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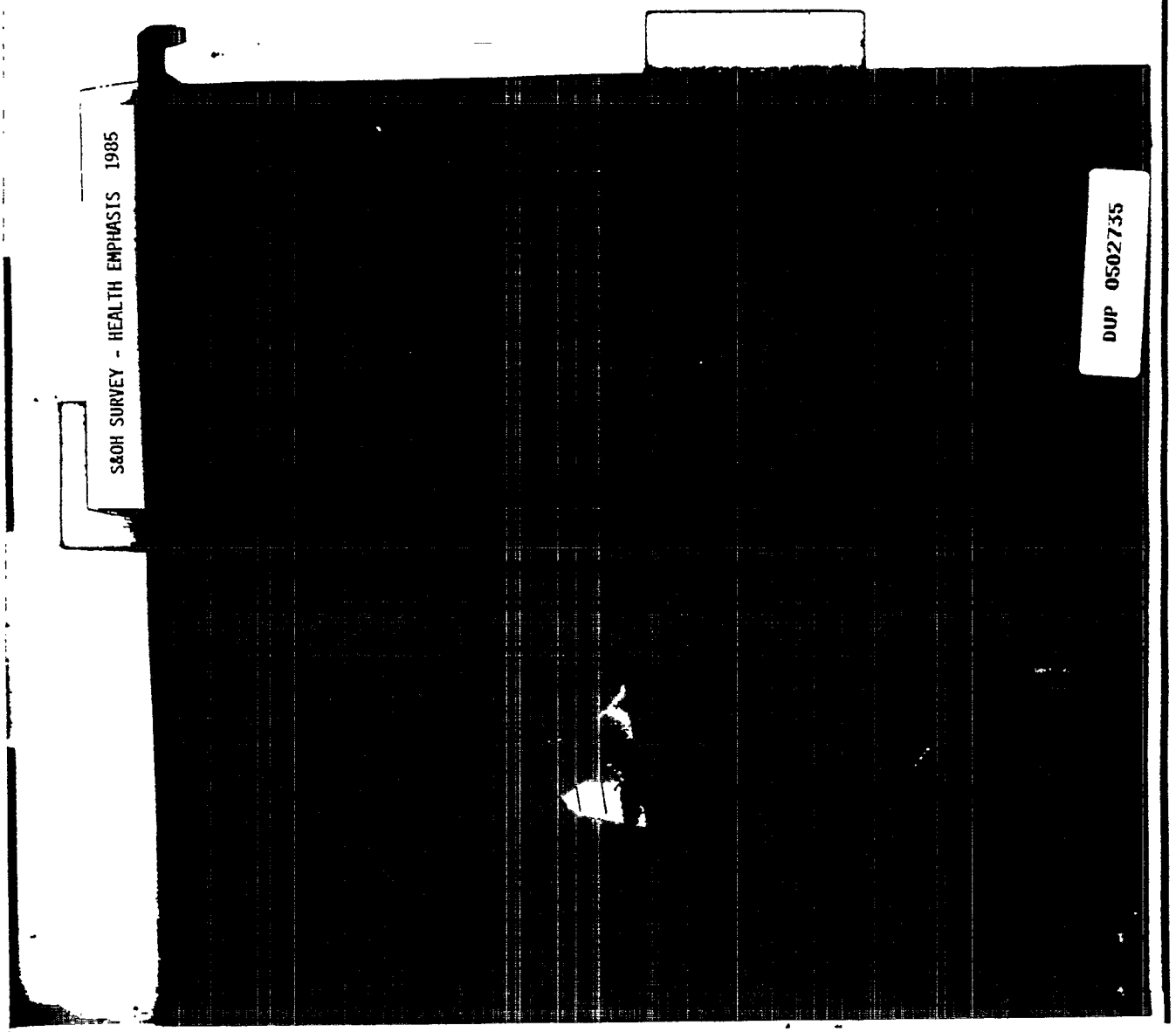
EXHIBIT
DUP-2044



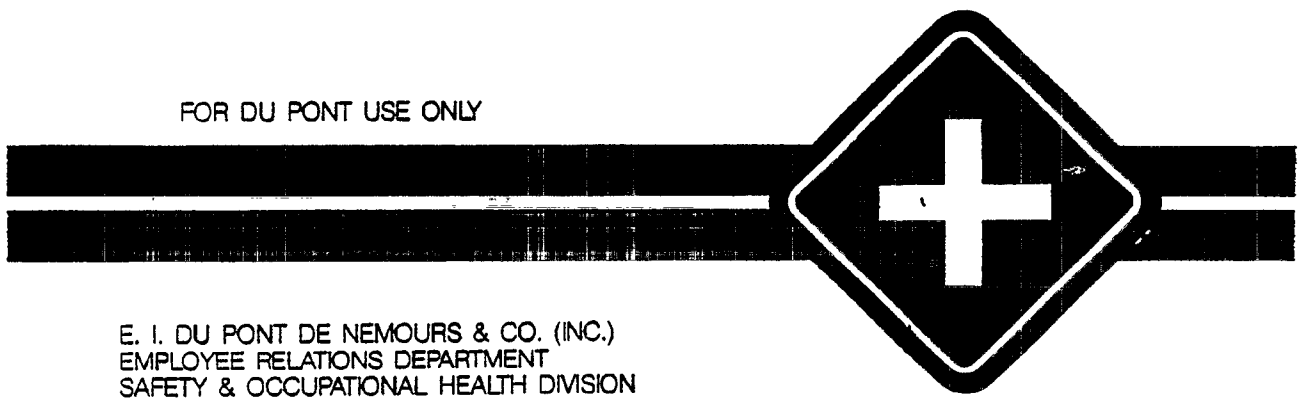
ER-6669 (Rev. 1-85)

Health Emphasis Survey

BEAUMONT WORKS
POLYMER PRODUCTS DEPARTMENT
BEAUMONT, TEXAS

REPORT NO. 5052-H
OCTOBER 31, 1985

FOR DU PONT USE ONLY



E. I. DU PONT DE NEMOURS & CO. (INC.)
EMPLOYEE RELATIONS DEPARTMENT
SAFETY & OCCUPATIONAL HEALTH DIVISION
WILMINGTON, DELAWARE 19898

DUP 0502736

INTRODUCTION

A health emphasis audit of the Beaumont Works was conducted October 7-16, 1985. This audit was the first of its type conducted at the site and included strong participation by Beaumont Works employees. Both health and safety concerns were addressed as contained in this report. Safety & Occupational Health Division (S&OH) survey engineers coordinated the audit, acting as resources concerning scope of audit, reference for recommendations, team members, and other aspects of the participatory audit. Many site exempt and nonexempt employees were involved in the audit, including four S&OH Division survey engineers. Each of those involved had equal input concerning field observations and final recommendations reflected in this audit report.

The purpose of the new participatory approach to the audit was to improve the site's overall safety and health efforts, emphasizing program strengths and weaknesses. No ratings were given. Participating personnel made honest, open observations on safety and health items of concern. A "purpose statement" blending the S&OH Division's and site's audit purpose is included in this report.

The report summarizes findings and field observations presented to the site staff by 13 team members at the conclusion of the audit. The audit teams recommend appropriate responsive action be taken to strengthen the observed program weaknesses.

Please send two copies of a status report to D. G. Windsor, S&OH Division, within three months reflecting progress on recommendations in this report. The status report should also contain any items which require further discussion with the audit teams before implementation.

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BEAUMONT WORKS/SAFETY & OCCUPATIONAL HEALTH DIVISION

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RCC/FPM/RJG/RJR:raf

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The development of the audit purpose statement was accomplished in a meeting conducted by the plant manager, with the participants and the Central Safety Committee, using the task cycle theory base. This meeting provided understanding and "buy-in" of the participants.

PURPOSE STATEMENT

TO:

- AUDIT OUR CURRENT PERFORMANCE AGAINST A SET OF CORPORATE STANDARDS.

IN A WAY THAT:

- WE SEE THINGS AS THEY REALLY ARE.
- DEVELOPS PEOPLE.
- SHARES EXPERTISE.
- UPGRADES STANDARDS AND PERFORMANCE.
- CREATES A HEALTHIER AND SAFER WORK ENVIRONMENT.
- ALLOWS FOCUSING ENERGIES EFFECTIVELY.
- SHARES INDIVIDUAL AUDITS SITE-WIDE.

SO THAT:

- WE PRODUCE OUR PRODUCTS WITHOUT HURTING PEOPLE OR THE ENVIRONMENT.

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SUMMARY

The audit teams noted continuing progress in essentially all areas of safety and health since the previous surveys. Many areas of particular strengths were noted by audit team members; however, some areas of program weaknesses were noted that need ongoing attention.

Strengths:

- Overall, the occupational health (industrial hygiene) program is very strong.
- Personnel work hazards identification is good across the plant.
- Considering the raw materials handled and products manufactured, a strong housekeeping program is noted.
- Employee hazards communications are appropriate, well documented and personnel are knowledgeable.
- The material safety data sheet (MSDS) effort is strong with site-wide distribution of appropriate sheets. Continued efforts are needed to insure necessary sheets are available for contractor chemicals and some chemicals used in shops and laboratories.
- Employee work practices noted during the audit are good.
- The site continues to have a generally effective RHYTHM® program.

Weaknesses/Recommendations:

- Although the contractor written program has significantly improved since the last survey, field implementation of this program is not effective in many areas.
- Implementation of the job cycle check program varies widely from area to area. A consistently implemented program which verifies employee job knowledge and procedure status is needed in some areas.
- A review of safety rules annually and important job procedures at least each two years is needed in some areas.

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- Clarification of requirements is needed in some important safety procedures, particularly the lock, tag, and try procedure.

- Although food control is generally appropriate, additional efforts are needed on basic cleanliness in some food consumption areas, particularly the cleanliness inside microwave ovens.

- Proper storage and cleanliness of protective equipment (earmuffs, face shields, gloves, and some respirators) is an ongoing problem and needs attention.

- The condition of some flammable storage cabinets (used throughout the plant) needs improvement. A site-wide review is recommended.

- The current multilayered audit program should be reviewed opposite findings on this audit and the program strengthened accordingly. Cross-auditing (communications) is suggested to share particular program strengths and weaknesses from area to area.

The site is implementing a program (organizational effectiveness) which includes much stronger involvement of people in overall program management. This effort is currently in its early stages. Based on improvements in safety and health programs noted at other sites with advanced OE programs, the Beaumont Works can look forward to significant improvements in employee attitude, involvement, enthusiasm, productivity, and program contributions in the future. (Note: As discussed with the site manager, notable examples of program "turnarounds" because of the impact of OE principles, include the Niagara Plant and the Belle Plant.)

SAFETY AND HEALTH MANAGEMENT

This category of the health emphasis audit includes program organization and administration, communications, committees, audits, programs, rules and procedures, and contractor handling for both safety (includes safe distribution program, RHYTHM® functions) and health. The elements of this category were evaluated by the report preparation team and findings categorized into "strengths" and "weaknesses/recommendations", summarized as follows:

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Strengths:

- The Central Safety Committee and its associated sub-committees are well organized as a policy-making group and are functioning well.

- The contractor safety committee has significantly improved its written program since the previous survey. However, this committee needs to more effectively audit field implementation of this program to insure compliance and to eliminate inconsistencies noted.

- The risk management group (safety/health/RHYTHM®) has "survived" EHO and its reorganization appears effective.

- The communications program for employees is generally strong regarding safety and health information. Although not a significant weakness, audit team members noted lack of understanding of some job safety requirements and policies among some employees.

- Both safety and health procedures and related job procedures are generally well established. However, review of job procedures (particularly those directly related to process hazards management) should be accomplished each two years with updating as necessary. Safety rules, such as in the Safety How, should be reviewed annually with necessary updating where needed.

- A multilayered audit program is established which is operating satisfactorily. Improvements would include conducting area cross-audits during which strengths and weaknesses of each area's programs can be shared.

- Generally, the RHYTHM® program is well established.

- The construction group's program and performance is generally satisfactory.

- The site is working diligently to strengthen its process hazards management program.

Weaknesses/Recommendations:

- The most significant concern noted by the audit teams is field implementation of the non-construction contractor handling program which differs significantly from the current written program. Supervision must insure that

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area contractor coordinators have adequate time to monitor contractor performance. In addition, each employee has a responsibility to assist with the "monitoring" of contractor performance.

- Although the RHYTHM® program is well established, training should be "freshened" and updated to insure satisfactory future performance.

- The job cycle check program, although used across the site, is inconsistent from area to area. Implementation of this program to determine both employee job knowledge and the status of individual procedures is recommended (where job cycle checks are needed).

WORK PRACTICES

This category of the health emphasis audit report includes employee compliance with rules and procedures, use and storage of personal protective equipment, training and job checks for both safety (includes safe distribution program RHYTHM® functions) and health. Program strengths and weaknesses noted by the audit teams (with recommendations for improvement) are summarized as follows:

Strengths:

- Few unsafe acts were noted by the audit teams. Continued emphasis on employee actions during area audits is recommended.

- Personnel interviewed were aware of expected safety performance and were knowledgeable concerning plant safety and health goals.

Weaknesses/Recommendations:

- Some supervisors do not spend adequate time in the field to keep abreast of conditions, situations, and problems. It is important that supervision keep themselves well informed on problems and progress in the workplace.

- Generally, some protective equipment is not adequately cleaned and stored in the workplace. Major items being mishandled include face shields, acid suits, self-contained breathing air devices, gloves, and some other respirators. Site-wide improvement is needed.

- Employee work practices indicate poor understanding of the lock, tag, and try procedure. The audit teams recommend questions concerning this very important procedure be clarified with all personnel.

WORK ENVIRONMENT

This category includes area and machine guarding, facility arrangements, spill control, working conditions, transportation equipment inspections, other equipment inspections and tests, material handling and waste disposal. Both safety (includes safe distribution program-RHYTHM®) and health aspects were evaluated. Strengths and weaknesses in this category are summarized as follows:

Strengths:

- Guarding in work areas is generally good. Hazard areas are well identified (noise, hot work, chemical leaks, etc.)

- Interlocks (stop devices) are appropriately installed and employees possess good knowledge of their function. Operation of these devices is checked periodically.

- Housekeeping is generally satisfactory; the audit teams feel it is outstanding in the Powerhouse.

- Inspections of material handling equipment, such as forklift trucks, is appropriate. The use of safety devices, such as chocks, king pin locks, etc., on transportation equipment is excellent.

Weaknesses/Recommendations:

- Spill and leak control in work areas (not environmental leak control) needs to be updated, particularly in the laboratory.

- The condition of flammable liquid storage cabinets varies across the site and needs review and upgrading.

- The condition and adjustment of eyewash stations in some areas needs prompt attention.

- Improvement is needed in guarding plastic bowls on high pressure equipment. (S 1 H, S 2 H)

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CHEMICAL HEALTH HAZARDS

This category includes the airborne chemical monitoring and abatement program, PERS, ventilation control, the use of personal protective equipment, and food control/sanitation. Strengths and weaknesses of these programs are summarized as follows:

Strengths:

- The site has a well established chemical purchase approval program. However, periodic auditing of work-place chemicals to insure compliance is recommended by the audit teams.
- The site has a strong medical support program.
- The air monitoring program is well organized; appropriate frequencies for resampling are established, and the resulting data are properly analyzed. Several potential exposure situations needing further monitoring were noted during field observations.
- The PERS program is well established.
- Generally employee sanitation facilities are clean and sanitary and meet company guidelines.
- Recommendations in previous surveys regarding "Chemical Health Hazards" have been aggressively addressed.

Weaknesses/Recommendations:

- Although food control is generally satisfactory, ongoing attention is needed to the condition inside microwave ovens and employee observance of authorized food consumption zones. A particular problem with food control was noted in the laboratories.
- Additional inspection criteria are needed in some areas to insure proper evaluation of adequacy of the self-contained breathing apparatus.
- Overall, the ventilation control test program needs improvement. For example, the hood testing program in the laboratory needs to be thoroughly reviewed; Engineering Standard H 3 U provides a useful guide for this

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reevaluation. In addition, several local exhaust ventilation systems which control chemical exposures site-wide are not appropriately monitored annually as recommended in Engineering Standard H 4 T.

- Asbestos gasket storage areas should be identified.

PHYSICAL HEALTH HAZARDS

The Physical Health Hazards category includes noise monitoring and abatement, radiation control and heat/cold stress. Strengths and weaknesses with recommendations follow:

Strengths:

- The annual noise survey program (with compliance plans and employee audiometric testing) is very satisfactory.
- No problems were found in the radiation control program by the audit teams.
- Although some very hot work areas were noted by the audit teams, no unaddressed potential heat or cold stress situations were noted.

Weakness/Recommendation:

- The 87 dBA noise boundary (for 12-hour shift employees) around portable noisy equipment should be identified to insure employees working nearby wear hearing protection.

PREVIOUS REPORTS

A review of the previous Safety Survey Report No. 3181, dated January 6, 1984 and Occupational Health Survey Report No. 1022-H, dated May 1, 1981 indicate all recommendations have been appropriately addressed. However, contractor response to contractural agreements, although improved, needs much further improvement.

Attachments (9)

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AREA SUMMARIES

ACRYLONITRILE AREA

Strengths:

- Generally, strong inspections and tests program.
- Well implemented RHYTHM® program.
- Strong attention to work rules by employees.
- Adequate "local" spill control procedures.
- Chemical monitoring program appropriate and up-to-date.
- No unaddressed noise problems.

Weaknesses/Recommendations:

- Several discrepancies in inspection and test records need to be updated.
- Contractor control should be strengthened.
- The job cycle check program should be strengthened (a site-wide problem).
- Standards for in-house auditing should be upgraded.
- Althnough generally good, cleanliness and storage of protective equipment such as face shields and gloves should be upgraded.
- Grounding of train rails at chemical handling spots needs to be upgraded.
- There was evidence of food consumption in no food zones; this needs attention.

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AMMONIA AREA

Strengths:

- Inspections and tests recordkeeping and program is up-to-date and appropriate.
- Industrial hygiene concerns are well managed.
- Flow alarms installed on eyewash stations and safety showers add an additional margin of safety for users.
- Procedures (hundreds of them) are reviewed and updated as necessary each three years.
- The control room training simulator allows valuable refresher training for control room operators.
- Contractor activities are adequately controlled (based on audit team observations), however, see "Weaknesses".

Weaknesses/Recommendations:

(1) • An appropriate capping kit for ammonia tank cars will improve the area's ability to handle this hazardous material in an emergency.

(2) • Current evaluation of employee needs for Nomex® clothing should be completed promptly.

(3) • "Dead spots", where employees cannot hear the emergency fume alarm, should be investigated (again) and the problem resolved.

(4) • Splashing and odor emission from the Belco ditch should be resolved.

(5) • Observations of contractors violating good safety practices such as jumping from barrel to barrel to pack down asbestos in plastic bags, must be eliminated.

(6) • Procedures which directly impact on process hazard reviews should be reviewed and updated (as necessary) each two years; not each three years as currently done.

ANILINE AREA/TEL AREA

Strengths:

- Job cycle check scheduling and followup are strong.
- Relief valve test recordkeeping and computerized shutdown planning of tests and inspections are notable strengths.
- RHYTHM® inspections and records.
- Improvements noted in NO_x fume control and process leak elimination.
- Shop and warehouse upgrades are commendable.
- Upgraded safety shower and eyewash facilities.
- Food preparation areas (including microwave oven).

Weaknesses/Recommendations:

1. Housekeeping at the south end of the Aniline building needs significant improvement.
2. Audits for employee work practices need to be upgraded.
3. Although the general industrial hygiene program is strong, there is an ongoing need for a portable instrument that can directly measure nitrobenzene fumes (currently being studied).

CONTRACTOR SECTION

Strengths:

- Upgrading of the written site contractor guidelines is commendable. There has been a strong effort to incorporate all major changes for contractor handling reflected in the September, 1984, company guidelines and S&OH Guidelines, Section 4.6.

Weaknesses/Recommendations:

(1) • Tne implementation phase of contractor handling needs significant upgrade, based on observations made by audit teams throughout the audit.

(2) • Contractor work permits should be reviewed, both in design and use, to insure they meet site expectations.

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ENGINEERING DIVISION I

Strengths:

- Housekeeping in the central and P&O shops is commendable.
- Health protection aspects of shops operation have been well addressed. Employees were particularly knowledgeable concerning wood dust exposures in the carpenter shop.

Weaknesses/Recommendations:

1. A thorough review of the shop's use of chain falls on monorails should be conducted. The audit teams feel there is a risk of exceeding monorail capacity during use.
2. Asbestos gaskets should be identified and stored as discussed (Engineering Standard S 4 T) by the audit teams.
3. Food control should be upgraded in some areas, as addressed in the field observations.

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E&EM AREAS

Strengths:

- Area injury performance (5-1/2 years without a tabulatable injury) is outstanding.
- The "classical" approach to job cycle checks is used; supervision is commended.
- Inspections and tests recordkeeping is very good.
- Industrial hygiene programs are well considered.
- Housekeeping is excellent.

Weaknesses/Recommendation:

- The area should insure that a backup chlorine leak repair kit is always available. The backup kit currently located in the ACRN area may be "phased out in the near future." This backup kit should be moved to an appropriate new location if this occurs.

Complete DSR 2/12/86

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HYPALON AREA

Strengths:

- The radiation program, heat/cold stress, noise control program, and other industrial hygiene programs are generally well controlled.
- The inspections and tests program and associated record-keeping is very good, overall.
- Procedures, both in manuals and posted, are excellent and up-to-date.
- The area feels they have recovered from the impact of ERO.
- Area employees were working safely and displayed a good, positive attitude.

Weaknesses/Recommendations:

1 • The in-house audit program should be upgraded, to include the detailed approach used by the audit teams. People observations should be stressed.

2 • Contractor performance should be strengthened; adequate time for contractor coordinators to perform must be allowed.

3 • Upgrading the job cycle check is needed (site-wide problem).

4 • Annual testing of the air flow into local chemical fume control systems is needed (site-wide problem).

5 • Portable equipment, such as ladders, must be more carefully stored after use. In addition, storage practices for protective equipment vary throughout the area; consistency and improvement are needed.

6 • Housekeeping in the basement area is weak and needs upgrading.

7 • The condition and storage practices of flammable cabinets should be upgraded (site-wide problem).

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8 • Eyewash stations and safety showers (several) need repair and more frequent testing.

9 • Reactor fumes control at the PE detector should be evaluated.

10 • Food control is generally satisfactory but cleanliness in microwave ovens needs prompt attention (site-wide problem).

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NORDEL®

Strengths:

- Procedures, i.e., emergency, interlock, job, safety and healtn, are very good.
- Inspections and tests programs are good; no problems noted. The upgrade in performance of the contractor water "blasters" is commendable.
- Improved equipment such as the automatic bale loaders, packing equipment, "EE" forklift trucks, and the DIBAC improvements is commendable.
- The warehouse is well maintained.
- Overall, the industrial hygiene program is excellent.

Weaknesses/Recommendations:

1 • The approach to job cycle checks needs to be upgraded (site-wide problem). 3Q 86

2 • Many posted procedures need to be updated. Complete

3 • Generally, contractor performance is weak; stronger use of the new site and corporate guidelines is needed. Maint. active; training add. cls. to admin school.

4 • Greater attention is needed to safety/health items such as valve packing leaks, railroad track grounding, the condition of eyewash stations, and housekeeping in the polymer area and shops. April '86

5 • The condition of acid suits, noted by the audit teams, should be upgraded; handling methods for PTBC should be improved. procedures

Lockers

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DU 002304

POLYMER PRODUCTS DEPARTMENT LABORATORY

Strengths:

- The average experience level of employees in this group is excellent; experienced employees are among the company's safest employees.
- Efforts of the task teams, addressing important subjects such as training, are commendable.
- The laboratory has an effective job cycle check program.
- Laboratory management insures that all levels of employees are actively involved in the safety program. A very positive attitude was noted among laboratory employees during the audit.

Weaknesses/Recommendations:

1 • The problem with excess talcum powder dust in Hypalon® samples should be actively pursued until potential dust exposure hazards are eliminated. Hypalon should [illegible] their new sample system [illegible], should solve

2 • Chemical waste disposal is currently being evaluated. Technique changes or additional ventilation should be considered until current concerns have been alleviated. Evaluated by outside consultants - OK - will be back 2/28 — expect to [illegible]

3 • The procedure for "logging-in" a contractor at the laboratory should be reevaluated to insure laboratory management is aware of any contractor's presence for work. Complete

4 • The periodic hood ventilation testing program has many significant deficiencies. Another thorough review of Engineering Standard H 3 U is needed. It's recommendations should be followed.

Rec Due Feb 76

5 • Food storage/consumption practices are not well controlled in the laboratories. S&OH Division Guideline, Section 9.18 on food control should be reviewed regarding practices in laboratories, and the program significantly upgraded. Complete

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