Dow U.S.A.
The Dow Chemical Company
P.O Box 150
Plaquemine, Louisiana 70765-0150

DOW
LOUISIANA DIVISION
CONSOLIDATED AUDIT PROGRAM
CELL SERVICE
MARCH 24, 25, 1992

Date of Report: April 9, 1992

Superintendent: Roddey Peebles, Cell Service

PRODUCED FOR THE ASBESTOS DATABASE
DATE: 4/9/92
MASTER No. 432460 HW

cc: Tom Austin, Bldg. 3701,LAD
Jim Thomerson, C/A Tech Center, Texas
Gary Meier, Bldg. 3502W, LAD
Art Royals, Bldg. 3502W, LAD
Allan Sandow, 3701, LAD

Enclosed are the recommendations from the various audits for your response. You should develop an implementation plan as a response to the recommendations. The plan should include the name(s) of the employee(s) assigned to each action item along with an estimate of time required to complete each item. Your plan must be reviewed and approved by the area Major Manager (or Section Manager) within 45 days of the audit. The results of the audit will be communicated to the General Manager by the Major Manager (or Section Manager). Please send your approved implementation plans to me within 60 days of the audit. I will forward a copy to members of the Core Audit Team and the appropriate section to the Functional Team Leaders.

Enclosed Audit Recommendations:

1. Safety Audit
2. Security Audit
3. Loss Prevention/Fire Audit
4. Electrical Reliability Audit
5. Reactive Chemicals Audit
6. Occupational Health Audit
7. Hazardous Material Transportation Review (HMTR)

HW

Howard R. Wilkinson, Facilitator
LAD Consolidated Audit Program

Attachment

cmk

OPENING
(Tuesday, March 24,1992 -- 7:30 to 9:30)

Attendance:

Henry Easter	Roddey Peebles	Allan Sandow
Maralee Marchant	Gary Meier	Geof Kusch
Bruce Heinze	Kent Smith	Buck Bailey
Jackie Paul	Dean Smith	Dean Walters
John Lewis	Don Jones	

Howard Wilkinson of the Audit Group began the opening session by expressing gratitude to the Cell Service department staff for the time and effort put into completing all the pre-work involved in preparing for the Consolidated Audit. The two day agenda was also reviewed.

I. PROCESS AND UNIT OPERATIONS

John Lewis, Project Support Supervisor

The Cell Service plant is primarily a disassembly/reclamation/assembly operation involving the handling, shipping, receiving of parts and asbestos. There are very few reactive or flammable chemicals involved in the operation.

John reviewed the three basic parts of the chlorine cell in detail: anode, cathode, and frame.

The Dow cell has vertical anodes made of titanium expanded metal coated with ruthenium oxide and steel screen or punched plate cathodes supporting a deposited asbestos diaphragm. The frame is cast from polymer concrete.

A complete flow chart of how the chlorine cell is transported to/from LAD Texas, Canada, and Russellville.

The following topics were also discussed:

* asbestos removal and handling system
* asbestos pulp slurry
* diaphragm depositing/baking
* cathode/anode reclamation and cell frame
* cell storage and shipping
* pulp bagging operations
* air handling system
* high (2200 psi)/low (150 psi) pressure water washing

CRITICAL INSTRUMENTS:

There are 49 critical instruments including vibration monitors identified at Cell Service. Critical instruments protect rotating equipment, gas turbines (3), one twin-screw air compressor and one twelve-stage centrifugal pump. Two of the instruments guard against the discharge of asbestos particles to the atmosphere. There is no process control computer. Testing is up to date and documented. This session concluded with a view of the critical instrument list.

II. ORGANIZATION

An overview of the plant organization, work schedules, and job assignments was reviewed. Operations personnel presently work eight (8) hours a day five (5) days a week.

III. REVIEW OF PLANT/DEPARTMENT POLICIES/PROCEDURES AND COMMUNICATIONS

Henry Easter, Operations Supervisor

Plant policies are available to all Cell Service employees in a block manual or through the computer. The manual is located in the safety/environmental office. Policies for after hour work on mechanical and electrical equipment and the M.E.K.P. were reviewed. Some eight hundred (800) procedures exist. These are also available to all operations personnel through the computer system and a hard copy in the permit office.

IV. REVIEW OF TRAINING/RETRAINING PROGRAM

Henry Easter, Operations Supervisor

Retraining topics are listed and assigned annually. Certified instructors are utilized. Some eighty eight (88) years of experience exist in Cell Service (10 Dow employees and 18 contract employees work same shift. There are no new operators to train. The S&LP IPT modules are use in a self paced training program.

Cell Service has begun to implement the IPT program. Process modules are complete. Two of the operators have taken area reviews. Several IPT modules, sign up list and checklist were reviewed. It was noted that there is still some work to do in this area.

V. REVIEW OF SIGNIFICANT INCIDENTS AND MAJOR CONCERNS

Henry Easter, Operations Supervisor

Both Dow and Contract employees at Cell Service have good safety records. Dow employees have completed some 23 years without a Day Away From Work Case. This is and outstanding record and we compliment you on this achievement. The OSHA recordable data was reviewed for the last three years.

Good methods of control in the asbestos and high noise areas have been identified. In the asbestos area, isolation, containment, controlled access, collection, bonding, wetting, sampling (personnel and area) and personal protective equipment are some of the strengths in the Cell Service overall Safety and Health program. High noise areas are differentiated by warning signs requiring hearing protection. Short term high tasks (i.e. impact guns) procedurally require hearing protection.

VI. PLANT INDOCTRINATION

Dean Walters, Safety, IH, and Environmental Contact

Before leaving for the plant tour the Cell Service plant indoctrination was reviewed by the group. Dean highlighted the key areas of communication in the indoctrination and showed examples during the presentation.

VII. PLANT TOUR

The audit teams broke into functional groups for the plant tour. Cell Service provided the tour guides.

SUMMARY

Significant points to note 1) the Cell Service facility is the only plant in the U.S. that handle dry asbestos 2) employees routinely handle 3-4 ton chlorine cells and 3) the operation is more labor intensive, less capital intensive than a chemical processing plant.

The presenters were well prepared and knowledgeable about areas of responsibility. The Cell Service plant utilize the Chlro-Alkali Technology Center as a resource for technical support.

Excellent job on your overview presentations.

Thanks, LAD Consolidated Auditors

HAZARDOUS MATERIALS TRANSPORTATION REVIEW
(Wednesday, March 25, 1992 - 8:30 a.m. to 10:00 a.m.)

AUDIT TEAM: Dean Smith

ATTENDANCE: H. Easter, J. Thomerson, Roddey Peebles, Dean Walters, Pam Usie, Howard Wilkinson

PRESENTER: John Lewis

WRITER: Dean Smith

The HMTR Team would like to thank John Lewis for all the work he put into his review. The Cell Service Plant has a dedicated group of people, which shows in the way they have conducted their business.

RECOMMENDATIONS:

1. Whenever training is completed concerning the loading or off-loading of asbestos containing materials that have a potential for releasing friable fibers, please make certain that this training agenda is included along with the name(s), employee I.D., date, and name of trainer.

2. Check with the people in Texas to confirm one way or another if the carrier or Texas Operations is providing training for handling and E/R situations to the drivers. If not, why not?

3. Make sure that the driver has received a check sheet from the Tank Truck Inspection department and that there are no items unclear to the driver. Also, make sure that the driver has a copy of the 1990 D.O.T. Emergency Response Guide Book (Dean Smith has extra copies if needed).

4. A Tedder, MSDS or other information sheet needs to be developed for the chlorine cells that travel to and from the Division. Check with the operations in Texas and Canada for information they may use. Even though asbestos and especially asbestos slurry is indexed at only -1- the HMTR Team felt that because of the public concern for this material, a more extensive review was conducted. Asbestos slurry is not included in the D.O.T. HAZMAT table, and the regs actually exempt the material if "fixed" in a natural or artificial binding material and has no commercial value due to the asbestos.

* INDICATES PRIORITY ITEMS

LOSS PREVENTION
(Tuesday, March 24, 1992 - 10:45 a.m. to 11:30 a.m.)

AUDIT TEAM: Buck Baily

ATTENDANCE: Henry Easter, Jim Thomerson, Ed Bohry, Roddey Peebles, Allan Sandow, Howard Wilkinson

PRESENTER: John Lewis

WRITER: Buck Bailey

This list of recommendations will contain some but probably not all of the items that were identified as "Opportunities for Improvement" by the Cell Services plant staff during the pre-audit preparations.

This department seems to be in good condition with no significant Loss Prevention concerns. The plant staff was very helpful compiling the necessary pre-audit information and in evaluating the results to determine areas that need further attention. For a plant support type of operation, Cell Services has an extensive collection of procedures and a well organized method of maintaining them. Other programs for periodic inspection and maintenance of equipment appears to be in good condition.

ELECTRICAL:

The recommendations from the Electrical Emphasis Team should be considered as supported by Loss Prevention. The general external appearance of the MCC areas was good. This is an important item for fire protection in motor control areas, to keep them clean and free of miscellaneous non-electrical burnable materials.

CRITICAL INSTRUMENTS:

Loss Prevention supports your plans to get the plant P&ID's reviewed and updated. Engineering is set up to support this activity.

* INDICATES PRIORITY ITEMS

PRESSURE VESSELS / SAFETY DEVICES:

Loss Prevention supports plans to review and update the plant PV and PSV records and design calculation files. Engineering is also set up to support this activity.

CONTROL OF PROCESS CHANGE:

Implement the new Process Change standard when it becomes available to the Division.

Again, we appreciate the co-operation and opportunity to learn more about the Cell Services operation. If I can be of any further assistance please call.

Buck Bailey
Loss Prevention
3-20-92

CHEMICAL EXPOSURE INDEX (CEI)

All CEI calculations were below 100. An internal review was conducted and all necessary documents signed by the Plant Superintendent and Major Manager.

OCCUPATIONAL HEALTH
(Tuesday, March 24, 1992 - 12:00 p.m. to 3:30 p.m.)

AUDIT TEAM: Gary Meier, Kent Smith, Bruce Heinze, Donnie Lee, Maralee Marchant, Jackie Paul, Geof Kusch

ATTENDANCE: Pam Usie, Roddey Peebles, Jim Thomerson, Henry Easter, Howard Wilkinson

PRESENTER: Dean Walters

WRITER: Gary Meier

* INDICATES PRIORITY ITEMS

EDUCATION AND TRAINING:

Employees receive HAZCOM training annual. The written HAZCOM program (updated Nov. 1991) and MSDS's are current and located in the Safety/Environmental Office readily accessible to all employees. The indoctrination program is well done and is thorough. All training is properly documented with sign-up sheets, a short description of the agenda items, date and the presenter. There is evidence of a good follow-up program to cover anyone that may have been missed. Labeling throughout the plant is good which included the Dow labeling system on portable containers.

RECOMMENDATIONS:

1. Dean Walters did an excellent job with the oral presentation of new employee indoctrination. New employees are given a checksheet with key topic words which can be followed along during the presentation. Even though Dean mentioned the combined effects of smoking and asbestos, it is such a critical issue that we suggest it also be noted on the checksheet. Also during indoctrination it should be emphasized to new contract employees that they have appropriate medical surveillance prior to work assignments in the block.

2. We suggest adding cell putty to the CPAI. Efforts to make the CPAI as complete and representative as possible for each job assignment will result in a helpful resource for initial and annual training.

RESPIRATORY PROTECTION PROGRAM:

There is a written respiratory protection program (updated 3/92) which addresses both escape and routine operations. Respiratory protection with asbestos handling is emphasized in annual training and fit tests are conducted every six months. Training and fit tests are well documented. There are two designated cleaning stations with instructions posted and supplies provided. Weekly and monthly inspections are documented.

RECOMMENDATIONS:

* 1. The SCBA units can be used for emergencies and those who are expected to respond need to be fit tested in the Scott-O-Vista facepiece. The SCBA's should be added to the written respiratory program.

* INDICATES PRIORITY ITEMS

2. We agree with your plans to add the audit of the full face escape respiratory to the C-9 Checklist.

3. There needs to be documentation that the contract employees are receiving proper medical surveillance, respiratory medical approval, and fit testing. This may require some effort because of the past history of Dow providing these services to the Hebert Bros. employees. There should also be documentation that the contract employers are properly informed of the required medical surveillance for the plant. Gary Meier, Geof Kusch, and Pam Usie will assist the Cell Service personnel in this effort.

VENTILATION PROGRAM:

There is a sophisticated collection system for asbestos handling. A HEPA filter with particulate break through shut down has been installed on the collection system. Lab Hoods are checked annually.

RECOMMENDATIONS:

1. We support your plans to begin the preventive maintenance performance checklist and C-9 documentation.

2. Even though there is a "large" blower on the asbestos collection system, engineering calculations should be made to determine the performance (air flow) and limitations on the present system.

HEARING CONSERVATION:

Warning signs for high noise areas are very well done including temporary signs in areas where moveable equipment such as compressors are being used.

Significant efforts have been made to reduce noise exposure. This includes engineering changes and the purchase of a new forklist. We commend you on the additional $2500 investment which provided a ten decibel noise level reduction for this piece of equipment. There seems to be an ongoing commitment to attack the noise levels in the block.

Personnel are included in a hearing conservation program involving training and annual audiograms. The OSHA noise exposure standard is posted.

RECOMMENDATIONS:

* 1. A written hearing conservation program needs to be developed.

2. Continue to evaluate employee noise exposures on the small fork trucks just as you have with the large units. We support your actions to include noise abatement packages on new fork trucks when purchased.

* 3. Consider evaluating impact wrenches which have been designed with noise reduction and ergonomics in mind. An evaluation is needed to determine of others working near the impact wrench also need hearing protection. We support your efforts to reduce noise levels at the bag lifter.

PERSONAL PROTECTIVE EQUIPMENT:

Personal Protective Equipment is required by job procedure, by safe work permit, and is readily available. Tyvek overclothing is used, removed to prevent tracking, and properly disposed daily. A boot wash is also used to prevent tracking.

RECOMMENDATIONS:

1. All of the different types of PPE used for various job tasks should be listed to ensure the proper selection was made for the task and that back-up test performance data is available.

2. A topic for a safety meeting might be on how to properly wear, care for and the limitations of PPE. The training video "We've Got You Covered" available from I. H. may be an appropriate resource.

DATA GENERATING AND MONITORING

The I.H. Contact is responsible for all exposure monitoring in the block. Cell Service has its own sampling equipment for monitoring of asbestos and sound level meter for noise.

The 1991 draft annual I.H. report has been written and reviewed with supervision. Finalization and distribution will be completed in the near future.

* INDICATES PRIORITY ITEMS

RECOMMENDATIONS:

1. We support your goal to complete your annual monitoring program by the end of the third quarter.

ASBESTOS

Since asbestos handling involves a significant portion of the work activities, emphasis is given to HAZCOM training, written procedures, protective equipment, and engineering controls. All phases of the process are kept wet to prevent airborne fibers. Asbestos labeling and warning signs are well done throughout the plant. Warning signs are painted on outside tanks for better weatherability. There is a good data base of potential employee exposures to asbestos. Asbestos warehouse storage is secure to prevent any inadvertent contact.

Many other comments made in this report also pertain to asbestos handling and compliance issues.

Cell Service has no asbestos pipe insulation. Asbestos gaskets are received in individual envelopes or stored in plastic. There is an on-going effort to discontinue the use of asbestos gaskets. Any removal is done by trained abatement personnel.

RECOMMENDATIONS:

* 1. An asbestos warning sign should be posted in the asbestos gasket storage area.

RADIATION

There are no radiation sealed sources in the block.

GENERAL INDUSTRIAL HYGIENE

There are designated areas for storing food, eating lunch, and washrooms are strategically located. A new contractor change area and lunchroom has been built. A personal hygiene section has been added to the indoctrination checklist.

* INDICATES PRIORITY ITEMS

The entire block is a non-smoking area. This is an excellent approach considering the synergistic effects of smoking and asbestos exposure. The Cell Service team is to be congratulated for this effort which unquestionably benefits the health of the workers in this plant.

Housekeeping in the plant is excellent which is good evidence of the plant's continuing efforts to keep the potential for asbestos exposure as low as possible.

Heat stress is a potential hazard in the plant, and it is well addressed in the indoctrination program. Employees are encouraged to take breaks, drink plenty of water, and an air conditioner is installed in the debagging area where there is likelihood of high temperatures in the summer.

RECOMMENDATIONS:

1. The work on the chlorine cells is physically intensive, and there are many opportunities for adjustments to improve the ergonomic aspects of many of the tasks including vibration of impact wrenches. Kent Smith will work with Dean Walter and John Lewis to evaluate possible changes which can be made.

MEDICAL

All Dow employees and contractors in the block receive required annual physicals. All injuries no matter how minor are required to go to medical.

RECOMMENDATIONS:

1. When a new employee is transferred into the Cell Service Plant, there needs to be communication with the Medical Department regarding whether that employee has any restrictions which need to be considered before he/she begins work in the block.

2. Now that contractors will be responsible for their own medical surveillance, we need to develop an auditing system to verify contract employees receive proper medical surveillance. (This was addressed in the Respiratory Protection section).

* INDICATES PRIORITY ITEMS

NON-DOW EMPLOYEES

All Non-Dow employees receive an area-specific indoctrination on the safety rules of the plant, proper PPE and HAZCOM. A new facility is provided for eating lunch, for meetings and change room/restroom. Non-Dow employees are included in I.H. monitoring program and results are communicated in a timely manner.

RECOMMENDATIONS:

1. The various sections of this report contain comments which apply to contractor situations. (This includes medical surveillance, respirator fit-testing, decontamination training for PPE among others).

REACTIVE CHEMICALS AUDIT
(Wednesday, March 25, 1992 10:00 to 11:00 a.m.)

AUDIT TEAM: Don Jones, Mark Mitchell, Joe Schell, Buck Bailey, Gerald Wagener

ATTENDANCE: Henry Easter, Roddey Peebles, Allan Sandow, Jim Thomerson, Howard Wilkinson

PRESENTER: Dean Walters

WRITER: Gerald Wagener

RECOMMENDATIONS:

1. Absorbents which will be used in the plant for MEKP spill control should be tested to determine compatibility.

2. Reactive Chemicals test data pertaining to the operation of Cell Service should be kept on file in the block.

* INDICATES PRIORITY ITEMS

3. Start-up and shutdown sequences are written but reasons for sequences and consequences of deviation are not well documented. This documentation should be completed and reviewed with operations personnel on whatever time interval the Cell Service staff feels is appropriate.

SAFETY AUDIT
(Wednesday, March 25, 1992 - 11:00 a.m. to 11:30 a.m.)

AUDIT TEAM:	Steve Parker, Don Jones, Allen Sandow, Howard Wilkinson
ATTENDANCE:	Dean Walters, Buck Bailey, Jim Thomerson, Roddey Peebles
PRESENTER:	Henry Easter
WRITER:	Don Jones

SAFETY PROGRAM FUNDAMENTALS:

The block has a written safety policy and the natural work team has a formal written safety mission statement.

Goals and plans are set by the natural work team. All natural work team members help develop the safety program and conduct audits and safety meetings. Housekeeping and intervention emphasis is an integral part of the safety program. Investigation, correction and elimination of incidents is a shared responsibility.

Each employee feels individually responsible for his/her safety and the safety of others. Also, individual safety goals are set.

RECOMMENDATIONS:

1. Better communication of expectations concerning safety.

* INDICATES PRIORITY ITEMS

EMPLOYEE RESPONSIBILITY FOR SAFETY:

Safety responsibility is part of each job description. Goals are set for the individual and the plant. Individual goals are reviewed with each employee periodically. Plant goals are reviewed and set annually. Each employee knows that safety is a vital part of his job, not just his actions, but his attitude. Individual responsibility is recognized and accepted.

RECOMMENDATIONS:

1. Additional responsibility for the safety of out of block contractors.

PROGRAM STRUCTURE - ORGANIZATION - PLANNING:

The natural work team evaluates data, develops and administers the safety program. All Cell Service employees have direct input and responsibility for the overall program. 100% participation of individuals encourages commitment and ideas for improvements in the program.

RECOMMENDATIONS:

1. Get more involved through intervention to reduce injuries and chemical exposures.

2. Allow innovation and ownership of the program to grow.

SAFETY TRAINING:

All Dow and contract employees receive Block Safety Indoctrination. Dow personnel have bi-weekly safety and training meetings. Contractors have weekly safety meetings. Dow personnel are required to have 100% participation at bi-weekly safety and training meetings. Dow and contractors have tailgate meetings as needed.

Personnel are kept up-to-date on Division Safety Training in a timely manner. Specialized training is done by certified instructors.

* INDICATES PRIORITY ITEMS

RECOMMENDATIONS:

* 1. Improve documentation on meetings and training.

2. Develop a list of training employees should receive.

OPERATING PROCEDURES:

Operating procedures are reviewed and updated as needed. When procedures are revised, each employee reviews the job procedures prior to any work being performed. All jobs that have special considerations, have procedures available for review.

RECOMMENDATIONS:

1. Complete IPT Resources.

2. Once IPT is in place, update as needed.

* 3. Consolidate and organize procedures to allow for more effective reviewing and revising.

* 4. Institute method of documentation of reviews and revisions.

5. Complete safety portion of IPT.

EMERGENCY PLAN:

Drills are held periodically and the emergency plans procedures are available on the MAC (PC) emergency and block manual. All drills are discussed afterwards and suggestions for improvements are brainstormed and communicated to employees and contractors.

RECOMMENDATIONS:

1. Need to continue to test limits of E/R plan.

* 2. Conduct plant/department on-scene contact training.

* INDICATES PRIORITY ITEMS

3. Meet with Fire Protection to discuss firefi_hting plans and hazards.

ACCIDENT/INCIDENT INVESTINGATION AND REPORTING:

All accident/incidents are investigated promptly and are tracked to completion by the safety/environmental person. The investigation includes the person(s) involved, supervisor, safety superintendent, safety coordinator and anyone who may help to find cause and solution. All employees are encouraged to report all injuries, no matter how minor.

Accidents/incidents are tracked continuously by the safety/environmental person with the completion date being the focal point. All corrective actions are tracked to completion. Only 100% on time completion is acceptable. Results and findings are communicated to Dow and Contractors via safety and/or tailgate meetings.

RECOMMENDATIONS:

1. Continue working on improvements in investigation at all levels.

SAFETY STANDARD, GUIDE AND REQUIREMENTS:

Safety standards, plant and division policies and procedures are reviewed using IPT's or tailgate meetings as necessary. All plant personnel are required to complete S&LP IPT modules.

Non-routine jobs are reviewed for compliance with accepted plant and division policies, procedures and standards.

New projects are reviewed and all operators are trained prior to start-up.

RECOMMENDATIONS:

* 1. Review, revise and communicate plant policies and procedures.

* INDICATES PRIORITY ITEMS

SAFETY SUGGESTION SYSTEM:

Both existing and potential hazards are reported by all plant personnel through the USCR program. Using the USCR program is a part of individual goals. Timely response with 100% on time completion being the only thing being accepted. Safety meetings are conducted in a manner to encourage discussion and suggestions. Plant personnel actively participate.

Safety is prioritized to get maintenance dollars.

RECOMMENDATIONS:

1. Increase emphasis on intervention.

HAZARD DETECTION PROGRAM:

Inspections are made daily by the Supervisor, Plant Superintendent, and all other operators. Audits are made at regularly scheduled intervals. Housekeeping problems are corrected promptly and all items are corrected or work orders input to be corrected as soon as possible. All problems are tracked to completion and documented.

RECOMMENDATIONS:

1. Continue to track progress on discrepancies found on audits.

AWARDS/RECOGNITION SYTEM:

1991 CIP award programs are set by the committee. Also, the block participates in the division award programs. SRA's are available for safety recognition. A non-monetary recognition system will be used in 1992.

RECOMMENDATIONS:

1. Operators develop and administer award programs.

* INDICATES PRIORITY ITEMS

CONTRACTOR SAFETY:

All contract employees receive block indoctrinations. All maintenance jobs require a safe work multi-permit. Safety meetings are held weekly with block contractors. Changes and updates in policies are reviewed at weekly block safety meetings along with any incidents/accidents. Contract personnel participate in the planning and brainstorming of projects or problems.

Emphasis is being placed on communication and observing of contractors while in Cell Services. All Cell Service operators help with contractor safety meeings. A contractor foreman is utilized full time for laborers. Contractor management is involved with their employees. Contractors actively participate in their unsafe condition programs and are award of block hazards.

The same safety/housekeeping policy exists for Dow and Contract personnel (No double standards).

RECOMMENDATIONS:

None at this time.

OFF-THE-JOB SAFETY:

Off-the-job safety is emphasized. Accidents/incidents are investigated and communicated if the experience is beneficial to someone else.

Off-the-job safety meetings are conducted periodically and incidents are discussed at Safety Meetings.

RECOMMENDATIONS:

1. Stress off-the-job safety and its positive and negative effects.

COMMUNICATION:

Cell Service has a closed-circuit TV and VCR in the Dow and contractor lunch room. Up-to-date safety messages and emergency updates are available. Bulletin board postings are available. Safety films are also available for employees to bring home or to a school or club.

The small group allows for excellent communication and also, immediate access to all individuals allows for effective and timely tailgate meetings.

RECOMMENDATIONS:

1. Make employees more aware of availability of films and what topics exist.

PHYSICAL FACILITIES:

Plant layout is non-congested and has adequate protective equipment for employees and facilities. Emergency equipment is inspected monthly for proper operation. Housekeeping is a vital part of each job.

RECOMMENDATIONS:

1. Drainage of parking lot.

EMPLOYEE INTERVIEW SUMMARY:

Five employees were interviewed by the area safety superintendent in the absence of the major manager. The following comments were documented.

1. Do you and your supervisor establish specific measurable safety goals?

   Answer: Yes

2. What is your opinion about managements committment towards safety?

   Answer: Very high, major concern, maintains awareness and expections.
   Four out five stated management visibility would not effect performance. Sometimes caught up in paper work, more emphasis on numbers.

3. What is your opinion about your peers committment toward safety?

   Answer: Strong, very concerned, utilizes intervention techniques.
   Labors are a little timid to surface issues.

4. Is enough individual accountability taken/emphasized concerning safety issues?

   Answer: Yes

5. Are you satified with your plant's and LAD's safety performance?

   Answer: Dow - yes Contractor - no.
   Can aways improve, cannot let down your guards.

6. What ideas do you have to improve the safety performance?

   Answer: Improve contractor training, Continuous evaluation of program to point out needs, stress awareness, expections, and accountibilty.

SECURITY AUDIT
(Wednesday, March 25, 1992 -- 11:00 a.m. to 11:30 a.m.)

AUDIT TEAM: Joe Goodwin, Al Lott

ATTENDANCE: Dean Walters, Buck Bailey, Jim Thomerson, Roddey Pebbles, Don Jones, Allan Sandow, Henry Easter, Don Jones, Howard Wilkinson

PRESENTER: John Lewis

WRITER: Joe Goodwin/Howard Wilkinson

* INDICATES PRIORITY ITEMS

2. What is your opinion about managements committment towards safety?

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ATTENDANCE: Dean Walters, Buck Bailey, Jim Thomerson, Roddey Pebbles, Don Jones, Allan Sandow, Henry Easter, Don Jones, Howard Wilkinson

PRESENTER: Dean Walters

WRITER: Joe Goodwin/Howard Wilkinson

* INDICATES PRIORITY ITEMS

GENERAL PRACTICES:

Cell Service employees have a good basic understanding of their responsibility to protect company assets and are alert to strangers in their work areas. All visitors are escorted and follow plant policies. Dow and Contract employees are required to wear ID badges.

Confidential burn barrels are available for confidential material. Three (3) teams are set up to do housekeeping inspections.

RECOMMENDATIONS:

1. Consider conducting "Security Awareness" meetings with all Cell Service personnel to re-emphasis our key security responsibilities. Please contact Al Lott for assistance.

2. We suggest that all personnel practice the clean desk policy in order to protect proprietary information.

3. Develop and implement security control procedures for the release of P&ID's, engineering drawings, etc.

MOTOR VEHICLE PROGRAM:

RECOMMENDATIONS:

1. Consider a motor vehicle refresher course for all employees. Security has suggestions on which courses are available.

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* INDICATES PRIORITY ITEMS

ELECTRICAL RELIABILITY AUDIT:
(Tuesday, March 24, 1992 - 10:30 a.m. to 10:45 a.m.)

AUDIT TEAM: Lonnie Marchand, Eugene Eskins, Electrical Audit Team

ATTENDANCE: John Lewis, Buck Bailey, Allan Sandow, Roddey Peebles, Ed Bahry, Jim Thomerson, Henry Easter, Howard Wilkinson

PRESENTER: Lonnie Marchand

WRITER: Lonnie Marchand

ELECTRICAL SYSTEM RELIABILITY AUDIT OF CELL SERVICE:

The electrical reliability audit for Cell Services was conducted on February 24, 1992 as per the Five Point Electrical Program. Your action plans should include your plans for completion of the following recommendations and those recommendations submitted on March 11, 1992.

RECOMMENDATIONS:

1. There is an accumulation of dust on batteries located inside the generator control room, inside the MCC No. 1 electrical room and at the GT-502 panel. Also, there is no visible grounding conductor connected to the battery charger - inverter rack located inside the MCC No. 1 electrical room, Re.-pp.6, 12, 19 of Electrical Reliability Audit.

   Review and update battery maintenance requirements. Adjust and/or revise battery maintenance program to insure batteries are adequately maintained. Re.-Safety and Loss Prevention Safety Reference E-2.

2. The area in front of the main control panel is limited/cramped; the panel rear enclosure is constructed of flammable material (wood); cable entry/exit openings are unsealed; and wiring, both inside and outside the enclosure is not installed in a neat and workmanlike manner. In addition, the rear of the panel constitutes the east wall of the laboratory, Re.-pp.14, 16 of audit summary.

   If feasible, replace the existing control panel with a new and more modern type panel; otherwise, rehabilitate the existing unit.

* INDICATES PRIORITY ITEMS

3. Cable entry/exit openings into the three motor control centers (MCC) rooms are unsealed, Re.-pp. 8, 10, 13 of audit summary.

   Seal all cable trays and conduit penetrations into the MCC rooms in accordance with established codes and standards. Re.-See Loss Prevention Principle (LPP) 3.2.6, Dow Engineering Specification (DES) 7C-0301 and National Electrical Code (NEC) 300-21.

4. For this audit, 75 specific items or elements of electrical equipment have been audited and rated in accordance with the "Definitions of Index Numbers" page 2. A percentage breakdown of the audit ratings (index numbers), denoting an overall condition for audited equipment is as follows:

   67% Has been in service for some time and is in good condition

   8% Average condition

   23.4% Needs attentions

   1.6% In operation but with significant signs of deterioration

   Note: Percentage values do not include housekeeping in the electrical rooms or the condition of buildings.

* INDICATES PRIORITY ITEMS