

TEXAS CITY PLANT

FOLLOW-UP

INDUSTRIAL HYGIENE

PROGRAM EVALUATION

February 28 - March 1, 1984

S. D. Paul
R. A. Smith

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INTRODUCTION

Background

Throughout Monsanto, there is a concerted effort to develop and maintain quality plant industrial hygiene programs to reduce employee exposure to chemical, physical, and biological agents which may produce adverse health effects. Plant IH programs reflect specific plant needs and are in various stages of development. DMEH and MFI have a responsibility to evaluate these programs on a continuing basis and to recommend elements or strategies that promote complete program development and maintenance.

Purpose

This Follow-up IH Evaluation Reports presents the current status of the Texas City Plant response to comments and recommendations in the 1982 Initial IH Program Evaluation Report and includes other specific items as appropriate.

Scope

Recommendations are made to minimize the differences between current program capabilities and perceived plant needs. The following criteria were evaluated for the Texas City Plant IH program.

- I. General Information
- II. Organization and Staffing
- III. Employee Education and Training
- IV. Contract Employees
- V. Industrial Hygiene/Occupational Medicine Interface
- VI. Exposure Assessment
- VII. Monitoring Data Integrity
- VIII. Action/Compliance Planning
- IX. Information Reporting
- X. Noise and Hearing Conservation
- XI. Respiratory Protection
- XII. Personal Protective Equipment
- XIII. Radiation Protection & Heat Stress
- XIV. Hygiene Facilities and Practices
- XV. Engineering Control Implementation and Evaluation
- XVI. Emergency Response

EXECUTIVE SUMMARY

The follow-up IH evaluation at the Texas City Plant generally showed that the overall program is very good. The technical aspects of the program are usually handled in excellent fashion. The communications, training, and participation aspects of the program need some improvement. Although the "unit trainer" concept can be used very effectively, it requires close coordination and regular follow-up between the IH group and each operating unit contact.

The plant IH group is strongly encouraged to spend more time in the plant talking with operating personnel, asking questions, and generally building a stronger rapport with employees. The people throughout the plant need a better understanding and appreciation of the industrial hygiene group. It is more than monitoring. The key is regular participation by the IH group in the routine affairs of working men and women in the plant when health issues arise. The IH group needs to be seen and heard more often and in more places around the plant.

The plant IH group has done an excellent job in such areas as routine and special monitoring, validation, hearing conservation, contract employees, hygiene facilities and practices, evaluation engineering controls, and emergency response. Program progress is also due to the continuity of personnel assigned to the IH group over the years. The effects of recent personnel changes is difficult to accurately assess, but I feel strongly that the question needs to be carefully considered if program quality is to be maintained regardless of continued plant management support.

The comments and recommendations presented in this report have been prioritized to assist you with DMEH/MFI perceived future plant IH action areas. For Texas City, principal thrust areas would logically include maintenance of strength areas, and further development of program training, communication, and participation aspects to improve employee understanding of the IH group. These areas and other Priority I items should be initially addressed. Priority II items are desirable to accomplish, but are not viewed as critical in the short term.

It is extremely important for plant management to continue to fully support plant-wide industrial hygiene effort. It is also important to continue to stress effective implementation of IH program elements in plant operating units. IH activities need to be visible on a daily basis throughout the plant. Employee training and education should also continue to be emphasized. Communication can affect desired changes in employee work practices and minimize the risk of adverse health effects.

An effort has been made to make comments and recommendations specific enough to provide definition and direction, but general enough not to restrict your approach to problem solving. Successful plant IH programs are usually well planned and implemented, stress fundamentals, and provide a means to develop a technical, people oriented program for future growth and maintenance. Adequate resources and sustained effort are normally required.

Many of the recommendations suggest an integrated approach to upgrade and/or maintain a quality, sustaining, performance oriented plant IH program. DMEH and MFI will continue to work with you as needed to assist in any possible way.

COMMENTS/RECOMMENDATIONS

The following 1984 comments update the Texas City Plant IH status noted in 1982. The recommendations are offered as suggested future IH action areas. Sherman Plant IH status and future IH action areas respectively.

TEXAS CITY PROGRAM EVALUATION SUMMARY

Program Element	1981 Comment/Recommendation	1983 Comment/Recommendation	Priority
<u>I. GENERAL INFORMATION</u>			
A. General Plant	This section contains basic information about the plant (major products, guest operations, number of employees, union representation, etc.). It was satisfactorily completed.	The high density polyethylene unit has been shut down (840.35). The recently completed I.D.A. II unit has also been shut down and a new process, Builder U, may be pilot planted utilizing existing process equipment.	
B. Worker Population		The total plant worker population is 1386. Of that total, 516 are salaried, 416 are hourly production, and 454 are hourly maintenance.	
<u>II. ORGANIZATION AND STAFFING</u>			
A. Staffing	1. The current staffing level of three professionals and 5 technicians appears ample to meet the needs of the Industrial Hygiene function. It is important that the skills of the hygiene professionals and technicians be maintained and improved through continued (annual where appropriate) professional training (e.g., AIHA sponsored courses on respiratory protection, radiation noise/hearing conservation, etc.).	The current staffing level is one professional and 3 technicians. One professional retired. The second professional has become the research librarian. Two IH technicians were reassigned during a plant reorganization. There is no IH chemist per se.	
B. Professional Training	Continued technical training and annual participation at the national AIHA ¹ conference for the AIHA ² certified professional is critical toward maintaining a certified hygienist at the plant.	The plant industrial hygienist has not been permitted to attend the national AIHA conference annually.	
C. Laboratory	2. Placing the hygiene lab within the industrial hygiene organization is evaluated favorably. Close coordination and maximum utilization of people and lab resources is a significant positive result of this organizational arrangement.	This arrangement continues to be very effective.	
D. General	3. The plant has shown continued commitment of resources to maintain its extensive employee health protection program. The team fully supports this significant and necessary commitment.	The plant continues to be committed to a quality plant IH program. The 1984 budget for IH is approximately 675K and 50K is budgeted for capital IH projects.	
E. Respiratory Protection	4. The respiratory protection and personnel protective equipment responsibilities lie with the safety function rather than the industrial hygiene function. These responsibilities, overall, appear well handled. Since the result sought from each of these programs is the prevention of over-exposure via inhalation or dermal routes, they are often made the responsibility of the industrial hygiene function. Such a change may at some time be appropriate.	The respiratory protection program is now the responsibility of the IH group, but the personnel protective equipment program is still administered by LP and S although the IH group does recommend material of choice information occasionally.	

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Program Element	1981 Comment/*Recommendation	1983 *Comment/*Recommendation	Priority
III. EMPLOYEE EDUCATION AND TRAINING			
A. Worker Orientation	1. New employees received a general introduction to industrial hygiene as part of their "new employee" training. Hourly employees receive training on industrial hygiene related topics as scheduled by their supervision. Departmental supervision receives IH training on an "as requested" basis. The plant also sponsors an "hourly safety committee" which allows approximately 25 employees from all parts of the plant to participate more intensely in the plant safety effort, including IH training. Membership is rotated every 6 months and has involved a large number of plant employees over the years. It appears that a significant effort is being put forth by the plant in the training area. The team supports this emphasis on training and recommends that every department annually use one or two of its monthly safety meetings to discuss pertinent industrial hygiene/employee health topics.	3. Staffing be reviewed in view of current plant needs.	I
		4. The plant industrial hygienist be permitted to annually attend the AIHA National Conference to maintain professional certification and be exposed to new developments in IH.	I
B. Training Program Status	2. It is recognized that the responsibility for training lies with department supervision. The plant teaches that good safety and industrial hygiene practices are the responsibility of each individual employee. However, the team shares a concern about "who trains the trainer?" If IH training for department supervision and/or trainers is on an "as requested basis" then weaknesses may exist in quality of the training given to employees. It is our recommendation that the industrial hygiene professionals become more actively involved in reviewing and evaluating the programs presented on industrial hygiene, particularly for appropriateness of topics and the accuracy of the contents. The hygiene group will recognize the weaknesses which exist in departmental training programs and what direct/indirect assistance from this group is necessary to help any department upgrade its program.	The situation has remained essentially unchanged. New salaried employees receive orientation which is organized by the plant Personnel Department. Hourly employees receive orientation from their unit trainer. It is strongly recommended that the plant review hourly employee orientation to ensure uniformity of general plant information and effective IH indoctrination to get the new employee started off "on the right foot."	II
		The recommendation has not been followed up on sufficiently. It is strongly recommended that unit training programs be generally reviewed by the plant industrial hygienist and that there be increased involvement in ensuring quality and clarity in all training programs. This is viewed as a general concern needing immediate attention.	I

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TEXAS CITY PROGRAM EVALUATION SUMMARY

Program Element	1981 Comment/*Recommendation	1983 *Comment/*Recommendation	Priority
C. Hazard Awareness	3. Posting of chemicals encountered in a specific department, their specific hazards, and the proper protective equipment for handling these materials was evident throughout the plant. Additional information of this nature is part of the training an employee receives upon assignment into a department. Posting departmental chemical hazards is an excellent way to provide high visibility for this important information.	This is an excellent practice which continues to be provided throughout the plant. It puts you "one leg up" in complying with the OSHA Hazard Communication Standard (1910.1200). MSDS documents are not placed in appropriate operating areas, but are maintained in the CP&S library and in purchasing. HFI/DHEH will be working closely with the plant to ensure efficient implementation.	I
D. Reference Material		It is recommended that a general plant strategy be developed to effectively use plant, operating company, DHEH, and other resources to implement this standard in a cost effective, efficient manner. HFI will soon issue a company strategy and desires to consult with you on your specific needs. The plant III group has essentially all reference material needed to respond to plant problems and execute a quality program.	
IV. OUTSIDE CONTRACTORS			
A. General Status	1. The effort to deal with the problems of contractor safety and health is quite evident. Both written and visual training material has been developed to explain safety and operating rules to contractors. These training efforts also address in a general way health and safety concerns associated with contractors working within the plant. The team strongly supports continued emphasis in this important area.	This excellent plant practice continues to be provided. No further recommendation is needed.	
B. Contractor Booklet	2. The plant booklet "Contractors Guide to Accident Prevention" does not discuss related industrial hygiene concerns. We recommend that a section or a series of statements on industrial hygiene be added during the next update of this pamphlet. If the pamphlet "Plant Chemical Safety Manual" was also designed for distribution to contractors, then basic information addressing respirator use, hearing protection, tagging of breathing air cylinders, etc. could alternatively be covered here.	The "Contractor Guide to Accident Prevention" has not been updated. However, III information has been incorporated into the Monsanto employee booklet. It is recommended that III information be added to the contractor booklet when it is next updated.	II
		The plant has a contract employee (Ray Supak of Opel Construction) who works with all contractors at the plant on a daily basis. Contractors are informed of health hazards in specific work areas.	
		It is recommended that plant contractor health and safety procedures be reviewed when the HFI guideline is issued.	I

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Program Element	1981 Comment/Recommendation	1983 Comment/Recommendation	Priority
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V. INDUSTRIAL HYGIENE/OCCUPATIONAL MEDICINE INTERFACE

A. General

1. The plant now has a resident physician. The plant also utilizes the services of a medical clinic and the community hospital. An in-depth evaluation of the medical surveillance program would require participation by DHEH medical staff and was not planned as a part of this evaluation.

The current situation remains unchanged. The Beeler-Hauske Clinic is still used. The plant physician frequently works with the IH group. The plant industrial hygienist is called upon for special services occasionally. Dan Campbell and Bob Hammann are used as resource people for the Danforth Emergency Room. The plant physician is not well acquainted with routine IH activities. Mark Riddle (LP6S) maintains the OSHA 200 log. No occupational illnesses have been entered in the past 3 years. The plant has 1 R.N. and is looking for an additional R.N. and clerk due to 2 recent resignations. Plant medical services are offered days only, from Monday through Friday. Metpath is used to analyze biological samples.

It is strongly recommended that the doctor become better acquainted with plant IH activities and that the nurse and IH group continue to regularly communicate to facilitate effective follow-up by both groups.

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VI. EXPOSURE ASSESSMENT

A. Base Data Survey

1. Baseline exposure assessments consist of the original base data survey and the initial monitoring assessments made at the plant. The base data survey was conducted by John Fox and Steve Roberts in November, 1975. Initial baseline monitoring assessments were conducted by the plant industrial hygiene group and were completed in 1979. A thorough job was done of gathering this information and these historical documents are essentially complete.

There have been no changes.

B. Status

2. The most recent status report on routine exposure monitoring was issued in November of 1980. The industrial hygiene group indicated that more recent summaries have been delayed largely due to efforts being directed at conversion of industrial hygiene and work history data from an interim format into a format programmed for an acceptable to the final MEHI system. The team recommends that a report on the results of current monitoring be issued on a semi-annual frequency. It is understood that the hygiene group will use the MEHI "Industrial Hygiene Status Report" output service to provide a compilation and summary of sampling data gathered over the monitoring period and add written comments as appropriate.

There have been no status reports in the past 2 years.

It is recommended that the plant issue an annual IH monitoring status report beginning in 1984. DHEH/HFI will provide more definition by September 1, 1984.

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Program Element	1981 Comment/Recommendation	1983 Comment/Recommendation	Priority
C. Communication of Monitoring Results	3. The hygiene group currently reports monitoring results back to departmental supervision. On personnel monitoring results above the recommended exposure guideline, follow-up to determine the cause is conducted in conjunction with supervision. On exposure results below recommended guidelines, the option of communicating the results is left to supervision. The team recommends that all monitoring results on employees who wear pumps, badges etc. be communicated to them whether or not they are above the recommended limits. The plant appears to be in compliance with the specific written reporting requirements of the OSHA acrylonitrile standard applicable to monitoring.	Monitoring results for selected agents (e.g., asbestos, AN, noise, benzene) are communicated to individual employees verbally and in writing. Other monitoring results are communicated monthly to each operating unit by job class and supervision is encouraged to use them in monthly safety meetings. The IH group will communicate individual results for these agents verbally upon request. It is recommended that pertinent IH monitoring results for other agents be communicated in writing to individuals monitored to improve employee understanding and cooperation and improve IH group credibility with the plant working population.	1
D. New Chemicals		The plant industrial hygienist is not always notified of new chemicals being introduced to the plant (e.g., new CT treatment chemical causing odor concerns).	1
E. Monitoring Assessment		It is recommended that a procedure, preferably formal, be implemented to ensure proper IH review of new agents introduced to the plant. DHEH conducted a monitoring assessment in early 1983. A preliminary evaluation shows that the plant has done an excellent job developing a monitoring schedule and executing a quality IH monitoring program. Monitoring assessment remains a plant responsibility. Regulatory monitoring requirements are currently met for AN, noise, asbestos, and benzene, along with other regulated agents and non-regulated agents of health concern. IH sampling pumps have become unreliable due to age. The monitoring program has gained notable strength in the areas of chain of custody, scheduling, and equipment calibration. It is recommended that:	1
F. Routine Monitoring		1. The plant review manpower needs and continue to support a quality plant IH monitoring program. 2. Monitoring pumps be purchased to replace older units that have become unreliable. Either 5 high flow or 5 low flow units or 5 pumps capable of operating over a wide range of flows are currently needed.	1

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TEXAS CITY PROGRAM EVALUATION SUMMARY

Program Element	1981 Comment/Recommendation	1983 Comment/Recommendation	Priority
VII. MONITORING DATA INTEGRITY			
	Basically this section covers the "nuts and bolts" of the sampling and analysis program. Comments are directed such that we may be assured that the data generated within the program are of the highest quality, and proper documentation exists for the same. Outstanding positive elements of the monitoring (Sampling and analyses) program include:		
A. Laboratory Accreditation	a. Most documentation is now in place for planned AHA accreditation by 1983. Included are: a) calibration logs for sampling and analytical equipment, b) maintenance log for sampling and analytical equipment, and c) recent completion of a GLP manual.	The laboratory has achieved AHA accreditation and all of the documentation pertinent to maintenance of accreditation is in order. Performance in the NIOSH Proficiency Analytical Testing (PAT) program has been very good.	
B. Control Charts	b. Initial efforts on control charts for major chemicals, e.g., AN, Styrene, Benzene, is an important step in documenting laboratory analytical control. This area is strongly emphasized by AHA laboratory accreditation site visitors.	Complete and up-to-date laboratory control charts for major chemicals document the laboratory's good performance. Additionally field validation control charts document the quality of the entire monitoring program for those major chemicals. With few exceptions, the results lay within the 75-125% recovery range recommended by DHEH.	
C. Equipment	c. Monitoring emphasis is in the proper direction as evidenced by the fact that about 85% of the samples taken in the program are personnel samples. d. Sampling and analytical equipment are sufficient to do the job presently at hand with the exception that new noise dosimetry equipment will be necessary to comply with the new noise standard. I was particularly impressed with the credentials, both educational and experience, of the personnel within the Texas City I.H. program. The monitoring program, in general, reflects those skills.	The monitoring emphasis continues to stress personnel monitoring. The noise dosimetry equipment is on site. The sampling and analytical equipment are sufficient to perform the presently required workload. However, future thermal desorption analyses may be in jeopardy because the thermal desorption devices (and replacement parts) are no longer manufactured. It is recommended that at least some of the units be replaced. It may prove cost effective to purchase one automatic thermal desorber rather than several manually operated units.	1
D. General		Generally, all aspects of the monitoring programs are planned, documented, and performed very well with good quality assurance and record keeping programs.	

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Program Element	1981 Comment/Recommendation	1983 Comment/Recommendation	Priority
	Specific recommendations within the Texas City program are:		
E. Field/Lab Validation	a. A routine frequency be established for field validation of all I.H. monitoring methods where validation is possible. Continue and expand field validation efforts on passive monitors - particularly because a transition is in process from the previously used pump and tube methods. It should be documented that data obtained using either passive devices or pump and tube methods give comparable results. b. Personnel samples should be taken for welding fumes utilizing I.C.A.P. (Inductively Coupled Argon Plasma) or A.A. (Atomic Absorption) for specific metals after filter collection, rather than surveys using a T.S.I. (Thermo-Systems, Inc.) survey instrument.	A program of field validating the monitoring methods for the major chemicals has been practiced for the last year. It is recommended that all materials monitored be evaluated for applicability of field validation and that those candidates chosen be field validated at least once per monitored shift. Personnel samples for welding fumes have been analyzed by ICAP and will continue to be so analyzed routinely.	
F. Welding Fume Analysis		<u>It is recommended that:</u> 1. The Quality Assurance/Control Manual be updated to recent changes in organization and/or personnel. The section on ALHA accreditation should reflect the current laboratory status. 2. A section dealing with the "outside" laboratory be included which addresses the pertinent elements as partially addressed in ESC's "Outside Laboratory Evaluation Checklist." 3. A Quality Control program for the outside laboratory be instituted which covers the inclusion of sampling media with the appropriate levels of analytes added. 4. Investigations into the desorption anomalies associated with the DuPont passive monitors be initiated with the goal of essentially 100% adsorption and desorption upon field validation. 5. For DuPont passive monitor validation, the analytes addition be performed in a short period of time (<1 hour) and that the analytes be added without carrier solvent. Equipment may need to be purchased for this purpose. 6. The few written monitoring methods which do not meet the DMEH "standard" be so updated by the end of December, 1984.	I II II II I II

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Program Element	1981 Comment/Recommendation	1983 Comment/Recommendation	Priority
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VIII. ACTION/COMPLIANCE PLANNING

- A. General
1. Action/compliance plans apparently exist as part of the routine effort of each department to engineer improvements/corrective projects. Once having the need for corrective action, the III group relies on department supervision to satisfy the need. No master list of III projects and the status of corrective action is maintained by the III group. Without the latter it is difficult to assess performance vs. indicated need. However, we made no observations which would suggest that this practice is not being used successfully at Texas City.

There has been essentially no change since 1981.

It is recommended that the III group maintain closer association with action plans intended to reduce employee exposure to ensure that effective approaches are used and their performance verified.

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- B. AN Compliance
2. The team recommends that an in-depth review be made to ensure compliance with each requirement of the Acrylonitrile standard (OSHA 29CFR1910.1045). Specific concerns are: updating on a 6-month basis the written compliance plan as recommended by Corporate legal respirators; and, documentation of annual training of AN exposed workers.

The III group closely follows AN action plans, but has experienced problems with such plans associated with benzene exposure in departments 14 and 16. The AN compliance plan is regularly updated, quantitative fit testing is conducted semi-annually, and training is documented.

It is recommended that this effective practice be continued.

- C. Hearing Conservation
3. It is also recommended that a plant-wide compliance plan be developed outlining additional actions (training, dosimetry, engineering controls, etc.) necessary to meet the hearing conservation amendment to the noise standard. Compliance with this recent amendment will require a concerted effort by medical, hygiene, engineering and production groups.

The hearing conservation program has been fully implemented.

See Section X for further recommendations.

IX. INFORMATION REPORTING

1. The plant position that the mortality study had top priority over other activities involving health data collection has been recognized and supported. However, when data processing and support personnel become available, other priority needs exist as follows:

- A. HEIH
- a. Correcting data already in the HEIH system.

Largely completed for III data.

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Program Element	1981 Comment/Recommendation	1983 Comment/Recommendation	Priority
b. Monthly Status	b. Maintaining the MEH system "evergreen" with current monitoring (Industrial Hygiene) and Work History (Personnel) data. Currently hygiene monitoring data and work history records are being stored in hard copy form.	largely done, but concerns exists with maintaining an evergreen system which is complete and accurate.	1
		It is recommended that a QA mechanism be developed and implemented to reliably keep the work history module evergreen.	
C. Materials Subsystem		The MEH system was significantly updated in late 1982 and maintained relatively well since that time. Salaried headers and work records are a concern. The IH group runs a monthly IH Status Report for substances monitored. Results are organized by job classification.	1
		The IH/MIS plant interface is a concern.	
		IH data entry practices are excellent. QA in sampling, analysis, and entry are a program strength.	1
		It is strongly recommended that the IH/MIS interface be examined closely to determine the source of the apparent problems and find a solution which is acceptable to both groups.	
		It is recommended that a quarterly review of all new Header Records and selected new Work Records be conducted.	1
		IH issues a status report monthly to unit supervisors. The report lists all substances monitored during the past month. The plant has not issued a plant-wide IH report in the past 3 years.	
		It is recommended that the plant issue a plant-wide status report annually and that monthly IH status be communicated to Bob Hamaun and others as appropriate.	1
		The MEH Materials Subsystem has been updated. The Occupational Exposure Subsystem is fully operational.	
		It is recommended that the Work Area ID Table be updated and that IH continue to enter IH data while Personnel enters employee work history data and maintains the Job Classification ID Table.	1
		MEH output reports are used by the plant IH group. Monthly status reports are sent to each unit for their use in training and safety programs.	

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TEXAS CITY PROGRAM EVALUATION SUMMARY

Program Element	1981 Comment/Recommendation	1983 Comment/Recommendation	Priority
X. NOISE AND HEARING CONSERVATION			
A. Overall Responsibility	1. Recently, Industrial Hygiene reassumed responsibility for conducting plant noise surveys in addition to continuing personnel monitoring. The committee fully supports this more active role.	This arrangement remains in place and appears to be very effective.	
	2. After a plant-wide noise survey is conducted and dosimetry work is completed, an action plan should be developed to ensure compliance with the new OSHA hearing conservation amendment (see Section VIII, item 3). DHEH has recently published Industrial Hygiene, which outlines major elements of an effective, comprehensive program.	The plant appears to be in compliance with the OSHA Hearing Conservation Amendment and the Monsanto Hearing Conservation Program Guide.	
	3. The team recommends that the practice of posting areas above 95 dBA with time limits (e.g., 95 dBA - Hearing protection required after 4 hours) should be reconsidered vs. the alternative of requiring hearing protection wherever the noise levels exceed 90 dBA. We support the latter approach as providing more effective protection.	The plant now designates a "noise area" where sound level meter data indicates a workplace level >85 dB(A).	
D. Equipment		The plant has sufficient noise measuring equipment (e.g., SLM, dosimeters, OBA, etc.). Employees have a choice of ear protection (e.g., custom molded, E-A-R, Willson Silencer, MSA Mark IV, etc.). Daily checks with the Oscar II as well as periodic and exhaustive audiometer calibration are acceptable. Selection and issue of ear protectors appears to be well implemented. Unit trainers are responsible for meeting training requirements.	
		It is recommended that you reconsider the use of custom molded earplugs.	1
		It is strongly recommended that the plant IH group work closely with unit trainers and actively participate in employee hearing conservation training to ensure uniformity and quality of training and IH visibility throughout the plant.	1
		It is recommended that manufacturer's attenuation data be reduced by 50% before running the NIOSH Method No. 1 calculation with OBA data to determine real world protection. Laboratory versus real world considerations make the adjusted attenuation more reasonable.	1

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TEXAS CITY PROGRAM EVALUATION SUMMARY

Program Element	1981 Comment/Recommendation	1983 Comment/Recommendation	Priority
XI. RESPIRATORY PROTECTION			
A. General	1. Historically, the Texas City plant has been a leader in the area of respiratory protection. It has had for a number of years, a qualitative fit/facial hair respirator policy which now is being implemented throughout Monsanto. It has also been a forerunner in the development of dedicated breathing air systems which is another concept being implemented throughout the corporation.	The plant uses quantitative fit testing due to the AN standard and maintains a good facial hair policy.	
B. Written Program	2. The plant has plans to update/revise its respirator program to reflect recent advances in program concepts, including quantitative fit. These concepts have expanded into 11 key program elements outlined in ANSI Z88.2 - 1980 "Standard Respiratory Protection Practices" and explained in DHEW Industrial Hygiene Bulletin #81-2 "Monsanto Respirator Program Guide". The team supports review of such an important plant program.	The written program has not been revised to reflect current plant practices. It is recommended that such a review be made soon and the written policy accurately reflect current program status.	1
C. Overall Responsibility	3. It is our understanding that in the past year the responsibility for respiratory protection was reassigned to Mark Riddle. Advanced training for Mark would be appropriate. We suggest the AIHA sponsored training course attached (Appendix A).	Overall responsibility for respiratory protection was transferred to the plant IH group as part of the plant reorganization. It is recommended that appropriate training be provided to the IH group to handle this new responsibility.	1
D. User Medical Approval	4. By plant policy, medical evaluations of potential respirator users are being made to determine their ability to wear this equipment. Records of these evaluations are being made on an "exception" basis (i.e., only restricted individuals are being recorded). For compliance with the documentation provision of OSHA 1910.134, and the AN standard, OSHA 1910.1045 all evaluations, both approvals and restrictions, should be noted in the individual's medical file. A medical approval form for respirator use is attached (Appendix B).	The plant physician is now recording approval to wear respiratory equipment on the physical examination form.	
E. Fit Testing	5. A careful review of the quantitative fitting schedule for 1982 is necessary to ensure that twice-yearly respirator fitting of employees exposed to AN will be accomplished per the requirement in the AN standard.	The plant is in compliance with this requirement.	

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TEXAS CITY PROGRAM EVALUATION SUMMARY

Program Element	1981 Comment/*Recommendation	1983 *Comment/*Recommendation	Priority
F. Maintenance		Respiratory protection equipment is maintained consistent with plant safety philosophy and regulatory requirements. All reusable units are turned into central cleaning for maintenance and inspection.	
G. Training		There appears to be a lack of information concerning respiratory protection training in the operating units due to the distance separating the III group from the hourly employees being filled by unit trainers. It is strongly recommended that the III group become involved with the training on a routine basis to ensure uniformity, quality, and clarity for operating personnel even though the "unit trainer" concept is acceptable and may continue to be used if the results desired are being achieved.	I
XII. PERSONAL PROTECTIVE EQUIPMENT			
A. General	1. Departmental personal protective equipment procedures were reviewed for selected departments during the field walk-thru. The information found in the department operating procedures manual appeared to be adequate to meet the needs of those departments. No failures by employees to wear proper protective equipment were noted.	The plant loss Prevention and Safety Department has overall responsibility for the Personal Protective Equipment program. The III group is called on occasionally to specify the material of choice for protection against a specified chemical or physical agent.	
XIII. RADIATION PROTECTION & HEAT STRESS			
A. Radiation	1. The plant has several sources of both ionizing and non-ionizing radiation. The plant has had for several years a well written radiation protection program which is currently being revised/updated. We recognize the high quality of the program and support the effort to update it.	The Radiation Safety Officer for the Texas City Plant is J. C. Edwards. The program was to be inspected by the State of Texas in early March, 1984. Non-ionizing sources in the plant include microwave ovens and welding operations. Ionizing sources include level gauges, density meters, and perhaps scales. Film These use cesium, cobalt, and americium sources. Film badges are used for selective employee groups and are read by Siemens, Inc. There are believed to be 9 people in the plant who wear radiation dosimeters. The plant does not have adequate heat stress measuring equipment. There are two restricted areas in the plant where heat stress is known to be a problem--the "fin fan" area and the methanol reformer.	
B. Heat Stress		It is recommended that the plant purchase heat stress measuring equipment. The Reuter-Stokes WISGET is suggested.	I

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TEXAS CITY PROGRAM EVALUATION SUMMARY

Program Element	1981 Comment/*Recommendation	1983 *Comment/*Recommendation	Priority
XIV. HYGIENE FACILITIES AND PRACTICES			
A. Lockers	1. The plant provides special "clean and dirty" lockers for both male and female employees from the Acrylonitrile (all employees), maintenance (insulators) and materials handling (pumper/gaugers) departments. Showering is mandatory/encouraged per the specific legal requirements of the applicable standard. These locker facilities were visited and appeared clean and well kept. Individuals in the insulator shop were questioned and demonstrated an excellent knowledge of asbestos handling procedures.	The situation remains unchanged in most respects and represents elements of an excellent plant program. A recent labor contract now allows added employee crafts to become involved with asbestos removal.	
B. Eating Areas	2. The plant central lunchroom and the eating facilities ated within operating departments appear satisfactory. Wash facilities are located convenient to eating areas and employees are encouraged to and apparently do use these facilities prior to eating.	The facilities and practices remain essentially unchanged and represent good industrial hygiene practice.	
C. Work Clothing	3. Special procedures concerning issuance of work clothing and laundering of contaminated work clothing apply to insulators (asbestos) and on certain maintenance turn-arounds. The plant does not normally provide work clothing but subsidizes purchase of work clothing via "clothing allowance" issued 1 time/year.	The same practices are still used.	
D. Cleaning	4. The plant does not provide laundry facilities except locally for asbestos or AM contaminated clothing. The team expressed a concern that those who wear work clothes out of the plant can potentially carry chemicals, catalysts, and other agents into cars, homes, etc., where others including infants could contact them. An alternative would consist of daily issue of standardized laundered work clothing to be left at the plant, and end of shift showering for some tasks.	The plant has not changed their past practices, but have chosen to review and refine their approach to minimize the known risks.	
XV. ENGINEERING CONTROL, IMPLEMENTATION AND EVALUATION			
A. Implementation		It is recommended that shower rooms be cleaned every shift since employee complaints have occurred. The plant has written action plans, but the IH group is not involved with scheduling and project execution. The operating unit Manufacturing Representative (MR) is responsible for documenting project progress. The plant conducts internal LP, EC, and E reviews where IH participates. The MR serves as the coordinator due to experience, knowledge and ability in the	1

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TEXAS CITY PROGRAM EVALUATION SUMMARY

Program Element	1981 Comment/Recommendation	1983 Comment/Recommendation	Priority
B. Utilization		operating unit. Alternative approaches are considered. III may not be informed of progress if there is no significant impact on III considerations.	
C. Monitoring		The plant uses many kinds of engineering controls. Many plant groups, including III, have input in the process.	
D. Training		The III group monitors before and after engineering control implementation and do ventilation system testing. Other groups from inside and outside the plant periodically stack sample.	
E. Equipment		Operating personnel are appropriately trained in the use of engineering controls and work practices to minimize exposure.	
F. Alternative		There is adequate equipment to perform the monitoring needed.	
		Operating units evaluate other things as appropriate and work with the III group if problems become apparent.	
		It is recommended that communication with the III group be reviewed to determine ways it may be improved. Evaluation frequency for critical local exhaust systems should also be reviewed.	I
XVI. EMERGENCY RESPONSE			
A. Inside the Plant		The plant has an excellent written procedure covering a variety of situations. The III group is directly involved with the Fire Department, operating unit(s), Safety, and Medical. Responsibilities are clearly delineated in the Plant Emergency Response Manual. There are annual drills.	
		The Night Superintendent is responsible for emergency response on off-shifts. Safety designates protective equipment to be worn.	
		An extensive risk analysis has been completed for a variety of emergency situations. Dispersion modeling has been completed to predict selective emergencies and potential impact (e.g., HCN, ACY, AN, etc.).	
		Employees trained in first aid, CPR, and an EMT are on site each shift.	

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TEXAS CITY PROGRAM EVALUATION SUMMARY

Program Element	1981 Comment/Recommendation	1983 Comment/Recommendation	Priority
B. Outside the Plant		A written, comprehensive evacuation procedure has been prepared for each operating unit.	
		The plant also has written "Outside Emergency Response Procedures" which address a variety of situations and assign site responsibility.	
		The plant has information, personnel, and other equipment/materials as needed to respond to emergencies outside the plant.	
		The plant control center is used to communicate with outside agencies and groups. There is a procedure for responding to questions from the press. The plant may participate in clean-up as appropriate.	
		The plant has an emergency response vehicle which is maintained by the material handlers. Other vehicles, helicopters, or aircraft are available as needed.	
		The plant III group has received Clem Trec training for emergency response.	
		The resource person is Stanley H. Brand - AAJA - St. Louis (Ext. 4-5605).	

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