediately.

There is no procedure for informing contractors about the chemicals on-site.

Action Plan: Develop a contractor information procedure before the next maintenance shutdown in July, 1990. This information procedure should include the following:

- Appropriate workplace specific MSDSs
- Chemical and physical properties (i.e., skin sensitization, flammability, etc.)
- Appropriate personal protective equipment to be used.

Target Date: June 1, 1990.

RESPIRATORY PROTECTION

The Salisbury facility has a written respirator program, and it is reviewed annually.

All employees are trained and fit tested on the 3M®8712, but that respirator has been discontinued and replaced with a new 3M respirator. These respirators are of the disposable type and therefore are not cleaned, but just thrown out.

Action Plan: Complete a list of all employees covered in the Respiratory Protection Program.

Target Date: February 1, 1990.

Action Plan: Conduct all elements of respirator training and fit testing for all employees covered by the Respiratory Protection Program.

Target Date: April 15, 1990.

Each employee who participates in the Respiratory Protection Program must be medically certified for ability to wear. The Salisbury facility is phasing in audiometric testing as well as spirometry for all employees. Spirometry may be used and is a very good judge of an employee's ability to wear a respirator. However, at this time we are not going to make spirometry mandatory.

Action Plan: Medically certify ability to wear for employees covered by the Respiratory Protection Program.

Target Date: December 31, 1990.

NOISE - HEARING CONSERVATION

A complete sound level survey of the facility was conducted more than three years ago. There were no areas with noise above 90 dBA identified at that time. A memo will be issued offering all employees an annual audiometric exam. Affected employees have not been trained in the effects of noise on the ear or the OSHA noise standard.

Since audiometric exams have not been administered, there is no way of determining whether any employees have experienced a standard threshold shift (STS). Once baseline audiograms have been performed and analyzed, employees who experience an STS with the next annual audiogram will be included in the Hearing Conservation Program.

Action Plan: Issue a memo offering all employees annual audiometric exams.

Target Date: January 1, 1990.

Action Plan: All affected employees are to be identified and given annual training on the effects of noise on the ear, as well as the principles of noise generation.

Target Date: Completed.

Action Plan: Complete sound level survey.

Target Date: April 15, 1990.

Action Plan: Conduct respective 8-hour dosimetry in the shredder room.

Target Date: June 15, 1990.

Action Plan: Develop a system for documentation of the following:

- Area and personal sampling
- Audiometric testing
- Annual training.

Target Date: October 1, 1990.

Action Plan: Conduct representative 8-hour dosimetry for the balance of the plant, if needed.

Target Date: October 1, 1990.

Action Plan: Conduct audiometry on individuals identified by 8-hour dosimetry who are included in the hearing conservation program.

Target Date: October 1, 1990.

CHEMICAL EXPOSURE

The last air monitoring survey for representative employee exposure was conducted in 1987. A new sampling strategy needs to be developed, and a current survey documenting representative employee exposure needs to be conducted. All local exhaust ventilation must be monitored so that hood flow velocity meets requirements to effectively capture contaminants, as well as transport them to collection units.

Action Plan: Send Alnor-Velometer out for repair and recalibration.

Target Date: Completed.

Action Plan: Develop a complete sampling strategy to include all industrial hygiene potential issues and representative monitoring in respective job classifications.

Target Date: May 15, 1990.

Action Plan: Complete the air monitoring survey for all potential issues identified in the sampling strategy outlined above.

Target Date: October 1, 1990.

SUBSTANCE SPECIFIC STANDARDS

Lead is the only substance used at Salisbury that has an expanded standard. Lead is used as a stabilizer in certain pigments, and the potential for employee exposure should be addressed by air monitoring during the addition of these pigments to the various product batch mixes.

Action Plan: Conduct air monitoring for employee exposure to lead. Comply with the appropriate provisions of the lead standard based on the air monitoring results. These provisions may include, but are not limited to, additional monitoring and training on personal protective equipment.

Target Date: October 1, 1990.

Although U.V.-cured resin coating is not addressed in a substance specific standard, it should be considered as a specific substance issue because these resins contain acrylate esters. Acrylate esters can be skin sensitizers.

Allergic reactions of sensitive individuals may include smarting of the eyes, headache, and skin eruptions. Very serious chemical burns can result from prolonged contact with uncured resins, since by their very nature they remain "wet" in the uncured state. A small amount of resin that can soak

through permeable cloth (including sneakers) can create this condition, which may not surface until many hours later when the employee is at home.

Over the past year, several meetings with plant management and the manufacturer's representative of these uncured resins have resulted in the development of a plan to:

1. Inform employees as per HazCom of the hazards of uncured U.V. coating resin.

2. Select impervious protective equipment, and test their use.

3. Establish regulated areas.

4. Establish job procedures, including disposal.

Action Plan: Finalize data in all the above-mentioned areas and complete the training program.

Target Date: June 1, 1990.

ACCESS TO MEDICAL AND EXPOSURE RECORDS

Employee interviews indicated a knowledge of where medical records are kept, the person responsible, and their right of access to the records. Mike Sracic will reiterate all of these points at the May safety meeting.

REMARKS

A useful tool for communication is the monthly safety meeting. The three subjects that should be included on an annual basis are:

1. Noise
2. Respiratory Protection
3. Hazard Communication, including access to medical and exposure records.

By incorporating these three subjects into the safety meeting, the plant will fulfill the respective OSHA requirements. Steve Walston informed me of his schedule of monthly safety meetings for 1990. This schedule includes the following:

January, 1990 - Respiratory Protection
February, 1990 - HazCom Video
March, 1990 - Hearing Video
May, 1990 - HMIS Labelling

MAB:dah

SALISBURY PLANT

ACTION PLANS

For Evaluation of November 15-16, 1989
by Mike Buczynski

01-89 **Action Plan:** Conduct a monthly inspection of labels to insure that they are proper, in good condition, and legible.

Target Date: Steve Walston is conducting the monthly inspection immediately.

02-89 **Action Plan:** Develop a contractor information procedure before the next maintenance shutdown in July, 1990. This information procedure should include the following:

- Appropriate workplace specific MSDSs
- Chemical and physical properties (i.e., skin sensitization, flammability, etc.)
- Appropriate personal protective equipment to be used.

Target Date: June 1, 1990.

03-89 **Action Plan:** Complete a list of all employees covered in the Respiratory Protection Program.

Target Date: February 1, 1990.

04-89	**Action Plan:**	Conduct all elements of respirator training and fit testing for all employees covered by the Respiratory Protection Program.
	Target Date:	April 15, 1990.
05-89	**Action Plan:**	Medically certify ability to wear for employees covered by the Respiratory Protection Program.
	Target Date:	December 31, 1990.
06-89	**Action Plan:**	Issue a memo offering all employees annual audiometric exams.
	Target Date:	January 1, 1990.
07-89	**Action Plan:**	All affected employees are to be identified and given annual training on the effects of noise on the ear, as well as the principles of noise generation.
	Target Date:	Completed.
08-89	**Action Plan:**	Complete sound level survey.
	Target Date:	April 15, 1990.

09-89 **Action Plan:** Conduct respective 8-hour dosimetry in the shredder room.

Target Date: June 15, 1990.

10-89 **Action Plan:** Develop a system for documentation of the following:

- Area and personal sampling
- Audiometric testing
- Annual training.

Target Date: October 1, 1990.

11-89 **Action Plan:** Conduct representative 8-hour dosimetry for the balance of the plant, if needed.

Target Date: October 1, 1990.

12-89 **Action Plan:** Conduct audiometry on individuals identified by 8-hour dosimetry who are included in the hearing conservation program.

Target Date: October 1, 1990.

13-89 **Action Plan:** Send Alnor-Velometer out for repair and recalibration.

Target Date: Completed.

14-89 **Action Plan:** Develop a complete sampling strategy to include all industrial hygiene potential issues and representative monitoring in respective job classifications.

Target Date: May 15, 1990.

15-89 **Action Plan:** Complete the air monitoring survey for all potential issues identified in the sampling strategy outlined above.

Target Date: October 1, 1990.

16-89 **Action Plan:** Conduct air monitoring for employee exposure to lead. Comply with the appropriate provisions of the lead standard based on the air monitoring results. These provisions may include, but are not limited to, additional monitoring and training on personal protective equipment.

Target Date: October 1, 1990.

17-89 **Action Plan:** Finalize data in all of the following areas and complete the training program.

1. Inform employees as per HazCom of the hazards of uncured U.V. coating resin.
2. Select impervious protective equipment, and test their use.
3. Establish regulated areas.
4. Establish job procedures, including disposal.

Target Date: June 1, 1990.

QUESTIONNAIRE

OCC 8295

INDUSTRIAL HYGIENE

QUESTIONNAIRE

Facility: SALISBURY MD

Prepared By: MIKE SRACIC / STEVE WALSTON

Date: 5-15-89

I. HAZARD COMMUNICATION

All plants must have a written HazCom program in place which addresses container labeling, material safety data sheets (MSDSs), and training. All new employees must be given training within 30 days of hire and before being assigned to work with hazardous chemicals. The written program should be reviewed annually and signed by the facility manager. The following items are designed to insure that your facility is in compliance with the HazCom standard.

	YES	NO
a. Do you have an up-to-date chemical inventory?	X	
b. Do you have a written hazard communications program?	←	X
c. Has there been a hazard determination made on all hazardous chemicals?	X	
d. Has everyone been trained in the hazards and properties of the chemicals he/she works with within 30 days of the introduction of the chemicals?	X	
e. Does this training include target organs?	X	
f. Are all appropriate containers, tanks, etc. labeled?	←	X
g. Is the H M I S labeling system used?	X	
h. Are these labels in good condition and legible?	X	
i. Do you have an MSDS file that is up-to-date and readily accessible?	X	
j. Is there a designated individual responsible for assuring that workers are informed of MSDS changes/additions that results in a new hazard being introduced into the workplace?	X	

I. HAZARD COMMUNICATION (Con't)

	YES	NO
k. Is there a procedure in place that requires the Purchasing Department to request and receive a MSDS on all new chemical purchases?	X	
l. Is there a tracking system for new chemicals to assure that they do not leave the receiving dock until a MSDS has been received, reviewed and distributed to the appropriate departments?	X	
m. Do you have a procedure for informing contractors about the chemicals on site?	X	

II. RESPIRATORY PROTECTION

If the facility uses or provides employees with respirators of any kind (even nuisance dust disposables) or emergency SCBAs (such as Scott Air Paks), the facility must have a respiratory protection program which contains, as a minimum, the following elements:

	YES	NO
a. Do you have a written respirator program?	X	
• Is the program reviewed annually?	←	X
b. Have the respirators been selected for the type of contaminant protected against?	X	
c. Have workers been trained in the use and limitations of their respirators?		X
Does their training include:		
1. an opportunity to handle the respirator?	←	X
2. having it fitted properly?		
• Qualitative	←	X
• Quantitative		X
3. is the fit test current (annual)?		X
4. if asbestos is handled at your facility, is fit testing conducted semi-annually?	N/A	
5. testing its facepiece-to-face seal (beard, glasses, etc.)?	←	X
6. wearing it in normal air for a long familiarity period?	←	X
7. wearing it in a test atmosphere?	←	X
8. is the training documented?	←	X
d. Have respirators been individually assigned, where appropriate?	X	
e. Are respirators regularly cleaned? (This requirement does not apply to disposables.)	*N/A	
• Are they disinfected?	N/A	
f. Are respirators stored in a clean, convenient and sanitary location?	X	

* Respirators are of the Disposable type

II. RESPIRATORY PROTECTION (Con't)

	YES	NO
g. Have workers been instructed to inspect respirators for wear or damage including a leak check, before and after each use?		X
h. Are monthly inspections of SCBA equipment conducted and records maintained?	X	
i. Is Grade D breathing air utilized for all supplied-air respirators?	N/A	
• Is oxygen content checked?	N/A	
j. Do supervisors maintain awareness of possible changes in workplace exposure conditions and respirator effectiveness through frequent random inspections?	X	
k. Has each worker in the respiratory protection program been medically certified for ability to wear?		X
l. Is his/her status reviewed periodically?		X

III. NOISE - HEARING CONSERVATION

There is no OSHA requirement for a written noise program. The regulation does require that we determine whether our employees are exposed at or above the "action level" of 85 dBA as an eight-hour time-weighted average (TWA). If they are, the affected employees must be given training, access to hearing protection and audiometric testing. Our practice has been to include all plant employees in the program if there are any sources of noise above 90 dBA in the plant.

You should have an up-to-date noise survey on file to show the compliance officer. Noise surveys should be updated whenever new noise sources are added, or at least every two years. If indicated by the survey, dosimetry should be performed on employees in high noise environments.

	YES	NO
a. Has a sound level survey of the facility been performed to identify areas above 85 dBA within the past two years?	X	
b. Are areas above 90 dBA posted with signs?	X	
c. Are workers offered an annual audiometric exam?		X
d. Has representative 8-hour dosimetry been conducted on those individuals identified by the sound level survey?	X	
e. Are employees given annual training?		X
f. Does this training include effects of noise on the ear, and the principles of noise generation?		X
g. Is a copy of the OSHA Noise Standard 1910.95 readily available for employees to examine?	X	
h. Is proper hearing protection provided for identified employees?	X	
• Are employees trained in care and use?	X	
i. In areas over 90 dBA, is hearing protection usage enforced?	X	

III. NOISE - HEARING CONSERVATION (Con't)

	YES	NO
j. Does the program include documentation of:		
1. Area and personal sampling?	X	
2. Audiometric testing?	←	X
3. Annual training?		X
k. Is the documentation readily available?	X	
l. Is special training given to employees who have experienced a standard threshold shift?		X

IV. CHEMICAL EXPOSURE

For all chemicals in your facility for which there are OSHA Permissible Exposure Limits (PELs) or Threshold Limit Values (TLVs), employee exposure should be determined or estimated. A listing of these limits & values may be obtained from Corporate Industrial Hygiene. Sometimes, a careful review of the exposure potential will result in the conclusion that exposure is minimal or non-existent. In other cases, it will be necessary to actually sample to determine the extent of exposure. If exposure (without regard to the use of personal protective equipment) is above the action level (1/2 of the limit), then a program of routine sampling must be established, and an engineering solution investigated. Chemicals for which there are substance-specific standards (asbestos, formaldehyde, vinyl chloride, etc.) should be sampled routinely to generate sufficient data to allow exposure to be estimated with more confidence. (See section V.)

	YES	NO
a. If as a result of sampling an overexposure is believed to exist, have the individual employees who were monitored been provided with proper personal protective equipment?	X	
• Is its use enforced?	X	
b. Is there an action plan to engineer out the source of overexposure?		X
c. Is ventilation checked regularly and results documented?	X	
d. Have representative exposure samples been taken for all chemicals with OSHA-PELs or ACGIH-TLVs at your facility?	X	
e. Are samples taken on a scheduled basis?		X
f. Are they representative of an 8-hour TWA?	X	
g. Are area STEL and Ceiling samples taken?		X
h. Are employees notified of monitoring results?	X	
i. Is there prompt follow-up on high exposures?	X	
j. Is there proper documentation of:		
1. Monitoring data?	X	
2. Sampling/Analytical procedures?	X	
3. Results	X	

V. SUBSTANCE SPECIFIC STANDARDS

If your facility handles chemicals which have been specifically regulated by OSHA as listed below, the requirements of that standard(s) must be met. If there are any questions in this area, please call Corporate Industrial Hygiene.

Substance Specific Standards have been promulgated by OSHA for the following:

1. Asbestos
2. Coal tar pitch volatiles
3. 4-Nitrobiphenyl
4. a-Naphthylamine
5. Methyl chloromethyl ether
6. 3,3'-Dichlorobenzidine and salts
7. bis-Chloromethylether
8. b-Naphthylamine
9. Benzidine
10. 4-Aminodiphenyl
11. Ethyleneimine
12. b-Propiolactone
13. 2-Acetylaminofluorene
14. Dimethylaminoazobenzene
15. N-Nitrosodimethylamine
16. Vinyl chloride
17. Inorganic arsenic
18. Lead STAB-DERS *
19. Coke oven emissions
20. Cotton dust
21. 1,2-Dibromo-3-chloropropane
22. Acrylonitrile
23. Benzene
24. Formaldehyde
25. Ethylene oxide

Have the specific requirements of these standards been addressed as to...

	YES	NO
a. Sampling to measure action level?	____	X
b. PEL, ceiling and STEL concentration?	____	X
c. Change rooms & shower facilities?	N/A	____
d. Medical monitoring?	N/A	____
e. Medical removal from workplace exposure?	N/A	____
f. Recordkeeping & training?	N/A	____
g. Is there a written program where required?	N/A	____
h. Have regulated areas been established and demarcated as required?	N/A	____

* NO REASON TO EXPECT LEAD EXPOSURE ABOVE ACTION LEVELS

VI. ACCESS TO EXPOSURE AND MEDICAL RECORDS

OSHA regulations require that employees be informed annually that they have a right to see and/or obtain a copy of their exposure and medical records. Should an employee ask to see his/her data, we have fifteen days to comply. Requests for exposure data will likely be minimized if you discuss the results of any sampling with employees as they are obtained. The notification of right of access can be done by posting an appropriate announcement on the bulletin board, or by discussion during a safety or communications meeting. If you use the latter method, you must document that fact. Records are required by the standard to be preserved and maintained for the duration of employment, plus thirty years.

	YES	NO
a. Are employees informed annually of their right to exposure data and medical records, both past and present?	X	
b. Are employees notified of their personal exposure data as collected?	X	
c. Can you meet the 15-day time frame to supply requested records?	X	
d. Do the employees know of the existence, the location and availability of records?	X	
e. Do employees know the designated person who maintains these records?	X	
f. Do employees know of their right of access?	X	
g. Is a copy of the standard (OSHA 1910.20) readily available for employee examination?	X	

SUMMARY

COMPLIANCE
SUMMARY

OCC 8306

SALISBURY PLANT

Summary of Compliance Questionnaire

(Percent Complete)

	Date Evaluated	HazCom	Respiratory Protection	Noise	Chem PEL	Substance Specific	Medical Notification	Open Action Items
Self-Evaluation	5/31/89	85	31	60	77	100	100	--
Buczynski Audit	11/16/89	92	47	60	83	0	100	17
Buczynski Visit	3/29/90	100	68	73	83	0	100	14

OCC 8307