PLAINTIFF'S EXHIBIT

UC-1914

UCC-C+P-P+D-1

C&P Purchasing & Distribution HEALTH, SAFETY & ENVIRONMENTAL MANUAL

UNION CARBIDE

BRC 1321

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UNION CARBIDE CHENICALS & PLASTICS CO.
PURCHASING AND DISTRIBUTION C1
39 Old Ridgebury Road
Danbury, CT 06817-0001

TO: C&P Purchasing and Distribution HS&E Manual Holders

DATE: July 7, 1990

FROM: J. B. Evans

DEPT: HS&EA

COPY:

SUBJECT: New Off-the-Job Injury Procedure

Attached is a new HS&E Procedure on off-the-job injury reporting. It describes a system for investigating and reporting off-the-job injuries, with the goal of preventing similar injuries in the future. It also describes the proper procedure for supervisors to follow to encourage employees to return to work after an off-the-job injury as soon as it is safe to do so.

This procedure is consistent with off-the-job reporting procedures used by other departments and divisions in C&P and has been reviewed by a number of you in presentations throughout the department. Please note that it applies to all employees in Purchasing and Distribution, even though they may work at a site hosted by another department or division.

✓ Done 7/11/90
Please insert the new HS&E Training procedure into your manual in the space after tab 2.16. Also, please replace the first "Table of Contents" page with the second attachment.
✓ 7/11/90

J. B. Evans

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SUBJECT: HSEA Administration
Variance Procedure

PURPOSE: C&P Purchasing and Distribution's Health, Safety and Environmental Manual was developed to define the standards, practices, and procedures needed to assure departmental compliance with Corporate HSE procedures. Recognizing that in some instances the objectives of these departmental requirements can be achieved through different yet equally effective means, this Variance Procedure provides a consistent format for review and approval of justified deviations from the requirements specified herein.

BACKGROUND: Corporate HSEP Procedure 2.6, "Variances from Internal Procedures."

REQUIREMENTS:

1. All applicable HS&E requirements contained in this manual are mandatory if they are not relieved by an approved variance.

2. Variances may be requested in the following situations:

   - o when the requirement conflicts with laws or regulations;
   - o when the variance will result in an equally effective measure;
   - o when time is needed to achieve compliance and an acceptable action plan is in place to eliminate the variance and operations under the action plan will not adversely affect health, safety and environmental considerations.

3. A written variance request from an HS&E requirement is initiated by the accountable manager who is responsible for insuring its compliance.

4. The variance request will contain the following information; see variance form attached:

   a. The requirement that the proposed variance would replace.
   b. Documentation explaining the proposed variance, why it is being sought, and how it adequately addresses the intent of the requirement it replaces.
   c. The duration of variance request: normally one year or less and in no case longer than five years. If the term requested exceeds one year, justification must be provided along with an action plan intended to eliminate the need for the variance.
   d. The requester's signature.
   e. The names on the approval hierarchy.

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5. Approval Hierarchy

The approval sequence for a variance to a departmental requirement is:

Location Manager
Location Manager's boss
Departmental HS&EA Manager
Director responsible for the operation

If the variance is from a C&P business group requirement, approval by the C&P HSEA Department is also required.

If the variance is from a corporate requirement, approvals from the Corporate HS&EP Department are required in addition to C&P HSEA and departmental approvals.

6. Variance records (a log and copies of approved variances and their supporting documentation) will be maintained by the Departmental HS&EA Manager and by the originator and grantor of the variance.

SCOPE: These requirements apply to all C&P Purchasing and Distribution operations.

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C&P PURCHASING AND DISTRIBUTION

VARIANCE FROM HS&E PROCEDURES

- Variance Requested By: _____
- Location: _____
- Internal Requirements To Which Variance Applies
  (List specific requirements and title of procedure or mandatory standard).

- Why the Variance is Needed.

- Requested Period of Time: _____
  (Normally one year, an in no case longer than five years).

- Description of The Alternative Procedures and/or Standards To Be Used During Term of Variance.

- Justification for Variance Term (if longer than one year).

ENDORSEMENTS:

	SIGNATURE	DATE	
- Location HSEA Manager	_____	_____	
- Location/Operation Manager	_____	_____	[A]
- Line Manager Location/Operation Manager Reports to Departmental HSEA Manager	_____	_____	
- Director Responsible for the Location/Operation	_____	_____	[B]
- C&P HSEA	_____	_____	[C]
- Corporate HSEP	_____	_____	[D]

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[A] Stop here if the variance is from a location requirement.
[B] Stop here if the variance is from a departmental requirement.
[C] Stop here if the variance is from a C&P Group requirement.
[D] Stop here is the variance is from a Corporate requirement.

o NOTE:

1. A variance can be approved only by the administrative head of the issuing organization or someone directly reporting to that person.

2. A log and copies of approved variances and their supporting documentation will be maintained by the Departmental HSEA Manager and by the originator and grantor of the variance.

3. Variance renewals are subject to the same requirements as original requests.

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SUBJECT: HSEA Administration
Audits

PURPOSE: To fulfill the department's obligation for internal control of its HSEA policies and practices.

BACKGROUND: Corporate HSEP Procedure 1.0, "Health, Safety, and Environmental Management Systems."

REQUIREMENTS:

1. Each of the department's operations, whether managed by UCC or contractors, will be audited at least every four years. High exposure or high risk locations will be audited at least every two years.

2. The audit will assess compliance with federal, state, and local laws and regulations; UCC policies, procedures, and standards specific to the location; and accepted industry practices.

3. An audit team will be selected in advance by the Departmental HSEA Manager and the manager responsible for the audited facilities.

4. Audit team findings will be presented orally to UCC location management at the conclusion of the audit.

5. The audit team will provide a written report within 30 days of the audit. The report will be directed to the UCC location or operations manager for owned and contracted facilities, senior line management up to and including the responsible director, and the departmental HSEA Manager.

6. Within 60 days of the written audit report, the UCC location manager will issue an audit response action plan to recipients of the audit report and the audit team members.

7. At contracted facilities, the UCC location manager will work with contractor management to develop an action plan for correcting audit findings.

8. Quarterly progress reports to the same addressees will be made until all issues are resolved.

9. Audits by corporate HSEP auditing groups will fulfill the requirements of this policy.

SCOPE: These requirements apply to all C&P Purchasing and Distribution operations whether owned or contracted.

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SUBJECT: HSEA Administration
Community Awareness and Emergency Response

PURPOSE: To provide public access to information regarding hazardous materials processed or stored at owned and contracted locations and to assure that emergency response plans are in place to minimize the risk to the communities where our facilities are located or our products are stored.

BACKGROUND: Corporate HSEP Procedure, 2.0, "Emergency Response Planning."

REQUIREMENTS: Location managers will develop and implement programs which will include the following basic elements:

1. Assure that the most recent Material Safety Data Sheets for all hazardous materials handled by a facility are in the hands of the public officials designated by the community; that the MSDS's are updated as revisions occur, and that MSDS transmittals are documented and retained.

2. Assure that written emergency response plans for owned facilities identify reasonably forseeable emergency situations that could have serious adverse effects on the health or safety of employees, the public, or the environment. The plans will contain provisions for employee training and drills to respond to identified emergencies.

3. Assure that written emergency response plans for owned facilities include instructions for managers, operators and other employees for coping with emergency situations. Such instructions explain the location's:

   - o emergency organization
   - o alarm systems
   - o internal communications network
   - o external communications requirements, i.e., neighbors, response organizations, media
   - o emergency equipment and facilities
   - o specific steps for mitigation and return to normal operations

4. Assure that programs for owned facilities with potential for acute episodic events require active participation in and support of community response planning and emergency networks. In the event the community is apathetic toward such planning, the location manager should take action to increase its priority on the community's agenda. All such actions should be appropriately documented.

5. Actively encourage contractors which store, ship, or otherwise handle hazardous materials owned by UCC have programs in place which comply with the intent of these requirements.

6. A model Emergency Response Plan is attached.

SCOPE: These requirements apply to all C&P Purchasing and Distribution operations which involve hazardous materials.

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MODEL EMERGENCY RESPONSE PLAN

A. Emergency Response to Protect Site Personnel and Equipment

Standards

1. Emergency Response procedures exist at every site where personnel can become involved in an operational emergency threatening their safety or health.

2. Tests and/or drills of the site emergency procedures and equipment, based on likely emergencies, are periodically conducted to maintain response skills. Critiques are used to update emergency plans and improve response capabilities.

3. The emergency response team structure ensures clarity of roles, responsibilities, and adequate staffing during emergencies.

4. Communication, warning, and notification procedures are kept current. Communication to external authorities and to the media will be performed as required.

5. On- and off-site training of emergency responders, commensurate with the needs of the site, is provided on a periodic basis.

6. Emergency Operations Centers (EOC's) are designed and staffed to meet the level of risk addressed. Where likely emergencies determine the need, two EOC's are established to separate internal and external roles and to serve as a back-up to each other.

7. EOC's are equipped with evergreen documents and data on site hazardous materials, emergency procedures, and likely emergency situations.

8. The impact of meteorological conditions on emergencies is taken into account.

9. Breathing air and other emergency response equipment is available within the site in quantities consistent with emergency response plan needs.

10. Emergency communications systems are used and monitored by specifically designated personnel.

11. A comprehensive medical emergency plan exists and is coordinated with area agencies and organizations. Area hospitals have access to toxic treatment guides and MSD Sheets.

12. A procedure for safely achieving stand-by status of operations is developed for likely emergencies.

13. Emergency response plans consider the possibility of fire protection systems being out of service.

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B. Emergency Response to Protect the Community

Standards

1. Community emergency response procedures exist at every site where the community can become involved in an operational emergency threatening their safety or health.

2. The site's community emergency response plan is appropriate to the level of risk and compatible with the culture, politics, laws, and regulations in effect in the community in which they are located and in compliance with UCC policies, procedures, and directives.

3. The site's community emergency response plans support the local community emergency response plans. The site plans are based on likely emergencies and defined responsibilities.

4. Communication, warning, and notification procedures are kept current (internal to the site and to the community).

5. Critical off-site occupancies (hospitals, schools, etc.) are identified and plans established to support their specific needs in an emergency situation.

6. The site's community emergency response plans are regularly tested, based on likely emergencies, and updated as required to improve emergency response capabilities. Periodically, local authorities and agencies will participate in the site's community emergency response plan test and site personnel will participate, as required, in local community emergency response plan tests.

7. The Site's Community Emergency Response Plans will:

   a. Include designated and trained media spokesperson(s), supported by technical, legal, and environmental protection expertise. Training includes chemicals, likely hazards and emergency response procedures as required by the site.

   b. Provide for adequate facilities to house briefings for public officials and the media and include anticipated equipment.

   c. Provide for security procedures to control the personnel permitted access to the site during emergencies.

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SUBJECT: HSEA Administration
HSEA Endorsement of New Projects and Major Lease Proposals

PURPOSE: To assure that safety, health, and environmental aspects of new projects have been adequately evaluated and endorsed by departmental, business group, and corporate HSE management.

BACKGROUND: Corporate HSEP Procedure 2.3, "Capital Project Review". C&P Supplement CP 2.3 S1.

REQUIREMENTS:

Major Capital Projects and Major Lease Proposals

All CBP's requiring management committee authorization must be endorsed by C&P HSEA Department before project authorization is requested. Additionally, CBP's which are to be presented to the Board of Directors for information and/or authorization and CBP's for projects which have the potential to expose the corporation to Significant Potential Risk (SPR) must be endorsed by Corporate HSEP. Criteria for Significant Potential Risk are defined in Appendix I.

1. The department's HSEA Manager will be responsible for evaluating the projects for HSEA impact and for obtaining C&P HSEA and Corporate HSEP endorsement.

2. The project sponsor will have a project summary prepared for HSEA evaluation and endorsement. The summary will include:

   a. The title and description of the project and the person primarily responsible for performing the review.

   b. A description (or identification) of the review procedures used to determine the project's health, safety, and environmental acceptability including its SPR determination.

   c. A review of any significant health, safety, and environmental concerns associated with the project including:

      - o assessment of episodic risk potential
      - o assessment of potential chronic adverse effects on employees, customers, the community or the environment
      - o assessment of compliance with governmental and internal requirements

      Appropriate corrective actions and control measures identified by the review are included as conditions placed on the capital project as terms of endorsement.

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d. A general description of the controls to be used to assure compliance with corporate, business group and departmental procedures and applicable laws/regulations, plus an indication of the degree of technical certainty that the project design and operating controls will be effective in maintaining compliance.

e. For projects which meet any of the Significant Potential Risk criteria from Appendix I, a Capital Project Proposal HS&E Review Summary must be provided along with completed HS&E Checklists for Capital Project Proposals (Appendix III). Guidelines for completing the checklists are provided in Appendix II. This information will normally be provided by HS&E technologists from Central Engineering together with representatives who understand distribution technology and can address operational safety issues. (Responses to the checklists in step e. will lead to the development of documented action plans to resolve any issues identified).

Working Budget Projects

Same procedure as for Major Capital Projects, see 2 above. Working Budget Projects which pose SPR still require step 2e of the Major Capital Project procedure but completion of step 2e may be done by qualified personnel from the location staff.

Endorsement of Departmental Working Budget Projects which pose SPR will be provided by the Departmental HSEA Manager. Endorsement of projects sponsored by client divisions which are integrated into departmental facilities and which pose SPR must first be endorsed by the sponsoring division's HSEA Manager. Significant hazard projects (defined as increasing the amount of hazardous materials in an operation) requires the additional endorsement of C&P HSEA. Substantial hazard projects (defined as increasing the capacity of the largest vessel containing a hazardous material)* requires the additional endorsement of both C&P HSEA and Corporate HSEP.

Miscellaneous Minor Property Projects

The location manager will request the Departmental HSEA manager's endorsement of MMP funded projects which pose SPR as, and when, they are defined.

SCOPE: This procedure applies to all Major Capital Projects, Major Lease Proposals, Working Budget Projects, and MMP Projects sponsored by the C&P Purchasing and Distribution Department.

*Operations which may result in increasing the capacity of hazardous material storage, such as reallocating tankage in a terminal, will be subject to the Facility Change Review procedure. See section 2.14.

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Appendix I

Criteria for Significant Potential Risk (SPR)

1. The proposed project involves handling of one or more of the following:

Acrolein	Hydrogen Sulfide
Acrylates	Sulfur Dioxide
Amines	Sulfur Trioxide
Acrylonitrile	Liquefied Petroleum Gas
Aldicarb Solution	Methyl Isocyanate
Ammonia	Nickel Carbonyl
Arsine	Peracetic Acid
Carbon Monoxide	Phosgene
Chlorine	Phosphine
Ethylene Oxide	Vinyl Chloride
Propylene Oxide	Vinyl Methyl Ether
Hydrogen Chloride	Carbon Disulfide
Chlorosilane	

2. The proposed project involves handling of any material or its decomposition product that under reasonable "worst case" conditions can exceed the following fenceline concentrations:

   25% of the lowest of: OSHA PEL, ACGIH TLV or UCC internal exposure standard

   25% of the IDLH

   50% of the LFL for gas

   OR

   if the materials have exothermic reaction potential in the presence of available contaminants.

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Checklists

APPENDIX III

UNION CARBIDE CORPORATION
CAPITAL PROJECT PROPOSAL
HS&E REVIEW SUMMARY

This brief summary, required to accompany the proposal, provides information on the review process and status which cannot be realistically covered in checklists. the summary should address, where applicable, the topics listed below.

Reviewer(s) - List the names and assignments of main participants in the HS&E review to date. Discuss intended staffing for any further review activities.

Project Data - Provide all of the following information that is currently available:

a. Material Balance - For the project.

b. Environmental Releases - List air pollutant emissions, wastewater discharges and solid wastes generated from the project. List all permits, licenses, contracts, etc., required for the project.

c. Governmental Requirements - List all federal, state and local HS&E laws and rules which apply to the project.

d. Corporate HS&E Policy Requirements - Describe any variances from UCC HS&E policies which will be requested.

e. Project Reviews - List all HS&E Risk Management reviews planned for the project through the initial operation phase.

Concerns - Discuss any reviewer HS&E concerns for the project that are not adequately expressed in the completed checklist or endorsement.

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APPENDIX III

HS&E SCREENING CHECKLIST

If all the questions for any of the three sections can be answered "No" then that section of the HS&E checklist can be excluded from further consideration by indicating on the first page of that section under "Comments" that all responses to that section of the Screening Checklist were negative. The questions should be answered in the context "as a result of this project".

Environmental

1. Will there be any increase in air emissions? _____
2. Will any toxic or hazardous materials or any new materials be handled or emitted to the air from this facility? _____
3. Will there be any increase in materials discharged to the sewer system? _____
4. Will there be any increase in materials discharged with wastewater from this facility? _____
5. Are there any plans to dispose of wastewater by underground injection? _____
6. Are there any or will there be any RCRA hazardous wastes generated, stored, treated, or disposed of at the project site? _____
7. Is there presently any ground water contamination or will additional ground water monitoring be required at the project site? _____
8. Will there be any modifications to the process or additional relief devices installed requiring episodic emission screening per the Corporate Air Toxics Control Policy? _____
9. Will underground storage tanks be used for this project? _____

Safety and Health

1. Will flammable, toxic, corrosive, reactive, or otherwise hazardous substances be transported, stored, processed, or produced at the project site? _____
2. Are extremes of pressure (500 psig) or temperature (400°C) present anywhere in the new facility? _____
3. Will this project employ any new process technology or adversely affect reliability of existing facilities? _____
4. Are any process intermediates isolated that are not included in the Toxic Substance Control Act Inventory? _____

Product Safety

1. Are any new products manufactured or will any existing products be directed toward a new market area? _____
2. Will new distribution schemes cause new or additional public exposures to this product? _____
3. Will this project introduce new contaminants, increase existing contaminants, or otherwise adversely affect the quality of the product? _____

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01/07/88 Reviewer _____ Date _____

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UNION CARBIDE CORPORATION
CAPITAL PROJECT PROPOSAL
HS&E CHECKLIST

	ENVIRONMENTAL	YES	NO	OTHER	COMMENTS:
1	General				
1.1	Does the geographic location of the project present any potential interstate or international air pollution liabilities or unusual water pollution liabilities?	( )	___	( )	
1.2	Is the proposed project or site to be located within 1/2 mile of any existing or potential drinking water source?	( )	___	( )	
1.3	Will the project have an adequate buffer zone between the air emissions sources and offsite residences or facilities?	___	( )	( )	
1.4	Will the facility be staffed, or have readily available, personnel fully aware of the environmental consequences of operational problems and trained to implement timely and proper response actions?	___	( )	( )	
1.5	Are any of the residuals from either environmental discharges or disposed wastes resulting from operation of the completed project believed to be a potential subject of future governmental rulemaking that would cause future unfavorable economics or publicity for the project, location, or Corporation?	( )	___	( )	
2	Design				
2.1	Is process technology design derived from either proven commercial-scale facilities or six months or more of successful pilot-scale operations?	___	( )	( )	
2.2	Will proposed air emissions require offsets or exceed available increments in the Air Quality Control Region?	( )	___	( )	
2.3	Will wastewater discharges be restricted by water quality limits of the receiving stream or by the capacity of a Publicly-Owned Treatment Works (POTW)?	( )	___	( )	

Any answer in brackets requires explanation keyed to the question number under "Comments" (continued on separate pages if necessary). Use "NA" where question is not applicable.

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		YES	NO	OTHER	COMMENTS:
2.4	Are there any plans to dispose of wastewater by underground injection?	( )	___	( )	
2.5	Have all hazardous waste conservation/minimization alternatives been reviewed and used where feasible?	___	( )	( )	
2.6	Are there any treatment, storage, disposal design plans that have not been reviewed to assure conformance with Federal, State, and Local regulations?	( )	___	( )	
2.7	Has facility design minimized the generation of air and water pollution and residue streams to the extent consistent with "best available technology" as defined by EPA or, where more stringent, UCC guidelines?	___	( )	( )	
2.8	Has the design inventory of hazardous and toxic chemicals been minimized to the extent practicable?	___	( )	( )	
2.9	Does the project design satisfy the restrictions imposed by the UCC Air Toxics Control Policy for both continuous emissions and episodic releases?	___	( )	( )	
2.10	Will secondary containment be provided for all new oil and chemical handling or storage areas?	___	( )	( )	
2.11	Will underground storage tanks be used for this project?	( )	___	( )	

Any answer in brackets requires explanation keyed to the question number under "Comments" (continued on separate pages if necessary). Use "NA" where question is not applicable.

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		YES	NO	OTHER	COMMENTS:
3	**Wastes, Emissions**				
3.1	Have all significant air emissions and water discharges been identified and described with respect to quantity and composition? (Consider start-up and shut-down conditions and abnormal operating conditions.)	___	( )	( )	
3.2	Have all proposed hazardous waste streams been identified?	___	( )	( )	
3.3	Do proposed air emissions contain any material classified as hazardous under federal, state, or local regulations?	( )	___	( )	
3.4	Do proposed wastewater discharges contain any substances on EPA's priority pollutant list or on EPA's list of toxic materials?	( )	___	( )	
3.5	Are any proposed wastes classified as hazardous under Federal, State, or Local regulations?	( )	___	( )	
3.6	Will the total quantity of hazardous waste generated at the site be more than 100 kilograms per month?	( )	___	( )	
3.7	Is there a high degree of confidence that the predicted composition and quantities of air and water pollutants and residues generated from operation of the project has not omitted any chemical more toxic than those listed and has not understated any quantities by more than 50%?	___	( )	( )	
3.8	Do the discharges which reach the air or receiving water from this project constitute a predicted increase of more than 10% in the present environmental level of any hazardous or regulated constituent and/or to more than 50% of the acceptable environmental level?	( )	___	( )	

Any answer in brackets requires explanation keyed to the question number under "Comments" (continued on separate pages if necessary). Use "NA" where question is not applicable.

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		YES	NO	OTHER	COMMENTS:
4	Compliance				
4.1	If the project is associated with an existing facility, has the facility experienced any incidents of non-compliance with air emission permits or with waste-water discharge permit requirements or received any air pollution related citizen complaints in the past 12 months?	( )	___	( )	
4.2	Are there any Compliance Orders or other legal actions that affect the existing site or operation?	( )	___	( )	
4.3	Will the predicted air and water discharges from operation of the completed project comply with all applicable governmental rules?	___	( )	( )	
4.4	Will the planned storage, treatment and disposal of hazardous wastes comply with all applicable governmental rules or, where more stringent, UCC guidelines?	___	( )	( )	
4.5	Are modifications to an existing or an entirely new Spill Prevention, Control, and Containment (SPCC) Plan required?	( )	___	( )	
5	Permits				
5.1	Have all required air emission and wastewater discharge permits and permit modifications been identified?	___	( )	( )	

Any answer in brackets requires explanation keyed to the question number under "Comments" (continued on separate pages if necessary). Use "NA" where question is not applicable.

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		YES	NO	OTHER	COMMENTS:
5.2	Will a RCRA Part B Permit Application or modification of an existing Part B Permit be necessary?	( )	___	( )	
5.3	Are any delays in construction or operation startup likely due to permitting requirements?	( )	___	( )	
6	Monitoring				
6.1	Is ambient or background air quality monitoring data available for the past 12 months at the project site or facility?	___	( )	( )	
6.2	If there are proposed wastewater discharges to surface water, is background water quality data available?	___	( )	( )	
6.3	Is there presently any known or suspected ground water contamination at the project site or facility?	( )	___	( )	
6.4	Would additional soil or ground water monitoring be required to demonstrate that the project site or facility is not a source of contamination?	( )	___	( )	
7	Control Systems				
7.1	Are air and water pollution or hazardous waste control and treatment facilities designed to meet applicable governmental technological levels or, where more stringent, UCC requirements?	___	( )	( )	
7.2	Do any proposed air emissions sources or wastewater discharges require new control systems or upgrading of existing systems?	( )	___	( )	

Any answer in brackets requires explanation keyed to the question number under "Comments" (continued on separate pages if necessary). Use "NA" where question is not applicable.

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		YES	NO	OTHER	COMMENTS:
7.3	Will the project necessitate the treatment, storage, or disposal of hazardous waste, either onsite or offsite?	( )	___	( )	
8	Plant Site Expansion				
8.1	Are there any inactive or active waste storage, treatment or disposal facilities located on the new plot?	( )	___	( )	
8.2	Are there on-going or past site investigations and/or remedial actions for present and past solid and hazardous waste units that pose(d) a significant threat of release of hazardous constituents to the environment?	( )	___	( )	
8.3	Is there any material containing PCBs located on the new plot?	( )	___	( )	
8.4	Are underground storage tanks located on the new plot?	( )	___	( )	
8.5	Does the new plot contain U.S. Coast Guard designated wetlands?	( )	___	( )	
8.6	Are buildings or other structures containing asbestos going to be razed?	( )	___	( )	

Reviewer

Date

Any answer in brackets requires explanation keyed to the question number under "Comments" (continued on separate pages if necessary). Use "NA" where question is not applicable.

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UNION CARBIDE CORPORATION
CAPITAL PROJECT PROPOSAL
HS&E CHECKLIST

		YES	NO	OTHER	COMMENTS:
SAFETY AND HEALTH					
1.	General				
1.1	Will toxic, flammable, corrosive, or otherwise hazardous substances be transported, stored, processed, or produced as the result of this project.	(__)	____	(__)	
1.2	Will any unusual physical hazards be present in the facility?	(__)	____	(__)	
1.3	Are any substances handled that could cause an explosion if heated, contaminated, concentrated, or otherwise mishandled?	(__)	____	(__)	
1.4	Is all necessary safety and health data known for each substance handled?	____	(__)	(__)	
1.5	Do up-to-date Material Safety Data Sheets exist for each substance handled?	____	(__)	(__)	
1.6	Will this project introduce new chemicals that are highly reactive with other chemicals already handled in the plant?	(__)	____	(__)	
2.	Compliance				
2.1	Will any additional safety or health programs be required under OSHA regulations?	(__)	____	(__)	
2.2	Have all Department of Transportation requirements been identified for all substances that will be shipped?	____	(__)	(__)	
2.3	Are there any proposed changes to safety and health regulations that could impact this new activity?	(__)	____	(__)	
2.4	Will any of the following be required to comply with safety and health regulations:				
	a) exposure monitoring?	(__)	____	(__)	
	b) engineering controls?	(__)	____	(__)	

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		YES	NO	OTHER	COMMENTS:
	c) personal protective equipment?	(__)	____	(__)	
	d) special medical examinations or surveillance activities?	(__)	____	(__)	
	e) special safety operating or maintenance procedures?	(__)	____	(__)	
2.5	Will employees need supplemental training beyond normal corporate programs to assure safe operation?	(__)	____	(__)	
2.6	Will any variances to UCC Safety/Health Standard Practices be required?	(__)	____	(__)	
2.7	Are there any state or local regulations that supercede federal safety and health regulations?	(__)	____	(__)	
2.8	Are all chemicals handled included in the Toxic Substances Control Act inventory?	____	(__)	(__)	
3.	Public Impact				
3.1	Are relief device discharges controlled such that no releases to the atmosphere can occur that would have adverse impact on the public?	____	(__)	(__)	
3.2	Could any process upset or other emergency situation occur in this facility (explosion, spill, etc.) that would impact on the health and safety of the public?	(__)	____	(__)	
3.3	Are the existing or planned monitoring, detection, and/or alarm systems for release of toxic chemicals adequate?	____	(__)	(__)	
4.	Facility Design				
4.1	Will chemicals or other hazardous materials be handled under extremes of temperature or pressure (i.e. temperatures above 400°C or pressure over 500 psi)?	(__)	____	(__)	
4.2	Will there be any potential ignition sources associated with this project?	(__)	____	(__)	

Any answer in brackets requires explanation keyed to the question number under "Comments" (continued on separate pages if necessary). Use "NA" where question is not applicable.

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		YES	NO	OTHER	COMMENTS:
4.3	Will recognized industry practices be followed in the layout of the facility?	____	(__)	(__)	
4.4	Will pressure vessels and storage tanks meet all performance standards and federal, state, and local laws and regulations and will all piping, valves, safety valves, and fittings meet all recognized industry standards?	____	(__)	(__)	
4.5	Will all normal project safety and health reviews be performed?	____	(__)	(__)	
4.6	Has the need for any process risk studies been determined?	(__)	(__)	(__)	
4.7	Would the loss of any utility create a possible hazardous situation?	(__)	____	(__)	
4.8	Has the need for flammable gas detectors been determined?	(__)	(__)	(__)	
4.9	For reaction systems, is any reaction sufficiently exothermic to result in a runaway reaction under any conceivable operating conditions?	(__)	____	(__)	
4.10	Is this a new process or does it incorporate process technology new to this plant site?	(__)	____	(__)	

Any answer in brackets requires explanation keyed to the question number under "Comments" (continued on separate pages if necessary). Use "NA" where question is not applicable.

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	YES	NO	OTHER	COMMENTS:
4.11 Are process monitoring and control devices adequate?	____	(__)	(__)	
4.12 Can the use of automation or advanced process control be increased to reduce the risks of employee exposures?	(__)	____	(__)	
4.13 Will water spray protection be provided for processing, storage, and distribution areas in accordance with UCC criteria?	____	(__)	(__)	
4.14 Are fire water supplies and distribution systems adequate to provide sufficient fire water to this facility?	____	(__)	(__)	
5. Emergency Response				
5.1 Will special fire and emergency response equipment, personnel, or procedures be required for this facility?	(__)	____	(__)	
5.2 Will this project require any changes in Community Evacuation plans?	(__)	____	(__)	

Reviewer

Date

Any answer in brackets requires explanation keyed to the question number under "Comments" (continued on separate pages if necessary). Use "NA" where question is not applicable.

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UNION CARBIDE CORPORATION
CAPITAL PROJECT PROPOSAL
HS&E CHECKLIST

		YES	NO	OTHER	COMMENTS:
PRODUCT SAFETY					
1.	General				
1.1	Will any of the products from this facility be marketed as a consumer product?	(__)	____	(__)	
1.2	Will any of the products be used as an intermediate by UCC or others to formulate a product that will be marketed as a consumer product?	(__)	____	(__)	
1.3	Are any of the products intended for use in the manufacture of food, drugs, or their packaging materials?	(__)	____	(__)	
1.4	Are any of the products classified by the Food and Drug Administration as medical devices?	(__)	____	(__)	
1.5	Are any of the products subject to regulation under Federal Insecticide, Fungicide, Rodenticide Act; Toxic Substances Control Act; Consumer Product Safety Commission; or Federal Food, Drug and Cosmetic Act?.	(__)	____	(__)	
1.6	Are any of the products classified as toxic, explosive, corrosive, flammable, or otherwise hazardous?	(__)	____	(__)	
1.7	Could any product cause damage to persons or property when used in accordance with instructions or subjected to foreseeable misuse?	(__)	____	(__)	
2.	Product Design				
2.1	Has the product undergone a product safety risk analysis to evaluate downstream exposure/health risk potential?	(__)	(__)	(__)	
2.2	Are any Premanufacturer Notifications necessary for any of the products?	(__)	____	(__)	
2.3	Does any product require certification or testing by Federal, State, or local governmental agencies?	(__)	____	(__)	

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11-11

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	YES	NO	OTHER	COMMENTS:
2.4 Does any product require testing or approval by a nationally recognized testing agency such as Underwriters Laboratory, Factory Mutual, etc.?	(__)	____	(__)	
2.5 Have product quality and product reliability test methods been identified and included in the facility design?	____	(__)	(__)	
3. Distribution				
3.1 Will any products be distributed by common carrier?	(__)	____	(__)	
3.2 Have all regulatory requirements for shipping the products been identified?	____	(__)	(__)	
3.3 Are new packaging or labeling designs required for these products?	(__)	____	(__)	
3.4 Has all labeling and Material Safety Data Sheet data been obtained for all products?	____	(__)	(__)	
3.5 Will any hazardous products be transported or stored near or through populated areas?	(__)	____	(__)	
3.6 Will any special handling, storage, or shipping equipment or procedures be required for any of the products?	(__)	____	(__)	
4. Product Image				
4.1 Is there any history of product liability with any of these products or similar products?	(__)	____	(__)	
4.2 Could any of the products be viewed by the public or regulatory agencies as presenting an unacceptable risk to health, safety or the environment?	(__)	____	(__)	
4.3 Will communication with any regulatory agency be required regarding the safety of any of the products?	(__)	____	(__)	

Any answer in brackets requires explanation keyed to the question number under "Comments" (continued on separate pages if necessary). Use "NA" where question is not applicable.

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APPENDIX II
PART II

UNION CARBIDE CORPORATION
CAPITAL PROJECT PROPOSAL
GUIDANCE DOCUMENT FOR HS&E CHECKLIST

The following pages consist of guidance for completion of the HS&E Checklists. For ease of use, the checklist questions and corresponding guidance items are printed side by side with the guidance on the right.

In many instances, the guidance suggests consultation with specialists knowledgeable of regulations or other needed technical skills. One such group is the Health, Safety and Environmental Technology group of the South Charleston, West Virginia Engineering Center (who were heavily involved in guidance document and checklist preparation).

Following is a definition of terms relating to hazards of materials which is useful in working with the checklists and guidance documents.

Hazardous	A substance is considered hazardous if it is included on one of the following lists. - RCRA 40 CFR 261 - CERCLA List of Hazardous Substances and Reportable Quantities 40 CFR 302 - OSHA Air Contaminants Lists 29 CFR 1910:1000 - NESHAP 40 CFR 61
Toxic	A substance is considered toxic if it is included in the EPA List of 402 Acutely Toxic Chemicals or if it falls in the definition of Carcinogen, Highly Toxic, or Toxic as defined in 29 CFR 1910:1200 Appendix A
Flammable	- Flash point less than 100°F
Highly Reactive	- Reactivity rating of 4 in the UCC or NFPA Hazard Signal System
Corrosive	- DOT Hazardous Materials Table
Explosive	- DOT Hazardous Materials Table

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UNION CARBIDE CORPORATION
CAPITAL PROJECT PROPOSAL
HS&E CHECKLIST

	ENVIRONMENTAL	YES	NO	OTHER
1	**General**			
1.1	Does the geographic location of the project present any potential interstate or international air pollution liabilities or unusual water pollution liabilities?	( )	___	( )
1.2	Is the proposed project or site to be located within 1/2 mile of any existing or potential drinking water source?	( )	___	( )
1.3	Will the project have an adequate buffer zone between the air emissions sources and offsite residences or facilities?	___	( )	( )
1.4	Will the facility be staffed, or have readily available, personnel fully aware of the environmental consequences of operational problems and trained to implement timely and proper response actions?	___	( )	( )
1.5	Are any of the residuals from either environmental discharges or disposed wastes resulting from operation of the completed project believed to be a potential subject of future governmental rulemaking that would cause future unfavorable economics or publicity for the project, location, or Corporation?	( )	___	( )
2	**Design**			
2.1	Is process technology design derived from either proven commercial-scale facilities or six months or more of successful pilot-scale operations?	___	( )	( )
2.2	Will proposed air emissions require offsets or exceed available increments in the Air Quality Control Region?	( )	___	( )
2.3	Will wastewater discharges be restricted by water quality limits of the receiving stream or by the capacity of a Publicly-Owned Treatment Works (POTW)?	( )	___	( )

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UNION CARBIDE CORPORATION
CAPITAL PROJECT PROPOSAL
GUIDANCE DOCUMENT FOR HS&E CHECKLIST

ENVIRONMENTAL

General

1.1 Check distance to federal forest, federal parks, or other EPA designated Class I areas. See 40 CFR 52 for restrictions.

1.2 "Potential drinking water source" - A body of water that supplies drinking water (lake, reservoir, river, stream, aquifer, etc.). Review the RCRA Part B permit application for the plant for needed information (geology reports, site descriptions, etc.). Look at state Water Quality Standards to see if the water bodies are regulated as drinking water sources.

1.3 Look at the OSHA PELs/ACGIH TLVs and detectable odor limits for the compounds and the proximity of the emission sources to the boundary of the plant and nearby residences/facilities. If you sense a potential emission concern, contact a skill area for air modeling assistance.

1.4 Review past divisional and corporate HS&EP audits of the plant and the unit (if existing) and responses to deficiencies noted in the audits. Discuss with project design personnel.

1.5 First review current regulations for future effective dates. Then review proposed regulations. Review the Regulatory Agenda in the Federal Register for future planned regulatory actions. Consult a skill area involved with regulation tracking, and/or an internal group making forecasts.

Design

2.1 Consult with Process Engineering and Process R&D group leaders for information concerning technology design.

2.2 Consult with a skill area involved with regulation tracking. See 40 CFR 52 for regulation requirements.

2.3 Contact the plant EP Department or other appropriate environmental personnel for information. Also refer to state Water Quality Standards for the receiving water body. A direct call to the POTW (with management permission) may prove helpful.

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		YES	NO	OTHER
2.4	Are there any plans to dispose of wastewater by underground injection?	( )	___	( )
2.5	Have all hazardous waste conservation/minimization alternatives been reviewed and used where feasible?	___	( )	( )
2.6	Are there any treatment, storage, disposal design plans that have not been reviewed to assure conformance with Federal, State, and Local regulations?	( )	___	( )
2.7	Has facility design minimized the generation of air and water pollution and residue streams to the extent consistent with "best available technology" as defined by EPA or, where more stringent, UCC guidelines?	___	( )	( )
2.8	Has the design inventory of hazardous and toxic chemicals been minimized to the extent practicable?	___	( )	( )
2.9	Does the project design satisfy the restrictions imposed by the UCC Air Toxics Control Policy for both continuous emissions and episodic releases?	___	( )	( )
2.10	Will secondary containment be provided for all new oil and chemical handling or storage areas?	___	( )	( )
2.11	Will underground storage tanks be used for this project?	( )	___	( )

2.4 Contact the appropriate plant personnel (normally EP Department). Ensure that alternatives have been evaluated.

2.5 The RCRA goal is to minimize the generation and/or the toxicty of hazardous waste. If land disposal (landfills, landfarms, surface impoundments, and waste piles) will handle any hazardous wastes, compliance with 40 CFR 268 (land disposal restrictons) needs to reviewed. If based upon review of the outline of project or inter- views with process engineers and process R&D personnel you feel that adequate consideration has not been given to this requirement, mark the answer NO and recommend that the HS&E Definition of Tech- nology (DOT) address this requirement and that design and opera- tional changes be made based upon review of the DOT findings.

2.6 RCRA references include 40 CFR 262.34 (accumulation time), 264 (permit standards), 265 (interim status standards), 266 (recycle/ reuse standards in combination with 261.6), and 268 (land disposal restrictions). Underground storage tank regulations are covered in 40 CFR 280. Air regulation references include 40 CFR 52 (PSD), 40 CFR 60 (NSPS), 40 CFR 61 (NESHAP), and individual state regulations.

2.7 Refer to 40 CFR 268 (land disposal restrictions) to determine if hazardous wastes have been treated to the extent necessary for land disposal (ie. landfills, landfarms, surface impoundments and waste piles). The EPA BACT Clearing House Document, NSPS regulations, and effluent guidelines are sources of information concerning air and water pollution control.

2.8 See the Definition of Terms section for definition of hazards and toxic.

2.9 Review the UCC Air Toxics Control Policy.

2.10 Use the Spill Prevention, Control and Countermeasures (SPCC) criteria of 40 CFR 112 for this review. Also obtain a copy of the plant's SPCC plan and compare the design/operational features of the project to the plant criteria.

2.11 If the tank handles hazardous waste, it must meet either 40 CFR 262.34 or 264 Subpart J standards. For storage of other materials, review 40 CFR 280 for applicability and compliance.

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		YES	NO	OTHER
3	**Wastes, Emissions**			
3.1	Have all significant air emissions and water discharges been identified and described with respect to quantity and composition? (Consider start-up and shut-down conditions and abnormal operating conditions.)	___	( )	( )
3.2	Have all proposed hazardous waste streams been identified?	___	( )	( )
3.3	Do proposed air emissions contain any material classified as hazardous under federal, state, or local regulations?	( )	___	( )
3.4	Do proposed wastewater discharges contain any substances on EPA's priority pollutant list or on EPA's list of toxic materials?	( )	___	( )
3.5	Are any proposed wastes classified as hazardous under Federal, State, or Local regulations?	( )	___	( )
3.6	Will the total quantity of hazardous waste generated at the site be more than 100 kilograms per month?	( )	___	( )
3.7	Is there a high degree of confidence that the predicted composition and quantities of air and water pollutants and residues generated from operation of the project has not omitted any chemical more toxic than those listed and has not understated any quantities by more than 50%?	___	( )	( )
3.8	Do the discharges which reach the air or receiving water from this project constitute a predicted increase of more than 10% in the present environmental level of any hazardous or regulated constituent and/or to more than 50% of the acceptable environmental level?	( )	___	( )

Wastes, Emissions

3.1 Review available Process Flow Diagrams, Process and Control Dia- grams, and Outline of Project for emmisions data. Especially check for spent catalyst handling/disposal procedures and any unit equip- ment cleanup requirements for batch operations.

3.2 Refer to 40 CFR 261 for definition of hazardous waste.

3.3 Refer to NESHAP regulations, 40 CFR 61. Also check state air toxics program.

3.4 Refer to 40 CFR 401.15 for list of priority pollutants and 40 CFR 117 for list of toxic (hazardous) materials.

3.5 Refer to 40 CFR 261 for definition of hazardous waste.

3.6 "Site" means the entire plant.

3.7 Review available material balance tables (usually associated with Process Flow Diagrams) for incomplete or errant material balance calculations. If one has questions, they should contact the pro- cess engineer or process R&D person.

3.8 Refer to plant air emission inventories and wastewater treatment influent analysis records for percentage increases in air and wastewater discharges, respectively.

Interpolate increases in influent loading to discharge values and compare the new discharge values to NPDES permit limits (ie. monthly averages). Review draft permit if current permit is under negotiation.

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		YES	NO	OTHER
4	**Compliance**			
4.1	If the project is associated with an existing facility, has the facility experienced any incidents of non-compliance with air emission permits or with waste-water discharge permit requirements or received any air pollution related citizen complaints in the past 12 months?	( )	___	( )
4.2	Are there any Compliance Orders or other legal actions that affect the existing site or operation?	( )	___	( )
4.3	Will the predicted air and water discharges from operation of the completed project comply with all applicable governmental rules?	___	( )	( )
4.4	Will the planned storage, treatment and disposal of hazardous wastes comply with all applicable governmental rules or, where more stringent, UCC guidelines?	___	( )	( )
4.5	Are modifications to an existing or an entirely new Spill Prevention, Control, and Containment (SPCC) Plan required?	( )	___	( )
5	**Permits**			
5.1	Have all required air emission and wastewater discharge permits and permit modifications been identified?	___	( )	( )

Compliance

4.1 "Facility" means entire plant. Contact the appropriate plant per- sonnel (normally the EP Department) for non-compliance history and list of citizen complaints filed in the past 12 months.

4.2 "Site or operation" means the entire plant. Contact the appro- priate plant personnel (normally the EP Department) for current list of compliance orders and other legal actions.

4.3 Consult with a skill area involved with regulation tracking.

4.4 Refer to 40 CFR Parts 262.34 (accumulation time), 264 (permit standards), 265 (interim status standards), 266 (recycle/reuse standards in combination with 261.6) and 268 (land disposal restrictions).

4.5 Evaluate needs from consideration of project and, if applicable, the current SPCC Plan.

Permits

5.1 In concert with the appropriate plant personnel (normally the EP Department), review the increase in both hydraulic and organic loading to the plant's (or POTW's) treatment facilities. Look at how this increased loading affects the facility's ability to meet its NPDES permit conditions. Pay special attention to the introduc- tion of new priority pollutants to the wastewater. Review draft permit if current permit is under negotiation. Also review the affect of additional stormwater drainage or discharge. Air construction permits or agency notification may be required by PSD, NESHAP, NSPS, or state regulations.

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		YES	NO	OTHER
5.2	Will a RCRA Part B Permit Application or modification of an existing Part B Permit be necessary?	( )	___	( )
5.3	Are any delays in construction or operation startup likely due to permitting requirements?	( )	___	( )
6	Monitoring			
6.1	Is ambient or background air quality monitoring data available for the past 12 months at the project site or facility?	___	( )	( )
6.2	If there are proposed wastewater discharges to surface water, is background water quality data available?	___	( )	( )
6.3	Is there presently any known or suspected ground water contamination at the project site or facility?	( )	___	( )
6.4	Would additional soil or ground water monitoring be required to demonstrate that the project site or facility is not a source of contamination?	( )	___	( )
7	Control Systems			
7.1	Are air and water pollution or hazardous waste control and treatment facilities designed to meet applicable governmental technological levels or, where more stringent, UCC requirements?	___	( )	( )
7.2	Do any proposed air emissions sources or wastewater discharges require new control systems or upgrading of existing systems?	( )	___	( )

5.2 Refer to 40 CFR 270.1 (purpose and scope), 270.41 & 42 (permit modifications) and 270.70 (qualifying for interim status).

5.3 Be especially careful if new or modified RCRA Part B permit appli- cations are required. If an air construction permit is required, construction cannot start until permit approval.

Monitoring

6.1 Contact the appropriate plant personnel (normally the EP Depart- ment) for this information. Contact the appropriate state agency if this is a new plant.

6.2 Same as 6.1.

6.3 "Project site or facility" means entire plant. Review the plant's RCRA Part B permit application (ie. groundwater sampling/analysis and release histories for both hazardous and non-hazardous waste units) and contact the appropriate plant personnel (normally the EP Department).

6.4 Is there sufficient groundwater data for the area of the plant where the project is to be located to positively identify it as or as not the source of the contamination plume(s)? Basically one needs to determine if the proposed project location is hydrauli- cally up-gradient of the plumes; and if so, is there sufficient monitoring data to either implicate or exonerate the area of interest. Refer to RCRA Part B permit application (if available), and contact the appropriate plant personnel (normally the EP Department) for further information.

Control Systems

7.1 Refer to 40 CFR Parts 262.34 (accumulation time), 264 (permit standards), 265 (interim status standards), 266 (recycle/reuse standards in combination with 261.6) and 268 (land disposal restrictions) for RCRA regulations. Review the Outline of Project, Process Flow Diagrams, and P&CD's to identify air emission sources. Refer to appropriate air regulations such as PSD, NSPS, NESHAP, and state requirements to determine emission control requirements.

7.2 Review the Outline of Project, Process Flow Diagrams, and P&CD's to identify air emission sources, or any new or modified wastewater treatment systems (both in-unit and terminal treatment). Also review all available information on wastewater discharges with the appropriate plant personnel (normally the EP Department) to deter- mine if any needed modifications/additions to wastewater treatment facilities are missing in the above documentation. Refer to appropriate air regulations such as PSD, NSPS, NESHAP, and state requirements to determine emission control requirements for air emission sources.

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		YES	NO	OTHER	
7.3	Will the project necessitate the treatment, storage, or disposal of hazardous waste, either onsite or offsite?	( )	___	( )	7.3 Review the Outline of Project and Process Flow Diagrams for refer- ences to any need for treatment, storage or disposal of hazardous waste either onsite or offsite. Also review all available informa- tion of hazardous wastes with the appropriate plant personnel (normally the EP Department) to determine if any needed modifica- tions/additions to hazardous waste management units are missing in the above documentation.
8	Plant Site Expansion				Plant Site Expansion
8.1	Are there any inactive or active waste storage, treatment or disposal facilities located on the new plot?	( )	___	( )	8.1 Check the National Priority list or state Superfund list. Consult with appropriate plant personnel (normally EP Department).
8.2	Are there on-going or past site investigations and/or remedial actions for present and past solid and hazardous waste units that pose(d) a significant threat of release of hazardous constituents to the environment?	( )	___	( )	8.2 Review the investigation reports for appropriate action.
8.3	Is there any material containing PCBs located on the new plot?	( )	___	( )	8.3 Review 40 CFR 761 for PCB regulatory requirements. Consult with a skill area involved with regulation tracking.
8.4	Are underground storage tanks located on the new plot?	( )	___	( )	8.4 If the tank handles hazardous waste, it must meet either 40 CFR 262.34 or 264 Subpart J standards. For storage of other materials, review 40 CFR 280 for applicability and compliance.
8.5	Does the new plot contain U.S. Coast Guard designated wetlands?	( )	___	( )	8.5 Wetlands may severely restrict use of the new plot. Consult with appropriate plant personnel (normally EP Department).
8.6	Are buildings or other structures containing asbestos going to be razed?	( )	___	( )	8.6 See 40 CFR 61 for regulatory requirements.

Reviewer

Date

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UNION CARBIDE CORPORATION
CAPITAL PROJECT PROPOSAL
HS&E CHECKLIST

SAFETY AND HEALTH	YES	NO	OTHER
1. General			
1.1 Will toxic, flammable, corrosive, or otherwise hazardous substances be transported, stored, processed, or produced as the result of this project.	(__)	____	(__)
1.2 Will any unusual physical hazards be present in the facility?	(__)	____	(__)
1.3 Are any substances handled that could cause an explosion if heated, contaminated, concentrated, or otherwise mishandled?	(__)	____	(__)
1.4 Is all necessary safety and health data known for each substance handled?	____	(__)	(__)
1.5 Do up-to-date Material Safety Data Sheets exist for each substance handled?	____	(__)	(__)
1.6 Will this project introduce new chemicals that are highly reactive with other chemicals already handled in the plant?	(__)	____	(__)
2. Compliance			
2.1 Will any additional safety or health programs be required under OSHA regulations?	(__)	____	(__)
2.2 Have all Department of Transportation requirements been identified for all substances that will be shipped?	____	(__)	(__)
2.3 Are there any proposed changes to safety and health regulations that could impact this new activity?	(__)	____	(__)

UNION CARBIDE CORPORATION
CAPITAL PROJECT PROPOSAL
GUIDANCE DOCUMENT FOR HS&E CHECKLIST

SAFETY AND HEALTH

General

1.1 See first page of this Guidance Document for definitions. List any substances that are considered toxic, flammable, corrosive, or otherwise hazardous. If there are other chemicals that might be considered toxic, consult an expert such as an industrial hygienist to determine if they should also be listed. Describe any special preventive measures taken to minimize employee exposure to toxic substances.

1.2 Review facility design with process engineer to identify any unusual physical hazards such as radiation, noise, heat stress, etc. and describe preventive measures taken to minimize employee exposure.

1.3 Review Definition of Technology, if available, and discuss with process engineer, process safety engineer, and/or reaction systems engineer to identify any such substances. Describe the hazards and the preventive measures taken to prevent an explosion from occurring.

1.4 Review Definition of Technology, if available, and discuss with process engineer to identify any missing data and plans to obtain it.

1.5 List any chemicals for which sheets are missing or not up-to-date and describe plans to obtain them.

1.6 Review with process engineer to identify any such chemicals. State which existing materials they could react with and what measures will be taken to prevent contamination or mixing of materials.

Compliance

2.1 Review project versus OSHA regulations to see if any new programs will be required. In particular, check OSHA 1910.95 (noise), 1910.96 (radiation), and 1910.1000 - .1047 (chemical exposures).

2.2 Work with Divisional distribution personnel to identify any substances for which DOT shipping requirements have not been completely identified. In particular, list any substances that have not been tested to determine if they fall under HM-196 and state plans for testing.

2.3 Contact person knowledgeable in impending OSHA or other regulations to identify any such proposed additions. Describe what the proposed additions are and how they may impact this facility.

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		YES	NO	OTHER
2.4	Will any of the following be required to comply with safety and health regulations:			
	a) exposure monitoring?	(__)	____	(__)
	b) engineering controls?	(__)	____	(__)
	c) personal protective equipment?	(__)	____	(__)
	d) special medical examinations or surveillance activities?	(__)	____	(__)
	e) special safety operating or maintenance procedures?	(__)	____	(__)
2.5	Will employees need supplemental training beyond normal corporate programs to assure safe operation?	(__)	____	(__)
2.6	Will any variances to UCC Safety/Health Standard Practices be required?	(__)	____	(__)
2.7	Are there any state or local regulations that supercede federal safety and health regulations?	(__)	____	(__)
2.8	Are all chemicals handled included in the Toxic Substances Control Act inventory?	____	(__)	(__)
3.	Public Impact			
3.1	Are relief device discharges controlled such that no releases to the atmosphere can occur that would have adverse impact on the public?	____	(__)	(__)
3.2	Could any process upset or other emergency situation occur in this facility (explosion, spill, etc.) that would impact on the health and safety of the public?	(__)	____	(__)
3.3	Are the existing or planned monitoring, detection, and/or alarm systems for release of toxic chemicals adequate?	____	(__)	(__)
4.	Facility Design			
4.1	Will chemicals or other hazardous materials be handled under extremes of temperature or pressure (i.e. temperatures above 400°C or pressure over 500 psi)?	(__)	____	(__)

2.4 Review project versus OSHA regulations to see if any of the listed items will be required. In particular, check OSHA 1910.95 (noise), 1910.96 (radiation), and 1910.1000 - .1047 (chemical exposures).

2.5 Review with process engineer and operating representative to determine if any special supplemental training is needed for safe operation.

2.6 Review the Safety/Health Standard Practices (Safety/Health Technology Manual, Section 5) with the process engineer to identify any variances that are required. In particular, review the layout for any deviations from SH-10. Describe any variances planned and why the standard will not be complied with.

2.7 Some states such as California have lower exposure levels for some air contaminants than OSHA. Contact an internal health technologist or appropriate state agency to determine if there are any such regulations. Describe what additional controls, monitoring, or surveillance methods may be required.

2.8 Check with the Divisional Product Safety Manager to identify any chemicals not on the TSCA inventory. State whether a Pre-Manufacture Notification (PMN) will be required.

Public Impact

3.1 Review facility design with process engineer to identify any relief device discharges that will go to the atmosphere that could have adverse impact on the public. Describe what that impact would be, and why it is judged acceptable to discharge to the atmosphere. Contact skill area for any screening dispersion calculations that may be necessary.

3.2 Review facility design with process engineer and process safety engineer to identify any such scenarios. Include possibility of transformation of released material by reaction, decomposition, or combustion and consider the effects of the products of transformation on personnel. Describe them and what preventive measures are being taken to prevent occurrence.

3.3 Review with process engineer or plant personnel to determine what exists and will be added by this project in terms of monitoring, detection, and alarm for release of toxics. Discuss with industrial hygienist to determine if it is adequate.

Facility Design

4.1 Review facility design with process engineer to identify any handling of materials at temperatures over 400°C or pressures over 500 psi and describe measures taken to protect employees.

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		YES	NO	OTHER
4.2	Will there be any potential ignition sources associated with this project?	(__)	____	(__)
4.3	Will recognized industry practices be followed in the layout of the facility?	____	(__)	(__)
4.4	Will pressure vessels and storage tanks meet all performance standards and federal, state, and local laws and regulations and will all piping, valves, safety valves, and fittings meet all recognized industry standards?	____	(__)	(__)
4.5	Will all normal project safety and health reviews be performed?	____	(__)	(__)
4.6	Has the need for any process risk studies been determined?	(__)	(__)	(__)
4.7	Would the loss of any utility create a possible hazardous situation?	(__)	____	(__)
4.8	Has the need for flammable gas detectors been determined?	(__)	(__)	(__)
4.9	For reaction systems, is any reaction sufficiently exothermic to result in a runaway reaction under any conceivable operating conditions?	(__)	____	(__)

4.2 Review facility design with process engineer to identify any potential ignition sources such as flares, fired heaters, incinerators, or hot surfaces above the autoignition temperature of materials handled. Describe preventive measures taken to prevent ignition of a release.

4.3 Review the layout to determine if it conforms to industry practices. C&P facilities should conform to UCC safety criteria (UCC Safety/Health Technology Manual Section 1, Paragraph 2.1) and Standard Practices SH-10 Safety Consideration for Occupied Buildings and SH-301 Diking Standards. State any deviations from the criteria and the reason for the deviation. Variances should be processed for deviations from UCC standard practices.

4.4 Review process design with process engineer to verify that all laws and regulations for vessels and industry standards for piping, etc., will be followed. C&P facilities should also comply with UCC criteria and standards. State any deviations and the reason for the deviations.

4.5 Includes Process S/H Review, S/H Review Board, S/H Considerations Report, and Pre-Startup S/H Review. Review Sponsors Objectives and/or Outline of Project for commitment to perform all these safety activities. If not documented, obtain commitment from Process Group Leader and state in endorsement letter. If any of these activities will be omitted, state why.

4.6 Discuss with process engineer and person knowledgeable in process risk work. If need is not readily apparent, describe plans to determine need for process risk study. If the answer is yes, describe any process risk studies that are planned or why none are needed.

4.7 Review facility design to evaluate whether loss of electric power, cooling water, steam, plant air, nitrogen, fuel gas, etc. could cause an upset that would result in a release to the atmosphere. Describe what precautions will be taken to prevent it from happening.

4.8 Review facility design with process engineer and process safety engineer to determine the need for flammable gas detectors, see criteria in UCC Safety/Health Technology Manual Section 1, Paragraph 4.16. If it can't be resolved now, describe the potential for formation of a flammable vapor cloud and plans to determine need for flammable gas detectors. If answer is yes, describe what has been decided and why.

4.9 Review reaction system design with process engineer, reaction systems engineer, and process safety engineer to evaluate the potential for a runaway reaction. Describe what conditions could cause runaway reaction, what the consequences are, and what preventive measure will be taken to prevent runaway reaction from occurring.

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		YES	NO	OTHER	
4.10	Is this a new process or does it incorporate process technology new to this plant site?	(__)	____	(__)	4.10 Describe what plans are being made to safely operate the new process or process technology and to what extent the process has been proven. State what plans are regarding preparation of a Definition of Technology report.
4.11	Are process monitoring and control devices adequate?	____	(__)	(__)	4.11 Review process monitoring and control devices on P&CDs. If not available at this time, state that they will be reviewed later.
4.12	Can the use of automation or advanced process control be increased to reduce the risks of employee exposures?	(__)	____	(__)	4.12 Review process to see if increased use of automation or advanced process control would reduce risks of employee exposures. If yes, state what increased use and to what extent it would reduce exposures.
4.13	Will water spray protection be provided for processing, storage, and distribution areas in accordance with UCC criteria?	____	(__)	(__)	4.13 Review with process engineer and determine if water spray protection will be in accordance with criteria in UCC Safety/Health Technology Manual Section I, Paragraph 4.4 and NFPA 15. Describe in what ways water spray protection will deviate from UCC criteria and why.
4.14	Are fire water supplies and distribution systems adequate to provide sufficient fire water to this facility?	____	(__)	(__)	4.14 Review with fire protection engineer. Describe inadequacies and what will be done to correct or compensate.
5.	Emergency Response				Emergency Response
5.1	Will special fire and emergency response equipment, personnel, or procedures be required for this facility?	(__)	____	(__)	5.1 Review with process engineer and appropriate fire protection engineer. List any special equipment, personnel, or procedures required.
5.2	Will this project require any changes in Community Evacuation plans?	(__)	____	(__)	5.2 Review with plant personnel to evaluate impact on Community Evacuation plans. Describe any changes required.

Reviewer

Date

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UNION CARBIDE CORPORATION
CAPITAL PROJECT PROPOSAL
HS&E CHECKLIST

		YES	NO	OTHER
PRODUCT SAFETY				
1.	**General**			
1.1	Will any of the products from this facility be marketed as a consumer product?	(__)	____	(__)
1.2	Will any of the products be used as an intermediate by UCC or others to formulate a product that will be marketed as a consumer product?	(__)	____	(__)
1.3	Are any of the products intended for use in the manufacture of food, drugs, or their packaging materials?	(__)	____	(__)
1.4	Are any of the products classified by the Food and Drug Administration as medical devices?	(__)	____	(__)
1.5	Are any of the products subject to regulation under Federal Insecticide, Fungicide, Rodenticide Act; Toxic Substances Control Act; Consumer Product Safety Commission; or Federal Food, Drug and Cosmetic Act?.	(__)	____	(__)
1.6	Are any of the products classified as toxic, explosive, corrosive, flammable, or otherwise hazardous?	(__)	____	(__)
1.7	Could any product cause damage to persons or property when used in accordance with instructions or subjected to foreseeable misuse?	(__)	____	(__)
2.	**Product Design**			
2.1	Has the product undergone a product safety risk analysis to evaluate downstream exposure/health risk potential?	(__)	(__)	(__)
2.2	Are any Premanufacturer Notifications necessary for any of the products?	(__)	____	(__)
2.3	Does any product require certification or testing by Federal, State, or local governmental agencies?	(__)	____	(__)

UNION CARBIDE CORPORATION
CAPITAL PROJECT PROPOSAL
GUIDANCE DOCUMENT FOR HS&E CHECKLIST

PRODUCT SAFETY

General

1.1 Consumer product is defined as any substance or article produced or distributed for use in or around the home or for recreational purposes. List those that are consumer products.

1.2 List the products and who will use them to formulate what consumer products.

1.3 List the products and their intended use and by whom.

1.4 List any products so classified by FDA.

1.5 List the products, which regulation they are subject to, and what must be done to comply with the regulations.

1.6 See Definition of Terms section for definition of toxic, explosive, corrosive, flammable, and hazardous. List those products that fall under each category.

1.7 Review products with process engineer and process safety engineer to identify conditions under which any of the products could be used or misused resulting in injury to persons or damage to property. Include storage at other than normal conditions, improper disposal, etc.

Product Design

2.1 Discuss with Divisional Product Safety Manager to evaluate need for product safety risk analysis. Determine if enough is known about the potential hazards of the product to conclude that it can be used safely in the proposed application. If need for risk analysis is not readily apparent, describe plans to resolve. If analysis has been done, describe the results.

2.2 State any products that are not on the Toxic Substances Control Act Inventory List and what plans are for Premanufacture Notification.

2.3 State what certifications are required for which products and describe the plans to obtain certification.

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	YES	NO	OTHER	
2.4 Does any product require testing or approval by a nationally recognized testing agency such as Underwriters Laboratory, Factory Mutual, etc.?	(__)	____	(__)	2.4 State what testing or approvals are required for which products and describe the plans to obtain them.
2.5 Have product quality and product reliability test methods been identified and included in the facility design?	____	(__)	(__)	2.5 Describe what is lacking regarding product quality and reliability testing and plans to develop test methods. Describe any unusual test methods that have been identified.
3. Distribution				**Distribution**
3.1 Will any products be distributed by common carrier?	(__)	____	(__)	3.1 State which products will be distributed by what means of common carrier (tanker, barge, rail, tank wagon, etc.).
3.2 Have all regulatory requirements for shipping the products been identified?	____	(__)	(__)	3.2 State any regulatory shipping requirements that have not been identified and what plans are for identification. In particular, list any substances that have not been tested to determine if they fall under HM-196 and state plans for testing.
3.3 Are new packaging or labeling designs required for these products?	(__)	____	(__)	3.3 State any new packaging or labeling designs that will be required.
3.4 Has all labeling and Material Safety Data Sheet data been obtained for all products?	____	(__)	(__)	3.4 State what data is missing and describe plans to obtain the missing data.
3.5 Will any hazardous products be transported or stored near or through populated areas?	(__)	____	(__)	3.5 Any of the products identified in question 1.6 are considered hazardous. Populated area includes those areas identified by the Department of Commerce as Standard Metropolitan Statistical Areas.
3.6 Will any special handling, storage, or shipping equipment or procedures be required for any of the products?	(__)	____	(__)	3.6 Describe any special equipment or procedures that are required or planned for any of the products.
4. Product Image				**Product Image**
4.1 Is there any history of product liability with any of these products or similar products?	(__)	____	(__)	4.1 Consult with Corporate Law Department to determine any related product liability history. Describe what was found.
4.2 Could any of the products be viewed by the public or regulatory agencies as presenting an unacceptable risk to health, safety or the environment?	(__)	____	(__)	4.2 Consider this question objectively based on the products intrinsic properties and subjectively based on hearsay, reputation, media, etc. Describe any safety risks that could be perceived.
4.3 Will communication with any regulatory agency be required regarding the safety of any of the products?	(__)	____	(__)	4.3 Describe any required communication with any regulatory agency for any of the products.

Reviewer

Date

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SUBJECT: HSEA Administration
Contractor On-Site

PURPOSE: To assure that contractor employees at the department's facilities comply with site rules to maintain high safety standards, to avoid injury, to avoid business interruptions, and to comply with laws and regulations.

BACKGROUND: Corporate HSEP Procedure 2.1, "On-Site Contractors."

REQUIREMENTS:

1. On-site contractors must provide written agreement that they will comply with all federal, state, and local laws and regulations and Union Carbide's site health, safety, and environmental rules; that they will use fit and skilled personnel and equipment which is safe to operate; that they will provide authorized Union Carbide representatives access to their worksites.

2. Prior to the start of work, the manager providing liason with the contractor will review the following with the contractor's personnel and insure their understanding:

   - site health, safety, and environmental rules
   - known work place hazards to which the contractor's personnel may be exposed and appropriate precautionary measures to be taken
   - site emergency and similar procedures

3. The line manager responsible for contracting will annually:

   - audit and document that the contractor's performance is in compliance with site health, safety, and environmental rules

4. Union Carbide's oversight role does not involve direct supervision, instruction or management of contractor personnel unless specifically authorized by Business Group or Department management. Best efforts are made to preserve the independence of such contractors.

SCOPE: These requirements apply to all C&P Purchasing and Distribution administered locations which employ contractors on site with the following exception: These requirements need not apply to those contractors whose work on site will not expose the contractor, their employees or Union Carbide employees to reasonably foreseeable health or safety hazards. Such contractors must nevertheless be informed of site health, safety, and environmental rules and emergency procedures.

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1.6

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SUBJECT: HSEA Administration
Off-Site Contractors for Processing and Storage

PURPOSE: To assure that appropriate health, safety, and environmental performance standards are followed in the department's contracted activities performed at locations not administered by Union Carbide.

BACKGROUND: Corporate HSEP Procedure 2.2, "Off-Site Contractors for Processing and Storage." C&P Supplement CP 2.2 S1.

REQUIREMENTS:

1. Prior to selecting a contractor:

   - The line manager responsible for contracting will evaluate a prospective contractor's ability to comply with applicable governmental and Union Carbide health, safety and environmental requirements. The evaluation will include a review of health, safety and environmental practices at the contractor's location. The evaluation must be endorsed by the departmental HSEA Manager.

2. Prior to the beginning of work:

   - The line manager responsible for contracting off-site will provide information in writing which addresses the hazards and health, safety, and environmental precautions of materials and/or processes provided by Union Carbide. Process hazards associated with the contracted activity will be identified and appropriate risk control methods determined.

   - The off-site contractor will agree in writing to:

     - Abide by applicable governmental requirements and Union Carbide precautionary practices that are unique to the contracted facility;

     - Use equipment that is safe to operate;

     - Notify Union Carbide of any process or raw material changes that may affect product or operational safety; and

     - Provide Union Carbide representatives access to the locations where they are performing the work.

3. The line manager will review and document that the contractor's performance adequately addresses the precautions by means of a pre-contract review and an annual performance evaluation. See model attached. The reviews will be conducted at the contractor's location.

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4. Under normal circumstances, Union Carbide's oversight role does not involve direct supervision, instruction or management of contractor personnel. Best efforts are made to preserve the independence of contractors.

SCOPE: These requirements apply to all C&P Purchasing and Distribution operations which engage contractors off-site.

DEFINITION: Off-site contractors for processing and storage: Any contractors who manufacture, process, package or store products for use or sale by Union Carbide and who use our technology or equipment on property not owned by Union Carbide. (Product containers are not considered equipment).

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LOCATION MANAGER REMINDER

PRE-PERFORMANCE EVALUATION INTERVIEW

Review prior performance evaluation. Note any major concerns that have not been completed from prior performance evaluation.

Does the facility have adequate liability insurance coverage?

Review any know regulatory cnanges during the past year.

Survey list of products on-site for special concerns. (teratogens, carcinogens, decomposition hazards)

Review location CAER program.

1. U/A by lead agency?

2. Are media, hospitals and civil defense included?

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UNION CARBIDE CORPORATION

C&P DISTRIBUTION

CONTRACTOR PERFORMANCE EVALUATION

Terminal _____ Date _____

Location _____

Conducted by: Contractor Representative _____

Union Carbide Representative _____

	Pre-Contract Review	Performance Evaluation
OSHA Recordable:	X	X
Injuries _____ YTD		
Illnesses _____ YTD		
Lost Workdays:		
Injuries _____ YTD		
Illnesses _____ YTD		
Total Annual Manhours _____		
Most Frequently Occurring Injury		

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	Pre-Contract Review	Performance Evaluation
Major Incidents in Past 5 Years		
Fires resulting in property damage exceeding $1,000	X	X
Material spills or losses (container overfill or leakage, line or hose rupture, etc.) over 1,000 gallons	X	X
Occupational fatality or serious injury	X	X
Cause, $ loss, and corrective actions taken to prevent recurrence of any incident noted.	X	X

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	Pre-Contract Review	Performance Evaluation
Fire Protection Facilities and Resources		
A. On-Site Facilities	X	(1)
1. Fixed system, with storage tank and fire water pumps?		
2. Monitor nozzles and spray systems?		
3. Foam generation capability?		
4. Trained fire brigade, properly equipped with periodic drills and retraining?		
5. Equipment T&I program?		
6. Deluge system(s)?	X	(1)
B. Off-Site Resources	X	(1)
1. Local fire department		
How Summoned -		
Response Time -		
2. Local Industry Mutual Assistance Program		
Plans developed and posted; personnel trained to implement all plans.	X	X

(1) Note any change since last review

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	Pre-Contract Review	Performance Evaluation
Emergency Medical Resources		
A. On-Site Resources	X	(1)
1. Dispensary with nurse in attendance		
2. Emergency Medical Technicians		
3. Ambulance		
4. Rescue Squad		
B. Off-Site Resources	X	(1)
1. Emergency Medical Technician available		
How Summoned -		
Reponse Time -		
2. Agreement with local medical facilities to handle emergency		
3. Distance to nearest hospital		
Procedure developed to obtain service and personnel trained to implement.	X	(1)

(1) Note any change since last review

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	Pre-Contract Review	Performance Evaluation
Location Safety Program		
A. Safety rules developed and posted? All personnel trained?	X	(1)
No Smoking, except in designated areas		
Restriced Area defined		
Security and visitor control provided for		
Intoxicating beverages and controlled substances prohibited		
Minimum personnel safety equipment specified		
B. Safety discipline program known to all personnel and applied fairly	X	(1)
C. Safety training program	X	X
Developed and followed		
Meetings routinely held on schedule		
Meetings frequency		
Typical topics (material hazards, regulations, off-the-job safety, incidents review, etc.)		
Documentation of meetings and attendees.		

(1) Note any change since last review

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	Pre-Contract Review	Performance Evaluation
D. Product handling training	X	X
MSDS reviewed for physical properties and hazards		
Standard Operating Procedures developed		
Documented?		
E. Training resources	X	(1)
Internal		
External		
F. Life Critical Standards Program	X	(1)
Master Tag/Lockout		
Control of Hazardous Work		
Confined Space Entry (stating controls and tests required)		
Respiratory Protective Equipment specified		
Flammable/toxic vapor cloud procedure		
Site evacuation plan		

(1) Note any change since last review

BRC 1379

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	Pre-Contract Review	Performance Evaluation
Location Health Program	X	(1)
A. Health risks identified?		
Employees notified		
Control devices or administrative procedures applied		
B. Physical stresses identified? (noise, heat, vapor exposure)		
Controls established to prevent overexposure		
C. Products of special concern identified? (carcinogens, teratogens, toxic)		
Control programs developed		
D. Toxic Substance Control Act		
Procedure developed for reporting perceived adverse health/environmental effects to UCC.		

(1) Note any change since last review

BRC 1380

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	Pre-Contract Review	Performance Evaluation
Safety and Health Accountability	X	(1)
Person assigned to develop, maintain, and administer program.		
Are all personnel involved in development and implementation of policies?		
Have personnel fully accepted program? Are they committed to maintain safety and health of fellow employees?		
Safety and Health suggestion procedure.		
Test and Insoection Program established for:	X	(1)
Fire fighting equipment		
Personnel safety devices/equipment		
Testing and monitoring devices		
Tanks, hoses, equipment		
Records maintained of T&I		

(1) Note any change since last review

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	Pre-Contract Review	Performance Evaluation
Environmental		
Regulatory agencies citations in the last 5 years (EPA, OSHA, USCG, State) -	X	X
Event or deficiency that caused the citation(s) -	X	X
Status of resolution of problem -	X	X

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	Pre-Contract Review	Performance Evaluation
Permits		
Have all necessary permits been obtained?	X	(1)
Operations	X	(1)
NPDES (waste water, storm water)	X	(1)
Emissions	X	(1)
EPA (RCRA) registration	X	(1)
Generator		
Storage		
Disposal		
Waste disposal control procedure developed?	X	(1)
Receipt of shipments documented?		
Compliance status with provisions of all permits?	X	X
Are all UCC products, proposed for handling at the location, covered by existing permits?	X	(1)

(1) Note any change since last review

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	Pre-Contract Review	Performance Evaluation
If not, can permit be amended to include same?	X	(1)
Facility changes that may be required to handle UCC products.	X	(1)
Has a spill/upset reporting procedure been developed?	X	X
Reporting to UCC		
Reporting to Regulatory Agencies		

(1) Note any change since last review

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	Pre-Contract Review	Performance Evaluation
Regulatory Update Program		
A. Procedure for monitoring regulatory agencies new proposals/regulations?	X	(1)
B. Resources for above:	X	(1)
Internal		
External		
C. Any efforts made to influence Legislation by:	X	(1)
In-house program		
Industry association		
If required, has SPCC plan been developed?	X	X
If waterfront facility, has oil pollution prevention and containment plan been approved by USCG?	X	(1)

(1) Note any change since last review

BRC 1385

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	Pre-Contract Review	Performance Evaluation
Last visit by a regulatory agency (Federal or State) - EPA, OSHA, DOT, USCG	X	X
Which agency -		
Purpose of visit (inspection for compliance, training, or procedure development) -	X	X
Results of visit -		
Has an environmental inventory been developed? (see S&CMD DSM, page E-13)	X	X
Operator's assessment of environmental concerns by:		
A. Community	X	X
B. Regulatory Agencies	X	X
Push for additional controls		
Gathering information		
Are internal HS&EP audits conducted?	X	X

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	Pre-Contract Review	Performance Evaluation
OSHA Hazard Communication Program (Employee Right-to-Know)		
Has written program been prepared and made available to employee?	X	(1)
Are MSD sheets for all products on-site and available to employees?	X	(1)
Are employees trained in:	X	(1)
Program content?		
Material(s) hazards?		
Precautionary measures for safe handling of all materials?		
Labeling system used?		
MSD sheet information?		
Training documented?		

(1) Note any change since last review

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	Pre-Contract Review	Performance Evaluation
Community Awareness and Emergency Response (CAER)		
Is there a program to provide Hazardous Products Information to community?	X	(1)
How is information disseminated:	X	(1)
Designated Lead Agency?		
Referred to Union Carbide?		
Handled on-site and records maintained?		
Has a Community Emergency Response program (communications, alarm and evacuation) been implemented?	X	(1)
Current status (developing, functioning)?		
Who is coordinating agency?		
How is community alerted?		
Who makes decision to evacuate community?		
Has program been tested?		

(1) Note any change since last review

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	Pre-Contract Review	Performance Evaluation
Community Awareness and Emergency Response (CAER)		
Is there a program to provide Hazardous Products Information to community?	X	(1)
How is information disseminated:	X	(1)
Designated Lead Agency?		
Referred to Union Carbide?		
Handled on-site and records maintained?		
Has a Community Emergency Response program (communications, alarm and evacuation) been implemented?	X	(1)
Current status (developing, functioning)?		
Who is coordinating agency?		
How is community alerted?		
Who makes decision to evacuate community?		
Has program been tested?		

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(1) Note any change since last review

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SUBJECT: HSEA Administration
BLS Reporting and Recordkeeping

PURPOSE: To establish procedures for collecting, compiling, analyzing, and reporting work injury and illness details needed for vigorous compliance with BLS recordkeeping requirements.

BACKGROUND: Occupational Safety and Health Act of 1970; 29 CFR 1904. R. D. Kennedy letter of September 22, 1986. R. L. Baldwin letter of October 3, 1986.

REQUIREMENTS: The Occupational Safety and Health Act of 1970 and 29 CFR 1904 require employers to prepare and maintain records of occupational injuries and illnesses. The Bureau of Labor Statistics (BLS) administers this recordkeeping and reporting system. C&P Distribution will rigorously comply with the BLS reporting requirements. Errors in reporting will result in embarrassment to the corporation as well as penalties.

1. RESPONSIBILITY

The location manager is responsible for assuring that work-related injuries and illnesses affecting the location's employees are appropriately recorded and reported.

2. RECORDKEEPING

Records (OSHA No. 200 log and OSHA No. 101 supplementary record) must be kept at each physical location. Records for locations which are hosted by the Department will be maintained by the Department, i.e., Clear Lake City. Records for locations where the Department is tenant will be maintained by the location's host component, i.e., City Center East's records will be kept by EM&TS.

The records will be kept at the work location. They will be retained for five calendar years following the end of the year to which they relate. If, during the five-year retention period, there is a change in the extent or outcome of an injury or illness which affects an entry on a previous year's log, the first entry will be lined out and a corrected entry made. Also, new entries will be made for previously unrecorded cases that are discovered or for cases that initially were not recorded but were found to be recordable after the end of the year in which the case occurred. Conversely, recorded cases which are later found nonrecordable should be lined out.

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3. RECORDABILITY AND CLASSIFICATION

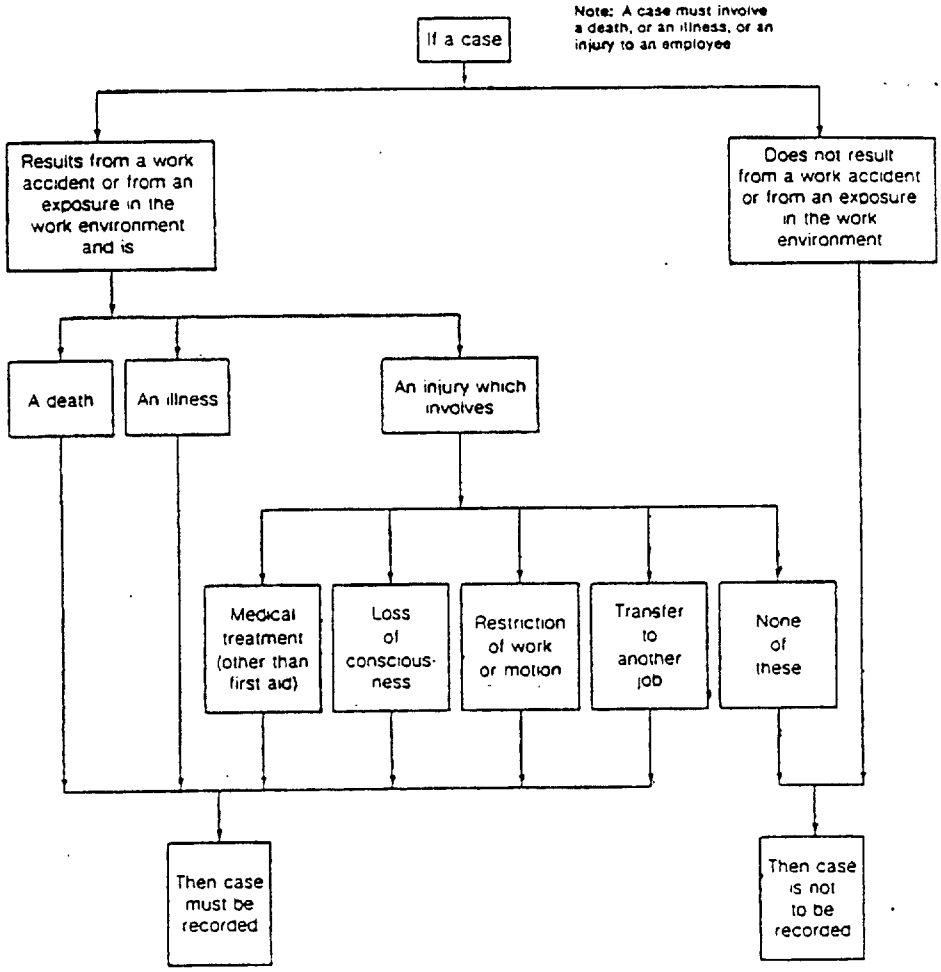
Deciding Necessity to Record

The decision-making process consists of five steps:

1. Determine whether a case occurred; that is, whether there was a death, illness, or an injury;
2. Establish that the case was work related; that it resulted from an event or exposure in the work environment;
3. Decide whether the case is an injury or an illness; and
4. If the case is an illness, record it and check the appropriate illness category on the log; or
5. If the case is an injury, decide if it is recordable based on a finding of medical treatment, loss of consciousness, restriction of work or motion, or transfer to another job.

Chart 1 presents this methodology in graphic form.

Chart 1. Guide to recordability of cases under the Occupational Safety and Health Act



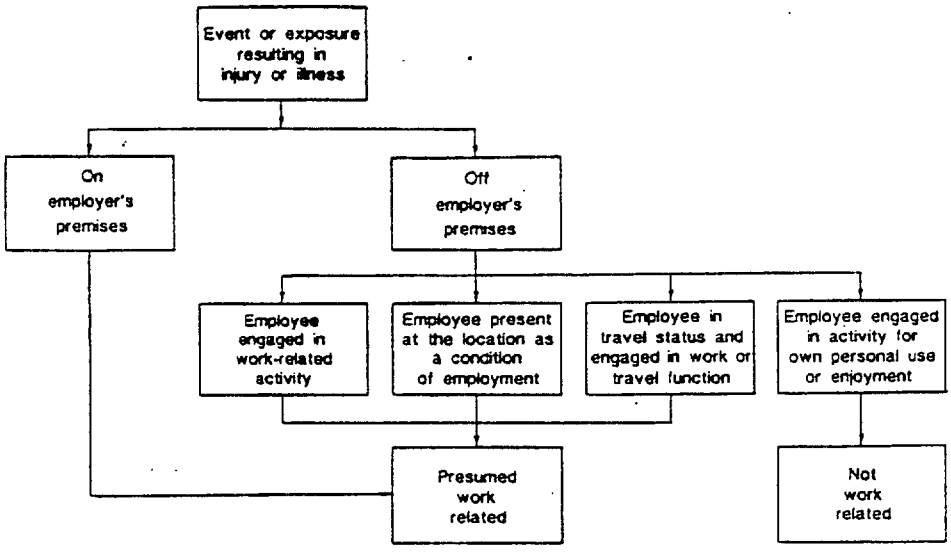
BRC 1392

RECORDABILITY AND CLASSIFICATION (Cont'd)

The first step is determining if a case occurred. A lost workday is not required. A case is defined as a work-related death, illness, or injury which involves medical treatment other than first aid, loss of consciousness, restriction of work or motion, or transfer to another job. Minor scratches, cuts, burns, splinters, etc. which do not ordinarily require medical care are not cases. Preventive medical measures are recordable with the exception of administering tetanus shots and hospitalization for observation. Also, if more than a single dose of prescription medication is prescribed, the case is recordable even if the medication was not taken. The aggravation of a previous injury as a result of a new work-related incident is recordable. The recurrence of symptoms of previous occupational illnesses should not be recorded as new cases, but adjustment of previous log entries may be required to reflect changes in extent or outcome.

The second requirement is the injury or illness must result from the work environment. The work environment is the employer's premises and other locations where employees are engaged in work-related activities, i.e., an employee in an airplane travelling on company business. The work environment does not, however, include employer-provided recreational facilities and parking lots, although they might be located on the employer's premises. Guidelines for establishing a work relationship is provided in Chart 2.

Chart 2. Guidelines for establishing work relationship



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RECORDABILITY AND CLASSIFICATION (Cont'd)

Deciding Injury or Illness

The general rule is that injuries are caused by instantaneous events. Cases resulting from other than instantaneous events are illnesses.

Occupational illnesses result from exposure to environmental factors associated with employment and can be caused by inhalation, absorption, ingestion, or direct contact. To be recordable, occupational illnesses must be diagnosed but not necessarily by medically-trained personnel. Some illnesses like contact dermatitis can be self diagnosed by the employee.

Obviously, recordability and classification involve numerous gray areas. It is necessary that the departmental HSEA Manager be consulted to help interpret situations which are unclear or ambivalent.

Evaluation

Recordable cases are categorized as fatalities, lost workday cases or cases without lost workdays. Fatalities must be recorded regardless of the time which may have passed between the injury or onset of illness and death.

Lost workday cases occur when there is absence from work for treatment/recuperation or restricted work activity, or both. Injuries or illnesses are not considered lost workday cases unless they affect the employee beyond the day of the injury or onset of illness. The recorded number of lost workdays are those an employee would have worked but could not, i.e., do not count weekends, holidays, vacation days; also do not count the day of injury or illness onset.

Reporting

Entries must be posted to the OSHA 200 log and the OSHA 101 form completed within six working days after receipt of information that a recordable case occurred.

Accidents resulting in one or more fatalities or the hospitalization of five or more employees must be reported to the nearest office of the OSHA Area Director within 48 hours of occurrence or within 48 hours after occurrence of the fatality.

Recordable cases should be reported to C&P Distribution's Manager of Health, Safety and Environmental Affairs or, in his absence, to the Director of Distribution Safety by the next working day after occurrence.

The HSEA Manager will bring the case to the attention of the Purchasing and Distribution Management Team which will review the incident and assure it is recorded and reported properly. The HSEA Manager will also assure the case is recorded in the monthly UCC Report of On-the-Job Injuries and Property Loss and UCC Report of Occupational Illnesses.

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RECORDABILITY AND CLASSIFICATION (Cont'd)

Posting and Access

From February 1 to March 1, each location must post an OSHA log 200 giving location identification and yearly totals certified by the person responsible for the annual summary totals. Locations having no injuries or illnesses during the year must post the form with zeros on the total line.

Upon request, the OSHA 200 will be made available to any employee, former employee, or their representative for examination and copying. Access will be available for locations where the employee is or has been employed and covers all logs required to be retained.

SCOPE: This procedure applies to all C&P Purchasing and Distribution locations where UCC employees work. City Center East, Clear Lake City, Danbury, Torrance, Carteret, San Ramon, South Charleston.

BRC 1395

Bureau of Labor Statistics
Supplementary Record of
Occupational Injuries and Illnesses

U.S. Department of Labor

This form is required by Public Law 91-596 and must be kept in the establishment for 5 years. Failure to maintain can result in the issuance of citations and assessment of penalties.	Case or File No.	Form Approved O.M.B. No. 1220-0029

Employer

1. Name

2. Mail address *(No. and street, city or town, State, and zip code)*

3. Location, if different from mail address

Injured or Ill Employee

4. Name *(First, middle, and last)* | Social Security No.

5. Home address *(No. and street, city or town, State, and zip code)*

6. Age | 7. Sex: *(Check one)* Male ☐ Female ☐

8. Occupation *(Enter regular job title, not the specific activity he was performing at time of injury.)*

9. Department *(Enter name of department or division in which the injured person is regularly employed, even though he may have been temporarily working in another department at the time of injury.)*

The Accident or Exposure to Occupational Illness

If accident or exposure occurred on employer's premises, give address of plant or establishment in which it occurred. Do not indicate department or division within the plant or establishment. If accident occurred outside employer's premises at an identifiable address, give that address. If it occurred on a public highway or at any other place which cannot be identified by number and street, please provide place references locating the place of injury as accurately as possible.

10. Place of accident or exposure *(No. and street, city or town, State, and zip code)*

11. Was place of accident or exposure on employer's premises? Yes ☐ No ☐

12. What was the employee doing when injured? *(Be specific. If he was using tools or equipment or handling material, name them and tell what he was doing with them.)*

13. How did the accident occur? *(Describe fully the events which resulted in the injury or occupational illness. Tell what happened and how it happened. Name any objects or substances involved and tell how they were involved. Give full details on all factors which led or contributed to the accident. Use separate sheet for additional space.)*

Occupational Injury or Occupational Illness

14. Describe the injury or illness in detail and indicate the part of body affected. *(E.g., amputation of right index finger at second joint; fracture of ribs; lead poisoning; dermatitis of left hand, etc.)*

15. Name the object or substance which directly injured the employee. *(For example, the machine or thing he struck against or which struck him; the vapor or poison he inhaled or swallowed; the chemical or radiation which irritated his skin; or in cases of strains, hernias, etc., the thing he was lifting, pulling, etc.)*

16. Date of injury or initial diagnosis of occupational illness | 17. Did employee die? *(Check one)* Yes ☐ No ☐

Other

18. Name and address of physician

19. If hospitalized, name and address of hospital

Date of report	Prepared by	Official position

OSHA No. 101 (Feb. 1981)

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Bureau of Labor Statistics
Log and Summary of Occupational
Injuries and Illnesses

NOTE: This form is required by Public Law 91-596 and must be kept in the establishment for *5 years*. Failure to maintain and post can result in the issuance of citations and assessment of penalties. *(See posting requirements on the other side of form.)*

RECORDABLE CASES: You are required to record information about every occupational death; every nonfatal occupational illness; and those nonfatal occupational injuries which involve one or more of the following: loss of consciousness, restriction of work or motion, transfer to another job, or medical treatment (other than first aid). *(See definitions on the other side of form.)*

Company N
Establishme
Establishme

Case or File Number	Date of Injury or Onset of Illness	Employee's Name	Occupation	Department	Description of Injury or Illness	Extent of a Fatalities
Enter a nonduplicating number which will facilitate comparisons with supplementary records.	Enter Mo./day.	Enter first name or initial, middle initial, last name.	Enter regular job title, not activity employee was performing when injured or at onset of illness. In the absence of a formal title, enter a brief description of the employee's duties.	Enter department in which the employee is regularly employed or a description of normal workplace to which employee is assigned, even though temporarily working in another department at the time of injury or illness.	Enter a brief description of the injury or illness and indicate the part or parts of body affected. Typical entries for this column might be: Amputation of 1st joint right forefinger; Strain of lower back; Contact dermatitis on both hands; Electrocution—body.	Injury Related Enter DATE of death. Mo./dev/Yr (1)
(A)	(B)	(C)	(D)	(E)	(F)	
					PREVIOUS PAGE TOTALS →	
					TOTALS (Instructions on other side of form.) →	

FOLD

Certif

OSHA No. 200

OSHA

BRC 1397

S. Department of Labor

For Calendar Year 19 _____ Page ____ of ____

Form Approved
O.M.B. No. 1220-0029

ame

ddress

tcome of INJURY					Type, Extent of, and Outcome of ILLNESS													
nfatal Injuries					Type of Illness								Fatalities	Nonfatal Illnesses				
uries With Lost Workdays				Injuries Without Lost Workdays	CHECK Only One Column for Each Illness *(See other side of form for terminations or permanent transfers.)*								Illness Related	Illnesses With Lost Workdays				Illnesses Without Lost Workdays
ar a ECK njury ives s away m rs, or s of tricted rk tivity, both.	Enter a CHECK if injury involves days away from work.	Enter number of DAYS away from work.	Enter number of DAYS of restricted work activity.	Enter a CHECK if no entry was made in columns 1 or 2 but the injury is recordable as defined above.	Occupational skin diseases or disorders	Dust diseases of the lungs	Respiratory conditions due to toxic agents	Poisoning (systemic effects of toxic materials)	Disorders due to physical agents	Disorders associated with repeated trauma	All other occupational illnesses		Enter DATE of death. Mo./day/yr.	Enter a CHECK if illness involves days away from work, or days of restricted work activity, or both.	Enter a CHECK if illness involves days away from work.	Enter number of DAYS away from work.	Enter number of DAYS of restricted work activity.	Enter a CHECK if no entry was made in columns 8 or 9.
	(3)	(4)	(5)	(6)	(7)								(8)	(9)	(10)	(11)	(12)	(13)
					(a)	(b)	(c)	(d)	(e)	(f)	(g)							

ct Annual Summary Totals By _____ Title _____ Date _____

00 POST ONLY THIS PORTION OF THE LAST PAGE NO LATER THAN FEBRUARY 1.

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SUBJECT: HSEA Administration
Internal Reporting of Accidents, Incidents, Losses

PURPOSE: To establish a system for compliance with corporate, business group, and departmental reporting requirements.

BACKGROUND: Corporate Health, Safety and Environmental Procedure 2.7, "General Health, Safety and Environmental Requirements." Corporate Administrative/Policies and Procedure No. 3.4, "Emergencies: Internal Communications." Chemicals and Plastics Supplement CP 2.7, "Incident Reporting Procedure."

REQUIREMENTS:

1. Emergency Reporting

Immediate Reporting - Day or Night

Corporate Administrative Policy No. 3.4 requires that "all incidents which have a substantial and broad impact on the activities of the Corporation or its reputation or which are likely to result in statewide or national publicity or could require prompt action by corporate management must be reported immediately to corporate management through corporate security." Specific emergencies which must be immediately reported (subjected to the conditions noted) are listed below, but the above guideline should be used to judge whether emergencies, other than those listed, also require immediate reporting.

A. Releases of toxic or hazardous substances;

B. Fires, explosions or other accidents;

C. Governmental investigations, information requests or enforcement actions;

D. Private actions or claims against the Corporation, its officers or employees;

E. Deviations from corporate policies or governmental requirements by senior or middle level management; or

F. Events deemed to be significant by senior management or the Community and Employee Health, Safety & Environmental Protection Department.

Immediate reporting is necessary when these events have resulted in or present a significant and realistic risk of resulting in the conditions noted on the following page:

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- death, serious injury or serious adverse health effects on employees or the public;
- property damage of $1,000,000 or more;
- governmental investigations or enforcement actions seeking a substantial limitation on a facility's operation or to impose fines or penalties of $100,000 or more;
- significant criminal actions being brought against the Corporation, its officers or employees; or
- substantial media coverage.

G. In addition, an Imminent Safety Concern and the action taken to eliminate it are subject to immediate reporting. An Imminent Safety Concern (risk) is a situation in which there is a possibility, that is greater than remote, of (1) serious injury to personnel inside or outside a facility or (2) a release outside of plant boundaries of toxic substance in a quantity that poses the potential of serious injury.

NOTE: Significant Events and Spills/Releases are after the fact. The Imminent Safety Concern is prior to an event occurring.

Reporting Within 24 Hours

H. Incidents, other than the preceding, that impact the community.

I. Transportation incidents which result in a spill of 1000 gallons or more.

J. Incidents resulting in local publicity.

K. Serious work related employee injury resulting from any cause.

L. Death, serious injury, or serious adverse health effects on any contract employee or contractor employee involved with UCC&P products.

The sequence for emergency reporting is shown on the following page.

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Emergency Reporting Responsibilities

Location of Emergency	Who Notifies	Whom to Notify
Terminal or Warehouse	Terminal/Warehouse Facility Manager	HS&EA Manager and Director of Operations
Waterborne - Domestic	Marine Management	HS&EA Manager and Director of Operations
Waterborne - Export	Ocean Transportation Purchasing or Export Operations Manager	HS&EA Manager and Director of Transportation and Purchasing Services
Office	Location Manager	HS&EA Manager
Transportation	HELP Manager	HS&EA Manager, Divisional Contact, and Regional Transportation Manager

---

HS&EA Manager Will Notify:	For Emergency Types:
C&P Purchasing and Distribution Vice President	All
C&P Group President anc Vice President	A, B, C, D, E, F, G
C&P HS&EA	All
C&P Law Department	A, B, C, D, E, F, G, I, L
Corporate Insurance Department	B
Corporate Security	All

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2. Reporting As Soon As Practical

Occurrence	Procedure
Recordable Injuries and Illnesses (BLS Definition), Including Lost Workday Cases.	Location manager or location Safety Coordinator notifies line management and the department Safety/Health Manager by the next working day and follows up with a written Preliminary Accident/ Illness Report within one week.
Off-the-job Disabling Injuries (Any off-the-job injury that results in one or more days away from work, deaths included).	Location manager or location Safety Coordinator notifies the department Safety/Health Manger as soon as practical but not later than the 5th workday of the following month.
Government Inspections	Location manager reports following information to line management and the department HS&EA Manager as soon as practical and no later than 3 workdays after the start of the inspection: Inspection agency Date of inspection and duration Reason for inspection Number of inspectors Violations found Citations expected Actions planned The HS&EA Manager reports the inspection to the C&P HS&EA.
Agency Fines/Citations/Notice of Violations/Administrative Orders	Location manager reports to line management and the department HS&EA Manager as soon as practical and no later than three workdays after the event. The HS&EA Manager reports the event to C&P HS&EA and the Law Department.

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2. Reporting As Soon As Practical (Cont'd)

Occurrence	Procedure
Spills and releases not reported as per Emergency Reporting Procedure but meeting the following criteria: 1. Was reported to a Govt. agency as required by law. 2. Worker (UCC or Contr.) Rec. Inj. or Ill. associated with release. 3. Community impact-reported or awareness. 4. Publicity resulted or is anticipated. 5. Release of 5000 lbs. or more of process material, waste, or proc.	Location Manager notifies the department HS&EA Manager within 24 hrs. The HS&EA Manager sends an Environmental Incident/Spill Report to C&P HS&EA.
Access to Medical and/or Exposure Records	Location manager reports to line management and the department HS&EA Manager as soon as practical but not later than three working days. The HS&EA Manager will notify C&P HSEA.
Fire or explosion:	
1. If estimated loss is $1,000,000 or more.	See Emergency Reporting Procedure
2. If estimated loss is less than $1,000,000.	Location manager reports no later than the first working day following the occurrence to the Corporate Insurance Department, line management, and the department HS&EA manager.

SCOPE: These requirements apply to all C&P Purchasing and Distribution operations and offices.

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Telephone Numbers

	Office	Home
Terminal, Warehouse Facility Management		
R. L. Armitage	(203) 794-7098	(203) 775-4594
Alt: J. F. Sullivan	(201) 541-5176	(201) 247-1691
C. M. Prince	(213) 371-5522	(714) 848-0843
Marine Management		
M. E. Bright	(304) 747-7406	(304) 776-3175
Alt: P. A. Hart	(304) 747-7524	(304) 727-5266
HELP Operator - Domestic Calls	(800) UCC-HELP	
HELP Operator - Non-U.S. Calls	(304) 744-3487	
HS&EA Manager:		
J. B. Evans	(203) 794-7049	(203) 355-1844
Alt: B. H. Thomas	(304) 747-7608	(304) 727-8293
R. L. Baldwin	(203) 794-7081	(203) 775-0275
Director of Operations		
B. H. Thomas	(304) 747-7608	(304) 727-8293
Transportation Management		
W. N. Sanservino	(203) 794-5390	(203) 778-2649
Alt: K. L. Howard	(304) 747-7345	(304) 344-0319
K. V. Vander Schaff	(713) 344-3530	(713) 280-8733
C&P Purchasing and Distribution Vice President:		
R. L. Baldwin	(203) 794-7081	(203) 775-0275
C&P Group Vice President		
N. L. Zutty	(203) 794-2560	(203) 972-0326 or (508) 693-8926
C&P Group President		
H. W. Lichtenberger	(203) 794-2554	(203) 438-5738
C&P HSEA		
R. G. Link	(203) 794-2546	(203) 431-4072
Alt: R. Van Mynen	(203) 794-5252	(203) 438-0745
C&P Law Department		
S. J. Murray	(203) 794-6288	(203) 222-0830
Alt: B. D. Fitzgerald	(203) 794-5023	(203) 966-4838
UCC Insurance Department		
F. W. Ingham	(203) 794-7272	(203) 791-9877
Alt: K. C. Dougherty	(203) 794-7283	(203) 354-5599
UCC Security, Danbury	(203) 794-3400 or 3310 (24 hr. hot line)	

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Loose

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BRC 1408

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SUBJECT: HSEA Administration
Accident/Incident Investigations

PURPOSE: To identify causes of job related accidents, illnesses, incidents and to take measures to prevent their recurrence. To increase awareness to hazards both on and off-the-job and direct attention to accident prevention in general.

BACKGROUND: Corporate HSEP Procedure 3.1, "Personnel Safety."

REQUIREMENTS:

1. JOB RELATED ACCIDENTS AND ILLNESSES

   a. Location Managers shall assure that procedures exist to investigate job related accidents, illnesses and incidents, develop and implement corrective actions and report findings in accordance with Safety Standard SH 107, attached.

   b. Accident/Incident/Illness investigation reports are to be issued within one week after the occurrence or earlier depending on the severity. Reports will be endorsed by the Location Manager and forwarded to the Director responsible for the operation, management levels between the Director and the Location Manager, the Departmental HSEA Manager, and others as appropriate.

2. OFF-THE-JOB ACCIDENTS

   a. Each location will develop and conduct prevention and awareness programs aimed at reducing the frequency of off-the-job accidents. Each location will appoint a Safety Coordinator to manage the programs.

   b. The Departmental HSEA Manager will maintain records of off-the-job disabling accidents and will assure records are routinely analyzed to determine the most serious and frequent causes.

SCOPE: These requirements apply to all locations administered by C&P Purchasing and Distribution.

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ACCIDENT/INCIDENT INVESTIGATION AND COMMUNICATION PROCEDURE

1 PURPOSE

1.1 To provide minimum requirements for developing an Accident/Incident Investigation and Communication Procedure.

2 GENERAL

2.1 To provide a program that identifies causes of accidents/incidents so that similar occurrences can be avoided. To direct attention to accident/incident prevention in general, and to maintain awareness by all personnel of occurrences at the Location and significant events throughout the Divisions.

2.1.1 Definitions

2.1.1.1 Accident - Any undesired and unplanned event that results in harm to a person and/or damage to property or the environment.

2.1.1.2 Incident - Any undesired event that under different circumstances could have resulted in, or may result in an accident.

2.1.2 Standards

2.1.2.1 A standard format and procedure exists for personnel to report accidents/incidents.

2.1.2.2 A procedure exists to investigate and document all accidents that involve or result in as well as incidents that could involve or result in:

1. Recordable injury or illness.
2. Injury or overexposure to chemical or physical agents as requested by the Safety/Health Department or line management.
3. Performance errors of significant loss or injury potential.
4. Spills or releases.
5. Fire or explosion.
6. Failure to follow established safe work procedures.
7. Equipment damage and premature failures.

2.1.2.3 Reports of accident/incident investigations shall describe the event, and identify causative factors, corrective actions to be taken, persons responsible for actions, and target dates for completion.

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2.1.2.4 All accident/incident investigation reports are reviewed by management of the line function(s) involved for U/A of action(s) or instructions for further investigation.

2.1.2.5 Completed investigation reports are routed to involve functional groups for communication to Location personnel.

2.1.2.6 Recordable injury or illness reports, critical-few accident and significant incident reports, and reports of significant interest are routed to the accountable Host Division Safety/Health Manager for review and possible further distribution to other Divisions. Criteria for identification of critical-few accident and significant incident reports include, but are not limited to, the following:

1. Flammable Vapor Release - Release of flammable or combustible material in excess of one hundred pounds at a temperature above its ambient boiling point. However, safety valve or vent valve discharges of less than 1000 pounds not entering an area where the occasional presence of personnel could result in serious injury, need not be reported.

2. Flammable or Combustible Spill - Release of flammable or combustible material in excess of five hundred pounds at a temperature above its flash point to an area of potential ignition sources.

3. Toxic Release - Release of toxic materials which are capable of causing significant respiratory discomfort, exceed UCC or regulatory personnel exposure limits, or are detectable outside the plant boundaries by odor, color, or haze.

4. Fire or Explosion - Ignition of flammable or combustible material where the resultant property damage amounts to $5,000 or more, or the bursting of a container as a result of internal pressure beyond confinement capacity.

5. Product Mix-Up Product or raw material contamination having a potential of causing a hazardous spill or release, fire, explosion, or runaway reaction.

6. Runaway Reaction - Release of reactor contents through relief device, quenching the contents of reactor to prevent an overpressure or overtemperature, or malfunction requiring abnormal procedures to complete, initiate, or halt a reaction.

3 REFERENCE

3.1 Corporate Health, Safety and Environmental Protection Procedure Manual, 3.1 Personnel Safety

Original Date: September 1975 (SF-107)
Revision Dates: April 1981 (SH-107)
February 1988

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22.5.1.2

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BRC 1412

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SUBJECT: HSEA Administration
Acquisition Review

PURPOSE: To assure that acquisitions proposed by the department are reviewed to identify health, safety and environmental hazards and that potential risks and/or liabilities are evaluated.

BACKGROUND: Corporate HSEP Procedure 2.4, "Acquisition Review." C&P HSEA Supplement CP 2.4, "Acquisition Review."

REQUIREMENTS:

1. Review Criteria

The sponsor of a proposed acquisition will assure that the acquisition has been reviewed by qualified personnel to identify health, safety or environmental hazards and to evaluate potential risks and/or liabilities associated with:

- o Episodic incidents;
- o Chronic adverse effects on employees, customers, the local community or the environment; and
- o Non-compliance with governmental and internal requirements.

Corrective actions and control measures identified by the review are included as conditions placed on the acquisition.

2. Review Documentation

The sponsor of the proposed acquisition will assure the review is documented and includes:

- o Title and description of the acquisition
- o Review findings and conclusions, including:
  - assessment of episodic risk potential
  - assessment of potential adverse effects on employees, customers, the local community or the environment
  - projected potential liabilities
  - assessment of compliance with governmental and internal requirements and
  - appropriate corrective actions and control measures
- o Name and location of the person primarily responsible for performing the review and
- o Recommendations and terms of endorsement, including conditions placed on the acquisition.

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3. Endorsement

Proposed acquisitions which have been reviewed and documented as per paragraphs 1 and 2 above must be endorsed by the Vice President of C&P Purchasing and Distribution, by C&P HSEA, and by Corporate HSEP.

Requests for endorsement by C&P HSEA must be submitted at least 10 working days prior to the date Corporate HSEP endorsement is required and must include:

1. A recommendation letter from the departmental HS&EA Manager which meets the Review Documentation requirements in paragraph 2 above.

2. Completed facility acquisition summary checklists as applicable: Air Pollution, Water Pollution and Spills Prevention, Hazardous Waste, Occupational Safety and Health, Process Safety and Accident Prevention, and Product Safety. (The checklists are completed by technologists in the EM&TS Health, Safety and Environmental Group).

Requests for endorsement by Corporate HSEP must be submitted at least five business days prior to the date endorsement is required and must include:

1. A recommendation letter from C&P HSEA stating any conditions placed on the acquisition.

2. The Review Documentation as per paragraph 2.

3. Approval by the Vice President of C&P Purchasing and Distribution.

SCOPE: This procedure applies to acquisitions, including long-term leases, proposed by the C&P Purchasing and Distribution Department. The procedure does not apply to leases of public storage facilities.

DEFINITION: Acquisition: A business unit or real estate obtained by any means (direct asset purchase, share purchase, lease, property trade, stock exchange, joint venture, legal settlement, etc.) A business unit includes all or part of a business (process technology, product technology, facilities, etc.).

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SUBJECT: HSEA Administration
Divestiture Review

PURPOSE: To assure that the department's divestitures are reviewed for health, safety and environmental liabilities prior to execution of a definitive sales agreement.

BACKGROUND: Corporate HSEP Procedure 2.5, "Divestiture Review." C&P HSEA Supplement CP 2.5, "Divestiture Review."

REQUIREMENTS:

1. Review Criteria

The sponsor of an anticipated divestiture will assure that the divestiture has been reviewed by qualified personnel to document compliance and evaluate known health, safety and environmental liabilities associated with:

- o Pre-divestiture non-compliance with governmental requirements
- o Chronic adverse effects on employees, customers, the local community or the environment resulting from pre-divestiture operations and
- o Impact of new ownership.

2. Review Documentation

The sponsor of the divestiture will assure the review is documented and includes:

- o Title and description of the divestiture
- o Review findings and conclusions
- o Name and location of the person primarily responsible for performing the review and
- o Recommendations and terms of endorsement, including conditions placed on the divestiture. The recommendations will be developed using the attached checklist as a guide.

3. Endorsement

Divestitures which have been reviewed and documented as per paragraphs 1 and 2 must be endorsed by the Vice President of C&P Purchasing and Distribution, by C&P HSEA, and by Corporate HSEP.

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Requests for endorsement by C&P HSEA must be submitted at least ten working days prior to the date Corporate HSEP endorsement is required and must include:

1. A recommendation letter from the departmental HSEA Manager which meets the Review Documentation requirements in paragraph 2 above.

Requests for endorsement by Corporate HSEP must be submitted at least five business days prior to the date endorsement is required and must include:

1. A recommendation letter from C&P HSEA stating any conditions placed on the divestiture.

2. The Review Documentation as per paragraph 2.

3. Approval by the Vice President of C&P Purchasing and Distribution.

SCOPE: This procedure applies to divestitures, including termination of long-term leases, proposed by the C&P Purchasing and Distribution Department. The procedure does not apply to termination of leases of public storage facilities.

DEFINITION: Divestiture: The sale or transfer of a business unit or real estate by any means (direct sale, lease, property trade, stock exchange, joint venture, legal settlement, etc.) A business unit includes all or part of a business (process and/or product technology other than licensing agreements, integrated facilities, etc.).

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DIVESTITURE CHECKLIST

PHS 2/9/88

ENVIRONMENTAL INFORMATION

1. Permits, licenses, etc. and applications, including RCRA ID# and preliminary notification under Section 3010 of RCRA.

2. Current waste treatment disposal contracts (including recycling).

3. Locations of all past and current off-site waste disposal facilities (including treatment and recycling):
   Indicate materials sent
   Indicate time frame
   Indicate method of treatment, storage, disposal

4. Locations of all active, inactive and closed on-site facilities used to treat, store and dispose of waste, including recycling - not limited to RCRA interim status or permitted facilities:
   Indicate materials sent
   Indicate time frame
   Indicate method of treatment, storage, disposal

5. NOV's, administrative orders, claims, court actions initiated by governmental agencies or citizens related to environmental matters, including suits alleging personal or property damages resulting from releases of chemicals from plants and notices of exceedances or noncompliances with permits submitted to governmental agencies - pending and last five years.

6. Copies of all CERCLA 103(c) reports, and copies of reports to NRC and/or to state and local government agencies on releases of hazardous substances or extremely hazardous substances for last five years, including annual continuous release reports.

7. Copies of information requests from EPA or States and responses regarding hazardous waste sites under CERCLA or comparable state laws.

8. Copies of complaints (or logs of complaints) from employees or local citizens regarding environmental matters, including releases of pollutants and contaminants.

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9. Copies of HS&EP, division and plant audits and action plans - last five years.

10. List providing age, location, construction material, material stored and capacity of underground storage tanks (UST's), including inactive and removed tanks. Copies of any integrity testing and information, if known, on leaks. Copies of any notification forms on UST's submitted to states under Subtitle I of RCRA or comparable state laws.

11. If applicable, copy of all notices pursuant to 302 of Title III of SARA to State Emergency Planning Commission(s) reporting that plant(s) is(are) subject to requirements of Subtitle A (Emergency Planning and Notification).

12. Copies of reports on testing of soil or groundwater at plant(s).

13. List of all PCB and PCB-contaminated electrical equipment of plant(s).

14. Copy of Toxic Chemical Release Inventory Form under 313 of SARA.

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HEALTH AND SAFETY INFORMATION

1. Material Safety Data Sheets.
2. Product labels.
3. Internal health and safety audits - last five years.
4. A summary of epidemiological data related to the divested business - last five years.
5. A summary of toxicological studies.
6. Industrial hygiene surveys - last five years.
7. A summary of personnel safety statistics - last five years.
8. All annual summaries of worker compensation liabilities - last five years.
9. A history of TSCA and OSHA actions - last five years.
10. TSCA 8(c) allegations and TSCA 8(d) and 8(e) reports.

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2.1

BRC 1422

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SUBJECT: Safety and Loss Control Program

PURPOSE: To establish minimum levels of performance within the Department to maintain a safety management system directed toward minimizing personnel injury and monetary loss due to accidents.

BACKGROUND: Corporate HSEP Procedure 3.1, "Personnel Safety."

REQUIREMENTS:

1. Organization and Commitment

   a. All levels of management demonstrate their concern and support for safety by involvement and actions that are visible to employees.

   b. Safety responsibilities and accountabilities are documented, understood, and accepted by all levels of line management, functional groups and contractors who affect safety performance.

   c. Adequate resources are assigned to develop and implement safety programs.

   d. Personnel participate, understand, and accept responsibility in development and implementation of safety programs.

   e. Safety is emphasized as being part of the total job.

2. Personnel Hiring and Selection

   a. A program of pre-employment and periodic physical examinations is administered.

   b. A job physical capability analysis exists when required and is utilized in pre-employment and job transfer stages.

3. Procedures to Insure Safety in Operations

   a. Written life critical safety procedures include:

      1. Hazardous Work Permit
      2. Industrial Elevated Work
      3. Lock Out and Tag
      4. Electrical Safety
      5. Electric Hot Work
      6. Confined Space Entry
      7. Pre-Start-up Review for Significant Process Changes
      8. Pre-use Review for New Chemicals Being Introduced to the Site
      9. Motor Vehicles
      10. Personal Protective Equipment Requirements

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REQUIREMENTS (Cont'd):

b. Emergency Procedures exist for:

1. Emergency/Disaster Communications
2. Fire/Explosions
3. General Utility Failure
4. Bomb Threats
5. Medical/Rescue Emergency
6. Spills of Hazardous Materials
7. Toxic Gas Release/Flammable Vapor Cloud

c. Operational Safety Standards exist for process hazards with serious injury or major property loss potential. These standards include:

1. Administrative Requirements
2. Operating Parameter Limits
3. Critical Controls
4. Operating Restrictions
5. Special Materials
6. Special Procedures
7. Special Test/Inspection Requirements
8. Equipment Information

d. Standard Procedures exist for process, maintenance, distribution, material handling and related activities which have hazard potential.

e. A location variance procedure exists for prompt but deliberate review of circumstance when compliance with Critical Procedures or Operational Safety Standards cannot be accomplished.

f. All procedures are reviewed on a regular basis and are updated as required.

4. Training

a. Training accountabilities and responsibilities are defined and understood.

b. Critical knowledge/skill requirements are defined for each job position.

c. A training program exists and provides an opportunity for all personnel to receive required training. The program includes a feedback system to measure the quality and effectiveness of the training.

1. Controls exist to ensure that a knowledge/skill inventory is conducted for new personnel and transferred personnel, and any deficiencies are corrected before work without close supervision is expected.

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REQUIREMENTS (Cont'd):

2. Training records exist for personnel engaged in activities which have hazard potential indicating the knowledge/skill requirements of their job and the current training status.

3. Records are monitored on an established schedule to ensure that required training and reviews are being conducted.

d. Knowledge/skill deficiencies identified in accident/incident reports are analyzed and used to improve training program effectiveness.

5. Communication

a. The location Safety and Loss Control Program is effectively communicated to appropriate personnel.

b. Open two-way safety communication exists at all job levels.

c. An accident/incident reporting procedure is established and complied with.

6. Facilities/Equipment

a. Designs meet all Engineering Standards adopted by the Department and conform to governmental regulations.

b. New facilities and/or significant changes to existing facilities requiring Capital Budget Proposal or Working Budget authorizations are reviewed and approved for safety, health, and environmental considerations at the appropriate management levels.

c. Rearrangements or changes to existing facilities using Minor Property or expense funds are reviewed and approved for safety, health, and environmental considerations by the location manager and others as necessary.

d. A Test and Inspection program exists for:

1. Process Equipment, including

Process vessels
Tanks
Pressure relief devices
Vacuum breakers
Overspeed trip devices

2. Fire Protection Equipment, including

Alarm systems
Sprinklers
Extinguishers
Hoses
Hydrants
Emergency vehicles

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REQUIREMENTS (Cont'd):

3. Personal Protective Equipment, including

   Breathing air
   Respiratory equipment
   Harnesses
   Lanyards
   Safety showers
   Eyewash fountains
   Oxygen analyzers
   Explosimeters
   Portable ladders

4. Mechanical/Electrical Equipment, including

   Vehicles
   Lifting devices
   Electrical protective equipment
   Emergency lighting

5. Pressure vessels and piping are tested following major repairs or alterations to ensure the integrity of the repairs before returning the equipment to service.

7. Off-the-Job

a. Off-the-Job disabling accidents that result in lost workdays are investigated, recorded, and reported to the Departmental HS&EA Manager.

b. Safety experience is analyzed and programs are implemented to help prevent the major causes of the Off-the-Job accidents.

8. Control

a. All accidents and potentially serious incidents are investigated.

b. Safety statistics are compiled and analyzed to identify program/implementation deficiencies requiring management attention.

c. Safety inspections and planned job observations are made on a regular basis.

d. Safety audits are conducted on an established schedule.

   1. Audit procedures are defined in writing.

   2. Deficiencies are addressed by accountable line managers through action plans and timetables for completion.

e. Appropriate corrective action is taken for all known violations of established safety rules. Corrective discipline is used as required to maintain safe working practices and conditions.

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REQUIREMENTS (Cont'd):

9. Performance Appraisal

Safety performance of individual managers and supervisors is evaluated against agreed-upon Measures of Performance.

SCOPE: These requirements apply to all locations administered by C&P Purchasing and Distribution. As used in this procedure, the term "personnel" includes employees and on-site contractors.

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2.2

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SUBJECT: Safety and Loss Control Program
Safety Management

PURPOSE: To establish management accountabilities necessary for administration of an effective safety and loss control program.

BACKGROUND: Corporate HSEP Procedure 1.0, "Health, Safety and Environmental Management Systems."

REQUIREMENTS:

Line management is responsible for programs and activities in their function required to meet objectives for safety performance, guided by the Department's procedures and practices. These responsibilities include:

- Development and implementation of a Safety and Loss Control Program meeting the requirements of Section 2 of the C&P Purchasing and Distribution HS & E Manual.
- Commitment of sufficient resources to achieve annual goals.
- Reporting of performance vs. goals on a monthly basis. Reporting of Serious Accidents on an immediate basis.
- Investigation of accidents, analysis of causes, and actions to prevent recurrence.
- Inclusion of Safety and Loss Control performance in performance appraisal of employees.
- Training for all employees in Safety and Loss Control programs commensurate with each employee's level of responsibility.
- Existence and adequacy of safety design standards, and ensurance that new facilities and modifications to existing facilities meet these standards.

The HSEA Manager is responsible to:

- Develop C&P Purchasing and Distribution Safety and Loss Control procedures and objectives at least equivalent to those established by the Corporate procedures.

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REQUIREMENTS (Cont'd):

- o Inform and advise all accountable personnel as to their duties under applicable government laws and regulations and Corporate and Departmental safety policies, procedures, and objectives relating to safety.

- o Assure regular audits confirm the adequacy of the internal control system, compliance with government laws and regulations, and compliance with Corporate policies, procedures, and objectives relating to safety.

- o Follow-up with those with end-result accountability to correct deficiencies noted through the audit.

- o Coordinate with those with accountability to develop a comprehensive Safety and Loss Control annual plan/budget and commit sufficient resources to achieve established goals.

- o Report routine and non-routine safety events in compliance with requirements.

SCOPE: These requirements apply to all locations administered by C&P Purchasing and Distribution.

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2.3

BRC 1431

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SUBJECT: Safety and Loss Control Program
Operational Safety

PURPOSE: To establish programs at departmental facilities that provide reasonable assurance that operational hazards are identified, significant episodic incidents are avoided and operational safety requirements are considered in evaluating business decisions. The programs must cover all phases of operational life from conceptualization, design and construction through operation and decommissioning.

BACKGROUND: Corporate HSEP Procedure 3.0, "Operational Safety." C&P Operational Safety Program.

REQUIREMENTS: The location manager will assure that operational safety considerations are addressed in the day-to-day operation of the facility by a program having the following minimum elements:

1. Operational Hazards

Operations are evaluated to determine their hazards. The evaluations take into consideration available information about the toxicity, flammability, reactivity and explosivity of materials handled in the operation. The evaluations are documented and reviewed and updated when circumstances warrant a revision.

2. Significant Episodic Incident Potential

The potential for a significant episodic incident is assessed using methodology endorsed by C&P HSEA and Corporate HSEP. The assessment will be repeated at intervals commensurate with the risk. Results will be reported to line management, the department HSEA Manager, C&P HSEA and Corporate HSEP.

3. Modifications to Operations

Modifications to operations that could increase operational hazards or the potential for a significant episodic incident are reviewed prior to commissioning and are approved at appropriate levels of management to reasonably assure that:

- Each change is understood and is within the domain of documented safe technology,
- Major operational hazards and potential incident scenarios are identified and assessed, and,

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- Equipment, procedural, and administrative controls are adequate.

Pre-startup safety reviews are conducted to verify readiness for operation of modified equipment and facilities. See Section 2.14 of this manual.

4. Engineering Design Reviews

New or modified equipment and facility designs are reviewed by the project sponsor's Engineering Manager, or equivalent function, to assess:

- Compliance with governmental and internal engineering design standards and
- The adequacy of basic control and safety systems to assure safe operation under reasonably foreseeable operating conditions and modes.

Design reviews are documented and equipment and facilities are physically inspected to verify readiness for operation before commissioning.

5. Decommissioning and Recommissioning

Equipment, procedural and administrative control measures provide reasonable assurance that idled facilities and recommissioned facilities, as well as potentially affected active operations, are safe.

6. Technology and Safety Information

For operations with the potential for a significant episodic incident, accurate and up-to-date technology and safety information are documented and maintained. The information includes:

- The technical basis for the operation and information required to characterize and control reasonably forseeable emergencies
- Equipment design standards and reference information and
- Physical properties and inherent hazards of materials handled in the operation.

7. Operating and Maintenance Procedures

Procedures necessary for safe startup, operation, shutdown and maintenance exist and are maintained up-to-date. The procedures address both normal and reasonably foreseeable emergency situations.

8. Operational Safety Standards

For operations at owned and contracted facilities with the potential for a significant episodic incident, operational safety standards (mandatory controls to avoid significant episodic incidents) are developed by the division which manufactures the product, approved at an appropriate level of their management and communicated to appropriate distribution operations personnel. The standards include, as appropriate:

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- o Critical operating parameters and limits
- o Critical controls, including process instrumentation, administrative controls and emergency systems
- o Critical equipment, including emission control devices, flares or scrubbers that must be in service
- o Critical materials of construction and operational materials specifications
- o Critical procedures (i.e., operating, maintenance and material handling procedural steps and sequences)
- o Critical equipment design standards and
- o Process equipment integrity test/inspection requirements.

9. Accident/Incident Investigation

Operations-related accidents, near-misses and potentially significant episodic incidents at owned facilities and those contracted facilities where UCC personnel or materials are involved are investigated and documented by or for management. Such investigations include, where appropriate:

- o Accident/incident descriptions
- o Determination of underlying causes
- o Identification and implementation of corrective actions to prevent recurrences
- o Definition of accountabilities and timetables for corrective actions and
- o Communication of results to similar facilities.

10. Training

Appropriate operational technology and safety training is provided for affected personnel to enable them to perform their jobs safely in both normal and reasonably foreseeable emergency situations.

11. Compliance Assurance

Operational safety audits are conducted to assess compliance with the requirements of this procedure:

- o Audits are conducted at operational units where the potential for a significant episodic incident has been identified and
- o Audit frequency is established based on the relative level of risk involved.

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SCOPE: These requirements apply to all locations administered by C&P Purchasing and Distribution which employ hazardous operations and to contracted facilities as noted.

DEFINITIONS: Significant episodic incident: Release of a toxic or hazardous substance, fire, explosion, a sudden release of energy or other accident that results in:

- o Death, serious injury or serious adverse health effects on employees or the public or
- o Property damage of $1,000,000 or more.

Operational safety: Control of those hazards that are caused by the maloperation or malfunction of the following types of operations: manufacturing processes, in-plant distribution and storage, mixing, blending and packaging, pilot plants, pipelines, waste treatment or energy systems.

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2.4

BRC 1436

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SUBJECT: Safety and Loss Control Program
Potentially Hazardous Work

PURPOSE: To establish minimum standards for location Hazardous Work Permit Procedures.

BACKGROUND: Corporate HSEP Procedure 3.2, "Potentially Hazardous Work."

REQUIREMENTS:

1. The location manager will assure that work assignments are reviewed by management to identify potentially hazardous work and to reasonably assure that:

   - o Appropriate methods to reduce or eliminate the hazard are implemented; and
   - o No additional hazards could result from adjacent equipment or systems.

2. Whenever potentially hazardous work must be executed, the location manager will assure that hazardous work permit procedures comply with Safety Standard SH-102 attached.

3. Upon completion of the potentially hazardous work activity, the function having final authority to sign off that conditions required for safety and health were adequate and had been met, must verify and sign off that conditions are safe for resuming normal operations.

4. The location manager will assure that persons who perform potentially hazardous work are trained in safe work practices, special procedures and equipment and emergency procedures.

SCOPE: This requirement applies to all facilities administered by C&P Purchasing and Distribution which perform potentially hazardous work.

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POTENTIALLY HAZARDOUS WORK PROCEDURE

1 PURPOSE

1.1 To provide minimum requirements for a Hazardous Work Permit Procedure.

2 GENERAL

2.1 A Hazardous Work Permit Procedure is to provide for the necessary management reviews and inter-group communications during the identification of, preparation of, and execution of potentially hazardous work.

2.2 The procedure is to ensure that the requirements of equipment preparation are defined and that precautionary measures are taken to reduce or eliminate the hazards and that no additional hazards could result from adjacent equipment or systems.

2.3 The procedure is to define the line responsibility of all functional groups involved in the preparation and monitoring of safety and health conditions throughout the job sequence.

3 STANDARDS

The location procedure shall include the following elements:

3.1 Work procedures exist and are executed prior to the initiation of potentially hazardous work involving, but not limited to, the following:

1. Introduction of ignition sources into restricted areas.
2. Welding, cutting, and brazing operations that present fire hazards per OSHA 29 CFR 1910.252 (d) (2).
3. Entering of vessels, confined spaces, or areas where there may be an oxygen deficient or enriched atmosphere, or other potentially hazardous environment.
4. The breaking or cutting of lines or opening of equipment which contain or could be expected to contain toxic, corrosive, flammable, hot, pressurized, or otherwise hazardous materials.
5. Maintenance and non-operating work in areas where it is known that personnel exposure limits (OSHA PELS, ACGIH TLVS, or UCC Internal Exposure Standard Limits) are being exceeded. (Does not include emergency releases.)
6. Electrical hot work and trouble shooting of energized systems above 50 volts except diagnostic hot work on low voltage or low amperage instrumentation circuits by persons authorized to perform such work.

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7. Manual excavations exceeding four feet in depth, all powered excavation work, and all excavations regardless of depth on underground process or sanitary lines.

8. Relocation or moving of radioactive sources.

9. Hot tapping.

10. Working near electric power lines with cranes, winch trucks, etc.

3.2 Procedures provide for the following:

1. Clear definition of ignition sources.

2. Requirement for Fire Watch where welding, cutting, or brazing operations are performed.

3. Definition of restricted areas.

4. Establishing responsibility for defining:

   a. Requirements for both pre-work and periodic safety reviews, monitoring, testing, and supervision.

   b. Work to be done and identification and location of equipment.

   c. Critical worker knowledge and skill requirements.

   d. Tools to be used.

   e. Equipment preparations required.

   f. Precautions to be taken.

   g. Testing required and minimum acceptable conditions stipulated.

   h. Personnel protective and other safety equipment required.

   i. Special work procedures to be used.

   j. Applicable emergency procedures and requirements.

5. Provision for double checking requirements and conditions by all functional groups involved.

22.5.1.2

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6. Definition of line authority required in each functional group necessary to authorize work.

7. Specifies responsibilities and qualifications of group representatives involved in the preparation of equipment and monitoring of safe and healthy conditions throughout the job sequence.

8. Requirement for posting of completed permit at the job site.

9. Provision for termination of work should unsafe or unhealthy conditions arise.

10. Provision for review and authorizations for updating or changing permit requirements within the work period as necessary to ensure the safety and health of the workers.

11. Training requirements of personnel authorizing and performing potentially hazardous work.

12. A pre-job discussion that includes emergency procedures to be followed.

3.3 A standard permit form providing the following information is completed prior to each job.

1. Date, time, and duration that permit is valid.

2. Description of equipment and work to be done.

3. Tools to be used.

4. Preparations and tests required.

5. Precautions to be taken.

6. Safety and personnel protective equipment to be used.

7. Additional permits required.

8. Special job procedure to be implemented.

9. Need for Fire Watch, Safety Monitor, or Confined Space Entry Attendant.

10. Signatures signifying the following:

    a. Work conditions to ensure safety and health have been specified.

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b. Required conditions have been met, checked, and verified by operations. (Operations refers to the function responsible for the equipment.)

c. Work site has been inspected and conditions outlined in the permit have been checked and are understood and accepted by the involved functional group.

d. Satisfaction by final authority that conditions required for safety and health are adequate and have been met.

e. Upon completion of the potentially hazardous work that conditions are safe to resume normal operations.

3.4 Training is provided on safe work practices, special procedures and equipment, and emergency procedures for employees who perform potentially hazardous work.

3.5 Engineering design of new or modified equipment and facilities seeks to reduce or eliminate potentially hazardous work.

3.6 Provisions for exceptions are clearly defined with appropriate approval levels.

3.7 The procedure includes an audit system to ensure understanding and compliance.

4. REFERENCES

4.1 Corporate Health, Safety and Environmental Protection Procedures Manual, 3.2 Potentially Hazardous Work.

4.2 OSHA 29 CFR 1910.252, Welding, Cutting, and Brazing.

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Revision Dates: April 1981
February 1988

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22.5.1.2

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2.5

BRC 1442

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SUBJECT: Safety and Loss Control Program
Industrial Elevated Work

PURPOSE: To establish standards to minimize the potential for injury from accidental falls.

BACKGROUND: Corporate HSEP Procedure 3.3, "Elevated Work."

OSHA 29 CFR 1910, Subpart D, Walking-Working Surfaces

OSHA 29 1910, Subpart F, Powered Platforms, Manlifts and Vehicle Mounted Work Platforms

OSHA 29 CFR 1926, Subpart E, Personal Protective and Life-Saving Equipment

American National Standards Institute Standards

REQUIREMENTS: The location manager will assure:

1. Adequate protection against an unexpected fall is mandatory at work locations exceeding 3 meters (10 feet). Whenever work must be performed in elevated areas, the location manager will assure that work procedures comply with Safety Standard SH-117, attached.

SCOPE: These requirements apply to all facilities administered by C&P Purchasing and Distribution which perform elevated work.

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ELEVATED WORK PROCEDURE

1 PURPOSE

To provide minimum requirements for developing a safety program for performing work in elevated areas.

2 GENERAL

Personnel performing work in elevated areas are subject to a high potential for serious injury or fatality through accidental falls. This potential is to be minimized through the use of proper design standards specifying fixed fall protection features. Where fixed fall protection does not exist, worker protection will be provided by personal fall protection equipment and/or procedures.

3 STANDARDS

3.1 Design practices and operating procedures shall be utilized at each location to protect personnel from falls while performing routine operating or maintenance work at elevated locations. Elevated work is defined as work performed at an elevation of three meters (10 feet) or more above a surface. This distance is measured from floor or grade to the level at which the worker is standing and includes excavation work and cable pits as well as above grade work.

3.2 Persons performing elevated work shall be provided with one or more of the following types of protection:

3.2.1 Fixed work platforms or scaffolds equipped with solid guard rails.

3.2.2 Vehicles with mounted elevating and rotating work platforms, which have their scaffolds and platforms securely attached to the vehicles and their brakes set prior to persons occupying the elevated scaffolds or platforms. Personnel occupying the scaffold or platform use securely attached safety belts.

3.2.3 Straight ladders equipped with safety shoes and tie-off ropes, which are secured to appropriate structures prior to initiating the work.

3.2.4 Safety belts and lanyards, which are tied to a secure object, lifeline, or horizontal fixed line.

3.3 Proper use, inspection, and care of equipment such as ladders, scaffolds, mobile equipment used to raise personnel to elevated work sites, as well as safety belts/harnesses, lifelines, shock absorbing lanyards, and personal protective equipment of a similar nature is provided for. Defective equipment shall be promptly removed from service.

3.4 When a safety belt/harness with lanyard is used as the sole means of fall protection, the lanyard is to be attached to a firm support close enough to the worker so that if a fall occurs it will be as close to vertical as possible to minimize swinging, and limit falls to six foot. Lanyards used as personal fall protection are to have a maximum length of 2 meters (6 feet) and a minimum size of 1/2" nylon or equivalent. Where tie offs cannot be made in accordance with this policy the use of nets, cranes, cherry pickers, etc., must be considered.

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3.5 Personnel protection from falling while in transit to and from an elevated work site shall be considered in all job planning and execution. The use of fall restraints during transit is not to be considered mandatory unless undue risk is clearly present.

3.6 All open-sided floors, platforms, runways, and roof, wall, and earth openings that qualify as elevated work locations shall be effectively barricaded in accordance with OSHA regulation.

3.7 Mobile work platforms and portable ladders used in close proximity to electrical lines have appropriate clearance.

3.8 For work assignments on flat or low-pitched roof type structures with a ground-to-eave height greater than ten feet, or a slope greater than or equal to 4 inches rise in 12 inches, employees shall be protected from falling from all unprotected sides and edges of the roof as follows:

3.8.1 By the use of a motion-stopping safety system; or

3.8.2 By the use of a highly visible warning line system erected not less than 6 feet from the roof edge; or

3.8.3 By the use of a person who monitors the safety of all employees in a roofing crew and remains in sight of and in voice contact with each employee.

3.9 Materials and tools are not to be "dropped" from or "tossed" to any elevated levels. Equipment/tools that must be raised or lowered must be controlled by the use of hand lines or mechanical lifting devices. The equipment/tools must also be contained by rigging, use of tool buckets, tool belts, chute, etc.

3.10 Training programs and schedules exist and are documented at Division locations where elevated work is performed to assure that levels of worker competence and knowledge of elevated work practices and associated equipment are adequate to provide necessary protection.

4 REFERENCE

4.1 OSHA 29 CFR 1926.500 Subpart M - Floor and Wall Openings, and Stairways, (g) (3) Warning Lines.

4.2 Corporate Health, Safety and Environmental Protection Procedure Manual, Section 3.3 Elevated Work.

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22.5.1.2

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BRC 1446

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SUBJECT: Safety and Loss Control Program
Lock-Out and Tag

PURPOSE: To establish minimum requirements to protect personnel from inadvertent operation of equipment during its installation, repair, alteration, cleaning, inspection, or similar work.

BACKGROUND: Corporate HSEP Procedure 3.2.2, "Equipment Lock-Out and Tagging."

REQUIREMENTS:

1. The location manager will assure that location lock-out and tag procedures comply with Safety Standard SF 101 attached, including the following supplementary requirements:

   Lock-out procedures include the following:

   - o Highly visible tags are used with locks to communicate that control points tagged are not to be altered.
   - o Administrative controls to supplement lock-out practices when a single lock is used to protect several workers, including:
     - Designation of accountability for placing and removing the lock
     - Controls to verify that all persons are clear of the equipment prior to removing the lock and
     - Training requirements for all affected persons.
   - o Provisions for the use of individually keyed personnel safety locks when requested by persons working on the equipment.

   When the use of safety locks is determined to be not practical,* tags may be used without locks but only in situations where strict administrative controls are employed and include:

   - The designation of individuals having the authority to place or remove tags
   - Training of all persons who may have access to tagged equipment
   - Frequent monitoring to verify compliance and
   - Supplemental protective measures are used when appropriate, such as physical separation, blocking, removal of fuses, grounding and/or stationing an attendant by the tagged equipment to prevent unauthorized or inadvertent changes.

SCOPE: This requirement applies to all operating facilities administered by C&P Purchasing and Distribution.

*Compliance with a requirement is considered "practical" unless compliance is technically unfeasible or requires expenditures which are unreasonable based on the benefit to be derived.

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MASTER TAG PROCEDURE

1 PURPOSE

1.1 To provide minimum requirements for developing a Master Tag Procedure.

2 GENERAL

2.1 ADMINISTRATIVE PRACTICES

2.1.1 A procedure for the tagging and identification of equipment and lines in and out of service is provided to ensure the safety of personnel and equipment which incorporates the following:

2.1.1.1 The procedure defines equipment to be isolated or immobilized such as lines, vessels, motors, switch gear, instruments, and vents.

2.1.1.2 Authority and responsibility levels are clearly defined for operations, maintenance, and shift organizations.

2.1.1.3 The procedure includes an audit system to ensure understanding and compliance.

2.1.1.4 A Master Card exists and provides for, but is not limited to, the following:

1. Identification of equipment and work to be done.
2. Listing of numbered tags and/or locks - "on" and "off".
3. Signing "on" and "off" for work by all concerned.
4. Authorization signatures for both operations and maintenance before starting work and at job completion to put equipment back into service.

2.1.1.5 Pre-work requirements include adequate communication between maintenance and operating personnel.

2.1.1.6 Provisions for temporary release for such work as motor "bumping" are defined including appropriate communication approval levels, sign "off", and tag and/or lock removal and replacement.

2.1.1.7 The procedure includes definition for tagging of blanks and isolation spools.

2.1.1.8 Requirements for electrical equipment or other power sources being locked out as well as tagged. (This unit lock is the first installed and the last removed.)

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2.1.1.9 Provision for individually keyed personal locks is provided in addition to the mandatory unit locks on electrical equipment or other power sources.

2.1.1.10 Requirements for operation of start/stop switch to ensure effective isolation.

2.1.1.11 No tags are removed until all individuals who have signed "on" have signed "off" the Master Card.

2.1.1.12 The need for instrument tagging is defined for both isolation of equipment and instrument repair work.

2.1.1.13 The procedure provides for: equipment blocking to prevent movement, for release of stored energy, and for the removal of process material from equipment.

2.1.1.14 The procedure includes administrative controls to supplement lock-out practices when a single lock is used to protect several workers and includes:

1. Designation of accountability for placing and removing the lock.

2. Controls to verify that all persons are clear of equipment prior to removing the lock.

3. Training requirements for all affected persons.

2.1.1.15 Highly visible tags are used with locks to communicate that tagged control points are not to be altered. Use of tags without locks is limited to situations where the following conditions apply:

1. The use of safety locks is not practical.

2. Appropriate supplemental protective measures are used, such as physical separation, blocking, removal of fuses, grounding and/or stationing an attendant by the tagged equipment to prevent unauthorized or inadvertent changes.

3. Administrative controls are employed, which include: the designation of individuals having the authority to place or remove tags, training of all personnel who may have access to tagged equipment, and frequent monitoring to verify compliance.

2.1.1.16 Provisions for exceptions are clearly defined with appropriate approval levels.

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2.2 ENGINEERING DESIGN

2.2.1 Except where not practical, engineering design of new or modified equipment and facilities include provisions for lock-out capability, de-energizing and isolation from all stored energy, and purging, decontamination, and depressurizing of equipment.

3 REFERENCE

3.1 Corporate Health, Safety and Environmental Protection Procedures Manual, 3.2.2 Equipment Lock-out and Tagging.

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REVISION DATE: FEBRUARY 1988
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22.5.1.2

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SUBJECT: Safety and Loss Control Program
Electrical Safety

PURPOSE: To establish minimum standards for electrical safety.

BACKGROUND: Corporate HSEP Procedure 3.2.3, "Electrical Safety."

REQUIREMENTS: The location manager will assure:

1. Electrical Design Standards exist and are applied by qualified personnel in specifying, designing, installing, and revising equipment which generates, distributes, or utilizes electricity.

2. Electrical safety is practiced at facilities which operate electrical equipment through the following standards:

   a. Pre-startup inspection of new or revised equipment is conducted by qualified personnel.

   b. Electrical switching operations are conducted by trained personnel under formal procedures.

   c. Integrity of insulating and grounding system is maintained by regular inspection/maintenance.

   d. Protective devices on electrical generating and distribution systems are maintained in good operating order by regular inspection and maintenance.

   e. Work on electrical equipment and systems is made safe by de-energization, isolation and lock-out prior to commencing work, if practical.

   f. Written procedures exist for:

      1. Special control procedures and skill requirements for switching operations on electrical distribution systems.

      2. Isolation and lock-out of equipment.

      3. Electrical hot work.

      4. Electrical work in manholes or cable vaults.

   g. Written procedures address:

      1. Tests to verify de-energization.

      2. Review of safe work practices before starting work.

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REQUIREMENTS (Cont'd):

3. Provision for specific management authorization and release.

4. Handling of emergency or abnormal situations.

h. Training is provided to appropriate operations and maintenance personnel to enable them to practice electrical safety in normal operations, on new or revised equipment and in proper response to an electrical injury or incident.

3. Electrical safety is supported by a management control system.

a. Electrical engineering work is documented.

b. Audits are conducted periodically.

c. Controls are established for work:

1. Requiring excavation in vicinity of underground electrical conductors.

2. In proximity to overhead electrical conductors.

3. Requiring entry to manholes or cable vaults.

4. Requiring entry of untrained personnel within enclosures of switchyards and substations.

d. All accidental contacts with electrical energy are investigated and documented.

e. Contractors on site are subject to procedures and controls which are consistent with the standards applied to UCC employees.

SCOPE: These requirements apply to all facilities administered by C&P Purchasing and Distribution.

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SUBJECT: Safety and Loss Control Program
Electrical Hot Work

PURPOSE: To require written electrical hot work procedures to assure safety of personnel, UCC employees, or contractors who perform such work.

BACKGROUND: Corporate HSEP Procedure 3.2.3, "Electrical Safety."

REQUIREMENTS:

1. Location managers must assure that electrical hot work is performed only when no other practical alternative exists to accomplish the job.

2. When electrical hot work is unavoidable, location managers must assure that written procedures are developed following the Safety Specification SH-113, attached.

SCOPE: These requirements apply to all operating facilities administered by C&P Purchasing and Distribution.

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ELECTRICAL HOT-WORK PROCEDURE

1 PURPOSE

1.1 To provide the minimum requirements for developing an Electrical Hot-Work Procedure.

2 GENERAL

2.1 Criteria for developing hot-work procedures shall be as follows:

2.1.1 Definitions

2.1.1.1 Hot-work is defined as any work on or in the immediate vicinity of the minimum clearance zone of an exposed and energized, alternating or direct current, electrical system.

2.1.1.2 Voltage levels referenced in this procedure are line to ground for grounded systems, and line to line for ungrounded systems.

2.1.1.3 For this procedure, hazard classifications of electrical hot-work are defined as follows: (Hot work for under 50 volts will be covered by location practices where applicable.)

1. Class A - Repair work to exposed and energized electrical systems over 150 volts to 1000 volts inclusive or repair work in the immediate vicinity to exposed and energized systems above 1000 volts; or trouble shooting work performed on or in the immediate vicinity to exposed and energized systems above 1000 volts.

2. Class B - Repair work to exposed and energized systems over 50 volts to 150 volts inclusive.

3. Class C - Troubleshooting work performed on any exposed and energized system over 50 volts to 1000 volts inclusive, and all megohmmeter or direct current high-potential testing.

4. Class D - Installation of temporary ground cables or grounding devices on electrical systems rated above 1000 volts for de-energization purposes.

2.1.1.4 For this procedure the definitions of terms used for work are as follows:

1. Repair work - work performed to remove, install, modify, or repair electrical components or wiring.

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2. Troubleshooting - work performed on an energized circuit to permit determining the cause and location of a problem or condition of the electrical system. Work done under this heading must be performed only with test instruments. During troubleshooting, mechanical connections may be made only to check circuit integrity and only if the voltage does not exceed 150 volts to ground. (Probes, spring loaded clips, sliding stabs, etc., are not considered mechanical connections.)

3. Hands on work - work performed by touching bare conductor with bare hand.

Working with bare hands on energized parts above 50 volts is not intended. A person performing work around exposed, energized, bare parts is subject to inadvertently touching the bare part, unless extreme care is exercised. Grounding of de-energized electrical parts 1000 volts and above is required prior to working with bare hands on the part.

2.1.1.5 For this procedure the definition of terms used are as follows:

1. No Human Entry Zone - is the area around any exposed and energized electrical part detailed in Figure 1 and Table 1. Note that no part of a human's body, guarded or unguarded, shall enter within the distances detailed in Figure 1 and Table 1.

2. Minimum Clearance Zone - is the area around any exposed and energized electrical part, detailed in Figure 1 and Table 2.

No employee shall penetrate the Minimum Clearance Zone with any unguarded part of his body. Note that the over 50 to 1000 volts range has no distance limitation for properly trained and knowledgeable people working with approved protective equipment.

a. The use of approved test equipment or protective clothing suitably insulated for the voltage class being worked on, and operated or worn per the manufacturer's instructions shall be permitted as an extension of the employee's body within the Minimum Clearance Zone. The approved equipment shall be operated by the employee from outside the Minimum Clearance Zone at all times.

b. The use of grounding devices that are designed to connect to an electrically isolated bus connection inside metal clad or metal enclosed switchgear in conformance with requirements for de-energization shall be permitted.

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3. Immediate Vicinity - is the area around the Minimum Clearance Zone detailed in Figure 1 that will allow an employee the opportunity to penetrate the Minimum Clearance Zone by any part of an employee's body or by tools, test equipment, or vehicles operated by an employee. A person in the immediate vicinity is subject to inadvertently penetrating the Minimum Clearance Zone unless extreme care is exercised.

NOTE: The Immediate Vicinity Zone can vary and depends on the voltage class of the system, the length of the approved test equipment, or the dimensions of the grounding device being used to penetrate the Minimum Clearance Zone.

The physical dimensions of the Immediate Vicinity Zone are detailed by the location Electrical Hot-Work Procedure.

For regulations governing work near power lines, refer to SH-112 "Operations of Cranes Near Power Lines".

4. Working Space - is a Minimum Working Space that must be clear of obstructions when an employee approaches an energized part. This distance is detailed in Tables 3 and 3A.

5. De-Energized (Dead) - means free from any electric connection to a source of potential difference and from electric charge; not having a potential different from that of the earth.

6. Exposed - as applied to live parts means that a live part is capable of being accidently touched or approached nearer than a safe distance by a person. An exposed part is one that is not suitably guarded, physically isolated, or insulated.

7. Guarded - A part is considered guarded when it is covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats, or platforms so as to remove the likelihood of dangerous contact or approach by persons or objects.

8. Isolated - A part is considered electrically isolated when it has been disconnected from energized parts by switching action, locked out, and tagged in accordance with SH-101, "Master Tag Procedure", and checked to ensure absence of voltage. A part is considered physically isolated when access to the part is barricaded or roped off, etc., and warning signs are posted at the entrances; or when special means are required to access the part.

9. Insulated - For conductors and parts less than 5000 volts to ground; barriers, enclosures, or insulation suitable for the voltage conditions involved may be used. For conductors and parts exceeding 5000 volts to ground, non-shielded insulating covering shall not be considered adequate.

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10. Mechanical Connections - for the purpose of this Mandatory Standard, mechanical connections will be those that are bolted or screwed. Spring loaded clips, sliding stabs, and pressure probes are not to be considered mechanical connections.

11. Qualified Person - one who is trained and knowledgeable in the task to be performed and who is accepted and documented by management as responsible for the work.

2.1.2 Standards

2.1.2.1 Procedures exist to control commencement of work on energized systems and contain the following:

1. Assurance that electrical hot-work is necessary and alternate solutions and scheduling have been considered.

2. Clearly defined responsibilities for job planning and for execution of all phases of work.

3. Requirement for authorization(s) by involved functional groups prior to initiation of work.

4. Specification of required safety equipment.

5. Specification of required worker knowledge and qualified delegate requirements.

2.1.2.2 Class A electrical hot-work requires a hazardous work permit with a pre-work safety review and full-time continuous supervision by an electrical supervisor or qualified person specifically authorized for that job by plant management. No repair work on energized equipment shall be performed on equipment (systems) energized above 1000 volts.

2.1.2.3 Class B electrical hot-work requires that the supervisor responsible for the exposed workers and the supervisor responsible for the equipment or the qualified person authorized by plant management, jointly review the work with the exposed worker prior to its initiation. A hazardous work permit is required. Immediately prior to its initiation if it is a first time job or a non-routine job, routine practices will be covered by standard procedures and reviewed by periodic training.

2.1.2.4 Class C electrical hot-work requires that the supervisor responsible for the equipment be notified prior to the initiation of work. A hazardous work permit is required, except for diagnostic hot work on low voltage or low amperage instrumentation circuits by persons authorized to perform such work.

22.5.1.2 [6.5.1.1]

BRC 1459

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2.1.2.5 Class D electrical hot work requires that the supervisor responsible for the exposed worker and the supervisor responsible for the equipment jointly review the work prior to its initiation, and prior to re-energization after the work is complete. A hazardous work permit is required.

2.1.2.6 Provisions for exceptions are clearly defined and appropriate approval levels indicated.

Exceptions are as follows:

1. Telephone company equipment owned and maintained by the telephone company.

2. Public utility equipment owned and maintained by the public utility.

3. Changing brushes on generator excitors. Local plant written procedures shall apply.

2.1.2.7 The procedure includes an audit system to ensure understanding and compliance.

2.1.2.8 Training in safe work procedures is given to all employees required to work on energized electrical systems.

3. REFERENCE

3.1 Corporate Health, Safety and Environmental Protection Procedures Manual, 3.2 Potentially Hazardous Work and 3.2.3 Electrical Safety.

3.2 Electrical Technology Manual.

Original Date: October 1980
Revision Dates: December 1980
March 1985
February 1988

27750

6.5.1.1 22.5.1.2

BRC 1460

TABLE 1
No Human Entry Zone

VOLTS	DISTANCE IN INCHES PHASE TO GROUND THAT SHALL NOT BE ENTERED BY THE GUARDED HUMAN BODY
1000	2
2500	3
5000	3.5
8000	4.5
15000	6
25000	8
34500	12
46000	15
69000	23
115000	37
138000	44
230000	76

Based on NEMA Pub. No. TR 10.07 - 1971

(NOTE: ANSI C57.12.27 Table 1 shows slightly less)

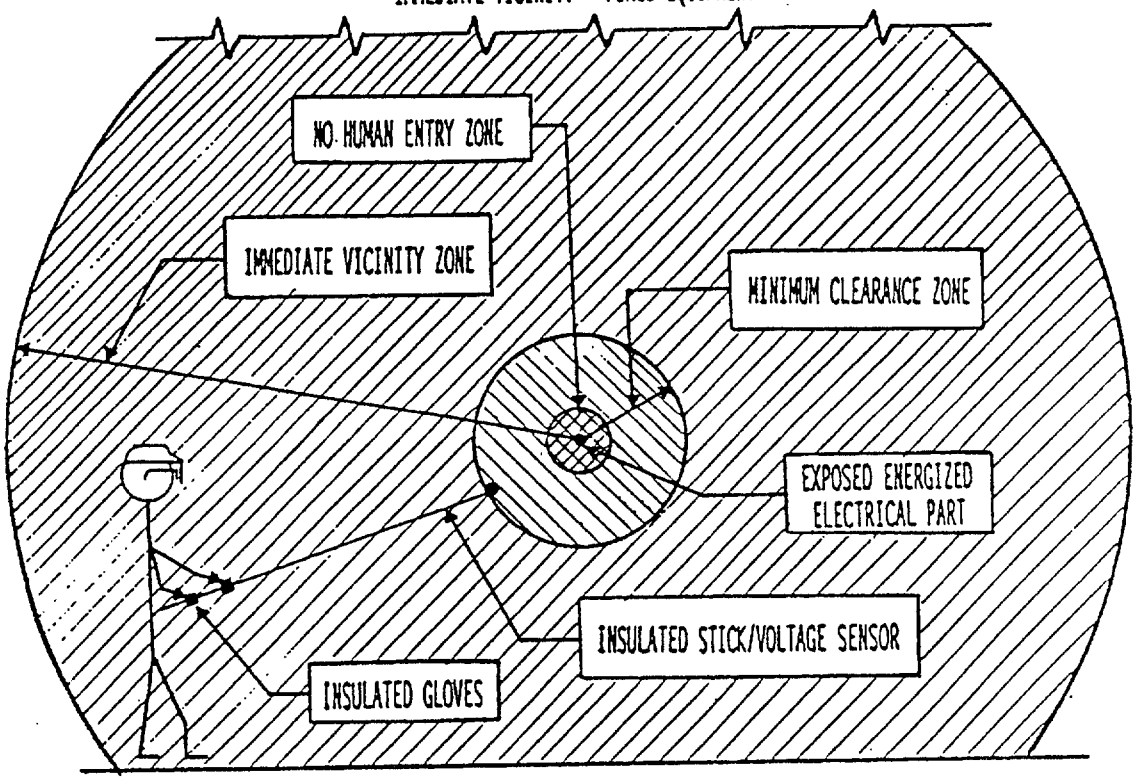
For minimum clearances between live parts of one phase and ground at altitudes of 3300 feet or less. For higher altitudes increase distances by one percent (1.01 multiplier) per each 330 foot increase in altitude.

22.5.1.2 6.5.1.1

BRC 1461

FIGURE 1

IMMEDIATE VICINITY - FIXED EQUIPMENT



NOTE: IMMEDIATE VICINITY ZONE VARIES IN DISTANCE WITH THE TYPE OF EQUIPMENT USED AND VOLTAGE OF EXPOSED ENERGIZED PART, E.G., INSULATED STICK LENGTH PLUS MINIMUM CLEARANCE DISTANCE.

TABLE 2

MINIMUM CLEARANCE ZONE

VOLTS	DISTANCE IN FEET PHASE TO PERSON
1,000 - 15,000	2' - 0"
15,000 - 35,000	2' - 4"
46,000	2' - 6"
69,000	3' - 0"
115,000	3' - 4"
138,000	3' - 6"
161,000	3' - 8"
270,000	5' - 0"

BASED ON ANSI C2 NESC 1987
SECTION 422, TABLE 422-1
WITH EXTRA DISTANCE REQUIRED BY OSHA

6.5.1.1 22.5.1.2

BRC 1462

MINIMUM CLEAR WORKING SPACE
Table 3
Canadian Electrical Code, Section 2.308 1982
(Table 3 is for use at UCCL Plant Locations

Voltage	Working depth Measured From Live Part or Enclosure Door	Working Width	Working Length
0-750	1 meter		
751-2500	1.2 meters		
2501-9000	1.5 meters	.76 m (2'-6")	2.2 m (6'-6")
9001-25000	1.9 meters		
25001-46000	2.5 meters		
46001-69000	3.0 meters		
>69000	3.7 meters		

Table 3a
National Electrical Code Section 110-16 (a) & 110-34 (a) 1984
(Table 3a is for use at Domestic UCC Plant Locations)

Voltage	Working Depth (Feet) A*	B*	C*	Working Width Feet	Working Height Feet
0-150	3(2)	3(2)	3	2.5	6.25
151-600	3(2)	3.5	4	2.5	6.25
601-2500	3	4	5	3.0	6.5
2501-9000	4	5	6	3.0	6.5
9001-25000	5	6	9	3.0	6.5
25001-75 KV	6	8	10	3.0	6.5
>75 KV	8	10	12	3.0	6.5

NOTE 1: Occupational Safety and Health Administration Electrical Standard dated January 16, 1981, Table 8-1 and Table 8-2 show the same working depth as above. OSHA has the same working width requirement as shown for the NEC. Table 8-3 of the OSHA document has working heights for unguarded live parts of 8.5 feet for 601-7500 volts between phases, 9 feet for 7501-35,000 volts between phases and 9 feet plus 0.37 inches per each 1000 volts above 35,000 volts between phases. The OSHA requirements for working heights for guarded live parts are the same as shown for the NEC.

*A. Exposed live parts on one side and no live or grounded parts on the other side of the working space or exposed live parts on both sides effectively guarded by suitable wood or other insulating materials. Insulated wire or insulated busbars operating at not over 300 volts shall not be considered live parts.

B. Exposed live parts on one side and grounded parts on the other side. Concrete, brick, or tile walls will be considered as grounded surfaces.

C. Exposed live parts on both sides of the work space (not guarded as provided in Condition A) with the operator between.

NOTE 2: For installations built prior to April 16, 1981 minimum clear distance may be 2 feet 6 inches.

22.5.1.2 6.5.1.1

BRC 1463

2.9

BRC 1464

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SUBJECT: Safety and Loss Control Program
Confined Space Entry

PURPOSE: To establish a formal confined space entry procedure that assures the safety and health of personnel required to enter confined spaces.

BACKGROUND: Corporate HSEP Procedure 3.2.1, "Confined Space Entry."

REQUIREMENTS:

1. The location manager will assure that a written Confined Space Entry Procedure exists and meets the minimum requirements of Standard SH 103, attached.

SCOPE: This requirement applies to all facilities administered by C&P Purchasing and Distribution. NOTE: C&P Purchasing and Distribution employees are prohibited from entering confined spaces at non-UCC facilities unless they have insured that the provisions of this policy have been complied with.

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CONFINED SPACE ENTRY PROCEDURE

1 PURPOSE

1.1 To provide minimum requirements for developing a Confined Space Entry Procedure.

2 GENERAL

2.1 To provide for the safety and health of personnel and protection of equipment when entrance into confined spaces is required by establishing minimum requirements for the preparation of equipment prior to entry and the monitoring of conditions throughout the job sequence.

2.1.1 Standards

2.1.1.1 Procedures define confined spaces as enclosures that are potentially hazardous due to possible (1) atmospheric contamination by toxic or flammable vapors or oxygen deficiency or excess; (2) physical hazards such as agitators, other moving parts, or electrical shock; (3) contamination by liquids, gases, or solids during occupancy; (4) isolation of occupants from help in case of need. This includes enclosures having (1) limited means of egress such as, but not limited to, storage tanks, tank cars, process vessels, bins, boilers, column skirts, and other tank-like compartments; (2) open-topped spaces more than four feet in depth such as pits or floating roof tanks; (3) ventilation or exhaust ducts, sewers, underground utility tunnels, and similar structures.

2.1.1.2 A procedure exists to ensure safety and health in the working environment and includes the following:

1. A pre-job discussion of the potential hazards is held between the supervisors and persons involved in the confined space work activity.
2. Provides for cleaning and removal of all harmful substances.
3. Ensures complete isolation through physical disconnect, blanking off, and inactivation of radioactive sources.
4. Ensures equipment and sources of hazardous energy release are physically immobilized.
5. Ensures "lock-out" of all powered equipment through use of a lock-out/tag-out procedure.
6. Provides for placement of appropriate work signs.
7. Testing for oxygen, flammable gas, suspected toxic materials, and excessive heat conditions is carried out prior to initial entry, after each interruption, at shift change, and more frequently, as needed, during the entire job sequence.

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8. Adequate ventilation and cool-down is provided to prevent the accumulation of flammable materials, combustible dusts, oxygen excess or deficiency (above 22 percent, below 19.5 percent), toxic contaminants (above allowable exposure limit), flammable gas (above 10 percent LFL), or harmful effects of temperature extremes.

9. A sketch or list is provided and attached to the vessel entry permit to identify the location and size of all points of isolation for large scope jobs.

10. The classification of electrical equipment and lighting to be used within the confined space is reviewed for acceptability and restricts the use of portable electrical lighting to 12 volt maximum in vessels.

11. All compressed gas/oxygen cylinders and manifolds, except breathing air containers, are located outside of the confined space.

12. Provides that the motivating force for pneumatic tools be of breathing air quality.

13. All hoses are inspected for mechanical integrity.

2.1.1.3 Procedure defines approval levels for execution of entry into confined spaces.

2.1.1.4 A permit system is used that provides pertinent information relative to the work assignment incorporating, but not limited to, the following:

1. Equipment or facility location.

2. Tools to be used.

3. Work to be performed.

4. Describes preparations required to ensure safety and health.

5. Precautionary measures, and including availability and use of personnel protective.

6. Testing requirements.

7. Stipulates allowable exposure limit of material common to task.

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8. Date and time for which permit is valid.

9. Proper level signatures of the managers or supervisors involved (all functional groups must sign).

2.1.1.5 A safety attendant is provided at each confined space point of entry and is in communication at all times with persons inside the confined space. The attendant must be able to call for and receive assistance in job related emergencies, such as:

1. Loss of communication.

2. Bodily injury or loss of consciousness.

3. Plant emergencies.

4. Loss of ventilation.

5. Loss of breathing air supply.

6. Changes in location conditions which may make continued entry hazardous.

2.1.1.6 Appropriate rescue equipment and trained rescue persons are available and can be summoned in a timely manner.

2.1.1.7 If it is not possible to take any of the above precautionary measures, special entry requirements are developed and documented and written entry authorization is obtained from the immediate supervisor and approved by a higher level manager.

2.1.1.8 The procedure is based on proposed ANSI Standard Z-117.1.

2.1.1.9 The procedure includes an audit system to ensure understanding and compliance.

2.1.1.10 Training in Confined Space Entry Procedure shall be provided for persons authorized to work in confined spaces.

2.1.1.11 The procedure may permit entry into steam generators without physical disconnect or blanking of the larger boiler feed water lines and steam lines. Should this option be utilized the procedure must also contain the following:

1. Applies only to inlet boiler feed water lines (6" or larger) and exiting steam lines (6" or larger) from steam generators. All other lines must either be blanked or physically disconnected per 2.1.1.2.3.

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2. Provides that the steam and boiler feed water lines must have double-valves and a 1 1/2-inch minimum vent directed to the atmosphere between the valves.

3. Provides that the in-line valves be padlocked in the closed position and the vent valve padlocked open. Access to the keys to these locks will be controlled through the requirements of Master Tag/Lockout procedures.

4. Provides that each in-line valve is leak tested at full operating pressure and assurance is provided that the vent valve is open and not plugged.

5. The padlocked valves must be near the entry point and readily accessible for inspection by the person entering the steam generator.

3 REFERENCE

3.1 Corporate Health, Safety and Environmental Protection Procedure Manual, 3.2.1 Confined Space Entry

3.2 ANSI Standard Z-117.1, Safety Requirements for Working In Tanks And Other Confined Spaces

Original Date: September 1975 (SF-103)
Revision Dates: December 1979 (SH-103)
February 1988

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22.5.1.2

BRC 1469

2.10

BRC 1470

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SUBJECT: Safety and Loss Control Program
Motor Vehicle Practices

PURPOSE: To establish minimum practices relating to the selection, operation and maintenance of in-plant and off-site vehicles to minimize injuries resulting from vehicle operation.

BACKGROUND: Corporate HSEP Procedure 3.1, "Vehicle Safety."

REQUIREMENTS:

Location managers at applicable facilities will assure that the following vehicle practices are established and complied with:

POWERED INDUSTRIAL TRUCKS AND MOBILE EQUIPMENT

A program to assure safe operation of powered industrial trucks and mobile equipment will be established to comply with Safety Standard SH 186, attached.

OFF-SITE VEHICLES

1. All UCC and contractor operators have a valid motor vehicle operator's license for the vehicle being driven.

2. All seats of automobiles, vans, and trucks used on company business are equipped with seat belts, which are periodically inspected and maintained in operable condition.

3. UCC operators and UCC occupants wear seat belts when riding in automobiles, vans and the cabs of trucks off-site (including private vehicles) while on company business. This applies to all UCC occupants whether seated in the front or in the rear seats; the UCC operator ensures that these passengers are belted-up prior to starting the vehicle in motion. The UCC operator encourages non-UCC occupants to wear seat belts while in vehicles under the operation of UCC personnel.

4. The transportation of personnel off-site while on company business in vehicles other than automobiles, vans, buses or the cabs of truck is prohibited.

5. Accidents and incidents involving vehicles covered by this standard shall be reported and investigated.

6. Defensive driver training is strongly encouraged.

SCOPE: These requirements apply to all C&P Purchasing and Distribution personnel who operate vehicles as a function of their employment and to all facilities administered by C&P Purchasing and Distribution which operate vehicles as part of their operation.

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POWERED INDUSTRIAL TRUCKS AND MOBILE EQUIPMENT PROGRAM

1 PURPOSE

1.1 To provide minimum requirements for developing a program for the safe operation of powered industrial trucks and heavy mobile equipment.

2 GENERAL

2.1 To have established a program for the safe operation of powered industrial trucks and heavy mobile equipment (fork lift trucks, side boom trucks, mobile cranes, tractors, sweepers, mobile conveyors, etc.). Standard over-the-road vehicles such as personnel vehicles, tractor trailers, buses, and light duty trucks are not included.

2.1.1 Standards

2.1.1.1 Equipment

1. Appropriate vehicle safety equipment, such as horns, lights, operational warning devices indicating vehicle motion, fire extinguishers, and overhead protection devices are provided when governmental regulations or conditions of use mandate the need for them.

2.1.1.2 Inspections - Written inspection procedures and inspection checklists exist for:

1. Applicable daily or shift inspections by the equipment operator before equipment is placed in service, and

2. Periodic inspections of brakes and critical load bearing parts such as forks, load hooks, and cables to be performed by qualified test and inspection personnel.

2.1.1.3 Maintenance - Written procedures and checklists exist for the planned maintenance on equipment. This includes lubrication and checking for wear and damage.

2.1.1.4 Operation - Written procedures exist which define:

1. Operator medical examination and screening.

2. Safety rules and operating procedures.

3. Limitations of equipment and controlled areas.

4. Controls to assure that modifications of equipment are consistent with the original design and area electrical classifications.

5. Operator training and testing in safe operation of vehicles program which shall include:

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a. Review of vehicle operation.

b. Demonstration of skills (test) which includes operation, inspection, and care of equipment.

c. Licensing.

(1) Includes physical examination.

(2) License has specified expiration date.

6. Retesting, refresher training as necessary, and relicensing of operators.

2.1.1.5 Records - Written procedures exist which require that records of inspections, maintenance, and training shall be maintained.

3 REFERENCE AND RESOURCE MATERIAL

3.1 Many of the items covered by this Mandatory Standard are a part of the Code of Federal Regulations and are listed below:

Powered Industrial Trucks (Fork Lift Trucks)	29 CFR	1910.178
Crawler, Locomotive and Truck Cranes		1910.180 1926.550
Vehicle Mounted Elevating and Rotating Work Platforms		1910.67

3.2 Safety and Health Information Manual (SHIM), Section III, 8. 7 and 8 (T&I Criteria).

3.3 Corporate Health, Safety and Environmental Protection Procedure Manual, 3.4 Vehicle Safety.

Original Date: December 1981 (SH-156)
Revision Date: February 1988 (SH-186)
03170

22.5.1.2

BRC 1473

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2.11

BRC 1474

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SUBJECT: Safety and Loss Control Program
Personnel Safety Equipment

PURPOSE: To establish procedures for the selection, purchase, maintenance and use of personal safety equipment by employees, contractors, and visitors to prevent exposures to safety and health hazards.

BACKGROUND: Corporate HSEP Procedure 3.1, "Personnel Safety."

REQUIREMENTS: Location managers will assure that the following practices are implemented:

1. Employees and contractors are informed of the mandatory nature of their use of personal protective equipment and their personal responsibility for its care.

2. Location routine work procedures specify appropriate personal protective equipment for that work.

3. Non-routine work which is potentially hazardous has personal protective equipment appropriate for that work specified in the Hazardous Work Permit.

4. Location Visitor Procedures assure adequate protection for visitors.

5. Nature of the hazard involved is reflected in the personal protective equipment specified. Adequate information on the hazard is obtained to permit intelligent selection of proper personal protective equipment.

6. Management control is exercised in the purchase of personal protective equipment to assure that equipment meets specifications defined in Safety Standard SH 37, attached.

SCOPE: These requirements apply to facilities administered by C&P Purchasing and Distribution where potential exposure to safety and health hazards exists.

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2. Head mounted (self supporting):

a. Shall be designed with a crown strap and a ridged, easily adjustable headband.

b. Shall be designed to provide crown protection for the frontal portion of the head.

3.1.2 Plastic Window and Support

1. Shall be a minimum of 0.040 inches thick and meet ANSI Z 87.1-1979.

2. Shall be a minimum of 11.5 inches wide at the top when measured over the curved surface, and a minimum of 8.0 inches high.

3. The window support shall be securely attached to the frame with pivotal supports which permit easy tilting of the window to an up or down position.

4 HARD HATS

4.1 Minimum specifications for hard hats shall meet OSHA requirements, currently 29 CFR 1910 Subpart I and 29 CFR 1926 Subpart E, which requires meeting ANSI Z89.1-1969 "Safety Requirements for Industrial Head Protection". Some additional requirements are:

1. Only plastic or fiberglass type hard hats shall be issued.

2. Bump caps and metal hard hats will be phased out through attrition.

3. The brim shall be designed to facilitate liquid run-off.

4. The manufacturer's design shall not be altered. Metallic attachment posts and screws shall not be used.

5. The nape strap shall be an integral part of the headband.

6. The sweatband shall be made of leatherette, plastic, or other material that can be easily cleaned and maintained.

5 SAFETY SPECTACLES

5.1 Minimum safety specifications for safety spectacles shall include the following:

1. Shall provide adequate protection against particular hazards for which they are designed.

2. Front member of the frame shall be plastic, metal, or plastic-metal combination and shall support the lenses around their entire periphery.

3. Lens shall be industrial strength safety glass, 3 MM thick or ANSI Z 87.1-1978 approved plastic lens. Standard lens shall be clear or tinted.

4. Variable-tint phototropic (photochronic) lenses are only acceptable for outside use as per ANSI Z87.1-1979.

5. Prescription spectacles shall meet above standards. Variance from the standards may be authorized by the location Safety/Health Department or Medical Department at locations where appropriate.

6. Every spectacle shall be distinctly marked to facilitate identification of the manufacturer.

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7. Where contact lens are permitted, safety eyeware (planos) and protective devices (goggles, face shields) are required as prescribed in existing procedures for all employees. Refer to Safety and Health Information Manual, Section III. M. 2.

6 COVERALL GOGGLES

6.1 Minimum specifications for coverall goggles shall meet OSHA requirements, currently 29 CFR 1910 Subpart I and 29 CFR 1926 Subpart E, which require meeting ANSI Z87.1-1968 "Practices for Occupational and Educational Eye Protection". Some key requirements are:

1. Frame shall be flexible plastic providing a seal on the full periphery of the facial contact area.

2. Frame design shall be such that the goggle will fit over spectacles and afford an effective minimum angle of vision of 90 degrees.

3. Frame fit shall assure side as well as frontal protection.

4. Plastic lens shall be a minimum of 0.050 inches thick, and meet ANSI Z 87.1-1979. Standard lens shall be clear or tinted.

5. Head band shall be adjustable and of suitable material to retain the frame comfortably and snugly in place.

6. Materials of construction shall be nontoxic, nonirritating, and easy to clean and maintain.

7. Splash/spray goggles ventilation shall be a splash and spray proof design.

7. GLOVES

7.1 Minimum safety considerations for selection of gloves shall include the following:

1. Gloves for chemical service:

   a. Must be selected for chemical service adequacy based on permeation test results.

   b. Requires communicating the service limitations and provisions for disposal of contaminated gloves.

2. Gloves for electric service:

   a. Rubber protective equipment such as gloves and sleeves must be in accordance with OSHA 1910.137 (ANSI J6 series).

3. Gloves for thermal protection:

   a. Thermally insulated gloves containing asbestos should not be used unless there is no suitable approved substitute.

4. Work gloves:

   a. Work gloves should be selected for light, medium, or heavy duty work.

   b. Glove material (cloth, leather, rubber, metal, mesh, etc.) will be selected to afford protection for the job.

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C&P PURCHASING AND DISTRIBUTION

HEALTH, SAFETY AND ENVIRONMENTAL MANUAL

SECTION: 2.12
APPROVED:
REVISED: March 31, 1988

SUBJECT: Safety and Loss Control Program
Toxic Gas Release/Flammable Vapor Cloud

PURPOSE: To establish written emergency procedures to be followed in the event of a significant vapor release.

BACKGROUND: Safety and Health Technology Manual Standard SH106 - "Standard for Reacting to a Flammable or Toxic Vapor Cloud

REQUIREMENTS:

1. The location manager will assure that a written procedure exists for reacting to a significant release of toxic or flammable gas. The procedure will address the applicable sections of Standard SH 106 attached.

SCOPE: This requirement is applicable to all facilities administered by C&P Purchasing and Distribution with potential for releasing a flammable or toxic vapor cloud.

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STANDARD FOR REACTING TO A FLAMMABLE OR TOXIC VAPOR CLOUD

1 GENERAL

1.1 This specification presents standards for developing a procedure for Reacting to a Flammable or Toxic Vapor Cloud.

2 PROCEDURE FOR REACTING TO A FLAMMABLE OR TOXIC VAPOR CLOUD

2.1 DEFINITIONS

2.1.1 A flammable vapor cloud is the release of any flammable volatile liquid or gas in a quanity, that if ignited, could cause serious injury or property damage.

2.1.2 A toxic vapor cloud is the release of any material which is immediately hazardous to life or health or any material with specifically defined ceiling limits, and in quantities which may carry beyond the boundary of the emitting unit (or may carry into areas outside the plant battery limits).

2.2 STANDARDS

2.2.1 Procedures exist to ensure the safety and health of personnel by requiring the following actions in the event of a flammable or toxic vapor cloud release:

1. Activation of local deluge system for the affected area.

2. Activation of an identified warning system to indicate the release of a vapor cloud.

3. Evacuation and isolation of the endangered area.

4. Prohibiting the entry of ignition sources into the area.

5. Use of all available water to disperse the cloud and form a water curtain to prevent the vapors from reaching an ignition source. (Deluge spray systems, monitor nozzles, and fire hoses should be used.)

6. Restriction of entry into the area in order to isolate the leak. Entry shall be restricted to personnel that are especially trained to cope with vapor releases, properly outfitted in protective clothing and breathing devices, from upwind, and under a protective water spray. (An ignition must be expected at any time.)

2.2.2 Procedures ensure that if a fire occurs it will not be extinguished until the source of fuel is closed off. (A re-ignition could be more hazardous than the fire.)

2.2.3 Comprehensive procedures exist which contain the following elements:

1. Procedures and training programs that insure that the responsible personnel know when and how to initiate a vapor cloud emergency procedure.

2. All shifts have designated and trained personnel responsible for entry operations.

3. Shutdown procedures exist for each known potential emergency area.

4. Protective equipment of sufficient quantity is located strategically outside the emergency area.

5. Control procedures exist to eliminate ignition sources in adjacent areas and to evacuate endangered personnel.

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6. Notification of local authorities (police, civil defense.)

7. Evacuation and isolation of adjacent residential areas.

8. Notification of adjacent companies.

2.2.4 An oxygen enriched cloud, though technically not a flammable cloud, will be handled in the same manner as a flammable vapor cloud per this procedure with the following exception:

No entry will be made into any oxygen cloud under any circumstance.

2.2.5 Toxic vapor cloud exposures will require:

1. Appropriate post emergency medical tests and examinations to verify degree of exposure or confirm negligible effects of exposure.

2. Provisions for documenting exposure data, employee training and medical findings.

2.2.6 Procedures include an assigned audit responsibility to ensure understanding and compliance.

22.5.1.2

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SUBJECT: Safety and Loss Control Program
Safety Engineering Standards

PURPOSE: To insure that accepted safety engineering standards are incorporated in the design of C&P Distribution facilities.

BACKGROUND: C&P Purchasing and Distribution Safety and Loss Control Program, Section 2.1.

REQUIREMENTS:

1. The location manager will insure that Safety/Health Standards adopted as mandatory by the Department will be incorporated in the design of new facilities unless a deviation from the standard is supported by an approved variance and that standards designated as recommended practice are given careful consideration.

2. The Department's Mandatory Safety/Health are those contained in Safety and Health Technology Manual, Section 5. A list of the standards is provided in the attached Table of Contents.

SCOPE: These requirements apply to all locations administered by C&P Purchasing and Distribution.

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SH-108A		FEBRUARY 1988	PRE-STARTUP SAFETY/HEALTH INSPECTIONS PROCEDURE
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SUBJECT: Safety and Loss Control Program
Facilities Change Review/Pre Start-Up Safety Review

PURPOSE: To assure that appropriate safety and health considerations are identified and addressed before introducing a new chemical, revising installed facilities, temporarily or permanently, or starting-up new or newly revised facilities.

BACKGROUND: Corporate HSEP Procedure 3.1, "Personnel Safety."

REQUIREMENTS:

1. Facilities Change Review

   a. The location manager will assure a procedure is in place that identifies and addresses the safety and health considerations involved with handling a new chemical or with revising existing facilities, either temporarily or permanently. The procedure should include the instructions and checklist contained in the "Facilities Safety Review" attached.

   b. In addition, the procedure will include an evaluation of the effects of the change on unchanged facilities.

   c. All facility changes will be authorized by at least the first level manager with overall responsibility for the operation. Higher level authorization will depend on the perceived risk. Major changes should include an independent review by appropriate technologists. Types of facility changes and their authorization requirements will be specified in the location's Facility Change Review Procedure.

2. Pre Start-Up Safety Review

   The Facilities Change Review assures the appropriateness of a change but does not indicate the readiness of a facility to implement the change. The readiness for implementation and final authorization for implementation are addressed in a Pre Start-Up Safety Review procedure.

   a. The location manager will assure a Pre Start-Up Safety Review procedure is in place which meets the requirements of Safety and Health Specification SH-108A attached.

SCOPE: These requirements apply to all operating locations administered by C&P Purchasing and Distribution.

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UNION CARBIDE CORPORATION

C&P DISTRIBUTION

FACILITIES SAFETY REVIEW

For New Products and Equipment Change of Service

A. PRODUCT DATA

PROFIT CENTER_____

Product Name _____ Product Class_____

Sp. Gr._____ Lb./gal._____

Vapor Pressure_____ Flash Point_____ °F

Boiling Point_____ °F Freezing Point_____ °F

Hazards:

Flammable_____ Corrosive_____ Other_____

TLV_____ - Source_____

IDLH_____ - Source_____

Unusual fire and explosion hazards:

Reactivity Data:

Unstable_____ Stable_____

Inhibitor_____

Materials to avoid:

DOT Classification_____ I.D.No._____

R.Q._____

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B. MATERIALS OF CONSTRUCTION

(1) Tank _____ _____ _____
(2) Lines _____ _____ _____
(3) Pumps _____ _____ _____
(4) Gaskets _____ _____ _____

Materials unsuitable:

Special Features:
Coiled_____ Insulated_____ Refr._____
Nitrogen_____ Other_____

C. EQUIPMENT SAFETY FEATURES

Tank:
Fixed Roof_____
Floating Roof_____ Internal_____ External_____
Double Seal_____ Single Seal_____

Vent unit properly sized and installed?

Flame arrestor required?

Adequate emergency overpressure protection (fire, explosion, overfill, reaction)?

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C. EQUIPMENT SAFETY FEATURES (contd)

Pump:
Overpressure protection

Coupling/shaft guard

Remote shutdown

Lines:
Overpressure protection

Remote shutdown/auto shutdown, if required at dock or loading station

Grounding or cathodic protection

D. FIRE PROTECTION

Adequate fire water provisions? (hydrants, monitors, deluge system)

Is spray protection required?

Fire proofed vessel legs?

Adequate accessibility for emergency equipment?

Dike walls and drainage?

Static grounding?

Fire hazards from other materials within same dike or close proximity?

Has local fire department been advised of new product?

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E. ENVIRONMENTAL PROTECTION

Adequate diking to contain spills from tank?

Suitable containment for spills at loading/unloading stations?

Can wastes be properly handled?

Are permits and/or revisions required?

Reporting procedures developed?

Are vapor scrubbers/absorbers required?

F. EQUIPMENT CONTROL AND TESTING

Have critical equipment, controls, and alarms needed for safe operations been identified and documented in writing to location's management?

Is the selected equipment dedicated to product and isolated from other facilities?

Is the location's equipment test and inspection program adequate?

Last test date and results of the selected equipment.

Is there agreement and understanding between all parties regarding equipment to be used in handling the specified product?

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G. OPERATIONS

Have tanks, lines, and other equipment been labeled or otherwise identified?

Have any operating restrictions been established?

Have critical operating parameters (COP) been established and appropriate corrective actions defined?

Have SOP's been reviewed and updated to include any operating restrictions, COP, and critical controls or alarms?

Have emergency procedures been updated?

H. TRAINING

New product information and MSD Sheets included in Right-to-Know program?

Any additional training required in DOT, USCG, or EP regulations?

I. PERSONNEL SAFETY

If required, are eye baths and safety showers installed in accessible location?

Self-contained breathing apparatus in place?

Personal protective gear specified and provided?

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PRE-STARTUP SAFETY/HEALTH INSPECTION PROCEDURE

1 PURPOSE

1.1 To provide minimum requirements for developing pre-startup safety/health inspection procedures for process facilities and for general facility installations such as laboratories, maintenance shops, warehouses, tank farms, and terminals.

2 GENERAL

2.1 To assure that a facility is safe to operate by confirming that the safety and health concerns either known or identified in the design review, have been addressed in the installation and/or in the procedures for operation and maintenance of the facility. The inspection is not intended to include a review of the unit process design criterion or construction specifications.

2.1.1 Standards - A pre-startup safety/health inspection shall be held when one or more of the following situations is present:

2.1.1.1 A new facility is to be started up.

2.1.1.2 An existing facility or process has been expanded or significantly revised.

2.1.1.3 A chemical is to be handled by a unit for the first time; and the chemical is a potential carcinogen, teratogen, or in Class 3 or Class 4 of the hazard classification for health, fire, or stability. When stability of a product requires special storage requirements, an inspection shall be completed prior to product purchase.

2.1.1.4 An older facility is to be operated after being idle for an extended period of time.

2.1.2 Timing - The pre-startup safety/health inspection shall be held before the startup of the facility and after installation or revision is sufficiently complete for a proper physical inspection. There should be adequate time provided following the inspection and before commissioning for the Facilities Manager to address any significant concerns that may be developed.

2.1.3 Procedure - Procedures exist and include the following:

2.1.3.1 Team Selection and Makeup

1. The Facilities Manager has the responsibility for establishing the inspection team, designating a team leader, and initiating the inspection.

2. The Facilities Manager will select the team from the different disciplines depending on the type and scope of the project.

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3. The team will normally consist of a leader appointed by the Facilities Manager and four to five members from the Engineering, Maintenance, Safety/Health, Environmental Protection, and Operating Departments, with individuals from specialized functions as deemed necessary. The team should include a representative from the original project, a unit operator or craftsman, and one or more members not directly related to the project under review.

2.1.3.2 Preparation and Execution

1. The project representative from the facility is responsible for familiarizing the team with the project and for reviewing the final report prior to publication.

2. The team should consider utilization of available resource documents in evaluating the safety/health aspects of the project under review, i.e.:

a. Engineering safety/health review documents.
b. Safety/health considerations report or facilities change review documents.
c. Current Flow Sheets.
d. Unit standard operating procedures.
e. Unit MSDS sheets.
f. R&D HS&EA guidelines or Definition of Technology report.
g. Divisional Safety and Health Technology Manuals and Standards.

3. The team should become familiar with the operating aspects of the facility or portion of the facility being evaluated.

4. The team should be aware of the Safety and Health considerations identified in the design review and included in the facility design. Members should look for application of design/operating features to address potential hazards that have been identified there or, in the divisions major loss experience.

5. The team shall make an inspection of the installation for process safety, personnel safety, fire protection, and health hazards, and shall utilize the department inspection lists to assure that the facility is installed as designed.

6. Operating procedures and operator training shall be checked to ensure that they contain adequate provisions for health exposure control; unit startup, recycle, or hold modes; and shut down; as well as component failure and emergency response activities.

7. Maintenance procedures, test and inspection criteria, and critical spare parts availability should be reviewed.

22.5.1.2

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2.1.3.3 Reporting and Follow-Up

1. The team leader shall prepare a written report to the accountable Facilities Manager. The inspection shall be documented, and the more significant deficiencies and/or concerns shall be highlighted for attention or corrective action prior to startup. Other deficiencies noted and/or concerns developed by the team should also be included in the report for later attention.

2. Action plans shall be addressed in the following manner:

a. The Facilities Manager has the responsibility to ensure that the more significant deficiencies and/or concerns highlighted by the team have been addressed prior to approval for startup and operation of the unit.

b. The Facilities Manager is responsible for addressing all the safety deficiencies and/or concerns noted by the team in an action plan with steps that include accountabilities and completion dates.

3. The written report and response documents are to be maintained in a central file for a reasonable period of time after completion of the safety inspection.

3 REFERENCE

3.1 Corporate Health, Safety and Environmental Protection Procedure Manual, 3.1 Personnel Safety.

Original Date: July 1982
Revision Date: February 1988
03380

22.5.1.2

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SUBJECT: HSEA Administration
OSHA Inspections

PURPOSE: To establish written, uniform procedures to follow in event of an inspection by OSHA.

BACKGROUND: OSHA inspections ordinarily result from a fatality or an employee complaint, but these events are not prerequisites for an inspection.

REQUIREMENTS: Location management will have a written procedure to be followed in event of an OSHA inspection. The procedure will comply with the UCC "Guidelines for OSHA Inspections" attached.

SCOPE: These requirements apply to all operating locations administered by C&P Purchasing and Distribution.

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OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

COMPLIANCE INSPECTION GUIDELINES

A. PREPARATION FOR AN OSHA INSPECTION

1. Site Manager designates in advance persons, familiar with the overall site, who will receive and guide the compliance officers.

2. Current employee representative list maintained.

3. Required injury-illness records available for the past five years (OSHA forms 100, 101, 102, 200, and 103 or 200S if applicable).

4. OSHA poster is prominently displayed.

5. Union Carbide Federal Employee Number is 13-1421730.

B. COMPLIANCE OFFICER ARRIVAL AND INSPECTION

1. Identify Verification - Compliance officers possess Department of Labor, Occupational Safety and Health Administration Identity Card which bears a color photo of the individual, sample signature and OSHA Region to which he is assigned. In those States with approved or pending State Plans, State Identity Cards will be carried.

   IN THE EVENT OF ANY DISCREPANCY, VERIFY IDENTIFICATION BY CONTACTING THE OSHA REGION OFFICE (look up the telephone number independently) PRIOR TO ALLOWING ENTRY INTO THE SITE.

   Non-official OSHA personnel (be they OSHA contractors or visitors) should not be permitted on site without a Confidentiality Agreement to insure that UCC trade secrets are protected.

2. Opening Conference

   a. Determine Type and Scope of Inspection - Employee Complaint, General, Safety or Health.

   b. Establish Employer Representation

      1. Representatives knowledgeable of the areas proposed to be inspected should participate as the Employer Representative.

      2. Qualified UCC personnel are to take parallel or side-by-side industrial hygiene and environmental samples, photographs, and tape recordings as those taken by OSHA.

   c. Determine Employee Representation - Employee representation as authorized by the employees; where there is no authorized representative, the Compliance Officer will consult with a reasonable number of employees. Private interviews with employees are permissible.

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8. COMPLIANCE OFFICER ARRIVAL AND INSPECTION (Cont.)

2. Opening Conference (Cont.)

d. Media Representation - is not authorized by law. Should a Media Representative request to accompany a compliance officer, it is totally the local Plant Management's option as to whether he permits or denies the request.

e. Determine Record Requirements - Compliance Officer may examine and copy (copying method at the discretion of local management) all records required by law as they pertain to Safety and Health of our employees. All requests for other records should be in writing: Refused requests should immediately be communicated to the Divisional HS&EA Manager. Typical examples of records NOT to be provided are: Production and Sales figures; benefit plan information and production process documents not applicable to an employee safety or health matter.

NEVER GIVE THE COMPLIANCE OFFICER AN ORIGINAL OF ANY DOCUMENT -- LET HIM COPY IT!

F. Status of Trade Secrets - Trade secrets are NOT exempt from inspection. The site manager's duty is to make it clear that the Compliance Officer will probably be learning trade secrets and that when requested by a management representative, he will note same on the information and/or evidence obtained. It is recommended that all materials be reviewed again at the closing conference to assure trade secret information/evidence is so protected.

3. Physical Inspection

a. It is suggested that answers to a Compliance Officer's request or question be responsive to the particular question but that it not offer any information beyond the scope of the question. REMEMBER The Compliance Officer cannot act in a consultative capacity. If he sees a violation, he must issue a citation for it.

b. Compliance Officers must abide by ALL site safety and health regulations. Consider:

1. Personnel Protective Equipment - Site management should provide any specialized equipment (respirators, SCBA, etc. and assure that the individual is familiar with usage PRIOR to entry into the designated area.

2. Monitoring Equipment - Deviations (for expediency reasons) from existing Hazardous Work, Confined Space, Electrical Lockout, Master Tag and/or Regulations Area procedures should not be undertaken.

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C. RECORDING THE OSHA VISIT (SITE USE)

Fully documenting the OSHA visit is a must if we are to benefit from each OSHA experience and develop background material in the event of a future legal challenge.

To adequately document and evaluate each visit, it is recommended that the following concerns be addressed by local plant management and recorded internally as applicable:

1. Names of compliance officers (Federal or State).

2. Time of arrival and departure.

3. Location, factual description of alleged violation and standard alleged to be violated.

4. Pertinent comments about violations and potential citations made by compliance officer, to include names of Carbiders who witnessed these statements.

5. General condition of area(s) visited to include:

   a. Names or description of employees doing the work and the number of employees working "within" the immediate (exposure) area of concern.

   b. Type of work being performed.

   c. Status of equipment and housekeeping in the area visited.

   d. If unusual condition is noted, how long was it present?

6. Measurements, if any, taken by the Compliance Officer including Industrial Hygiene sampling, photographs, chemical sample. Do we have independent comparative samples? Moreover, a notation of any information concerning the method of sampling should be kept.

7. Pertinent comments or remarks by Union representative or management representatives to the Compliance Officer regarding the alleged violations. Witnesses to these comments?

8. Names, including job titles, of individuals who accompanied the Compliance Officer, to include individuals interviewed during the course of the visit.

9. Was there any prior notice or complaint regarding the condition or situation involved in the alleged violation from either the Union, an employee or company inspection? If so, state:

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C. RECORDING THE OSHA VISIT (SITE USE) (Cont.)

a. Date of said notice or complaint.
b. By whom given.
c. Action taken by management.
d. Names of persons contacted.
e. Whether or not there are any records regarding the notice or complaint and, if so, in whose possession?

10. Notes of both the opening and closing conference.

11. An additional copy of all documents given to OSHA should be made and placed in the OSHA visit file.

12. Notations of all trade secret information should be made. If necessary, a letter reaffirming our right to trade secret protection can be written to OSHA by the Law Department.

D. USE OF PERSONAL SAMPLES BY COMPLIANCE OFFICERS

OSHA has authorized compliance officers to use personal sampling devices during inspections and to attach these devices to the employees. While we prefer that OSHA use summary data from our routine sampling programs, we see no problem with this change. Wherever appropriate, obtain independent comparative samples.

E. REPORTING THE OSHA VISIT

As soon as is practical following an OSHA employees visit to a facility, the purpose of his visit should be communicated to the Distribution HS&EA Manager and line management.

Upon receipt of an OSHA citation, the Law Department should be notified immediately. A copy should be sent to the HS&EA Manager along with a statement as to management's decision whether to seek an informal conference with the OSHA Area Director to contest it or not. REMEMBER - we have only fifteen (15) working days to contest a citation following receipt.

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SUBJECT	SECTION		
GUIDELINES FOR OSHA INSPECTION	I - Administrative		
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INTRODUCTION

The Williams-Steiger Occupational Safety and Health Act of 1970 requires that every employer furnish its employees a safe and healthful working environment free from recognized hazards that are causing or likely to cause death or serious physical harm.

A. Preparation for an OSHA Inspection

1. Site Manager designates in advance persons, familiar with the overall site, who will receive and guide the compliance officers. (To be called inspection coordinator.)

   (a) Establish a group of OSHA inspection coordinators and alternate(s) who are fully aware of company policy regarding OSHA inspections. Persons selected to serve as OSHA inspection coordinators and alternate(s) should be technically competent and knowledgeable about the product and/or processes and trained in the monitoring of substances to which employees may be exposed.

   (b) Instruct the OSHA inspection coordinators and alternate(s) as to the steps to be taken when an OSHA inspector arrives. Coordinators and alternate(s) should have a general working knowledge of OSHA rules and regulations. They also should be thoroughly familiar with the relevant printed Inspection Guidelines.

   (c) Keep the OSHA Inspection Guidelines and any Inspection Forms in a readily available location at all times.

   (d) Keep OSHA inspection coorindators and alternate(s) fully advised of all relevant OSHA developments.

2. Current employee representative list maintained.

3. Required injury-illness records available for the past five years (OSHA Forms 100, 101, 102 and 103 or 200S if applicable).

4. OSHA poster is prominently displayed.

5. Union Carbide Federal Employee Number is 13-1421730.

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BRC 1504

B. COMPLIANCE OFFICER ARRIVAL AND INSPECTION

1. Identify Verification - Compliance officers possess Department of Labor, Occupational Safety and Health Administration Identity Card which bears a color photo of the individual, sample signature and OSHA Region to which he is assigned. In those states with approved or pending State Plans, State Identity Cards will be carried.

   IN THE EVENT OF ANY DISCREPANCY, VERIFY IDENTIFICATION BY CONTACTING THE OSHA REGION OFFICE (look up the telephone number independently) PRIOR TO ALLOWING ENTRY INTO THE SITE.

   (a) Promptly notify an OSHA inspection coordinator or, in his absence, an alternate that an OSHA inspector has arrived. Then escort the OSHA inspector by an "appropriate route" to the office of the already notified OSHA inspection coordinator or alternate. As used hereafter, an "appropriate route" means one revealing as little of the facility as possible; i.e., the inspector should be taken outside work areas and through the entrance closest to the coordinator's office or the area to be inspected. OSHA should be exposed to as little as possible of the company facilities because the inspector may inspect and cite the company for violations within plain view without the necessity of obtaining a search warrant.

   (b) Immediately upon hearing of the arrival of the OSHA inspector, the OSHA inspection coordinator should take out the OSHA Inspection Guidelines and the OSHA Inspection Form. The Guidelines and Form should NOT be shown to the OSHA inspector. (They need not be hidden. They simply should not be made available for inspection or review.)

   (c) Two OSHA inspection coordinators or alternates should be present with the OSHA inspector at all times during any meeting and throughout any inspection. It is important that the OSHA inspector be treated courteously.

   (d) Make a written record of the inspector's name, title and, if possible, the name of his superior.

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B. COMPLIANCE OFFICER ARRIVAL AND INSPECTION (Contd.)

2. Opening Conference

(a) Determine Type, Purpose and Scope of Inspection - Employee Complaint, General, Safety or Health. OSHA must explain:

(1) An inspection pursuant to an employee complaint.

The nature of the complaint should be specifically identified. Section 8(f)(1) of the Act requires that a copy of the complaint be given to the employer, but the complainant is entitled to have his name withheld. . . .

(2) An inspection following a workplace fatality or accident causing the hospitalization of five or more employees.

The employer is required to report these incidents to OSHA within 48 hours after their occurrence and an inspection will be virtually certain to follow. The nature and location of the incident giving rise to the inspection should be specifically identified.

(3) A follow-up inspection of an item previously cited.

Such an inspection can be expected if the citation was for a serious, willful, or repeated violation, or if an abatement plan has been agreed to by the company as the result of an earlier inspection. The previous citation and the item should be specifically identified by the OSHA inspector.

(4) A regional programmed inspection based upon injury and illness rates.

(5) OSHA SPECIAL EMPHASIS PROGRAM (SEP) OR NATIONAL EMPHASIS PROGRAM (NEP) INSPECTIONS. In the event of an SEP or NEP inspection request, ascertain immediately what the scope of the inspection will be (how many units, chemicals, etc.). DIVISION HS&EA and legal consultation should be sought prior to the start of any such inspection. It is also important to identify in advance who the inspectors will be and their credentials to conduct such an audit. Any non-OSHA employee (contractor, etc.) shall not be admitted to the plant or shown any information until such time as a secrecy agreement acceptable to the UCC Law Department is signed and approved.

(Added)

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B. COMPLIANCE OFFICER ARRIVAL AND INSPECTION (Contd.):

(b) Establish Employer Representation to Include:

(1) Knowledgeable representative of the areas to be inspected.

(2) Qualified personnel to take parallel and similar photographs, chemical and environmental samples and tape recordings as applicable.

(3) The compliance officer should be advised if he is going to do industrial hygiene type sampling to define exposures and that if no professional is on site, as a matter of company policy, we require the presence of a professional hygienist when compliance sampling is performed. We will be happy to conduct him on a tour of the facilities, and answer any questions which he has, but we request that he delay any such compliance sampling until a UCC professional hygienist arrives on the scene. Explain that normally the industrial hygienist will be able to respond in a matter of hours. If a compliance officer should present himself at the gate on Monday, we should be able to respond and have our professional industrial hygienist at the site the next morning.

(c) Determine Employee Representation - Employee representation as authorized by the employees; where there is no authorized representative, the Compliance Officer will consult with a reasonable number of employees. Private interviews with employees are permissible, but company representatives can be present if on company premises. The OSHA inspector has the right to confer privately with employees under Section 8(a)(2) of the Act, so long as that right is exercised in a reasonable manner. Although the OSHA inspection coordinators do not have an absolute right to be present during a conversation between the OSHA inspector and an employee, they should request to be present. The names of any employees who had private conversations with the OSHA inspector should be recorded. If the OSHA inspector would like to talk privately with an individual employee who cannot reasonably be allowed to leave his work station at the time, the OSHA inspector should be informed of this and told that the employee will be made available as soon as possible.

WARNING: It is a violation of the law to retaliate against any employee who cooperates with an OSHA inspector.

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B. COMPLIANCE OFFICER ARRIVAL AND INSPECTION (Contd.)

(d) Media Representation - is not authorized by law. Should a Media Representative request to accompany a compliance officer, it is totally the local Plant Management's option as to whether he permits or denies the request.

(e) Determine Record Requirements - Compliance Officer may examine and copy (copying method at the discretion of local management) all records required by law (i.e., OSHA Form 200 and any exposure or medical records available to OSHA as required by law). All other record requests should be made in writing and should be released only after discussion and agreement by the UCC Law Department. Refused requests should be immediately communicated to HS&EA and the Law Department. Typical examples of records NOT to be provided are: Production and Sales figures; benefit plans information and production process documents not applicable to an employee safety and health matter.

NEVER GIVE THE COMPLIANCE OFFICER AN ORIGINAL OF ANY DOCUMENT -- LET HIM COPY IT!

During the opening conference, the OSHA inspector may, upon request, examine records that the company is required to keep under the Act. Such records include a log of occupational deaths, injuries, and illnesses, supplementary information on incidents recorded in the log, employee exposure and medical records, and equipment inspection and testing records. OSHA inspectors may not examine personally identifiable employee medical information, except for the sole purpose of verifying employer compliance with OSHA medical recordkeeping requirements, without first obtaining a written access order approved by the Assistant Secretary of Labor or specific written consent of the employee (29 CFR §1913.10).

(f) Status of Trade Secrets - Trade secrets are NOT EXEMPT FROM INSPECTION. The site manager's duty is to make it clear that the Compliance Officer will probably be learning trade secrets and that when requested by a management representative, he will note same on the information and/or evidence obtained. It is recommended that all materials be reviewed again at the closing conference to assure trade secret information/evidence is so protected. Section 15 of the Act requires OSHA to treat any trade secret in confidence. OSHA inspection coordinators should

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B. COMPLIANCE OFFICER ARRIVAL AND INSPECTION (Contd.)

identify any areas which contain or might reveal a trade secret. Any information obtained by the OSHA inspector in such areas, including all photographs and samples, should be labeled "Confidential - Trade Secret."

(g) Law Department Contacts - The UCC Law Department should be notified immediately if there is any pending OSHA litigation in which the company is presently involved or if the OSHA inspector seeks to conduct an inspection outside of regular working hours. Telephone one of the following persons in the order listed below:

		Work	Home
(R)	Ms. B. L. White	203-794-6379	
	Mr. D. R. Crowell	203-794-6755	
	Mr. M. N. Duvall	203-794-6617	

(h) Presentation of a Warrant - If the OSHA inspector presents a search warrant, ask to see the warrant. Read the search warrant carefully, especially noting the specific machine, equipment, or condition to be inspected. Copy the contents of the search warrant. Immediately call the UCC Law Department. The OSHA inspector should be advised you are calling your lawyer.

3. Physical Inspection

(a) It is suggested that answers to a Compliance Officer's request or question be responsive to the particular question but that it not offer any information beyond the scope of the question. Remember, the Compliance Officer cannot act in a consultative capacity. If he sees a violation he must issue a citation for it. Do not permit an OSHA inspector to disrupt your normal plant schedule and operations. If the individual who would normally respond to the compliance officer is unavailable because he is in a meeting, simply advise the compliance officer of this situation and tell him that he will be received as soon as this individual can finish the meeting or whatever activity he happens to be involved in. We should not use this as subterfuge and keep the compliance officer waiting unnecessarily. We are already in an adversary position when he arrives and we should not do anything which will escalate this condition.

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B. COMPLIANCE OFFICER ARRIVAL AND INSPECTION (Contd.)

We should not respond positively to any general request for information. For example, if the compliance officer says "What type of exposure reference do you have?", simply describe the type of industrial hygiene data and other types of data which we collect in broad general terms without specifying the stresses or other parameters of this type of activity. If he demands copies of all of this information, simply advise him that a formal request in writing will have to be made by OSHA to secure this information. This request should contain specifically what type of information he is requesting and for what purpose this information is needed.

If after being admitted for the purpose of making a limited inspection the OSHA inspector attempts to broaden the scope of his inspection, he should be asked to leave the work area and escorted back to the OSHA inspection coordinator's office. Do not forcibly stop the OSHA inspector from inspecting any area since such action may result in criminal liability. But tell the OSHA inspector to stop his inspection and that you want to consult your lawyer before the inspection continues. The UCC Law Department should be notified immediately.

(b) Compliance Officers must abide by ALL site safety and health regulations. Consider:

(1) Personnel Protective Equipment - Site management should provide any specialized equipment (respirators, SCBA, etc.) and assure that the individual is familiar with usage PRIOR to entry into the designated area.

(2) Monitoring equipment - Assure the monitoring equipment used (including camera flash) meets or exceeds the electrical classification of each area.

(3) Permit Systems - Deviations (for expediency reasons) from existing Hazardous Work, Confined Space, Electrical Lockout, Master Tag and/or Regulation Area procedures should not be undertaken.

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B. COMPLIANCE OFFICER ARRIVAL AND INSPECTION (Contd.)

(c) OSHA inspection coordinators should not volunteer information or documents, or offer additional areas for inspection. Statements made by the OSHA inspection coordinators could be used as admissions against the company in a subsequent OSHA hearing. The company has the right to insist that all questions to its reprsentatives be asked under oath in the presence of counsel.

(d) OSHA inspection coordinators should take detailed written notes of all remarks and questions asked by the OSHA inspector. Describe the "appropriate route" the OSHA inspector takes through the plant in these notes.

(e) OSHA inspection coordinators should photograph every condition photographed by the OSHA inspector. Ordinarily the photographs should be taken after the inspector leaves. An exception would be if the OSHA inspector appears to be photographing conditions from a misleading perspective or conditions which are subject to change. The OSHA inspection coordinators should photograph such conditions in the presence of the OSHA inspector from both the misleading perspective and the proper perspective. Note the type of camera, flash equipment and any special attachments used by the OSHA inspector. At the conclusion of the inspection, request copies of all photographs taken by the OSHA

(R) inspector or, as a preferred alternative, offer to have the film developed and copies of the photographs made for both OSHA and UCC.

C. RECORDING THE OSHA VISIT (SITE USE)

Fully documenting the OSHA visit is a must if we are to benefit from each OSHA experience and develop background material in the event of a future legal challenge.

OSHA inspection coordinators should bring along the following items on the inspection tour:

1. OSHA Inspection Guidelines. (Do NOT show these guidelines to the OSHA inspector under any circumstances.)*

* They need not be hidden. They simply should not be made available for inspection or review.

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C. RECORDING THE OSHA VISIT (SITE USE) (Contd.)

2. OSHA Inspection Form (Appendix A). (Do NOT show this form to the OSHA inspector under any circumstances.)*

3. Notepad. (Do NOT show any notes written prior to, during or after the inspection to the OSHA inspector under any circumstances.)*

4. Pre-selected camera and flash equipment. The camera should take good quality photographs and be readily available at all times. Since ordinary flash equipment cannot be used safely in certain flammable atmospheres, the flash equipment must be carefully selected so that its use does not violate any OSHA standards.

Allow the OSHA inspector to conduct his inspection of the machine, equipment, or condition specifically mentioned in the search warrant, employee complaint, accident report or prior citation, as the case may be. Section 8(e) of the Act gives walk-around rights; i.e., the right to accompany the OSHA inspector during the inspection, to both management representative and an employee representative. To adequately document and evaluate each visit, it is recommended that the following concerns be addressed by local plant management and recorded internally as applicable.

1. Names of compliance officers (federal or state).

2. Time of arrival and departure.

3. Location, factual description of alleged violation and standard alleged to be violated.

4. Pertinent comments about violations and potential citations made by compliance officer, to include names of Carbiders who witnesses these statements.

* They need not be hidden. They simply should not be made available for inspection or review.

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C. RECORDING THE OSHA VISIT (SITE USE) (Contd.)

5. General condition of area(s) visited to include:

   (a) Names or description of employees doing the work and the number of employees working "within" the immediate (exposure) area of concern.

   (b) Type of work being performed.

   (c) Status of equipment and housekeeping in the area visited.

   (d) If unusual condition is noted, how long was it present?

6. Measurements, if any, taken by the Compliance Officer including industrial hygiene sampling, photographs, chemical samples. Do we have independent comparative samples?

   (a) The sampling techniques and parameters employed by the OSHA compliance officer should be documented by the plant representative as completely as possible.

   (b) Simultaneous samples should always be obtained by the plant on the personnel sampled by OSHA.

   (c) The individuals sampled should be observed as continuously as possible. While it is generally not practice to continuously watch employees during routine sampling, because of practical limitations, exception should be made during OSHA sampling to avoid possible discrepancies.

   (d) The activities performed by the individuals samples should be closely documented. Although this should be standard sampling practice, it becomes of paramount importance during a "one-shot deal" OSHA sampling, when it's conceivable that the sample could reflect abnormal conditions.

   (e) The samples should be submitted ASAP for analysis.

7. Pertinent comments or remarks by Union or employee representative or management representatives to the Compliance Officer regarding the alleged violations. Witnesses to these comments?

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C. RECORDING THE OSHA VISIT (SITE USE) (Contd.)

8. Names, including job titles, of individuals who accompanied the Compliance Officer, to include individuals interviewed during the course of the visit.

9. Was there any prior notice or complaint regarding the condition or situation involved in the alleged violation from either the Union, an employee, or company inspection? If so, state:

   (a) Date of said notice or complaint.

   (b) By whom given.

   (c) Action taken by management.

   (d) Names of persons contacted.

   (e) Whether or not there are any records regarding the notice or complaint and, if so, in whose possession?

D. CLOSING CONFERENCE

During the closing conference, the OSHA inspection coordinators should thoroughly question the OSHA inspector as to citations, if any, OSHA may issue as a result of the inspection. The information should be recorded and, immediately following the conference, relayed to the UCC Law Department. OSHA inspection coordinators should request copies of all photographs taken by the OSHA inspector during the inspection.

E. REPORTING THE OSHA VISIT

Report the OSHA compliance visit to your Division HS&EA Manager. The Division HS&EA Manager will report the inspection to C&P Group HS&EA and to the Corporate HS&EP Department following the reporting procedure outlined in the Corporate Safety and Loss Control Manual or the Corporate Occupational Health Manual.

2379K (9/29/86)

Attachments

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BRC 1514

APPENDIX A

OSHA INSPECTION FORM

In anticipation that this inspection could lead to legal proceedings, you may wish to fill out this form to assist in protecting the company's rights during any hearings, trials, or other legal proceedings which might arise as a result of this inspection. Please attach additional pages when needed to complete any question(s) and copies of the requested documents.

1. OSHA inspection coordinator: _____ Name

2. Date of inspection: _____

3. Identity of OSHA inspector: _____ Name _____ Title

4. OSHA Area Director: _____ Name

_____ Address

_____ Telephone Number

5. State reason(s) for inspection

_____

_____

_____

_____

A. Did OSHA receive an employee complaint? _____
If so, describe the nature of the complaint, the machine, equipment or condition it specifically relates to, and the type of problem it involves:

_____

_____

_____

_____

Attach a copy of the complaint to this form.

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B. Has there been a workplace fatality? _____
If so, describe the nature and location of the incident which resulted in the fatality:

_____

_____

_____

Attach a copy of the report supplied to OSHA within 48 hours of the incident.

C. Has there been an accident which resulted in the hospitalization of five or more employees? _____
If so, describe the nature and location of the accident and the resulting injuries:

_____

_____

_____

_____

Attach a copy of the report supplied to OSHA within 48 hours of the accident.

D. Is this a follow-up inspection of an item previously cited? _____
If so, identify the previous citation, proposed penalty and abatement plan, if any:

_____

_____

_____

_____

Attach a copy of the previous citation and the OSHA inspector's worksheets relating to the citation, if available.

E. Is this a regional programmed inspection? _____
If so, describe the inspection program and the criteria used to select this particular facility for inspection:

_____

_____

_____

_____

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6. Is this an inspection of a multi-employer worksite? _____
If so, list the names of all other employers and the number of workers employed by each employer who are present on the worksite, with a brief description of the nature of the work being performed:

_____

_____

_____

_____

7. Is there any pending OSHA litigation in which the company is presently involved? _____
If so, was the Company Legal Department or Company Legal Counsel notified? _____

Name of lawyer notified _____

Time and date of notification _____

8. Did the OSHA inspector seek to conduct the inspection outside of regular working hours? _____
If so, state time of requested inspection and regular working hours:

_____

_____

If so, was the Company Legal Department or Company Legal Counsel notified? _____

Name of lawyer notified _____

Time and date of notification _____

9. If no search warrant was presented, did you consent to a limited inspection? _____

A. Describe the specific machine, equipment or condition you permitted the OSHA inspector to inspect in your oral statement of limited consent:

_____

_____

_____

_____

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8. Did the OSHA inspector attempt to broaden the scope of the inspection after being admitted for the purpose of making a limited inspection? _____
If so, describe the machines, equipment or conditions which you refused to allow the OSHA inspector to inspect and the reason(s) given for such refusal:

_____

_____

_____

_____

If so, did you contact the Company Legal Department or Company Legal Counsel before objecting to the inspection? _____

Name of lawyer notified _____

Time and date of notification _____

10. If no search warrant was presented, did you refuse the OSHA inspector entry? _____

11. Did the OSHA inspector present a search warrant upon arrival?

_____

A. If so, describe the contents of the search warrant and the specific machine, equipment, or condition to be inspected:

_____

_____

_____

_____

Attach a copy of the search warrant if it was given to you.

B. If so, was the Company Legal Department or Company Legal Counsel notified? _____

Name of lawyer notified _____

Time and date of notification _____

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12. List any records, documents or notices reviewed by the OSHA inspector:

13. Describe in detail any remarks made during the opening conference, including any oral statements made to the OSHA inspector regarding confidential products and processes:

14. List all machines, equipment or conditions inspected and their exact location:

15. State the names and titles of management representatives who accompanied the OSHA inspector during the inspection tour

16. State the names and titles of employee representatives who accompanied the OSHA inspector during the inspection tour

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17. Describe the route taken by the OSHA inspector during the inspection tour:

18. Describe in detail any relevant remarks made during the inspection by both the OSHA inspector and any employees, and identify the speaker:

19. Describe in detail any objections made prior to or during the inspection, and identify the objector:

20. Identify any photographs taken by the OSHA inspector, including location, time of day, date, and the names of any employees in the photograph:

A. Describe the type of camera, flash equipment and any special attachments used by the OSHA inspector:

B. Did you request copies of the photographs taken by the OSHA inspector?

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21. Identify any photographs taken by a management representative, including photographer, location, time of day, date, and the names of any employees in the photograph:

A. Describe the type of camera, flash equipment and any special attachments used by a management representative:

22. Describe any monitoring conducted by the OSHA inspector, including the equipment used, monitoring procedure, time of day, date, and the results of such monitoring, if known:

23. Describe any monitoring conducted by a management representative, including the equipment used, monitoring procedure, time of day, date, results and any variances between results of monitoring conducted by the OSHA inspector and management. Indicate which monitoring, if any, was conducted concurrently with the OSHA inspector's monitoring:

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24. Did any OSHA inspector seek to attach a monitoring or sampling device to an employee?

_____

If so, describe the monitoring or sampling device and identify the employees involved:

_____

_____

25. List the names of any employees interviewed by the OSHA inspector and state whether a management representative was present during the interview. If a management representative was present, state his/her name and a summary of the interview:

_____

_____

_____

_____

26. Describe any area(s) identified as containing or possibly revealing a trade secret:

_____

_____

_____

_____

_____

List any materials, such as photographs and samples, which were labeled "confidential-trade secret": _____

_____

_____

_____

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27. Describe in detail any remarks made during the closing conference and identify the speaker:

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2.16

BRC 1524

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SECTION: 2.16
APPROVED:
ISSUED: July 1, 1990

SUBJECT: Safety and Loss Control Program
Off-the-Job Injury Reporting

PURPOSE: To prevent personal injuries off-the-job, minimize the loss of employee work days and ensure injuries occurring off-the-job are not aggravated on the job.

BACKGROUND: Corporate HS&EP Procedure 3.1, "Personnel Safety."
C&P P&D HS&EA Section 2.1
C&P SHIM, III.C.2.

SCOPE:

1. Applicable to all off-the-job injuries sustained by Purchasing & Distribution employees.

REQUIREMENTS:

1. All off-the-job injuries resulting in lost work days will be investigated, documented and reported.

   Lost work days will be based on the employee's ability to perform regular or modified work and not necessarily whether or not the employee reports to work. See Appendix A.

2. Modified work consistent with medical restrictions shall be made available, when appropriate, to employees that are otherwise unable to report for work as a result of an off-the-job injury.

3. Employees absent for three or more days due to an off-the-job injury must obtain a release from the location physician and the employee's personal physician (when applicable) prior to returning to work.

4. Safety is emphasized as being a way of life.

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UNION CARBIDE CORP. C&P PURCHASING & DISTRIBUTION

OFF-THE-JOB INJURY REPORTING GUIDELINES

A. Employees suffering injuries which may hinder their ability to report for work should take the following actions:

1. Obtain professional medical attention.

2. Advise the doctor that modified work consistent with medical restrictions and physical limitations will be made available when appropriate. The employee's doctor may be consulted by the company doctor.

3. Report the following information to his or her supervisor as soon as practical.

a. Nature of injury

b. Professional treatment received (if any)

c. Work restrictions or physical limitations

B. The immediate supervisor receiving the report will take the following actions (as appropriate):

1. Encourage the employee to visit his or her physician if appropriate.

2. Offer restricted duty work if it is available within constraints of physical limitations or work restrictions.

3. Positively encourage the employee to report for work as soon as he or she is able.

4. Initiate an off-the-job injury report (Appendix A) and route according to the diagram in Part A.

5. Notify Location Purchasing & Distribution Safety Coordinator of the employee's status.

6. Notify location or contract physician.

7. Maintain regular contact with the injured employee providing support and encouragement to return to work.

8. Keep line management and location or contract physician and the Location Purchasing & Distribution Safety Coordinator informed of status until the employee returns to work.

C. The location Purchasing and Distribution Safety Coordinator will initiate the following actions:

1. Notify the Site (Host) Safety Manager and the Departmental Safety/ Health Manager of the employee's status on the first regular scheduled work day following the initial report or earlier as required by applicable Departmental GUIDELINES.

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2. Monitor the employee's status and keep the Site (Host) Safety Manager and the Department Safety/Health Manager informed.

D. The location or contract physician will:

1. Contact the employee's doctor immediately, if appropriate, but no later than the fourth lost work day, and review the following:

   - Nature of injury
   - Treatment prescribed
   - Work restrictions, if any
   - Nature of work available if employee returns to work.

2. Notify the employee's immediate supervisor of the employee's status. For example:

   - Diagnosis and prescribed treatment
   - Suggested days of work restriction
   - Other information as appropriate.

3. Maintain regular contact with the employee's doctor until the employee returns to work.

4. Release employee for return to work when appropriate.

E. When the employee returns to work, the immediate supervisor will:

1. Ensure the employee obtains a release from the location or contract physician if they have been absent for three or more days.

2. Discuss the injury event with the employee and request the employee to complete the Off-the-Job Injury Report (Appendix A, Parts B and C). The supervisor will provide the employee with office facilities and time away from the job to complete the report, or send the employee home, with pay, to complete the report with the support and involvement of the family, as appropriate.

3. Distribute copies of the completed Off-the-Job Injury Report as per the diagram in Part A of the report.

4. Request the employee to share the lessons learned with other employees at next safety meeting.

F. Employees should be encouraged to report all significant injuries that occur regardless of lost work. These injuries should be documented and reported via steps E.2 and E.3 above.

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APPENDIX A

OFF-THE-JOB INJURY REPORT
C&P PURCHASING AND DISTRIBUTION

REPORT NO._____ PAGE ONE

PART A
(To be completed by Supervisor)

Day _____ Shift_____ Maintenance_____ Other_____

NAME OF EMPLOYEE: SOCIAL SECURITY NO.

NAME OF SUPERVISOR: REPORTED TO SUPERVISOR:
DATE: TIME:

FIRST DAY OFF WORK:	MEDICAL RELEASE DATE:	DATE RETURNED TO WORK:	NO. OF LOST WORKDAYS:

PARTS B AND C COMPLETED BY: _____ DATE:_____
Employee

EMPLOYEE DECLINED TO COMPLETE REPORT: _____ DATE:_____
Employee

REVIEWED BY:_____ DATE:_____
Supervisor

REVIEWED BY:_____ DATE:_____
Purchasing and Distribution Safety Coordinator

DEFINITIONS AND DISTRIBUTION (See back of Part A)

BRC 1528

APPENDIX A

OFF-THE-JOB INJURY REPORT
C&P PURCHASING AND DISTRIBUTION

REPORT NO._____ PAGE TWO

PART A

DEFINITIONS:

Reportable Off-the-Job Injuries

1. The basis for determining "reportability" is one or more full lost work days resulting from non-work related injuries. Lost work days will be based on the employees ability to perform regular or modified work and not necessarily whether or not the employee reports to work.

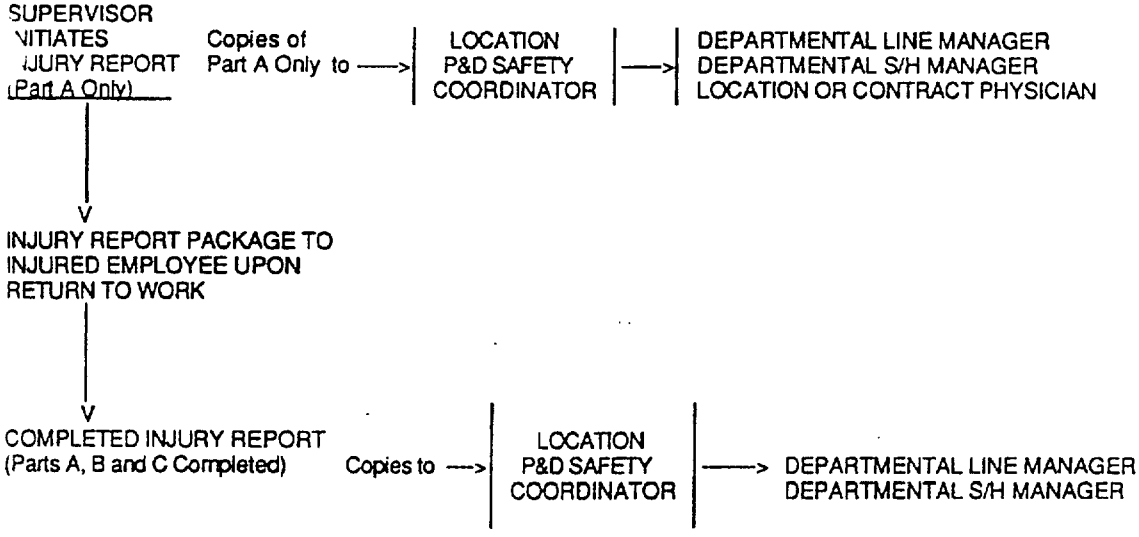
2. One day is allowed for medical evaluation if it is certified by the doctor that the employee was able to work.

3. Permanent disabilities should not be charged unless they meet this criteria. Off-the-job illnesses are not to be included.

Days Charged to a Reportable Off-the-Job Injury

"Total number of lost workdays incurred are to be counted." Do not included scheduled charges (identified in ANSI Z16.3-1973) for permanent disabilities or fatalities. For example, there would be no days charged in a fatality if accident and death occurred on the same day. Days should be charged to the current time period, not necessarily backcharged to the date of injury.

DISTRIBUTION OF INJURY REPORTS:



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APPENDIX A

OFF-THE-JOB INJURY REPORT
C&P PURCHASING AND DISTRIBUTION

REPORT NO. _____ PAGE THREE

PART B

(To be Completed by Injured Employee)

INJURY OCCURRED:
DATE: TIME:

DID INJURY INVOLVE (CHECK ONE)
EMPLOYEE MEMBER OF EMPLOYEE'S FAMILY

AGE OF INJURED PARTY:

TYPE OF ACCIDENT: CHECK ONE)

TRANSPORTATION

Injuries Caused by or resulted from: caused by:

_____ AUTO
_____ TRUCK
_____ BOAT
_____ BUS
_____ PEDESTRIAN ACTIVITIES
_____ VOLVING TRAFFIC
_____ RAILROAD
_____ BICYCLE
_____ STREETCAR
_____ OTHER

HOME

Injuries in home/yard area caused by:

_____ FIREARM
_____ TOOLS
_____ EXPLOSION
_____ TOXIC MATERIAL
_____ SHARP OBJECT
_____ OBJECT STRIKING
_____ OVEREXTENSION
_____ ANIMAL
_____ MACHINERY
_____ FIRE
_____ ELECTRICITY
_____ INSECT
_____ OTHER_____

PUBLIC

Injuries other than Trans./Home

_____ FIREARM
_____ EXPLOSION
_____ SLIP
_____ FIGHT
_____ EXPOSURE
_____ TOXIC MATERIALS
_____ ELECTRICITY
_____ FIRE
_____ FALL
_____ OBJECT STRIKING
_____ ASSAULT
_____ SPORTS
_____ OTHER _____

DESCRIBE BRIEFLY WHAT HAPPENED:
(Diagram Incident on Drawings in Part C)

TYPE AND EXTENT OF INJURY:

IDENTIFY FAILURE MODES:
EQUIPMENT:_____
PROCEDURE:_____
MANAGEMENT SYSTEM:_____

RECOMMENDATIONS TO PREVENT OCCURRENCE TO ANOTHER EMPLOYEE:

BRC 1530

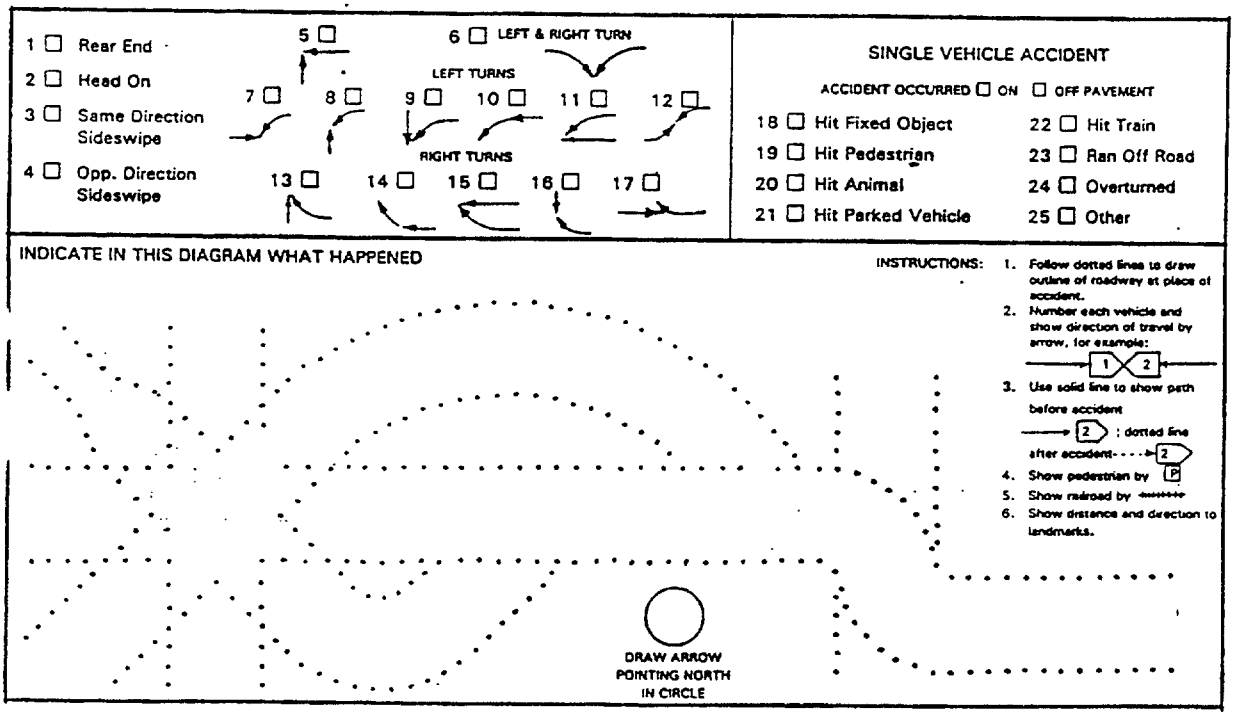
APPENDIX A

OFF-THE-JOB INJURY REPORT
C&P PURCHASING AND DISTRIBUTION

REPORT NO._____ PAGE FOUR

PART C

(Applicable Diagrams to be Completed by Injured Employee)



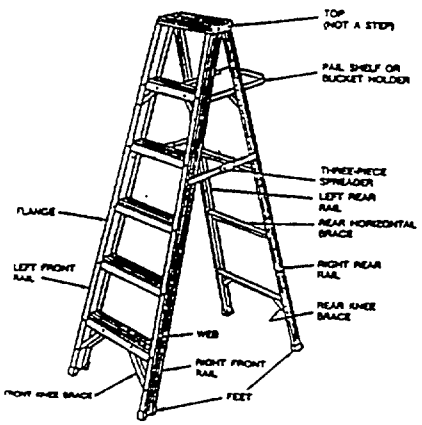
BRC 1531

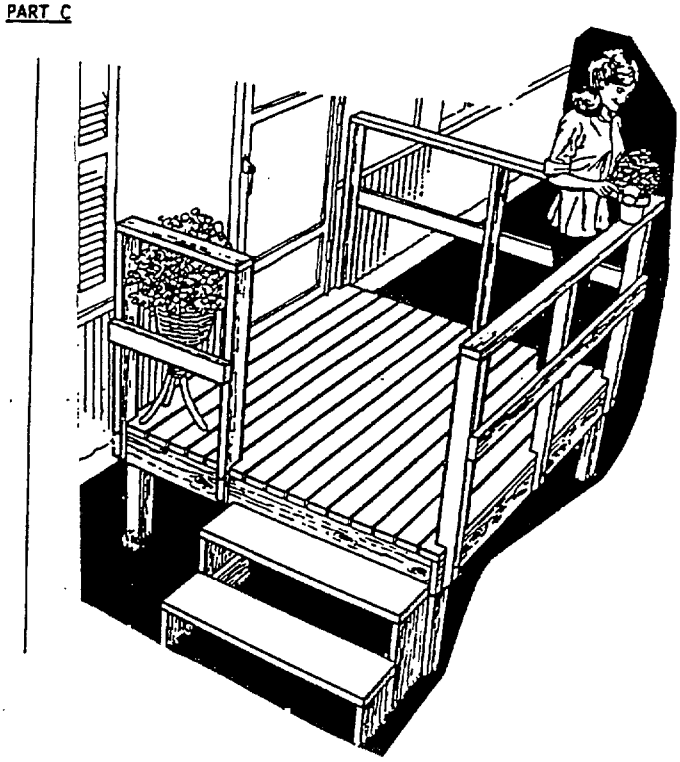
APPENDIX A

OFF-THE-JOB INJURY REPORT
C&P PURCHASING AND DISTRIBUTION

REPORT NO._____

PART C





OTHER

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SUBJECT: Occupational Health Program
Industrial Hygiene

PURPOSE: To establish a system to identify occupational health risks, inform employees of all identified potential health risks, implement programs to protect employees and on-site contractors from these risks and control exposures to levels mandated by law or UCC internal standards.

BACKGROUND: Corporate HSEP Procedure 3.5, "Occupational Health."

REQUIREMENTS: Location managers at facilities which handle or store materials that are potential health risks shall assure that such risks are minimized through a proactive, formal, and well-documented Industrial Hygiene program. The program will comprise the following elements:

A. Identification of Health Risks

1. A location inventory of potentially hazardous chemicals and other health hazards is maintained, updated when significant changes occur, and reviewed at least annually.

2. A procedure exists to review new chemicals and new procedures for potential health risks prior to use.

3. Potential health risks in the various job classifications and work areas are identified by means of a baseline study.

B. Informing Personnel

Personnel exposed to identified occupational health risks are provided the following information:

1. Chemical Stresses

a. The chemical and/or trade name of the risk substance and its physical properties.

b. The nature of the health hazards.

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c. The potential health consequences of overexposure or mishandling.

d. The proper procedures and precautions for safe handling.

e. Emergency first aid treatment.

2. Physical Stresses - examples include noise, radiation, heat, ultraviolet lights and lasers.

a. The condition under which the employee is exposed.

b. The nature of the health hazards.

c. Effects of acute and chronic exposure.

d. Precautions to prevent excessive exposure.

e. Applicable emergency first aid treatment.

3. The results of exposure monitoring data.

4. The control and protection programs being used to limit exposure.

5. Records are maintained of the information presented and the personnel who received the information.

C. Industrial Hygiene Sampling Strategy

Exposure of personnel to identified significant health risks is assessed on a periodic basis by means of a statistically valid sampling program (Corporate Occupational Health/Medicine Policy Manual, "Industrial Hygiene Sampling Strategy Guideline" or equivalent approved by the Corporate Industrial Hygiene Department). Written procedures are used to assure the quality of the sampling and analytic methods used to measure exposures.

D. Action Plans if Exposure Standards are Exceeded

Where exposure to identified occupational health risks exceeds governmental or Union Carbide Internal Exposure Limits (see Procedure 3.2):

1. Notify personnel of the results of the exposure data collected.

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2. Identify and implement actions to control exposure to below required levels. These actions may include workplace monitoring, engineering design change, administrative controls, work practice changes, personnel protective equipment, medical monitoring, process or material change, process termination, employee training and/or reassignment or other appropriate action.

3. Notify personnel of the actions implemented to control exposure at or below acceptable limits.

E. Recordkeeping

Recordkeeping and reporting of exposure information and industrial hygiene monitoring methods are maintained in accordance with governmental and Corporate record retention requirements. The following minimum records will be maintained:

1. The name of the individual being monitored, work areas, equipment and work conditions relative to the chemical, physical or biological stress at the time data is collected.

2. The type of work that was being done (e.g., normal operation, shutdown, emergency, etc.).

3. The purpose for which the data was collected.

4. Sampling/analytical methods and calibration information.

5. Exposure data collected.

6. The personal protective measures in effect (e.g., engineering controls, administrative controls or personal protective equipment).

7. The permissible exposure level at the time the data was collected.

F. Information Confidentiality

Exposure information obtained in the course of doing routine area or personnel exposure monitoring shall be:

1. Disclosed to the individual by his or her supervisor or designee.

2. Kept confidential to the extent possible or as required by this policy or the law, unless the individual consents to release same is obtained.

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REQUIREMENTS (Cont'd)

3. Where information is disclosed pursuant to this procedure, it will be disclosed only to the extent necessary, and only to those individuals who must have such information, or pursuant to appropriate court order, law or where failure to disclose such information could result in serious injury or illness to other persons.

4. The UCC Chief Labor Lawyer or designee and the C&P Purchasing and Distribution HS&EA Manager is to be notified whenever OSHA, NIOSH and/or a designated representative (generally a union) asks to see and/or copy exposure medical records. The Law Department and HS&EA should approve viewing or release of copies of records prior to honoring such a request.

SCOPE: These requirements are applicable to all locations administered by C&P Purchasing and Distribution.

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Union Carbide Corporation
Chemicals & Plastics Group *
List of Carcinogens
Intermediates & Final Products **

Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date	Sub Class AC	SHC	HC
1,4-DIOXANE	SP CHEM	F-43585	1-Jan-1985	Y	N	N
2-ETHYLHEXYL ACRYLATE	S&CM	F-43586	1-Nov-1985	Y	N	N
ACETALDEHYDE, CRUDE	S&CM	F-60166	1-May-1986	Y	N	N
ALLOY SURFACT TL-1	LONCO	CB170	8-Nov-1985	Y	N	N
ALLOY SURFACT TL-1 CONCENTRATE	LONCO	CB170	8-Nov-1985	Y	N	N
ALPHA OLEFIN EPOXIDE C-16	S&CM	F-49543	1-Nov-1985	Y	N	N
AMOCO 2050N CATALYST	SP CHEM	M-4928	1-Sep-1985	Y	N	N
BONDING AID 17	SP CHEM	U0383	13-Feb-1988	Y	N	N
BUTADIENE - CRUDE	IND CHEM	F-48961	1-Jul-1984	Y	N	N
DAS-361 NIAX POLYOL	SP CHEM	U0327	24-Oct-1986	Y	N	N
DIETHYL SULFATE SPENT SULFURIC ACID	S&CM	F-60387	1-Apr-1986	Y	N	N
DIOXANE, CPS GRADE	SP CHEM	F-M2267	1-Apr-1987	Y	N	N
DIOXANE, INHIBITED, PM-443	SP CHEM	F-60077	1-Jun-1985	Y	N	N
DIOXANE, INHIBITED, SCHERING	SP CHEM	F-49649	1-Oct-1985	Y	N	N
DISTILLED CNT	SP CHEM	S2058	21-Dec-1987	N	N	Y
EHA TAILS	S&CM	F-60437	1-May-1986	Y	N	N
ETHANOL SDA 20, 200 PROOF	S&CM	F-72009		Y	N	N
ETHYL ACETATE MAKE	S&CM	F-60415	1-Sep-1987	Y	N	N
ETHYL OILS	S&CM	F-60417	1-May-1986	Y	N	N
ETHYLENE OXIDE	IND CHEM	F-49167	1-Apr-1987	N	Y	N
ETHYLENE OXIDE POLYMERIC RESIDUE	IND CHEM	F-INT-17	1-Nov-1986	N	Y	N

* Excluding Polyolefins Division
** Excluding Vendor Raw Materials

AC = ANIMAL CARCINOGEN
SHC = SUSPECT HUMAN CARCINOGEN
HC = HUMAN CARCINOGEN

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Chemicals & Plastics Group *
List of Carcinogens
Intermediates & Final Products **

Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date	Sub Class A C	S H C	H C
ETHYLHEXYL ACRYLATE TAILS	S&CM	F-60301	1-Dec-1985	Y	N	N
H20 SOL AMINE W/POLYALKYLENE GLYCOL, POTASS. ALKYLATE, PROPY & ETHYLENE OX.	SP CHEM	F-M2093	1-Jun-1986	N	Y	N
H20 SOL. POLYALKYLENE GLYCOL, EHTYLENE OXIDE AND PROPYLENE OXIDE	SP CHEM	F-M2094	1-Jun-1986	N	Y	N
HYDROCRACKING CATALYST HC-24	SP CHEM	SPECIAL 031	1-May-1987	Y	N	N
HYDROCRACKING CATALYSTS HC-14 AND HC-16	SP CHEM	M-4804	1-Oct-1985	Y	N	N
HYDROCRACKING CATALYSTS HC-22 AND HC-30	SP CHEM	M-4806	1-Sep-1986	Y	N	N
ISOPROPANOL SPENT SULFURIC ACID	S&CM	F-60386	1-Apr-1986	N	Y	N
NATURAL GASOLINE	IND CHEM	F-48188	1-Oct-1985	N	N	Y
NEULON POLYESTER MODIFIER A	SP CHEM	U0471	18-Mar-1988	Y	N	N
NEULON POLYESTER MODIFIER S	SP CHEM	U0470	18-Mar-1988	Y	N	N
NEULON POLYESTER MODIFIER T	SP CHEM	U0466	18-Mar-1988	Y	N	N
NEULON PREBLEND LPB-14	SP CHEM		1-Aug-1986	Y	N	N
NEULON PREBLEND LPB-21	SP CHEM	O	1-Nov-1985	Y	N	N
NEULON PREBLEND LPB-41	SP CHEM	O	1-Nov-1985	Y	N	N
OLEFIN BY-PRODUCT POLYMER	IND CHEM	F-INT-31	15-May-1986	N	N	Y
PIP-375 NIAX POLYOL	SP CHEM	U0346	31-Dec-1986	Y	N	N
POLYCHLORINATED BIPHENYLS	SP CHEM	S0105	20-Nov-1985	Y	N	N
POLYGLYCOLDIAMINE PRECURSOR	SP CHEM	F-M2204	22-May-1986	N	N	Y
PYROLYSIS FUEL OIL - LPG BASE	IND CHEM	F-48958	1-Jul-1982	Y	N	N
PYROLYSIS FUEL OIL - NAPHTHA BASE	IND CHEM	F-48957	1-Jul-1982	Y	N	N

* Excluding Polyolefins Division
** Excluding Vendor Raw Materials

AC = ANIMAL CARCINOGEN
SHC = SUSPECT HUMAN CARCINOGEN
HC = HUMAN CARCINOGEN

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Union Carbide Corporation
Chemicals & Plastics Group *
List of Carcinogens
Intermediates & Final Products **

Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date	Sub Class A C	S H C	H C
PYROLYSIS GASOLINE/C DRIPOLENE	IND CHEM	F-48965A	1-Feb-1987	N	N	Y
RAFFINATE	IND CHEM	INT.	1-Feb-1987	N	N	Y
RESIN MC-28 SOLUTION	SP CHEM	U0386	2-Jul-1987	Y	N	N
SPENT RANEY NICKEL CATALYST	SP CHEM	F-M2208	22-May-1986	Y	N	N
STYRENE OXIDE	S&CM	F-44462	1-Jun-1987	Y	N	N
STYRENE OXIDE RESIDUES	S&CM	F-60441	1-May-1986	Y	N	N
TRIETHYLENE GLYCOL MIXTURE PM-3974	IND CHEM	LD-100	1-Nov-1985	Y	N	N
TX-8063A CATALYST	SP CHEM	M-4893	1-Sep-1985	Y	N	N
UCAR (R) LATEX 152	S&CM	3074Q	18-Aug-1987	Y	N	N
UCAR (R) LATEX 153	S&CM	3442Q	27-Jan-1988	Y	N	N
UCAR (R) LATEX 154	S&CM	3272Q	9-Nov-1987	Y	N	N
UCAR (R) LATEX 163	S&CM	3072Q	18-Aug-1987	Y	N	N
UCAR (R) LATEX 171	S&CM	F-48506	1-Jan-1984	Y	N	N
UCAR (R) LATEX 380	S&CM	2687Q	17-Jun-1987	Y	N	N
UCAR (R) LATEX 407	S&CM	3042Q	17-Aug-1987	Y	N	N
UCAR (R) LATEX 4570	S&CM	3348Q	15-Dec-1987	Y	N	N
UCAR (R) LATEX 803	S&CM	F-45705	1-Nov-1983	Y	N	N
UCAR (R) LATEX 807	S&CM	3070Q	18-Aug-1987	Y	N	N
UCAR (R) LATEX 872	S&CM	3074Q	18-Aug-1987	Y	N	N
UCAR (R) LATEX 874	S&CM	2835Q	22-Jul-1987	Y	N	N
UCAR (R) LATEX 878	S&CM	F-45663	1-Oct-1983	Y	N	N

* Excluding Polyolefins Division
** Excluding Vendor Raw Materials

AC = ANIMAL CARCINOGEN
SHC = SUSPECT HUMAN CARCINOGEN
HC = HUMAN CARCINOGEN

BRC 1543

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Chemicals & Plastics Group *
List of Carcinogens
Intermediates & Final Products **

Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date	Sub Class AC	SHC	HC
UCAR (R) LATEX 879	S&CM	3041Q	17-Aug-1987	Y	N	N
UCAR (R) LATEX AX-9505	S&CM	0847Q	29-Oct-1985	Y	N	N
UCAR (R) LATEX BX-3001	S&CM		1-Nov-1985	Y	N	N
UCAR (R) LATEX BX-3006	S&CM	0887Q	8-Nov-1985	Y	N	N
UCAR (R) LATEX BX-3148	S&CM	0894Q	8-Nov-1985	Y	N	N
UCAR (R) LATEX BX-3178	S&CM	0883Q	8-Nov-1985	Y	N	N
UCAR (R) LATEX ICX-7179	S&CM	0884Q	8-Nov-1985	Y	N	N
UCAR (R) PHENOLIC RESIN BK-5918	S&CM	F-48265	1-Jan-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BKR-2620	S&CM	F-43328	1-Nov-1984	Y	N	N
UCAR (R) PHENOLIC RESIN BKS-2600	S&CM	F-45877	1-Jun-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BKS-2630	S&CM	F-48540	1-Sep-1984	Y	N	N
UCAR (R) PHENOLIC RESIN BKS-2640	S&CM	F-60343	1-Feb-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BKS-2750	S&CM	F-45764	1-Jan-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BKS-2900	S&CM	F-60460		Y	N	N
UCAR (R) PHENOLIC RESIN BKS-2910	S&CM	F-60461		Y	N	N
UCAR (R) PHENOLIC RESIN BKS-4035	S&CM	F-47501	1-Sep-1984	Y	N	N
UCAR (R) PHENOLIC RESIN BKS-5928	S&CM	F-60218	1-Jan-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BKSA-2602	S&CM	F-48221	1-Jan-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BKUA-2370	S&CM	F-48251	1-Jan-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BKUA-2392	S&CM	F-48208	1-Jul-1984	Y	N	N
UCAR (R) PHENOLIC RESIN BLL-3913	S&CM	F-46689	1-Jun-1986	Y	N	N

* Excluding Polyolefins Division
** Excluding Vendor Raw Materials

AC = ANIMAL CARCINOGEN
SHC = SUSPECT HUMAN CARCINOGEN
HC = HUMAN CARCINOGEN

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Chemicals & Plastics Group *
List of Carcinogens
Intermediates & Final Products **

Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date	Sub Class AC	SHC	HC
UCAR (R) PHENOLIC RESIN BLS-2680 BLACK	S&CM	F-48243	1-May-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BLS-2681	S&CM	F-60380		Y	N	N
UCAR (R) PHENOLIC RESIN BLS-2700	S&CM	F-43957	1-Jan-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BLS-2835 BLACK	S&CM	F-47465	1-Jun-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BLS-2851	S&CM	F-46668	1-Jan-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BLS-4027	S&CM	F-60222	1-Nov-1985	Y	N	N
UCAR (R) PHENOLIC RESIN BLSA-3551	S&CM	F-47497	1-Jul-1984	Y	N	N
UCAR (R) PHENOLIC RESIN BLSB-2040	S&CM	F-46667	1-Jan-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BLSD-2851	S&CM	F-47498	1-Aug-1981	Y	N	N
UCAR (R) PHENOLIC RESIN BLSE-2030	S&CM	F-47488	1-May-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BRL-1100	S&CM	F-48212	1-Jan-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BRL-1302	S&CM	F-47495	1-Jan-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BRL-1520	S&CM	F-72113		Y	N	N
UCAR (R) PHENOLIC RESIN BRL-1540	S&CM	F-72114		Y	N	N
UCAR (R) PHENOLIC RESIN BRL-1550	S&CM	F-72115		Y	N	N
UCAR (R) PHENOLIC RESIN BRL-2741	S&CM	F-60371	1-May-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BRL-2759	S&CM	F-45881	1-Nov-1984	Y	N	N
UCAR (R) PHENOLIC RESIN BRL-2760	S&CM	F-45882	1-Nov-1984	Y	N	N
UCAR (R) PHENOLIC RESIN BRL-6891	S&CM	F-60339	1-Feb-1986	Y	N	N
UCAR (R) PHENOLIC RESIN BRSD-2112	S&CM	F-48253	1-Jun-1986	Y	N	N
UCAR (R) PHENOLIC RESIN CK-1634	S&CM	F-44436	1-Jul-1986	Y	N	N

* Excluding Polyolefins Division
** Excluding Vendor Raw Materials

AC = ANIMAL CARCINOGEN
SHC = SUSPECT HUMAN CARCINOGEN
HC = HUMAN CARCINOGEN

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Chemicals & Plastics Group *
List of Carcinogens
Intermediates & Final Products **

Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date	Sub Class AC	SHC	HC
UCAR (R) PHENOLIC RESIN CK-1636	S&CM	F-44436	1-Jul-1986	Y	N	N
UCAR (R) PHENOLIC RESIN CK-1638	S&CM	F-60002	1-Nov-1985	Y	N	N
UCAR (R) PHENOLIC RESIN CK-1640	S&CM	F-72077		Y	N	N
UCAR (R) PHENOLIC RESIN CK-1654	S&CM	F-72003		Y	N	N
UCAR (R) PHENOLIC RESIN CK-3890	S&CM	F-72001		Y	N	N
UCAR (R) PHENOLIC RESIN CKS-3891	S&CM	F-72006		Y	N	N
UCAR (R) PHENOLIC RESIN CKS-3892	S&CM	F-72078		Y	N	N
UCAR (R) PHENOLIC RESIN CKS-6943	S&CM	F-72076		Y	N	N
UCAR (R) PHENOLIC RESIN CLS-3112	S&CM	F-46831	1-Jan-1986	Y	N	N
UCAR (R) PHENOLIC RESIN CLS-3940	S&CM	F-47530	1-Jul-1984	Y	N	N
UCAR (R) PHENOLIC RESIN CLS-4869	S&CM	F-47531	1-May-1985	Y	N	N
UCAR (R) PHENOLIC RESIN CRL-3060	S&CM	F-48249	1-Jun-1986	Y	N	N
UCAR (R) PHENOLIC RESIN CRR-3485	S&CM	F-48475	1-Feb-1986	Y	N	N
UCAR (R) PHENOLIC RESIN SOLUTION BLS-2680	S&CM	F-46437	1-Nov-1985	Y	N	N
UCAR (R) SOLUTION VINYL RESIN VP-200	S&CM	F-72061	1-Jan-1988	Y	N	N
UCAR (R) SOLUTION VINYL RESIN VSSP	S&CM	F-60409	1-Jan-1988	Y	N	N
UCAR (R) SOLUTION VINYL RESIN VSSS	S&CM	F-60363	1-Jan-1988	Y	N	N
UCAR (R) SOLUTION VINYL VROH	S&CM	F-47029	1-Jan-1988	Y	N	N
UCAR (R) SOLUTION VINYL VYNP	S&CM	F-48235	1-Jan-1988	Y	N	N
UCAR (R) VEHICLE 4550	S&CM	0893Q	8-Nov-1985	Y	N	N
UCAR (R) VEHICLE 4570	S&CM	1378Q	2-Apr-1986	Y	N	N

* Excluding Polyolefins Division
** Excluding Vendor Raw Materials

AC = ANIMAL CARCINOGEN
SHC = SUSPECT HUMAN CARCINOGEN
HC = HUMAN CARCINOGEN

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Chemicals & Plastics Group *
List of Carcinogens
Intermediates & Final Products **

Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date	Sub Class AC	SHC	HC
UCAR (R) VEHICLE ICX-7113	S&CM	0891Q	8-Nov-1985	Y	N	N
UCAR (R) VEHICLE ICX-7155	S&CM	0890Q	8-Nov-1985	Y	N	N
UCAR (R) WATERBORNE VINYL DISPERSION AW-870	S&CM	F-72091		Y	N	N
UCAR PHENOLIC RESIN BLSB-3103	S&CM	F-46665	1-Jun-1986	Y	N	N
UCAR POLYMER PFB	SP CHEM	F-48412	3-Oct-1986	Y	N	N
UCAR TANNING AGENT EGM	SP CHEM	F-48559	1-Nov-1984	Y	N	N
UNION CARBIDE (R) RESIN MC-28	SP CHEM	U0386	2-Jul-1987	Y	N	N
UNION CARBIDE CYCLOALIPHATIC EPOXY RESIN ERL-4206	S&CM	F-43674	1-Jul-1986	Y	N	N
UNION CARBIDE CYCLOALIPHATIC EPOXY RESIN ERL-4234	S&CM	F-43676	1-Nov-1985	Y	N	N
UNION CARBIDE EPOXY RESIN ERL-2258	S&CM	F-47319	1-Jan-1986	Y	N	N
UNION CARBIDE EPOXY RESIN ERR-4205	S&CM	F-47320	1-Nov-1985	Y	N	N
UNION CARBIDE LOW PROFILE ADDITIVE LP-40A	SP CHEM	U0468	13-Mar-1988	Y	N	N
UNION CARBIDE LOW PROFILE ADDITIVE LP-85	SP CHEM	U0467	18-Mar-1988	Y	N	N
UNION CARBIDE LOW PROFILE ADDITIVE LP-90	SP CHEM	U0469	18-Mar-1988	Y	N	N
VINYL ACETATE, INHIBITED	S&CM	F-43142	15-Dec-1987	Y	N	N
WATER INSOLUBLE POLYALKYLENE GLYCOL AND PROPYLENE OXIDE	SP CHEM	F-M2080	1-Jun-1986	Y	N	N
WATER SOLUBLE POLYALKYLENE GLYCOL AND ETHYLENE OXIDE	SP CHEM	F-M2099	1-Jun-1986	N	Y	N
WATER SOLUBLE POLYALKYLENE GLYCOL AND PROPYLENE OXIDE	SP CHEM	F-M2095	1-Jun-1986	Y	N	N
XLP-4541 PREBLEND	SP CHEM	U0701	11-Jan-1988	Y	N	N
Y-10022 CRUDE CAPPER PRODUCT	SP CHEM	S0815	12-Feb-1988	Y	N	N
Y-10291 CRUDE CAPPER PRODUCT	SP CHEM	S0818	12-Feb-1988	Y	N	N

* Excluding Polyolefins Division
** Excluding Vendor Raw Materials

AC = ANIMAL CARCINOGEN
SHC = SUSPECT HUMAN CARCINOGEN
HC = HUMAN CARCINOGEN

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Chemicals & Plastics Group *
List of Carcinogens
Intermediates & Final Products **

Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date	Sub Class AC	SHC	HC
Y-4857A CRUDE CAPPER PRODUCT	SP CHEM	S0803	12-Feb-1988	Y	N	N
Y-6044 CRUDE CAPPER PRODUCT	SP CHEM	S0805	12-Feb-1988	Y	N	N
Y-6066 CRUDE CAPPER PRODUCT	SP CHEM	S0807	12-Feb-1988	Y	N	N
Y-6132 CRUDE CAPPER PRODUCT	SP CHEM	S0809	12-Feb-1988	Y	N	N
Y-6854 CRUDE CAPPER PRODUCT	SP CHEM	S0811	12-Feb-1988	Y	N	N
Y-6856 CRUDE CAPPER PRODUCT	SP CHEM	S0813	12-Feb-1988	Y	N	N

* Excluding Polyolefins Division
** Excluding Vendor Raw Materials

AC = ANIMAL CARCINOGEN
SHC = SUSPECT HUMAN CARCINOGEN
HC = HUMAN CARCINOGEN

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APPENDIX III

Criteria for UCC Classification

Carcinogens

I. A chemical is considered by UCC to be a carcinogen if:

(a) It has been evaluated by the International Agency for Research on Cancer (IARC) and found to be a carcinogen or potential carcinogen;

or

(b) It is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (NTP);

or

(c) It is regulated by OSHA as a carcinogen or potential carcinogen;

or

(d) It is classified by UCC as a carcinogen as result of meeting any of the criteria for human carcinogen, suspect human carcinogen, or animal carcinogen definitions given below.

Any chemical meeting criteria (a), (b), or (c) above is further classified by UCC as a human carcinogen, suspect human carcinogen, or animal carcinogen in accordance with the following definitions:

(1) Human Carcinogen — Applied to any material where there is sufficient credible and relevant evidence, based principally on observation of exposed human populations, which demonstrates that the material has caused cancer in humans.

(2) Suspect Human Carcinogen — Applied to any material for which there is sufficient credible evidence, based on animal and other related studies, that the material is carcinogenic in laboratory animals, and for which other relevant information is available to determine that the material might also be carcinogenic for humans.

(3) Animal Carcinogen — Applied to any material for which there is sufficient credible evidence, based on animal and other related studies, that the material is carcinogenic in laboratory animals, but for which there is insufficient evidence to allow a determination of the potential for carcinogenicity in humans.

II. A mixture is considered to be carcinogenic if not tested as a whole, if

Any component present in it with a concentration of 0.1% or greater is considered to be a carcinogen in accordance with any of the criteria given above.

Union Carbide further classifies each mixture as acting as a human carcinogen, suspect human carcinogen, or animal carcinogen as a result of the classification of the carcinogenic component.

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3.2

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SUBJECT: Occupational Health Program
Exposure Standards

PURPOSE: In the conduct of our business there is the potential that employees and on-site contractors may be exposed to hazardous substances or physical agents. Exposure standards that the government and Union Carbide have established are set at a level to protect employees from known adverse acute and chronic health effects. The following documents current exposure standards for use in developing location Industrial Hygiene programs.

BACKGROUND: Corporate HSEP Procedure 3.5, "Occupational Health."

REQUIREMENTS:

1. The maximum allowable eight hour exposure levels in C&P Purchasing and Distribution owned facilities will be the lowest of the levels mandated by the following:

   a. Current OSHA Standards (29CFR 1910), other OSHA Standards or other governmental (federal, state, local) regulations/standards applicable to the Union Carbide facility.

   b. A Union Carbide internal exposure standard established in response to the judgment that governmental standards do not provide an adequate margin of safety. The Union Carbide internal exposure standard in effect will be the one included on the current MSDS. Attached is a UCC Internal Exposure Limits List which includes those chemicals for which no OSHA PEL exists or for which a UCC internal exposure standard lower than the current OSHA PEL has been established.

   c. For radiation: OSHA Standards (29CFR 1910.96) and National Bureau of Standards Handbook #69 ("Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and Water for Occupational Exposure").

2. Compliance will be achieved with these governmental or Union Carbide internal exposure standards using (1) technically and economically feasible engineering controls, (2) administrative procedures and/or (3) personnel protective equipment (in this preferred order).

SCOPE: These requirements apply to all facilities administered by C&P Purchasing and Distribution.

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SUBSTANCE	CAS NO.	EXPOSURE LIMIT
Acrylic acid	79-10-7	2 ppm TWA_s
Allyl Methacrylate	96-05-9	20 ppm TWA_s (Skin)
2,2'-Azobisisobutyronitrile	78-67-1	0.5 ppm TWA_s 2 ppm STEL
Bis-2-chloro ethyl ether	111-44-4	15 ppm C (Skin)
Butadiene	106-99-0	10 ppm TWA_s
Cadmium	7440-43-9	40 ug/m^3 TWA_s 200 ug/m^3 C
Carbon Disulfide	75-15-0	10 ppm TWA_s 30 ppm STEL
Carbon Tetrachloride	56-23-5	2 ppm TWA_s 4 ppm C
Chlorodifluoromethane (Fluorocarbon-22)	75-45-6	1000 ppm TWA_s
Chloroform	67-66-3	10 ppm TWA_s 25 ppm STEL
Chloroprene	126-99-8	10 ppm TWA_s (Skin)
Chromium-6 compounds	--	0.05 mg/m^3 TWA_s(as Cr)
Diallylamine	124-02-7	10 ppm TWA_s
Dichlorofluoromethane (Fluorocarbon 21)	75-43-4	10 ppm TWA_s
Diethyl sulfate	64-67-5	1 ppm TWA_s No skin or oral contact
Diisopropyl sulfate	2973-10-6	1 ppm TWA_s No skin or oral contact
1,2-Dimethoxyethane	110-71-4	10 ppm TWA_s 25 ppm STEL (Skin)

* Adopted by UCC for domestic use. This listing includes only materials for which no OSHA PEL exists or for which an I.E.L. has been established which is lower than the current OSHA PEL.

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SUBSTANCE	CAS NO.	EXPOSURE LIMIT
Dimethylamine	124-40-3	10 ppm TWA_s
N,N-Dimethyl ethanolamine	108-01-0	5 ppm TWA_s 25 ppm STEL
Dimethyl sulfate	77-78-1	0.1 ppm TWA_s No skin or oral contact
Dimethyl sulfoxide	67-68-5	10 ppm (Skin) TWA_s
1,4-Dioxane	123-91-1	25 ppm TWA_s 100 ppm STEL (Skin)
n-Dodecyl mercaptan	112-55-0	0.5 ppm C
t-Dodecyl mercaptan	25103-58-6	0.5 ppm TWA_s
Dripolenes-A,B,C		600 ug/m^3 TWA_s, as benzene solubles No skin contact
Epichlorohydrin	106-89-8	0.5 ppm TWA_s
Epoxy resin ERL-2774	25068-38-6	10 ppm TWA_s No skin or oral contact
Epoxy resin ERL-4205	2386-90-5	10 ppm TWA_s No skin or oral contact
Epoxy resin ERL-4206	106-87-6	10 ppm TWA_s No skin or oral contact
Epoxy resin ERL-4234	26616-47-7	10 ppm TWA_s No skin or oral contact
2-ethoxyethanol CELLOSOLVE® Solvent	110-80-5	5 ppm TWA_s (Skin)
2-ethoxyethyl acetate CELLOSOLVE® Acetate	111-15-9	5 ppm TWA_s (Skin)
Ethyl acrylate	140-88-5	5 ppm TWA_s
Ethylene dibromide	106-93-4	0.1 ppm TWA_s
Ethylene dichloride	107-06-2	5 ppm TWA_s
Ethylene glycol	107-21-1	125 mg/m^3(50 ppm) C In vapor and/or mist form

* Adopted by UCC for domestic use. This listing includes only materials for which no OSHA PEL exists or for which an I.E.L. has been established which is lower than the current OSHA PEL.

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SUBSTANCE	CAS NO.	EXPOSURE LIMIT
2-Ethylhexyl acrylate	103-11-7	5 ppm TWA_s
Formamide	75-12-7	20 ppm TWA_s No skin contact
Hexafluoroacetone	684-16-2	0.1 ppm TWA_s No skin contact
Hexyl CELLOSOLVE®	112-25-4	20 ppm TWA_s
Hydrazine	302-01-2	0.1 ppm (Skin) TWA_s
Hydrogen sulfide	7783-06-4	10 ppm TWA_s
Itaconic acid	97-65-4	5 mg/m^3 TWA_s
Mercury Alkyl Compounds	—	0.01 mg/m^3 TWA_s (as Hg)
Mercury, all compounds except Alkyl	—	0.05 mg/m^3 TWA_s (as Hg)
2-Methoxyethanol Methyl CELLOSOLVE®	109-86-4	For women of childbearing potential: 2 ppm TWA_s 5 ppm, 15 min STEL (Skin) For other persons: 5 ppm TWA_s (Skin)
2-Methoxyethyl acetate Methyl CELLOSOLVE® Acetate	110-49-6	For women of childbearing potential: 2 ppm TWA_s 5 ppm, 15 min STEL (Skin) For other persons: 5 ppm TWA_s (Skin)
Methyl Chloride	74-87-3	25 ppm TWA_s 50 ppm STEL
4,4-Methylenedianiline	101-77-9	0.1 ppm TWA_s No skin or oral contact

* Adopted by UCC for domestic use. This listing includes only materials for which no OSHA PEL exists or for which an I.E.L. has been established which is lower than the current OSHA PEL.

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SUBSTANCE	CAS NO.	EXPOSURE LIMIT
Methylene Chloride	75-09-2	50 ppm TWA_8 250 ppm STEL
N-Methylpyrrolidone	872-50-4	500 ppm TWA_8
Nitrous Oxide	10024-97-2	25 ppm TWA_8
Ozone	10028-15-6	0.1 ppm TWA_8 0.3 ppm STEL
2,4-Pentanedione	123-54-6	20 ppm TWA_8
Peracetic acid	79-21-0	10 ppm TWA_8 (Skin)
Perchloroethylene	127-18-4	50 ppm TWA_8
Polychlorinated biphenyls(PCB's)	--	100 ug/m^3 TWA_8 No skin contact
Propylene oxide	75-56-9	20 ppm TWA_8 100 ppm STEL
Pyrolysis fuel oil	--	200 ug/m^3 TWA_8, as benzene solubles 600 ug/m^3 C, as benzene solubles No skin contact
Quench oil	--	200 ug/m^3 TWA_8, as benzene solubles 600 ug/m^3 C, as benzene solubles No skin contact
Resin B condensates	--	200 ug/m^3 TWA_8, as benzene solubles 600 ug/m^3 C, as benzene solubles No skin contact
Styrene oxide	96-09-3	10 ppm TWA_8 (Skin)
Sulfur dioxide	7446-09-5	2 ppm TWA_8 5 ppm STEL
Thionyl chloride	7719-09-7	1 ppm or As low As Feasible

* Adopted by UCC for domestic use. This listing includes only materials for which no OSHA PEL exists or for which an I.E.L. has been established which is lower than the current OSHA PEL.

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SUBSTANCE	CAS NO.	EXPOSURE LIMIT
Toluene-2,4-diamine	95-80-7	0.1 ppm TWA_s No skin or oral contact
Toluene-2,4-diisocyanate	584-84-9	0.005 ppm TWA_s 0.02 ppm STEL
Trichloroethylene	79-01-6	50 ppm TWA_s
Trimethoxy silane	2487-90-3	0.5 ppm TWA_s 5 ppm STEL
Vinyl acetate	108-05-4	5 ppm TWA_s
Vinyl cyclohexene monoepoxide	106-86-5	10 ppm TWA_s

* Adopted by UCC for domestic use. This listing includes only materials for which no OSHA PEL exists or for which an I.E.L. has been established which is lower than the current OSHA PEL.

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3.3

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SUBJECT: Occupational Health Program
Reproductive System and Embryo-Fetus Protection

PURPOSE: To take positive anticipative steps to provide protection for the reproductive system and the embryo-fetus from exposure to risks and to advise personnel of the precautions to be taken.

BACKGROUND: Corporate HSEP Procedure 3.5.3, "Reproductive System and Embryo-Fetus Protection."

REQUIREMENTS: The location manager shall assure the following:

1. A current list of substances, including their location, in a location's inventory that are reproductive hazards, teratogens or embryo-fetal toxins will be maintained.

2. Exposure data is obtained as directed in the Industrial Hygiene Procedure (Section 3.1) wherever identified risks to the reproductive system and to embryo-fetus are present. This data is retained in accord with Corporate Record Retention Policies.

3. Personnel on assignment to areas where identified risks are present are extensively advised by medical and line management of the risks and the procedures to safeguard the reproductive system and the embryo-fetus. Women are strongly urged to promptly report pregnancy to their supervisor and/or the medical department who will provide appropriate advice and review the exposure potential in the work area. Records of such cases are documented that such advice has been given.

4. One or more of the following steps for protecting personnel working in potential risk areas are followed:

   a. Exposures of all employees are reduced to, or below, the safe permissable limits.

   b. If exposure reduction cannot be accomplished, personnel are required to wear protective equipment.

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REQUIREMENTS (Cont'd)

c. If it is not feasible to protect personnel by reducing exposure and/or wearing protective equipment, they are removed from the work area while conforming with applicable government and Corporate personnel requirements.

SCOPE: These requirements are applicable to all locations administered by C&P Purchasing and Distribution which handle or store materials that are reproductive hazards, teratogens or embryo-fetal toxins. The term personnel includes on-site contractor personnel as well as UCC employees.

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Union Carbide Corporation *
Chemicals & Plastics Group *
List of Reproductive/Developmental Toxic Substances
Intermediates & Final Products **

Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date
50-1180 NIAX POLYOL (SUI-248)	SP CHEM	U0126	29-Dec-1986
A-175 ORGANOFUNCTIONAL SILANE (SUI-39A)	SP CHEM	S0074	3-Jun-1986
ACETALDEHYDE, CRUDE	S&CM	F-60166	1-May-1986
AF NIAX RESIN	SP CHEM	U0078	8-Oct-1986
AMERSETTE (R) (AMPHOSET)	SP CHEM	AM030	25-Mar-1988
AMOCO F.R. FLUID WG 46	SP CHEM	B0012	21-Jan-1988
ANHYDROL (R) SOLVENT SPECIAL, PM-4079 190 PROOF	S&CM	F-44115	1-Apr-1985
ANHYDROL (R) SOLVENT AI 190-3C	S&CM	F-60400	1-May-1986
ANHYDROL (R) SOLVENT AI 200-3C	S&CM	F-60395	1-May-1986
ANHYDROL (R) SOLVENT C190-3C	S&CM	F-60396	1-May-1986
ANHYDROL (R) SOLVENT C200-3C	S&CM	F-60397	1-May-1986
ANHYDROL (R) SOLVENT DI 190-3C	S&CM	F-60398	1-May-1986
ANHYDROL (R) SOLVENT SPECIAL, 200 ANHYDROUS PM-4084	S&CM	F-43198	1-Apr-1985
ANHYDROL (R) SOLVENT SPECIAL, PM-1474 200 PROOF	S&CM	F-43060	1-Apr-1985
ANHYDROL (R) SOLVENT SPECIAL, PM-4080 190 PROOF	S&CM	F-43867	1-Apr-1985
ANHYDROL (R) SOLVENT SPECIAL, PM-4081 190 PROOF	S&CM	F-43197	1-Apr-1985
ANHYDROL (R) SOLVENT SPECIAL, PM-4082 200 PROOF	S&CM	F-44079	1-Apr-1985
ANHYDROL (R) SOLVENT SPECIAL, PM-4083 200 PROOF	S&CM	F-45770	1-Apr-1985
ANHYDROL (R) SOLVENT SPECIAL, PM-4085 190 PROOF	S&CM	F-43943	1-Apr-1985
ANHYDROL (R) SOLVENT SPECIAL, PM-4157 190 PROOF	S&CM	F-48689	1-Apr-1985
ANHYDROL (R) SOLVENT SPECIAL, PM-4217, 200 PROOF	S&CM	F-48700	1-Apr-1985
ANHYDROL (R) SOLVENT, PM-1473, 190 PROOF	S&CM	F-43059	1-Apr-1985
ANHYDROL (R) SOLVENT, PM-4078, 190 PROOF	S&CM	F-44334	1-Apr-1985

* Excluding Polyolefins Division
** Excluding Vendor Raw Materials

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Chemicals & Plastics Group *
List of Reproductive/Developmental Toxic Substances
Intermediates & Final Products **

Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date
ANHYDROL (R) SOLVENT, PM-4135 200 PROOF	S&CM	F-48680	1-Apr-1985
ANHYDROL (R) SOLVENT, PM-4176 200 PROOF	S&CM	F-48692	1-Apr-1985
ANHYDROL (R)SOLVENT 3A 200 PROOF MIXTURE, PM-6227	S&CM	F-60257	1-Jun-1986
ANTI & DEICING - USN TYPE 2	IND CHEM	F-49162	1-Oct-1985
ANTIFREEZE BULK UC P/01/N, PM-2018	IND CHEM	LD-118	1-Oct-1985
ASER 'TM' 9004 ADDITIVE	LONCO	L	24-Oct-1985
ASER 'TM' 9004-50 BLACK	LONCO	ER050	1-Oct-1985
ASER'TM' 9004-50 BLUE	LONCO	L	1-Oct-1985
ASER'TM' 9004-MXW WHITE	LONCO	L	1-Oct-1985
ASER'TM' 9615 BLUE RESIST	LONCO	L	1-Oct-1985
ASER'TM' 9615-10 BLUE RESIST	LONCO	L	1-Oct-1985
ASER'TM'9004-50 CLEAR	LONCO	L	1-Oct-1985
ASER'TM'9615 10W BLUE	LONCO	L	1-Oct-1985
B RESIDUES	S&CM	F-60414	1-May-1986
BUTYL CELLOSOLVE (R) ACETATE CATALYST ACTIVATION STREAM	S&CM	F-72087	1-Jul-1987
BUTYL CELLOSOLVE (R) ACETATE TRANSITION FRACTION	S&CM	F-72086	1-Jul-1987
CARBITOL (R) SOLVENT, PM-600	S&CM	F-45879	1-Mar-1986
CARBITOL ACETATE	S&CM	F-72046	1-Nov-1987
CELLOSIZE HYDROXYETHYL CELLULOSE CONCENTRATED RESIDUES	SP CHEM	F-48435	1-Jun-1986
CELLOSOLVE (R) ACETATE	S&CM	F-43062	1-Aug-1985
CELLOSOLVE (R) SOLVENT	S&CM	F-43023K	1-Aug-1985
CONOCO F.C. FLUID	SP CHEM	B0059	12-Jan-1988
CONTENTS OF SURGE TANK DEPT. 086	SP CHEM	F-M2221	1-Jun-1986

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Chemicals & Plastics Group *
List of Reproductive/Developmental Toxic Substances
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Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date
CONTENTS OF TANK 1244 (INSTITUTE PLANT)	SP CHEM	F-M2218	1-Jun-1986
CYLIMOLD MOLDING RESIN PART C	S&CM	F-60525	1-Feb-1987
DISTILLED CNT	SP CHEM	S2058	21-Dec-1987
DUPLICATING FLUID, PM-5389	S&CM	F-60200	
EG/DYE CONCENTRATE	IND CHEM	INT.	1-Feb-1987
EG/FATTY ALCOHOL AQUEOUS MIXTURE	IND CHEM	INT.	1-Nov-1986
ETHANOL CDA 19, 190 PROOF	S&CM	F-43412	1-Apr-1985
ETHANOL CDA 19, 200 PROOF	S&CM	F-43413	1-Apr-1985
ETHANOL CDA 20, 200 PROOF	S&CM	F-48711	1-May-1983
ETHANOL SCA 2B (TOLUENE), 190 PROOF	S&CM	F-48688	1-Apr-1985
ETHANOL SD 2B RHS 190 PROOF	S&CM	F-72118	
ETHANOL SD 2B RHS 200 PROOF	S&CM	F-72217	
ETHANOL SDA 1, 190 PROOF	S&CM	F-46481	1-Sep-1983
ETHANOL SDA 1, 200 PROOF	S&CM	F-48675	15-Mar-1982
ETHANOL SDA 20, 200 PROOF	S&CM	F-72009	
ETHANOL SDA 23A, 190 PROOF	S&CM	F-48678	1-Aug-1985
ETHANOL SDA 23A, 200 PROOF	S&CM	F-48650	1-Aug-1985
ETHANOL SDA 23H MOD	S&CM	F-72027	
ETHANOL SDA 23H, 190 PROOF	S&CM	F-48660	1-Aug-1985
ETHANOL SDA 25, 190 PROOF	S&CM	F-48725	1-Sep-1983
ETHANOL SDA 27B, 190 PROOF	S&CM	F-48662	1-Aug-1985
ETHANOL SDA 29, 190 PROOF	S&CM	F-43531	1-Aug-1976
ETHANOL SDA 29, ANILINE, 200 PROOF	S&CM	F-48720	1-Aug-1985

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Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date
ETHANOL SDA 29, PENTANE, 200 PROOF	S&CM	F-48715	1-Aug-1985
ETHANOL SDA 29C, 200 PROOF	S&CM	F-60060	1-Nov-1985
ETHANOL SDA 29E, 190 PROOF	S&CM	F-48683	1-Aug-1985
ETHANOL SDA 29E, 200 PROOF	S&CM	F-60401	1-May-1986
ETHANOL SDA 29G, 190 PROOF	S&CM	F-48717	1-Aug-1985
ETHANOL SDA 29G, 200 PROOF	S&CM	F-48716	1-Aug-1985
ETHANOL SDA 29H, 200 PROOF	S&CM	F-72008	
ETHANOL SDA 29M, 200 PROOF	S&CM	F-48724	1-May-1985
ETHANOL SDA 29P, 200 PROOF	S&CM	F-48722	1-Aug-1985
ETHANOL SDA 29S, 200 PROOF	S&CM	F-48694	15-Mar-1982
ETHANOL SDA 29Y, 190 PROOF	S&CM	F-60402	1-May-1986
ETHANOL SDA 29Z, 190 PROOF	S&CM	F-SCM1002	1-Dec-1983
ETHANOL SDA 30, 190 PROOF	S&CM	F-48686	1-Apr-1985
ETHANOL SDA 30, 200 PROOF	S&CM	F-48714	1-Apr-1985
ETHANOL SDA 35A, 190 PROOF	S&CM	F-48526	1-Sep-1984
ETHANOL SDA 35A, 200 PROOF	S&CM	F-48690	1-Aug-1985
ETHANOL SDA 36, 190 PROOF	S&CM	F-48679	15-Mar-1982
ETHANOL SDA 36,(AMMONIA), 200 PROOF	S&CM	F-48608	1-Oct-1984
ETHANOL SDA 37/37L, 190 PROOF	S&CM	F-48721	1-May-1986
ETHANOL SDA 38B, 190 PROOF	S&CM	F-48652	1-Jan-1981
ETHANOL SDA 38B, 200 PROOF	S&CM	F-48695	1-Jun-1982
ETHANOL SDA 38BM, 190 PROOF	S&CM	F-72019	
ETHANOL SDA 38F, 190 PROOF	S&CM	F-48713	1-Dec-1983

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Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date
ETHANOL SDA 39B, 190 PROOF	S&CM	F-48719	1-Apr-1985
ETHANOL SDA 39C, 190 PROOF	S&CM	F-48677	1-Apr-1985
ETHANOL SDA 39C, 200 PROOF	S&CM	F-48682	1-Apr-1985
ETHANOL SDA 3A MIXTURE, PM-4897	S&CM	F-48666	1-May-1981
ETHANOL SDA 3A MIXTURE, PM-5862	S&CM	F-48651	1-Jan-1981
ETHANOL SDA 3A MIXTURE, PMM-4020, 190 PROOF	S&CM	F-48723	1-Sep-1983
ETHANOL SDA 3A, 190 PROOF	S&CM	F-46482	1-Apr-1985
ETHANOL SDA 3A, 200 PROOF	S&CM	F-46500	1-Apr-1985
ETHANOL SDA 3C, 190 PROOF	S&CM	F-60393	1-May-1986
ETHANOL SDA 3C, 200 PROOF	S&CM	F-60394	1-May-1986
ETHANOL SDA 40, 190 PROOF	S&CM	F-48693	1-Apr-1985
ETHANOL SDA 40, 200 PROOF	S&CM	F-44749	1-Apr-1985
ETHANOL SDA 40A, 190 PROOF	S&CM	F-48687	15-Mar-1982
ETHANOL SDA 40A, 200 PROOF	S&CM	F-48685	12-Mar-1982
ETHANOL SDA 40B PP, 200 PROOF	S&CM	F-60403	1-May-1986
ETHANOL SDA 40B, 190 PROOF	S&CM	F-48653	1-Apr-1985
ETHANOL SDA 40B, 200 PROOF	S&CM	F-48684	1-Apr-1985
ETHANOL SDA 40C, 200 PROOF	S&CM	F-48691	15-Mar-1982
ETHANOL SDA-40B PP, 190 PROOF	S&CM	F-60449	1-Jun-1986
ETHANOL SDA4, 190 PROOF	S&CM	F-48681	15-Mar-1982
ETHANOL SYNTHETIC SD 29EF, 200 PROOF	S&CM	F-72116	
ETHANOL, 200 PROOF, SD 2B DENATURED WITH TOLUENE	S&CM	F-47312	29-Jun-1979
ETHANOL, PURE, 190 PROOF	S&CM	F-43353	1-Apr-1985

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Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date
ETHANOL, PURE, 200 PROOF	S&CM	F-43354	1-Apr-1985
ETHOXYTRIGLYCOL, CRUDE	S&CM	F-60172	1-Dec-1985
ETHYL ACETATE, 85-88%, PM-3640 (DENATURED)	S&CM	F-43199	1-Jul-1986
ETHYLENE GLYCOL	IND CHEM	F-49152	1-Aug-1985
ETHYLENE GLYCOL MIXTURE PM-3961	IND CHEM	LD-42	1-Dec-1987
ETHYLENE GLYCOL/BORAX CONCENTRATE	IND CHEM	F-INT-69	1-Nov-1986
ETHYLENE GLYCOL/BORAX/BENZOTHIAZOLE/CAUSTIC SLURRY	IND CHEM	INT.	1-Nov-1986
ETHYLENE GLYCOL/BORAX/BENZOTRIAZOLE/CAUSTIC SLURRY	IND CHEM	F-INT-29	15-May-1986
ETHYLENE GLYCOL/BORIC ACID CONCENTRATE	IND CHEM	F-INT-22	1-Nov-1986
ETHYLENE GLYCOL/DYE CONCENTRATE	IND CHEM	INT.	1-Feb-1987
ETHYLENE GLYCOL/FATTY ALCOHOL AQUEOUS MIXTURE	IND CHEM	F-INT-25	15-May-1986
ETHYLENE GLYCOL/LIME/BORIC ACID SLURRY	IND CHEM	F-INT-21	1-Dec-1987
ETHYLENE GLYCOL/TOLYTRIAZOLE CONCENTRATE	IND CHEM	F-INT-60	1-Dec-1987
ETHYLENE GLYCOL/TOLYTRIAZOLE/GEMTEX CONCENTRATE	IND CHEM	F-INT-71	1-Nov-1986
ETHYLENE OXIDE	IND CHEM	F-49167	1-Apr-1987
ETHYLENE OXIDE POLYMERIC RESIDUE	IND CHEM	F-INT-17	1-Nov-1986
H20 SOL. POLYALKYLENE GLYCOL, EHTYLENE OXIDE AND PROPYLENE OXIDE	SP CHEM	F-M2094	1-Jun-1986
INK SOLVENT 6129	S&CM	F-72025	
INK SOLVENT I MIXTURE, PM-3863	S&CM	F-48654	1-Apr-1985
INK SOLVENT, PM-6118	S&CM	F-60327	1-Jan-1986
INK SOLVENT, PM-6230	S&CM	F-60349	1-May-1986
INK SOLVENT, PM-6264	S&CM	F-60366	1-Feb-1986

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Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date
INTERMEDIATE CONCENTRATE NO. 10	SP CHEM	F-M2076	1-Jun-1986
KTI 2-EL 2-ETHOXYETHANOL	KTI	90-14-000-2	15-Oct-1985
KTI BUFFERED OXIDE ETCH WITH AND WITHOUT SURFACTANT	KTI	70-12-000-1	15-Oct-1985
KTI CUSTOM ETCHANT—HUGHES 085 ETCH	KTI	70-99-025-1	1-Aug-1985
KTI EGMEA CELLOSOLVE ACETATE	KTI	90-17-000-2	15-Oct-1985
KTI HMDS III EGMEA BLEND—ALL BLEND RATIOS	KTI	50-20-000-1	1-Nov-1985
KTI KPR DEVELOPER	KTI	82-1251	1-Nov-1985
KTI MX-936 SURFACE PROTECTION RESIST (BACKLAP)	KTI	82-0231	15-Aug-1985
KTI NEGATIVE PHOTORESIST 747, 747R, 747 A313A	KTI	10-00-000-2	15-Oct-1985
KTI NEGATIVE PHOTORESIST KTFR	KTI	10-51-000-2	15-Oct-1985
KTI NEGATIVE RESIST THINNER	KTI	82-0242	15-Aug-1985
KTI P(MMA-MMA) TYPE 1 9%	KTI	K	22-Nov-1985
KTI P(MMA-MMA) TYPE I 11%	KTI	K	22-Nov-1985
KTI P(MMA-MMA) TYPE I 9%	KTI	K	22-Nov-1985
KTI POSITIVE PHOTORESIST 111	KTI	K	20-Jan-1986
KTI POSITIVE PHOTORESIST 1318-SFD	KTI	K	15-Oct-1985
KTI POSITIVE PHOTORESIST 1370, 1370 SF, 1370 SFK	KTI	20-20-000-2	15-Oct-1985
KTI POSITIVE PHOTORESIST 1375, 1375K	KTI	20-29-000-2	15-Oct-1985
KTI POSITIVE PHOTORESIST 1450J, 1450 FORMULA K	KTI	20-30-000-2	15-Oct-1985
KTI POSITIVE PHOTORESIST 1470,1470K	KTI	20-25-000-2	15-Oct-1985
KTI POSITIVE PHOTORESIST 3004,3004K	KTI	20-99-043-2	15-Oct-1985
KTI POSITIVE PHOTORESIST 809, 809K	KTI	20-50-000-2	15-Oct-1985
KTI POSITIVE PHOTORESIST 820, 820K	KTI	20-61-000-2	15-Oct-1985

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Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date
KTI POSITIVE PHOTORESIST 9000, 9000K, 9010	KTI	20-99-002-2	15-Oct-1985
KTI POSITIVE RESIST THINNER 809	KTI	82-1253	20-Aug-1985
KTI POSITIVE RESIST THINNER 920	KTI	83-0130	15-Aug-1985
KTI PRE-EVAPORATION ETCH	KTI	70-52-000-2	15-Oct-1985
KTI X-RAY RESIST 771	KTI	82-0628	11-Nov-1985
METHYL CARBITOL (R)	S&CM	F-43025	1-Apr-1986
METHYL CELLOSOLVE (R)	S&CM	F-43201J	1-Aug-1985
METHYL CELLOSOLVE (R) ACETATE	S&CM	F-43283	1-Aug-1985
METHYL METHYLACRYLATE	S&CM	F-72004	
MEVI WST B	SP CHEM	S0519	1-Mar-1986
MEVI WST C	SP CHEM	S0520	1-Mar-1986
MIX TANK INTERMEDIATE #1, PM-6141 (UCARTHERM)	IND CHEM	INT.	1-Dec-1987
MIXED ACETATE REACTOR RESIDUES	S&CM	F-60173	1-Apr-1986
MIXED SOLVENT & RESIN SOLUTION	S&CM	F-60196	1-Nov-1987
MONOETHYLENE GLYCOL STILL TAILS CRUDE	IND CHEM	LD-35	1-Nov-1985
N-PROPANOL	S&CM	F-43204	1-Apr-1985
NIAX RESIN AF	SP CHEM	U0078	8-Oct-1986
NIAX RESIN BF	SP CHEM	U0079	8-Oct-1986
NIAX RESIN CF	SP CHEM	U0080	8-Oct-1986
NIAX RESIN DF	SP CHEM	U0081	8-Oct-1986
NYVAC FR-200 FLUID	SP CHEM	B0066	21-Jan-1988
ORGANO FLUX(TM)735 WF	LONCO	L	1-Oct-1985
PC 222M(TM) INK WHITE PART A	LONCO	EP020	1-Oct-1985

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Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date
PC(TM) 222 M INK BLACK PART A	LONCO	EP030	1-Oct-1985
PC(TM) 222 M INK BLUE PART A	LONCO	EP080	1-Oct-1985
PC(TM) 222 M INK YELLOW PART A	LONCO	EP050	1-Oct-1985
PC(TM) 222 M PART B (CLEAR RESIST)	LONCO	EP090	1-Oct-1985
PC(TM) 33 RX BLUE RESIST	LONCO	PC160	1-Oct-1985
PC(TM) ADDITIVE	LONCO	AO020	1-Oct-1985
PC(TM) ADDITIVE TE-2	LONCO	AO030	1-Oct-1985
PC(TM)222M PART B UL RESIST (CLEAR)	LONCO	EP100	1-Oct-1985
PM 1717 INTERMEDIATE MIX	IND CHEM	F-INT-41	15-May-1986
PM 5178 UNDYED/DYE CONCENTRATE	IND CHEM	F-INT-54	1-Dec-1987
PM 5197 UNDYED/DYE CONCENTRATE	IND CHEM	INT.	1-Dec-1987
PM 5821 UNDYED/DYE CONCENTRATE	IND CHEM	INT.	1-Dec-1987
PM 6195 INTERMEDIATE MIX	IND CHEM	F-INT-56	1-Dec-1987
PM-1041 INTERMEDIATE CONCENTRATE	SP CHEM	F-M2051	1-Jun-1986
PM-1649 SYNASOL 193	S&CM	F-72022	
PM-5922 COMPONENT	SP CHEM	F-M2200	15-May-1986
PM-6166	S&CM	F-72072	
PM-6178 INTERMEDIATE CONCENTRATE	SP CHEM	F-M2122	1-May-1986
PM-6192, 6258 INTERMEDIATE CONCENTRATE	SP CHEM	F-M2123	1-May-1986
PM-6281 INTERMEDIATE CONCENTRATE	SP CHEM	F-M2143	1-May-1986
POLYGLYCOLDIAMINE PRECURSOR	SP CHEM	F-M2204	22-May-1986
POSITIVE PHOTORESIST 1350J SF, 1350 JSF FORMULA K	KTI	21-10-000-2	15-Oct-1985
PROPANOL/PROPYLACETATE	S&CM	F-72055	

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List of Reproductive/Developmental
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Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date
QUINTOLUBRIC 702-TCF	S&CM	F-60555	21-Aug-1987
RESIN MC-28 SOLUTION	LONCO	SB310	1-Oct-1985
RIM POLYMER POLYOL MIXTURE	LONCO	SB190	16-Oct-1987
SD-29 EEP	SP CHEM	S0380	15-May-1986
SEALBRITE 600-60 CONCENTRATE	IND CHEM	F-INT-66	1-Jul-1987
SEALBRITE(R) 600 CONCENTRATE	S&CM	F-48676	1-Nov-1985
SILWET SURFACTANT L-77	S&CM	F-48667	1-Apr-1985
SPENT GLYCOL RESIDUE (WITH DILUENT)	S&CM	F-44205	1-Jun-1985
SYNASOL (R) SOLVENT, PM-100, 200 PROOF	S&CM	F-43077	1-Jul-1987
SYNASOL (R) SOLVENT, PM-3224, 190 PROOF	S&CM	F-72083	1-Oct-1985
SYNASOL (R) SOLVENT, PM-41, 190 PROOF	S&CM	SA060	1-Oct-1985
SYNASOL (R) SOLVENT, PM-509, 200 PROOF	LONCO	SA050	10-Jun-1986
SYNASOL (R) SOLVENT, PM-6353	LONCO	1570Q	1-Oct-1985
SYNASOL (R) SOLVENT, PM-6353	S&CM	F-49172	1-Oct-1985
SYNTHA FLUX(R) 216	IND CHEM	F-43306	1-Jul-1986
SYNTHA-FLUX(TM) 214	IND CHEM	F-43577	1-Jun-1986
SYNTHETIC SCRUBBER SOLUTION-ANTIFREEZE	S&CM	F-45877	
TETA VENT SCRUBBER SOLUTION II-50-D PM-5196	S&CM	F-60460	1-Jan-1986
UCAR (R) AIRCRAFT DEICING FLUID II-50-D PM-5178	S&CM	F-60218	1-Jan-1986
UCAR (R) AIRCRAFT DEICING FLUID II-D PM-5178	S&CM	F-48221	
UCAR (R) AIRCRAFT 4T, FLAKE			
UCAR (R) BUTYLPHENOL 4T, FLAKE			
UCAR (R) BUTYLPHENOL RESIN BKS-2600			
UCAR (R) PHENOLIC RESIN BKS-2900			
UCAR (R) PHENOLIC RESIN BKS-5928			
UCAR (R) PHENOLIC RESIN BKSA-2602			
UCAR (R) PHENOLIC RESIN BKSA-2602			

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Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date
UCAR (R) PHENOLIC RESIN BLS-2680 BLACK	S&CM	F-48243	1-May-1986
UCAR (R) PHENOLIC RESIN BLS-2700	S&CM	F-43957	1-Jan-1986
UCAR (R) PHENOLIC RESIN BLS-2835 BLACK	S&CM	F-47465	1-Jun-1986
UCAR (R) PHENOLIC RESIN BLS-2851	S&CM	F-46668	1-Jan-1986
UCAR (R) PHENOLIC RESIN BLS-3536	S&CM	F-46666	1-Nov-1981
UCAR (R) PHENOLIC RESIN BLS-4027	S&CM	F-60222	1-Nov-1985
UCAR (R) PHENOLIC RESIN BLSA-3551	S&CM	F-47497	1-Jul-1984
UCAR (R) PHENOLIC RESIN BLSD-2851	S&CM	F-47498	1-Aug-1981
UCAR (R) PHENOLIC RESIN BRL-1100	S&CM	F-48212	1-Jan-1986
UCAR (R) PHENOLIC RESIN CLS-3112	S&CM	F-46831	1-Jan-1986
UCAR (R) PHENOLIC RESIN CLS-3940	S&CM	F-47530	1-Jul-1984
UCAR (R) PHENOLIC RESIN CLS-4869	S&CM	F-47531	1-May-1985
UCAR (R) PHENOLIC RESIN SOLUTION BLS-2680	S&CM	F-46437	1-Nov-1985
UCAR (R) PHENOXY RESIN PKHS-25	S&CM	F-48409	1-Nov-1984
UCAR (R) PHENOXY RESIN PKHS-28	S&CM	F-48424	1-Nov-1984
UCAR (R) RUNWAY DEICER PM-5197	IND CHEM	F-43952	1-Jan-1988
UCAR (R) SILICATE ESP-E	S&CM	F-72049	
UCAR (R) SILICATES ESP & ESPX	S&CM	F-46647	1-Jul-1985
UCAR (R) THERMOFLUID 17 PM-1717	IND CHEM	F-43864	1-Nov-1985
UCAR SILICATE C-15	S&CM	F-72145	
UCARSIL AF-2 ORGANOSILICON CHEMICAL	SP CHEM	S0144	15-Feb-1988
UCARTHERM 2J HEAT TRANSFER FLUID	IND CHEM	F-48126	1-Sep-1987
UCON (R) BRAKE FLUID 4896	S&CM	F-48623	1-Jun-1987

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List of Reproductive/Developmental Toxic Substances
Intermediates & Final Products **

Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date
UCON (R) BRAKE FLUID COMPONENT B	S&CM	F-48623	1-Jan-1988
UCON HYDROLUBE CC SERIES 7120 STANDARD PRODUCT	SP CHEM	F-46607	1-Feb-1986
UCON HYDROLUBE CC SERIES 732	SP CHEM	F-46607	1-Feb-1986
UCON HYDROLUBE CC SERIES 746	SP CHEM	F-46607	1-Feb-1986
UCON HYDROLUBE CC SERIES 746 DYED PROD.	SP CHEM	F-M2012	1-Feb-1986
UCON HYDROLUBE CC SERIES 760	SP CHEM	F-46607	1-Feb-1986
UCON HYDROLUBE CC SERIES 760 DYED PROD.	SP CHEM	F-M2012	1-Feb-1986
UCON HYDROLUBE CONCENTRATE 5782	SP CHEM	F-60267	1-Oct-1985
UCON HYDROLUBE CONCENTRATE 5794	SP CHEM	F-46653	1-Dec-1985
UCON HYDROLUBE CONCENTRATE 5884	SP CHEM	F-M2001	1-Jan-1986
UCON HYDROLUBE CONCENTRATE 5902	SP CHEM	F-60309	1-Dec-1985
UCON HYDROLUBE CONCENTRATE 6235	SP CHEM	F-M2034	1-May-1986
UCON HYDROLUBE CONCENTRATE 6241	SP CHEM	F-60276	1-Oct-1986
UCON HYDROLUBE CONCENTRATE C-84	SP CHEM	F-60293	1-Dec-1985
UCON HYDROLUBE CONCENTRATE CP-1	SP CHEM	F-M2007	1-Jan-1986
UCON HYDROLUBE CONCENTRATE CP-1 UNDYED	SP CHEM	F-M2166	1-Jun-1986
UCON HYDROLUBE CONCENTRATE CP-3	SP CHEM	F-M2038	1-May-1986
UCON HYDROLUBE LL SERIES 732 DYED PROD	SP CHEM	F-M2005	1-Feb-1986
UCON HYDROLUBE LL SERIES 746 DYED PROD	SP CHEM	F-M2005	1-Feb-1986
UCON HYDROLUBE SERIES LL 732	SP CHEM	F-46608	1-Feb-1986
UCON HYDROLUBE SERIES LL 746	SP CHEM	F-46608	1-Feb-1986
UCON HYDROLUBE SERIES LL 760 STANDARD PRODUCT	SP CHEM	F-46608	1-Feb-1986
UNDYED PM 1717/URANINE DYE CONCENTRATE	IND CHEM	F-INT-61	15-May-1986

* Excluding Polyolefins Division
** Excluding Vendor Raw Materials

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DRAFT

Chemicals & Plastics Group *
List of Reproductive/Developmental Toxic Substances
Intermediates & Final Products **

Product Name	Division Preparing MSDS	MSDS No.	MSDS Eff. Date
UNION CARBIDE SILICONE FLUID Y-1587	SP CHEM	S0126	15-Feb-1988
WATER SOLUBLE POLYALKYLENE GLYCOL AND ETHYLENE OXIDE	SP CHEM	F-M2099	1-Jun-1986
Y-10022 CRUDE CAPPER PRODUCT	SP CHEM	S0815	12-Feb-1988
Y-10291 CRUDE CAPPER PRODUCT	SP CHEM	S0818	12-Feb-1988
Y-4857A CRUDE CAPPER PRODUCT	SP CHEM	S0803	12-Feb-1988
Y-6044 CRUDE CAPPER PRODUCT	SP CHEM	S0805	12-Feb-1988
Y-6066 CRUDE CAPPER PRODUCT	SP CHEM	S0807	12-Feb-1988
Y-6132 CRUDE CAPPER PRODUCT	SP CHEM	S0809	12-Feb-1988
Y-6854 CRUDE CAPPER PRODUCT	SP CHEM	S0811	12-Feb-1988
Y-6856 CRUDE CAPPER PRODUCT	SP CHEM	S0813	12-Feb-1988
Y-7174	SP CHEM	S0727	1-Mar-1986
Y-7444	SP CHEM	S0738	1-Mar-1986
Y-9398 CRUDE ORGANOSILANE ESTER	SP CHEM	S1983	17-Nov-1987
Y-9414 ORGANOFUNCTIONAL SILANE	SP CHEM	S734	19-Jan-1987

* Excluding Polyolefins Division
** Excluding Vendor Raw Materials

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APPENDIX III

Criteria for UCC Classification

Carcinogens

I. A chemical is considered by UCC to be a carcinogen if:

(a) It has been evaluated by the International Agency for Research on Cancer (IARC) and found to be a carcinogen or potential carcinogen;

or

(b) It is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (NTP);

or

(c) It is regulated by OSHA as a carcinogen or potential carcinogen;

or

(d) It is classified by UCC as a carcinogen as result of meeting any of the criteria for human carcinogen, suspect human carcinogen, or animal carcinogen definitions given below.

Any chemical meeting criteria (a), (b), (c), or (d) above is further classified by UCC as a human carcinogen, suspect human carcinogen, or animal carcinogen in accordance with the following definitions:

(1) Human Carcinogen — Applied to any material where there is sufficient credible and relevant evidence, based principally on observation of exposed human populations, which demonstrates that the material has caused cancer in humans.

(2) Suspect Human Carcinogen — Applied to any material for which there is sufficient credible evidence, based on animal and other related studies, that the material is carcinogenic in laboratory animals, and for which other relevant information is available to determine that the material might also be carcinogenic for humans.

(3) Animal Carcinogen — Applied to any material for which there is sufficient credible evidence, based on animal and other related studies, that the material is carcinogenic in laboratory animals, but for which there is insufficient evidence to allow a determination of the potential for carcinogenicity in humans.

II. A mixture is considered to be carcinogenic, if not tested as a whole, if

Any component present in it with a concentration of 0.1% or greater is considered to be a carcinogen in accordance with any of the criteria given above.

Union Carbide further classifies each mixture as acting as a human carcinogen, suspect human carcinogen, or animal carcinogen as a result of the classification of the carcinogenic component.

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APPENDIX IV

Criteria for UCC Classification

Reproductive/Developmental Toxic Substances

I. A chemical is considered by UCC to be a reproductive/developmental toxic substance if it is a reproductive toxic substance, an embryofetal toxic substance, or a teratogen, in accordance with the following definitions:

Reproductive Toxic Substance

Reproductive toxic substance - A substance which can cause adverse effects on the function of the reproductive organs (male or female) and interferes with the ability to have offspring.

Developmental Toxic Substance

Embryofetal toxic substance - A substance which can produce delayed and/or detrimental effects upon the embryo or fetus, but which effects are not considered to be structural and/or functional aberrations of development. [Note: some materials showing embryo fetal toxicity may also be teratogenic.]

Teratogen - A chemical substance or physical agent which can cause abnormalities in structural and/or functional development during gestation, in the absence of significant maternal toxicity.

II. A mixture is considered to be a reproductive/developmental toxic substance, if not tested as a whole, if

Any component present in it with a concentration of 1.0% or greater is considered to be a reproductive/developmental toxic substance in accordance with the criteria given above.

Union Carbide further classifies each mixture as a reproductive toxic substance (male), reproductive toxic substance (female), embryofetal toxic substance, and/or teratogen as a result of the classification of the component.

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3.5

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SUBJECT: Occupational Health Program
Respiratory Protection

PURPOSE: To establish and maintain a standard procedure for the proper selection, maintenance, and use of respiratory protection equipment.

BACKGROUND: Corporate HSEP Procedure 3.5.2, "Respiratory Protection".

REQUIREMENTS: The location manager will assure that a Respiratory Protective Equipment Procedure is established to comply with Safety Standard SH 104, attached.

SCOPE: These requirements are applicable to all locations administered by C&P Purchasing and Distribution where personnel may reasonably be exposed to airborne contaminants.

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RESPIRATORY PROTECTIVE EQUIPMENT PROCEDURE

1 PURPOSE

1.1 To provide the minimum requirements for developing procedures for the proper use, cleaning, storage, maintenance, inspection, selection, and fitting of respiratory protective equipment for potentially hazardous atmospheres.

2 STANDARDS

2.1 GENERAL USE OF RESPIRATORY EQUIPMENT

2.1.1 Written standard operating procedures for the use, maintenance, inspection, selection, and fitting of respiratory protective equipment shall exist, be kept up-to-date, and include the accountability and authority for each aspect of the program. Provisions for exceptions to written standard operating procedures are clearly defined with appropriate approval levels.

2.1.2 Each respiratory protection equipment program shall comply with:

(1) OSHA requirements in 29 CFR 1910.134 and applicable OSHA health standards in 29 CFR 1910 Subpart Z.
(2) State and local requirements (where they exist).
(3) ANSI Z88.2 (except for fit testing frequency).

2.1.3 The location medical director or location contract physician shall determine periodically that employees are physically capable of using the respiratory equipment that may be required in performance of some of their duties without endangering their health.

2.1.4 Only NIOSH/MSHA approved positive pressure atmosphere-supplying respirators, either SCBA (self-contained breathing apparatus) or combination supplied-air/5 minute egress SCBA, shall be used in an atmosphere which is immediately dangerous to life or health.

2.1.5 Respiratory protection equipment shall be stored in convenient, clean, and sanitary locations.

2.1.6 Employees are periodically instructed and trained in the proper use, care, location, limitations, and emergency and rescue use of respiratory equipment.

2.1.7 NIOSH/MSHA approved respirators shall be used at all times. Where approved respirators are not available for a certain specific chemical or service, positive pressure or general purpose unapproved respirators may be used, provided adequate data is available to document the effectiveness of the respirator.

2.1.8 Procedures for proper selection of respirators shall exist based on the contaminant type (chemical and physical form) and concentration.

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2.2 INSPECTION OF RESPIRATORY EQUIPMENT

2.2.1 Qualified personnel shall repair respiratory protective equipment.

2.2.2 Records are maintained of inspections and repairs of emergency use respiratory equipment.

2.2.3 Respiratory protective equipment facepieces are cleaned and disinfected following each day of use and more often, if necessary.

2.2.4 All respirators shall be inspected routinely before and after each use. In addition, respiratory equipment that is not used routinely shall be inspected as required by regulations or manufacturers' recommendation.

2.2.5 Respirator inspection shall include a check of the tightness of connections and the condition of the facepiece, valves, headbands, connecting tubes, canisters, and rubber or elastomer parts.

2.3 SELECTION/FITTING OF RESPIRATORY EQUIPMENT

2.3.1 The selection and issuance of respiratory protection equipment conforms to OSHA 29 CFR 1910.134 and includes consideration of the potential exposure hazards known or expected to be associated with each employee's activity.

2.3.2 Personnel training must include:

1. Proper fit and adjustment of mask and equipment.
2. Testing of the seal between the facepiece and face.
3. Wearing of the respiratory equipment in a non-hazardous atmosphere.
4. Wearing of the respiratory equipment in a test atmosphere.
5. Additional requirements for negative-pressure respirators per OSHA health standards in 29 CFR 1910 Subpart Z.

2.3.3 Fit Testing

2.3.3.1 A qualitative or quantitative respirator fit test shall be used to determine the ability of each individual respirator wearer to obtain a satisfactory fit with each type of air-purifying respirator that the individual is expected to wear, including single-use respirators and dust masks, because these respirators create negative pressure within the facepiece as the wearer inhales.

2.3.3.2 Personnel assigned to use respirators shall be periodically evaluated by qualified medical personnel (refer to 2.1.3).

22.5.1.2

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2.3.3.3 Fit testing must be performed: (1) at the time of the initial fitting prior to assignment into an area where negative-pressure respirators may be used, and (2) at least every two years thereafter or as specified in OSHA health standards. Additionally, a positive and negative pressure fit check shall be conducted by each respirator wearer whenever the respirator is donned.

2.3.3.4 Accurate records shall be maintained for each employee subject to negative pressure respirator fit testing and include:

1. Protocol for either the quantitative or qualitative procedures selected for respirator fit testing.
2. Results of any quantitative fit test performed.
3. Size and manufacturer types of respirators successfully fit tested.
4. Type and facepiece selected for the employee.
5. Date of most recent fit test.
6. Name, social security number, and job description of the tested employee.

2.3.3.5 A policy concerning facial hair and the use of positive-pressure or negative pressure respirators with facepieces shall be established at each location and shall include the requirement that the respirator wearer's face be clean shaven in the area of the facepiece-to-face seal.

3 REFERENCES

3.1 OSHA Industrial Hygiene Manual, Chapter III, "OSHA Standard Method for Determination of Respiratory Protection Program Acceptability."

3.2 ANSI Z88.2, "Practices for Respiratory Protection."

3.3 OSHA Regulation, 29 CFR 1910.134, "Respiratory Protection" and 1910 Subpart Z, "Toxic and Hazardous Substances"

3.4 Corporate Health, Safety and Environmental Protection Procedure Manual, 3.5.2 Respiratory Protection.

ORIGINAL DATE: SEPTEMBER 1975
REVISION DATES: JUNE 1979
JULY 1986
FEBRUARY 1988

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22.5.1.2

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SUBJECT: Occupational Health Program
Breathing Air Quality Assurance

PURPOSE: To establish standards for assuring the quality of breathing air to protect the safety and health of personnel required to use breathing air systems.

BACKGROUND: Safety/Health Technology Manual Standard SH 105, Procedure for Use of Breathing Air.

REQUIREMENTS: When conditions require the use of supplied breathing air, the location manager shall assure that the air supplied is of the quality defined in SH 105 attached and that the air supply system complies with the requirements of SH 105.

SCOPE: These requirements apply to all locations administered by C&P Purchasing and Distribution.

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1 GENERAL

1.1 This specification presents standards for developing a Procedure for Use of Breathing Air.

2 PROCEDURE FOR USE OF BREATHING AIR

2.1 To have ensured the safety and health of personnel when required to use breathing air systems.

2.1.1 Standards

2.1.1.1 The procedure ensures the quality of purchased cylinder breathing air by:

1. Requiring certification from suppliers that meets CGA G-7.1, 1966 specifications.
2. Oxygen content is verified by analysis at the receiving location.

2.1.1.2 The procedure ensures the quality of breathing air from either bottle or compressor supplied systems by the following:

1. The compressor system shall be dedicated solely to breathing air service.
2. Compressors are equipped with intakes located to avoid contaminated air.
3. Oil lubricated compressors are equipped with carbon monoxide and/or high temperature alarms.
4. The compressor system is equipped with purifying beds and filters.
5. Testing frequencies are designed to ensure breathing air quality.
6. The system provides for adequate volume to allow escape time for all users and is equipped with low pressure alarms at all use locations.
7. Compressor alarm systems and purification filter systems are periodically inspected and maintained with appropriate records.
8. Breathing line couplings are incompatible with outlets for other services.
9. Pipe line systems and outlets are color coded and labeled.
10. Manifolding of breathing air containers with non-breathing air containers is not allowed.

22.5.1.2

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SUBJECT: Occupational Health Program
Hearing Conservation and Noise Control

PURPOSE: To provide a basis for management programs to control exposure to noise and to provide an audiometric test program to evaluate and monitor the hearing capabilities of employees.

BACKGROUND: Corporate HSEP Procedure 3.5.1, "Hearing Conservation."

REQUIREMENTS: At locations where noise may be an occupational exposure, location managers will assure:

1. Personnel are made aware of the potentially harmful effects of noise exposure. Ongoing education and information on the harmful effects of noise are provided. Areas where sound pressure levels exceed 85dBA are communicated to Hearing Conservation Program participants.

2. Work situations which cause exposure of personnel to unacceptable noise levels are identified and such personnel are protected through the reduction and control of noise by engineering and/or administrative controls.

   a. Biennial surveys are conducted to determine workplace noise levels and personnel exposures. Survey and measurement data are documented and retained.

   b. Noise surveys are conducted within 60 days of startup of new equipment or process modifications which have affected the noise level.

   c. All areas and mobile equipment exceeding 90dBA are posted.

   d. Feasible engineering and/or administrative control programs are initiated to achieve compliance with government or mandated Union Carbide noise standards.

   e. For situations where engineering and/or administrative controls are not feasible, the reasons are adequately documented and evaluated annually.

3. Exposures to unacceptable noise levels which cannot be satisfactorily controlled through feasible engineering or administrative programs are prevented with approved hearing protection devices.

   a. Personnel at risk are notified of noise exposure and the hearing protection controls in place.

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REQUIREMENTS (Cont'd)

b. Approved hearing protection devices are provided and fitted by properly trained/qualified personnel in accordance with acceptable medical practices after examination and recommendation by the local medical staff.

c. Personnel at risk are trained annually in the proper care and use of the hearing protection devices provided.

d. An effective monitoring and enforcement program is established and maintained to assure use of designated hearing protection.

e. Whenever time weighted average exposures cannot be accurately determined and controlled, hearing protection is required in all posted areas regardless of length of exposure.

f. The hearing protection program is endorsed by corporate experts.

4. Consideration of the effects of noise is included as a factor in replacement, modification, and addition of facilities and equipment.

a. Engineering criteria and design standards include statements on noise regulatory compliance.

b. Equipment design, layout, installation, and purchase criteria seek to achieve permissible noise levels with due consideration for employees and community exposure consistent with government regulations and good practices.

5. An audiometric test program is implemented as outlined in the Corporate Hearing Conservation and Noise Control Manual.

a. A baseline audiogram is included in all pre-employment or initial physical examinations.

b. A repeat audiogram is conducted at yearly intervals on personnel required to wear hearing protection and personnel regularly exposed to noise levels at or above 85dBA TWA and whenever recommended by a physician or consultant.

c. Audiometric testing:

- Is conducted by personnel certified by the Council for Accreditation in Occupational Hearing Conservation, or the Corporate consulting otologist, or other certification approved by the Corporate Medical Department.

- Meets all elements of the laws and regulations of the country in which the facility is located. In the United States and Puerto Rico the regulation is the OSHA Standard 1910.95 (Paragraphs (a) and (b) published in October 1972 and the revised Hearing Conservation Amendment published in the Federal Register on 3/8/83).

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REQUIREMENTS (Cont'd)

d. Audiograms are reviewed by the consulting otologist or by a qualified physician approved by the Corporate Medical Director.

e. Results of the otologist's findings are made available to the local physician, nurse, or designee who notifies the employee of the results and refers him/her for further consultation and follow-up as necessary.

6. Workman's Compensation or Health Insurance hearing loss claims are reviewed and approved by the Corporate Medical Department (and/or consulting otologist) and the Corporate Law Department prior to settlement of any claim.

7. Where feasible, an audiogram is performed on all employees upon layoff, termination, or retirement.

8. Audiometric data is maintained and transmitted to the Corporate consulting otologist on UCC Serial Audiogram Form # UCC 275-2A and retained in compliance with government and UCC record retention standards. A copy of the form is attached.

REFERENCE: UCC Serial Audiogram Form #275-2A (attached)

Manual: Corporate Hearing Conservation and Noise Control Manual

SCOPE: This procedure applies to all locations administered by C&P Purchasing and Distribution.

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UNION CARBIDE CORPOR"TION DIVISION
LOCATION
PLANT
SERIAL .. OGRAM
UC 275-1A
SOCIAL SECURITY # NAME (LAST) (FIRST) (MIDDLE)
SEX DATE OF BIRTH month day year Cont. Serv. Date:
Employee Number:
RIGHT EAR LEFT EAR
500 1000 2000 3000 4000 6000 8000
Exam Test No.
Date and Time
Serial Number Standard
Dept No
Shift No
Reas for test code
Job No. or class
Years on present job
Noise level code
Liner lapse code
Hear. prot. code
TESTER Sign and print name
Tester cert no or certificate
Date processed (HLC use)
Date
Is Eardrum Visible
Is Perforation Present
Is Drum Normal
Is Other Present
INITIAL OTOLOGIC HISTORY (Explain All "Yes" Answers)
NO YES
DATE
1. Ever had noises in ear?
2. Ever had dizziness?
3. Ever had fullness in ear?
4. Ever had pain in ear?
5. Have you had fluctuating hearing loss?
6. Have you had sudden or rapid hearing loss?
7. Have you had ear infections?
8. Have you been to an ear specialist?
9. Ear surgery recommended or performed?
10. Have you had head injury or unconsciousness?
11. Did you ever hunt or shoot?
12. Do you have any noisy hobbies?
13. Do you presently have other noisy job?
14. Have you had mycin, quinine, excessive aspirin?
15. Ever had hearing tested before?
When? Where?
16. Family history of hearing loss?
17. Do you now have difficulty hearing?
18. Ever had: 1 Measles 2 Mumps 3 Chick Pox 4 Scar Fev 5 Diph
19. Yes Military Serv Branch Job
20. Have you ever had a noisy job?
UPDATE OTOLOGIC HISTORY (enter test number)
OTOLOGIC & OTOSCOPIC COMMENTS
Test Number
Question Number
UPDATE OTOSCOPIC OBSERVATION
a. Are ear canals obstructed?
b. Are perforations present?
Is other present?
UPDATE INSTRUCTIONS Enter only "Yes" responses. Indicate with ✓ through numbers entered at top of column to show that all questions were asked. The purpose of the update is to discover new developments or worsening of conditions. The phrases such as "do you now have a new complaint of or since the last test" to elicit new information

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3.8

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SECTION: 3.8
APPROVED:
REVISED: March 31, 1988

SUBJECT: Occupational Health Program
NIOSH Inspections

PURPOSE: To establish written, uniform procedures to follow in event of a NIOSH inspection.

BACKGROUND: Corporate Occupational Health/Medicine Policy, "Governmental Agency Inspections".

REQUIREMENTS: Location management will have a written procedure to be followed in the event of a NIOSH inspection. The procedure will comply with the UCC "Guideline for NIOSH Investigations" dated March 10, 1982, attached.

SCOPE: This requirement applies to all operating locations administered by C&P Purchasing and Distribution.

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UNION CARBIDE CORPORATION OLD RIDGEBURY ROAD, DANBURY, CT. 06817
LAW DEPARTMENT

March 10, 1982

Memorandum to
GENERAL OCCUPATIONAL HEALTH COMMITTEE

Re: GUIDELINE FOR NIOSH INVESTIGATIONS

Preface

Considerable concern has been recently voiced over the apparent excess number of Health Hazard Evaluations (HHE) of Union Carbide facilities being undertaken by the National Institute of Occupational Safety and Health (NIOSH) of the federal government's Department of Health and Human Services (formerly Health, Education and Welfare).

NIOSH is, essentially, the research arm of OSHA as created under Sections 8, 20, 21 and 22 of the Occupational Safety and Health Act of 1970, and is authorized and required to conduct workplace inspections (the term is not to be confused with an OSHA inspection) to conduct research, experiments, demonstrations and studies in connection with its activities under the Act.

NIOSH can operate either through agreement with the employer; or following a request by employer or employee for a health hazard evaluation; or on its own initiative. Requested Health Hazard Evaluations are governed by NIOSH Regulations Part 85 (sections 1-12), issued 1972; other NIOSH visits are under it, Regulation Part 85a, issued 1975. Both were issued without notice and hearing, but after receipt of comments. The difference between the procedures is minimal, and they will be handled as one document in the following guidelines.

Statutory Authority

It should here be noted that NIOSH's inspection power is, under the Act, as broad as that of OSHA, except that NIOSH has no enforcement authority; cannot issue citations or penalties; or require correction of any violations of the OSH Act or any standards issued under it. Its aim is well-stated in the regulation; to make a health hazard evaluation, of one or more (up to all) substances appearing in a given workplace, and reporting on it, with recommendations. NIOSH uses the term "investigation" rather than "inspection", but states that

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this terminology includes a physical inspection as well as sampling, observation, measurements or other devices reasonably necessary to determine the toxic or potentially toxic effect of any substance "normally" found in the workplace.

Health Hazard Evaluation

Typically, a HHE will be initiated, in Union Carbide at least, by an employee request to NIOSH to make such a study. It can be requested by an employer. The request should be in writing, signed by an authorized representative, containing the name and address of the workplace, identifying the substance involved, the nature of the circumstances or grounds on which the request is based, and the form of the substance, number of people exposed, occupations of exposed employees, and other pertinent observations. The authorized representatives must represent at least 3 employees. Secrecy of identity may be requested, except as to the signatory to the request, although the employer is entitled to a copy of the request, at least by the time of the first visit of the NIOSH representative. The same requirements apply to an employer request.

NIOSH says it will, on receipt of the request, evaluate it and conclude whether there is reasonable cause to believe an investigation is warranted. It will then assign a project officer to the investigation, generally a physician, and an industrial hygenist. Normally these should be NIOSH employees, although NIOSH does contract out its projects to private contractors. The difficulty NIOSH has found with use of such contractors is that its own regulations permit the employer to refuse entry to any trade secret area or to furnish trade secret information to any such private contractor or consultant. If NIOSH decides no investigation is warranted, it will so advise the requestor in writing.

Investigations

A NIOSH investigation normally will be proceeded by advance notice (unlike OSHA inspections, where advance notice is prohibited by law). However, it need not be; NIOSH has discretion merely to show up at the plant, and its regulations state that such advance notice will not be given where such action "would adversely affect the validity and effectiveness of an investigation." This, however, is a comparative rarity, and it has not yet occurred at a Union Carbide Corporation plant site.

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When NIOSH contacts the site representative, it is required to "provide the details of why an investigation of the place of employment is being conducted." NIOSH should provide such details in writing, and, hopefully, will furnish a full protocol, certainly by the time of the visit. Such a document should be requested, and before the visit takes place. If NIOSH does not do so, particularly if it refuses to specify the nature of the request for a HHE, or withholds a copy of the complaint, or if any other problem arises, the NIOSH representative should be questioned at the time of the visit or before to ascertain what is involved.

No advance information prior to the site visit should be provided by Union Carbide Corporation, even though requested by NIOSH in writing; it is desirable (and proper) to await the full details of what is to take place before furnishing any information. NIOSH will also give advance notice to any employee requestor, and the relevant OSHA or state OSHA agency. The notice to the employee requestor will be given at the time of the NIOSH site visit. If there has been no employee request, NIOSH will notify any union representing employees at the site at the time of the actual visit.

NIOSH representatives, the regulations say, may "enter without delay and at reasonable times any place of employment" to conduct investigations. NIOSH says, thereby, it does not need a warrant to enter. This part of the regulations was issued before the U.S. Supreme Court in the Barlow case required OSHA to get a warrant to enter a site to be inspected; of course, the same rule applies to NIOSH. NIOSH representatives may otherwise enter only with the consent of the employer.

Such consent will normally be given, as is the case with OSHA inspectors, but could be withheld under certain circumstances (only after checking with the Law Department), such as attempted use of a private consultant or contractor to view trade secret areas; use of NIOSH procedures to harass or intimidate; attempted extension by NIOSH of the scope of the original investigation. Consent could be terminated if the NIOSH representative abuses his or her authority during the investigation, such as attempted private conversations on company premises with union officials. Consent to enter should be denied any person not employed by NIOSH who seeks to accompany a NIOSH representative, such as an OSHA inspector, student or other individual who will be a mere observer.

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It should also be noted here that NIOSH visits to areas classified in the interest of national security must be by a NIOSH representative with appropriate security clearance.

Conduct of Investigation

NIOSH investigations must also be conducted "in a reasonable manner; during regular working hours; or at other reasonable times; and within limits." NIOSH does not favor unusual visiting hours, and need not be allowed to disrupt the work or operation at the plant. In practice, this does mean that the plant does have leeway to negotiate with NIOSH a suitable time for its visit, and is especially useful where the Union Carbide hygenists are not immediately available.

Trade Secrets

NIOSH representatives will, and are required to, present credentials at the time of the site visit. If not presented, they should be requested. At that time they will explain the nature, purpose and scope of the investigation and the records they wish to see. It is at this time that trade secrets are to be identified, and NIOSH told that Union Carbide representatives will review their notes, photographs, movies, tapes, reports or other documents to ensure that no such information is revealed inadvertently or otherwise. NIOSH rules provide that this opportunity will be afforded. NIOSH does have regular procedures it follows if it wishes to question a trade secret designation; if this happens at the time of the visit or otherwise, the Law Department should be notified through appropriate channels so that this proposal can be evaluated and acted on.

Information Furnished * (See Addendum on Page 9)

NIOSH, under its regulations, may inspect the place of employment and all "pertinent conditions, structures, machines, apparatus, devices, equipment and materials therein" (85.5(a). It may also, it says, "question privately" any "owner, operator, agent or employee" and "review records required by the Act and other regulations and other records." This would include medical and exposure records of employees, under recent court decisions, even though no individual consents thereto have been given. However, there does not appear to be explicit statutory authority for NIOSH to inspect company records other than such individual records, or the OSHA logs (Forms 100, 101, 102 and 200). In any case, furnishing information other than

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above specified is at the discretion of the employer, which should not be liberally exercised. Pertinent records may be copied, under the regulations.

That is, such discretion should be confined to furnishing records pertinent to the purpose of the visit, and only on specific request; there should be no volunteering of any information or records at all. Many things such as process information; production records and figures; finances; personnal records not related to exposure and medical matters, are among the things that should not be furnished. The regulations themselves authorize:

1) environmental and substance samples

2) measuring employee exposures and environmental conditions

3) taking of photos, movies or tapes related to the purpose of the investigation

4) "other reasonable investigative techniques" such as

   (a) medical exams

   (b) "anthropomorphic measurements"

   (c) "standarized and experimental functional tests of employees"

5) questioning and private interviewing of employers of the place of employment (not employed anywhere else). The regulations require the employer to arrange for space and time for such private interviews, but only after consultation, and they are not to be allowed to disrupt operations. These matters are negotiable; and are paid for by NIOSH; there is no requirement that the employer pay the employees for time spent in such testing or interviewing.

Consent of employees, after full disclosure, is to be received in any such matters, and their participation is voluntary in such matters.

The above, of course, omits considerable areas and does not give NIOSH an opportunity for a fishing expedition.

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Personnel

The NIOSH agent is said to be in charge of the investigation. He or she should be accompanied at all times by at least one employer representative, as well as a Carbide industrial hygenist. The agent is authorized to permit an employee representative to accompany him or her, and normally will do so. In such case, care should be taken to avoid such representative being allowed to designate employees to be interviewed; who is to be interviewed is to be arranged between the NIOSH agent and the employer. Note, however, that unless the visit is due to an employee request, no employee representative may accompany the agent as a matter of right, but only at the discretion of the agent where the agent deems that will conduce to a better investigation.

The NIOSH agent may authorize other representatives to go along if he or she determines that will be reasonably necessary to the investigation. Access to trade secret areas may be limited by the employer in such cases. The NIOSH agent is authorized to resolve all disputes about who is to be the authorized employee representative.

The accompanying representative may be changed from time to time as necessary. The agent may deny accompaniment to anyone interfering with a "fair and Orderly" physical investigation.

If NIOSH is going to do sampling, take samples or tests, etc., it is very desirable that company medical and/or hygenist personnel be present. If such presence is refused in testing or employer interviews, etc., it is crucial that a detailed protocol of the procedure and questions be received. Duplicate tests or sampling should be taken at the time NIOSH does so, and this will normally present no problem. If any problems arise, consult the Law Department through channels.

It should also be noted that NIOSH may, if it discovers a condition of imminent danger, notify OSHA or the relevant state agency as well as the employer and employees.

NIOSH will, if it views or copies records of a confidential nature (such as medical records) maintain them as confidential under the 1974 Privacy Act relating to federal employees.

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NIOSH is required to observe all safety and health practices in effect at the plant, all NIOSH and OSHA regulations, and will provide and use its own protective clothing and equipment, unless specialized equipment is necessary, where it is to be provided by the employer. NIOSH is not to cause "unreasonable disruptions of the operations" of the site.

Further Visits

At the conclusion of the initial visit which is to cover the opening conference, the walkaround, sampling and/or tests and employee interviews arranged by the employer, plus a closing conference, NIOSH will determine whether a further visit or investigation is necessary. This could take several months; the terms thereof and the detailed protocol to cover the return visit should be negotiated by the employer. The return visit may be preceded by an interim report and recommendations. The final report will, by regulations, be preceded by a preliminary report, which could be the interim report mentioned above.

Final Report

The final reports will be made available to the "employer, owner, operator or agent in charge at the place of employment". Copies will be sent to OSHA or the state agency having jurisdiction; the employee representative originally notified of the visit; and/or the local union. The preliminary report (hopefully) will be sent only to the employer for correction and elimination of trade secret information. The data used to compile the reports will be available to the employer on request, but not in a form that is individually identifiable. If the report is a determination based on a request by either employer or employee for a health hazard evaluation, the determination will:

1) identify and set forth the concentrations of the substances found and the conditions of use;

2) state whether such substances have toxic effect in such concentrations and the basis for saying so.

In such a determination, the employer must post a copy for 30 days at or near the workplace of the affected employees and ensure such postings are legible; the alternative is to have NIOSH mail copies to the affected employees, defined as

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those exposed to the substance which is the subject of the health hazard evaluation. Copies of all determinations under a health hazard evaluation will be mailed to the Secretary of Labor, with "pertinent criteria" if the substance or substances investigated are found toxic or potentially toxic, and are not covered by a standard. Unlike NIOSH investigations under Part 85a, health hazard evaluation reports are not required to be available to the public, except as stated above. However, in other NIOSH investigations, the material may be used in NIOSH criteria documents, reports, technical reports, scientific journals, presentations at technical meetings or other "similar manners". The specific place of employment will not be identified, but the regulations warn that full investigation reports are subject to Freedom of Information Act requests.

Closing Conference

When the investigation is not made pursuant to a health hazard evaluation request, NIOSH can conclude it with a closing conference, not a written report, with the same persons who were present during the investigation. In such cases also, specific findings of individual employee tests, medical findings or measurements may be released to the company physician, but only on written authorization of the employee. If the findings are positive, the employee and his physician will be notified and a summary of NIOSH findings will be sent to such individual.

Suggestions

Aside from the above regulations, there are certain basic caveats that ought to be observed by each employer or representative in handling NIOSH visits.

First, an individual at the site should be designated to handle the NIOSH visit, and should be thoroughly familiar with the NIOSH rules and habits.

Second, the Division and Corporate Health officers and the Law Department should be notified immediately of any proposed visit, and necessary guidance and personnel to be present be determined ahead of time. In particular, industrial hygenist personnel need advance alertin

Third, as much written information as possible should be ascertaine from NIOSH about the visit and the substance thereof. In certain cases, a protocol which should take the form of an agreement will need to be requested.

Fourth, good reason should be shown for any denial of a NIOSH request for a visit. Unreasonable disruption of operations is one possibility.

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Fifth, the company representative should at all times be courteous to the NIOSH representatives. This does not mean the company cannot be firm as needed. Efforts should also be exerted to prevent employee or union representatives from taking over the visit. When disputed points arise, especially at the outset of the investigation, they should be resolved before the investigation starts or continues.

Sixth, only information pertinent to the particular subject matter of the investigation should be furnished on request by NIOSH, but never volunteered. All trade secret information should be identified in advance by NIOSH. Samples taken by NIOSH should be duplicated; as should photos, tapes, movies, etc. made by NIOSH. Copies of all such should be requested of NIOSH. Documents copied (and no originals should leave the plant) should be noted in full.

Seventh, full and complete notes should be kept by the company representatives of the entire visit. If NIOSH tapes any meeting, the company rapresentative should do likewise, as well as ask for a copy of the NIOSH tape. Full report of the entire visit in detail should be made to the appropriate plant, division and corporate personnel as soon as possible after the conclusion of the visit.

Eighth, private interviews with employees are permissible under the regulations. The company should, however, try to have the company physician present during such interviews; in any case, the summary of them should be requested after the investigation is over.

Ninth, do not hesitate to call division or corporate health officers or the Law Department if any questions arise.

Tenth, the completion of a health hazard evaluation, it should be noted, does not bar a request for another nor limit NIOSH discretion in undertaking a subsequent investigation.

– John W. Whittlesey

JWW/DD

* The Third and Sixth Circuits have subsequently determined that NIOSH has the right to subpoena employee medical records. Both leave a substantial amount of leeway on negotiating appropriate protections on disclosure. The Third Circuit Court of Appeals in Westinghouse Electric Corp. held that NIOSH, where necessary, may require an employer to turn over personally identifiable employee records to NIOSH. However, the court also said that NIOSH must give prior notice to the employees whose records it seeks so that they may object to such disclosure.

BRC 1600

3.9

BRC 1601

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SUBJECT: Occupational Health Program
Medical Evaluations

PURPOSE: To formulate a consistent medical evaluation program with objectives as follows:

To evaluate the health status and work capabilities of prospective and current employees and advise management on their ability to perform required work tasks without endangering themselves or others.

To meet the medical evaluations and medical surveillance requirements of laws and regulations.

To evaluate the health status of current employees potentially exposed to identified workplace chemical, biological or physical stresses.

To detect possible early adverse effects of occupational exposure to enabling management to consider process changes, engineering improvements, administrative controls, or the use of protective equipment to reduce the health risks, minimize legal liability and enable compliance with applicable statutory requirements.

To aid employees to remain in good health in order that:

Their productivity is at or above standard.
They adjust satisfactorily to the job environment.
Absenteeism is reduced and maintained at an acceptable level.
They may enjoy a long and productive period of employment free of health consequences.

BACKGROUND: Corporate HSEP Procedure 6.0, "Occupational Medicine."

REQUIREMENTS: The location manager shall assure that procedures are implemented to evaluate the physical and mental health status of current or prospective employees in accordance with the following:

1.1 PRE-EMPLOYMENT OR PRE-PLACEMENT EXAMINATIONS

All persons, otherwise approved for employment, shall be medically evaluated as an aid to placement prior to being hired or, in the case of an employee, before being assigned to a new job or work area where potential exposure to defined stress may occur or where laws or regulations mandate such evaluation.

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A protocol for the Pre-employment Medical Examination is outlined in APPENDIX I*.

1.2 HEALTH AND SAFETY EXAMINATIONS

These examinations apply to specific job classifications, tasks or stresses that require a medical determination of the employee's ability to safely perform the job or tasks in question and are mandated by corporate policies, federal, state laws, and/or local statutory laws or administrative requirements.

The standards for Noise, Respirator Wearers, Truck Drivers and Fire Brigades are mandated by federal law. The Industrial Equipment Operators PART I and PART II are ANSI standards.

A protocol for such examinations is outlined in APPENDIX II according to appropriate job title, task or statutory requirement.

1.3 MEDICAL SURVEILLANCE EXAMINATIONS

1.3.1 These Examinations will be made available to employees with potential exposure to specifically identified hazards required by:

1.3.1.1 Federal, state laws and/or local statutory laws or administrative requirements.

1.3.1.2 UCC internal standards selected and required according to Corporate Medical Surveillance Policy.

1.3.2 The Medical Surveillance Examinations are outlined in APPENDIX III according to the specific hazards involved.

1.4 VOLUNTARY EXAMINATIONS

The examination may be offered to employees on a voluntary basis at the discretion of component management.

A protocol for the voluntary examination is outlined in APPENDIX IV.

*The Appendices and Exhibits cited in this policy are contained in the Corporate Occupational Health/Medicine Policy "Medical Evaluations".

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1.5 RETURN TO WORK EVALUATIONS

The purpose of these evaluations is to assess the physical and mental status of the returning employee, and the need for modification or restrictions of the employee's work activities after a period of absence.

1.5.1 WORK-RELATED ABSENCES

The return to work of employees who have been absent from the workplace because of work-related injury or illness must be evaluated and approved by the location medical personnel.

1.5.2 NON-WORK-RELATED ABSENCES

Employees who have been absent from the workplace for three days or more due to non-work-related injury or illness are to be evaluated by the location medical personnel before returning to work.

2.0 All physical examinations shall be performed by or under the supervision of a licensed Physician. Examinations may be performed by a licensed Physician's Assistant, or Registered Nurse who has completed the additional clinical and didactic program necessary to be licensed as an Adult Nurse Practitioner or whose competency to perform physical examinations has been evaluated and approved by the location company Physician.

When the Physician serves as a part-time consultant or some other basis, written medical directions are needed to assist the nurse in making a provisional diagnosis and determining the correct steps in caring for an ill or injured worker.

3.0 RECORDKEEPING

The medical examination record, X-rays and reports, and other laboratory test reports, will be maintained as outlined in Corporate Medical Records Policy, and in compliance with applicable statutory and administrative requirements.

4.0 CONFIDENTIALITY

The confidentiality of the appropriate medical information will be maintained as outlined in the Medical Information Confidentiality Policy, and in compliance with applicable statutory and administrative requirements.

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REQUIREMENTS (Cont'd)

5.0 COMMUNICATION INFORMATION

All abnormalities found in the health history questionnaire, laboratory test reports, or on physical examination, should be evaluated by the location physician. The employee must be informed of all significant abnormal findings and advised as to what should be done about them. Appropriate recommendations should be made and documented in the Medical Record.

Written recommendations by the examining physician regarding work restrictions or duty assignments must be clearly and promptly transmitted to the employee and the responsible manager.

6.0 DIFFERENCE OF MEDICAL OPINION

In case of a difference of opinion between the employee's personal physician and the UCC physician, resolution should be attempted by direct contact and discussion between the two physicians. There are special occasions when another opinion may be necessary and the advice of the Corporate Medical Director shall be requested to assist in obtaining the opinion of an independent medical expert. In the event that compromise is not achieved, the UCC physician's opinion shall prevail.

7.0 REFUSAL TO BE EXAMINED

When an employee/applicant refuses all or part of a scheduled examination, it may be impossible for the evaluating physician to express an opinion to management on the medical suitability of the employee/applicant for the job or task. In such a case, this will be documented and reported in writing to appropriate management. See Exhibit I.

8.0 ADVICE AND SERVICE

Questions concerning application and interpretation of these procedures should be directed to the Corporate Medical Director, 39 Old Ridgebury Road, Danbury, Connecticut 06817-0001.

SCOPE: These requirements are applicable to all locations where C&P Purchasing and Distribution personnel work.

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3.10

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SUBJECT: Occupational Health Program
Contract Physicians

PURPOSE: To provide guidance to location managers in the management of contract physicians.

BACKGROUND: Corporate HSEP Procedure 6.0, "Occupational Medicine."

REQUIREMENTS:

1. Recruitment of Contract Physicians should be carried out with the assistance and acceptance of the Corporate Medical Director, or his designee, in the following manner:

   a. The Location Manager should interview physicians or clinics within the site community to determine their availability and willingness to provide the required services identified to interviewers. (A local hospital emergency room may be used for multiple shift, weekend, and holiday coverage of emergencies.)

   b. One to three names that meet with the Location Manager's approval for proximity, reputation, and willingness should be submitted to the Assistant Corporate Medical Director who will check the credentials, obtain other pertinent information about the individuals, and carry out interviews.

   c. After considering the recommendations of the Corporate Medical Director or designee, the Location Manager can decide which of the physicians interviewed will provide services for the site.

   d. The Location Manager and/or the Corporate Medical Director or designee should make arrangements to visit with the physician to further discuss the delivery of services as outlined in this document.

   e. The Contract Physician's services should be obtained by the use of a contract. Attachment I is a Model Contract for Medical Services.

2. The Contract Physician will be provided with the proper UCC medical forms.

   a. Pre-employment examinations - Medical Examination Form UC-186-90, 2/80.

   b. Periodic medical examinations - Medical Re-Examination Record Form UC-275-26, 5/82.

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c. The Authorization for Examination Form, UC 186-95 8/86, should accompany each applicant/employee when he/she reports for examination to the Contract Physician. It provides the following information:

(1) Name, social security, job title
(2) Type of examination to be performed
(3) The physical requirements of the job
(4) The types of hazards involved with the job
(5) Respirator requirements
(6) Type of test to be performed on the examination

d. Drug screening questionnaire, UC 186-85 8/86.

3. UCC POLICIES AND REQUIREMENTS

The Contract Physican should be given the following in order to fully understand Union Carbide policies and requirements:

a. Types of medical examinations and contents.

b. Confidentiality of medical information and records. Retention of medical records (medical records, reports of laboratory tests and chest x-rays must be retained for at least 30 years after termination of employment). Records of medical examinations and services performed on behalf of Union Carbide are the property of the Corporation and will be made available to the Corporate Medical Department upon request.

c. Appropriate Employee Relation Policies - Examples include: Employment of the handicapped, disability evaluation, pregnancy policy, health insurance benefits, affirmative action, rehabilitation, absentee control, etc.

d. Supply the information regarding the major potential toxic biological or physical hazards in the workplace so that the Contract Physician may become familiar with their acute and chronic effects on employees.

e. Invite the Contract Physician to visit the workplace so he/she can become familiar with the conditions under which employees perform their work.

(Many of the requirements can be met by supplying the Contract Physician or his/her office manager with copies of pertinent corporate, divisional, or component policies so that they may be available for reference in the medical office.)

4. SERVICES TO BE PERFORMED BY THE CONTRACT PHYSICIAN

a. The Contract Physician will perform pre-employment, periodic medical surveillance, and other medical examinations of component employees according to corporate and divisional policies and requirements.

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REQUIREMENTS (Cont'd)

(1) The Contract Physician is required to review the answers on the medical questionnaire, all test results, and perform a hands-on physical examination.

(2) The findings should be reported in the medical record in legible handwriting or typewritten, preferably without abbreviations. It shall contain a diagnostic impression, medical opinion on health status, an opinion on ability to perform the required work, and an opinion whether the employee can safely wear a respirator in the performance of work. The Contract Physician is to sign the physical examination form in the medical record.

(3) The Contract Physician shall inform the employee about the results of all tests whether normal or abnormal, the results of the physical examination, and any medical advice indicated to follow-up on abnormal findings. Proper written documentation that this has been accomplished must be included in the medical record.

(4) The completed medical examination should be returned to the site Medical Department, filed in the Contract Physician's office, or sent to the Corporate Medical Department for safekeeping.

(5) The Contract Physician should send his/her medical recommendation to the site Medical or Employee Relations Department, using the Health Status Report (Appendix I). It is not the responsibility of the Contract Physician to determine if an applicant will or will not be employed.

b. The Contract Physician may diagnose and treat occupational illnesses and injuries as requested by the location management. These shall be diagnosed and treated promptly with emphasis placed on rehabilitation and return to work at the earliest possible time, compatible with job safety and the employee's health. When the Contract Physician finds it necessary to refer the employee to a consulting specialist, he/she should maintain close communication with the specialist. However, being knowledgeable about the employee's job duties and related hazards, the Contract Physician is the one who should recommend to management when the employee is capable of returning to either full or limited duty.

c. At the discretion of location management, the Contract Physician may diagnose and test non-occupational illnesses and injuries to enable an employee to remain at work.

d. The Contract Physician will advise appropriate management of work restrictions on employees who have medical conditions discovered during pre-employment, periodic, or return to work examination.

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REQUIREMENTS (Cont'd)

e. Within the framework of the Information Confidentiality Policy, the Contract Physician shall convey information on health problems of employees that could potentially affect the safety of the employee or his/her fellow workers to management, so that they may be aware of potential needs for action. Such information should be primarily in the form of work restrictions. When further details of a disability need to be discussed with management, written permission shall be obtained from the employee.

f. The Contract Physician shall, on employer request, evaluate applicants for total and permanent disability or other employee benefits and advise the members of the Pension Plan/Disability Evaluation committee of the resulting findings and recommendations.

g. The Contract Physician shall provide, as required, the rendering of administrative services, supplemental to the medical services specified herein, such as reports, testimonies and furnishing of written opinions within the limits of the policy on Information Confidentiality.

h. If the Component employs a nurse at the site medical facility, the Contract Physician should be prepared to offer advice, service, and guidance in medical matters. The Contract Physician should approve and periodically update a set of standing orders that will cover nursing activities during his/her absence. Advice on necessary medical equipment and supplies should be offered.

i. The Contract Physician should visit the Site to become sufficiently familiar with the work environment of the employees to be able to make specific health protection recommendations when needed.

SCOPE: This procedure applies to all locations administered by C&P Purchasing and Distribution.

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Attachment I

MODEL CONTRACT FOR UCC PHYSICIANS

_____
Date

Dear _____,

This letter sets forth the terms of the agreement between _____ (hereinafter called the "Physician") and Union Carbide Corporation (hereinafter called the "Company") _____ (address) under which the physician undertakes to render certain medical services as set forth herein, to and on behalf of the Company under the terms and conditions set forth below, as follows:

I. Services

1. The Physician will render medical services to employees of the Company, where the Company is legally required to, or desires to, render such services, at the Company's _____, _____ facilities. (hereafter called the "site")

2. Perform preemployment, periodic medical surveillance and other medical examinations of emloyees of the Company according to Company and divisional policies and requirements.

3. Diagnose and treat occupational illnesses and injuries to employees as requested by the Company.

4. Attend to and treat employees who require immediate assistance for acute illness or injury.

5. Upon request by site management, and with the employee's consent, the Physician will diagnose and treat non-occupational illnesses and injuries to enable employees to remain at work. However, the Physician shall not act, or supplant, the employee's personal physician in doing so.

6. Provide routine handling of Workers' Compensation cases and shall assist management, as requested, in accident investigations.

7. At the Company's request, evaluate applicants for Total and Permanent Disability or other Company benefits and advise the medical members of the Pension Plan Disability Evaluation Committee of the resulting findings and recommendations.

8. Advise appropriate management of work restrictions on employees who have medical conditions which require them.

9. Within the restrictions of the Information Confidentiality policy, he/she shall provide information to appropriate management on health problems of employees so management can be made aware of potential needs for action.

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10. Provide for the following:
    a) the administration of the site dispensary;
    b) in consultation with site management, suggest equipment for the dispensary;
    c) provide for the proper keeping of medical records;
    d) issue standing and special orders for proper performance of the dispensary's work by the plant nurse.

11. When requested, participate in or conduct training, or educational programs, for employees regarding occupational or non-occupational health hazards.

12. Provide, as required for the rendering of administrative services supplemental to the medical services specified herein, reports, testimony, written opinions and the like.

II. Responsibilities of the Physician

1. The Physician shall make _____ calls a week at the site dispensary and be available on the occasion of each such call for _____ hours. The time of such calls in the interest of regularity and the convenience of employees is to be designated by the Physician with the approval of the Company, it being understood that the time of such calls may be subject to change at the convenience of the Physician with reasonable notice being given to the Company, and that during the time of such visits to the site the Physician, if called elsewhere, is free to respond to such other calls in connection with his/her medical practice without violating this Agreement.

2. The Physician is expected to become sufficiently familiar with the work environment of the employees served to be able to make specific health protection recommendations. A site tour at least once a year should be considered a minimum.

3. The Physician is expected to become familiar with the major potential toxic effects of work exposures in the site served.

4. The Physician shall be aware of and prepared to implement the Company and divisional medical safety and health policies and procedures relevant to the site as well as instructions of the Company or Divisional Medical Director.

5. The Physician shall become familiar with the contents of the Company's policies on "Medical Examination" and "Confidentiality of Medical Records" and practice its tenets. He/she shall also clearly understand and acknowledge that the records of medical examinations and services performed on behalf of the Company are the property of the Company and will be made available to the Corporate Medical Department at termination of this Agreement or upon request.

6. The Physician should be familiar with appropriate Employee Relations policies. Examples include employment of the handicapped, disability evaluation, pregnancy, health insurance benefits, affirmative action, etc.

7. The Physician should be aware of state and local public health regulations as they may affect employee health.

8. The Physician should be familiar with the provisions of the health and accident benefit plans of the Company.

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III. Compensation

The Company agrees to pay the Physician for services rendered* as follows:

1. A retainer fee of $_____ per month, or alternatively as set forth in 2a, b and c of this section.

2a. For each preemployment health examination to include laboratory tests, X-ray examinations and interpretations, and any other special procedures $_____.

b. For each periodic or special health or other medical examination to include laboratory tests and interpretations, and any other special procedures $_____.

c. For each health examination prior to return to work on an employee after absence, at the Physician's office $_____.

3. No payment for medical services rendered to an employee will be made by the Company except as specified herein and/or unless authorized by the site manager or his/her delegated representatives.

4. The Physician shall be called for any services required in the event of accidents at the site. If such services require visits to the Physician's office, or by the Physician to the employee's home or hospital, the medical services so required will be compensated by the Company or through the Company's insurance carrier at the prevailing rate in the community therefor.

5. If the Company through its site manager requires and authorizes medical services to any employee off the Company's premises, the Physician will be compensated by the Company at prevailing community rates for such services.

*Unless otherwise specified by the company, such compensation shall not include any costs for malpractice liability insurance to the extent provided by the company pursuant to Article V hereof.

IV. Alternates

The Physician, insofar as possible, will personally render the services herein provided for, but if circumstances make this impossible, will provide alternates who usually are Dr. _____ or Dr. _____. Cases requiring special consulting service in the opinion of the Physician, shall be referred to such specialist(s) as the Physician may designate.

V. Insurance

The Physician will be covered by Union Carbide's Public Liability Insurance to the extent of its malpractice liability insurance coverage, only for claims allegedly occurring while he/she is performing his/her services on behalf of Union Carbide Corporation.

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VI. Independent Contractor

The Physician will at all times be an independent contractor and not an employee of the Company. The manner in which the Physician renders services will be within his/her sole control and discretion. However, the Physician will cooperate with Company personnel and use the best efforts within the broad scope of the above outline of services. The Physician warrants that the services to be performed hereunder shall be performed in a professional and ethical manner in conformity with this Agreement. The Physician shall comply with all applicable laws or rules of any public authority having jurisdiction in performing services; and will observe rules and regulations with respect to conduct and the safety and protection of persons and property while on the Company's premises.

VII. Confidentiality

All knowledge and information which the Physician may acquire with respect to the Company's business (including but not limited to, the manufacture of products, the design of machines and equipment, and the process and practices employed) shall be held secret and confidential by the Physician and shall not be employed or revealed by the Physician unless, until and to the extent the Company shall consent thereto in writing. All Company documents and materials acquired by the Physician will be returned to the Company upon request, or at the termination of the contract.

The requirements of the Corporate HS&EA policy on Information Confidentiality of Medical Records will be strictly followed.

VIII. Third Party Obligations

The Physician represents he/she does not have and will not undertake any express or implied obligation to a third party which in any way conflicts with any obligations to the Company under and during the term of this Agreement. During the term of this Agreement, the Physician may perform services for others in the field of services hereunder, as well as outside said field; provided, however, that he/she does not violate any obligation to the Company under this Agreement.

IX. Term

The term of this Agreement shall commence on _____ and shall terminate _____, provided, however, that either party may soon terminate this Agreement at any time on thirty (30) days prior written notice, or on breach of Agreement by the other party. It is understood and agreed that the services to be performed under this Agreement are personal, and are of a unique nature, and, notwithstanding the provisions of this paragraph, this Agreement shall immediately terminate should the Physician die or become incapacitated and unable to perform his/her services during its term. The Agreement may be extended by mutual agreement on such terms and conditions as the parties may agree on.

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This Agreement contains all the existing agreements and understandings between the parties. No modifications of this Agreement or waiver of the terms and condition hereof shall be binding upon either party unless in writing and signed by both parties.

Kindly indicate your acceptance of the foregoing by signing the enclosed duplicate copy of this letter and returning the same to us.

Very truly yours,

Union Carbide Corporation

By _____
Signature

_____
Title

Accepted and Agreed:

Physician _____
Signature

_____
Name

_____
Address

Date _____

BRC 1615

3.11

BRC 1616

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SUBJECT: Occupational Health Program
Medical Clearance for International Travel

PURPOSE: To require medical clearance for employees travelling to overseas locations on company business.

BACKGROUND: Corporate HSEP Procedure 6.0, "Occupational Medicine."

REQUIREMENTS:

1. All employees otherwise approved for international business trips must obtain advance written medical clearance based upon standards established by the Corporate Medical Department, which will take into account the health history of the employee, travel itinerary, and duration of trip.

2. Before issuing such clearance, the physician and/or nurse will discuss with the employee problems of medical and preventive significance and provide proper immunizations and drug prophylaxis.

3. The need for a complete medical examination prior to international business travel will depend upon the following factors: the present general medical health of the employee; length of time since last medical examination; the duration of the trip and the remoteness of the place to be visited from adequate medical facilities.

   a. In general, a complete medical examination is rarely necessary for the employee planning a short trip to industrialized areas such as Europe, the Caribbean and Australia if the employee consulted a physician within the past twelve months. In such cases, the employee must sign an Interval History Statement (Attachment B) indicating that he/she has been free of serious illness or injury since last physical examination and has received the required drug prophylaxis and immunizations for that area.

   b. Any employee who has not consulted a physician within the past twelve months, any employee with an obvious medical problem, and any employee planning to go to an underdeveloped area of the world, must have a complete medical examination; receive the required drug prophylaxis and immunizations for that area; and the examining physician must complete the UCC form Medical Clearance for International Travel/Assignment (Attachment C).

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REQUIREMENTS (Cont'd)

4. In rare instances an employee may be accompanied on a business trip by a family member at Company expense. Family members should consult their personal physician. Proper immunizations and drug prophylaxis should be given and are reimburseable expenses. A complete medical examination is generally not necessary for the healthy person on a short trip to an industrialized area.

5. Transportation reservations and any other travel papers required will not be released or given to the employee or family members at any location until the Interval History Statement or Medical Clearance for International Travel/Assignment form has been received, reviewed, and approved by the Corporate Headquarters Medical Department or Company Physician.

6.0 Procedure for Obtaining Medical Clearance:

6.1 The medical services mandated by this policy may be provided at the Corporate Headquarters Medical Department, a UCC location Medical Department, or a Company authorized physician in accordance with standards established by the Corporate Medical Department. (Refer to Attachment A).

6.2 As soon as it is known that an employee is to make an international business trip, the local Medical Department or designated physician must be notified.

6.3 If a complete medical examination is not required, the employee must complete the Interval History Statement (Attachment B) and send to the Corporate Headquarters Medical Department or Company Physician. If medical clearance has been approved, the Travel Department and/or Employee Relations personnel (according to local procedure) will be notified.

6.4 If a complete medical examination is required, arrangements for the medical examination should be made 2-3 weeks before the trip, so that the physician can complete the medical evaluation, provide the necessary immunizations and drug prophylaxis. A Medical Clearance Form (Attachment C) must be completed, signed by the examining physician and immediately sent to the Corporate Headquarters Medical Department, Company Physician, or other designated person (according to local procedure). If medical clearance has been approved, the Travel Department and/or Employee Relations personnel will be notified.

6.5 Note: Complete medical examination records do not have to be sent to Headquarters Medical Department for employees going on international business trips.

SCOPE: These requirements are applicable to all C&P Purchasing and Distribution employees.

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UNION CARBIDE CORPORATION
MEDICAL DEPARTMENT

ATTACHMENT A

INTERNATIONAL TRAVEL
MEDICAL EXAMINATIONS (Adult)

1) Medical history (include review of immunization status)

2) Physical examination

3) Blood pressure, pulse, height and weight

4) Chest x-ray (PA and lateral)

5) Vision testing (near and far visual acuity, color perception)

6) 12-lead resting electrocardiogram

7) Tonometry

8) Laboratory tests:
   a. Complete blood count
   b. VDRL (Serology)
   c. Chem-Screen Profile or equivalent. The following blood tests should be included: LDH, SGOT, SGPT, Calcium, Phosphorus, Alkaline Phosphatase, Creatinine, Total and Direct Bilirubin, BUN, Albumin, Glucose, Globulin, A/G Ratio, Uric Acid, Total Cholesterol, Total Protein, Triglycerides
   d. Urinalysis with microscopic examination

9) Stool examination for ova and parasites when indicated by local conditions or medical history

10) Pap test and pelvic exam are recommmended for all adult females

11) Sigmoidoscopy recommended for persons 45 years and older or when indicated by medical history, symptoms, etc.

12) Audiogram is required for employeess exposed to noise at or above 85 dBA (Refer to Policy on Hearing Conservation and Noise Control)

13) Pulmonary function tests (FVC and FEV1) are recommended for persons exposed to pulmonary irritants and when indicated by medical history

14) Any additional tests recommended by the physician or required by specific diseases endemic to area (e.g., tuberculin skin test)

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UNION CARBIDE CORPORATION
MEDICAL DEPARTMENT

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ATTACHMENT B

INTERVAL HISTORY STATEMENT

EMPLOYEE'S NAME (LAST)	(FIRST)	(MIDDLE)	EMPLOYEE NUMBER
HOME ADDRESS (STREET)	(CITY)	(STATE) (ZIP)	DATE OF BIRTH
DEPARTMENT	LOCATION		WORK EXTENSION
ON THE BASIS OF THE PHYSICAL EXAMINATION PERFORMED ON (GIVE DATE).			
BY (NAME, ADDRESS AND TELEPHONE NUMBER OF PHYSICIAN)			

I have no obvious medical conditions and have been entirely free of serious illness or injury since my last physical examination. I have received the required immunizations and drug prophylaxis for the area(s) I will be traveling to. I request medical clearance for travel to:

TRAVEL ITINERARY

1. DESTINATION	FROM (MONTH-DAY-YEAR)	THRU (MONTH-DAY-YEAR)
2. DESTINATION	FROM (MONTH-DAY-YEAR)	THRU (MONTH-DAY-YEAR)
3. DESTINATION	FROM (MONTH-DAY-YEAR)	THRU (MONTH-DAY-YEAR)

IMMUNIZATIONS AND DRUG PROPHYLAXIS RECEIVED

1.
2.
3.

SIGNATURE OF EMPLOYEE	DATE

RETURN COMPLETED FORM
TO: UNION CARBIDE CORPORATION
HEADQUARTERS MEDICAL DEPARTMENT
OLD RIDGEBURY ROAD, N-2
DANBURY, CT 06817

OR _____

BRC 1620

UNION CARBIDE CORPORATION
MEDICAL DEPARTMENT

ATTACHMENT C

UC 275-41 11/82

MEDICAL CLEARANCE FOR INTERNATIONAL ☐ TRAVEL ☐ ASSIGNMENT

TYPE OR PRINT

▼ TO BE COMPLETED BY EMPLOYEE ▼

NAME (LAST) (FIRST) (MIDDLE)			DATE OF BIRTH
DIVISION AND/OR DEPARTMENT	PRESENT LOCATION	JOB TITLE	WORK EXTENSION

COMPLETE A or B

IF MEDICAL CLEARANCE IS REQUESTED FOR INTERNATIONAL TRAVEL, COMPLETE SECTION A; IF MEDICAL CLEARANCE IS REQUESTED FOR INTERNATIONAL ASSIGNMENT, COMPLETE SECTION B.

A. TRAVEL ITINERARY

1. DESTINATION	FROM (MONTH-DAY-YEAR)	THRU (MONTH-DAY-YEAR)
2. DESTINATION	FROM (MONTH-DAY-YEAR)	THRU (MONTH-DAY-YEAR)
3. DESTINATION	FROM (MONTH-DAY-YEAR)	THRU (MONTH-DAY-YEAR)

B. INTERNATIONAL ASSIGNMENT

COUNTRY	CITY OR TOWN

▼ TO BE COMPLETED BY EXAMINING PHYSICIAN ▼

On the basis of the physical examination performed on (Date) _____, the above patient was found to be physically ☐ FIT ☐ UNFIT for travel or assignment to the above areas. The patient has received the required immunizations and drug prophylaxis.

RESTRICTIONS/COMMENTS:

_____

_____

_____

_____

SIGNATURE (EXAMING PHYSICIAN)	DATE
PHYSICIAN'S NAME (PLEASE PRINT)	TELEPHONE NUMBER (AREA CODE)

OFFICE ADDRESS (NUMBER) (STREET) (CITY OR TOWN) (STATE) (ZIP CODE)

RETURN COMPLETED FORM TO:

UNION CARBIDE CORPORATION
HEADQUARTERS MEDICAL DEPARTMENT
OLD RIDGEBURY ROAD, N-2
DANBURY, CT 06817

-OR-

_____

_____

_____

_____

BRC 1621

3.12

BRC 1622

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SUBJECT: Occupational Health Program
Medical Information Confidentiality

PURPOSE: To ensure that employee exposure and medical information are kept confidential, within requirements and limitations as set forth in the Policy.

To define certain uses of exposure and medical information under specific circumstances.

BACKGROUND: Corporate HSEP Procedure 6.0, "Occupational Medicine."

REQUIREMENTS:

1. All records generated in the course of providing medical services are retained under the control of the physician who performed or directed said services, or in the location's Medical Department if the Medical Department is staffed by at least a licensed nurse. When a medical department staffed by a licensed nurse is not available, the records are forwarded to the C&P Group Medical Director at Union Carbide Headquarters.

2. Records on employees no longer in active employment may be transferred to the Corporation's Records Center at Morrisville, VT.

3. Medical information is disclosed to an employee in the presence of a company physician, or the physician of the employee's choice. Exposure information is disclosed to the employee by his/her supervisor or designee.

4. Medical or exposure information, as appropriate, identified to a specific individual, is disclosed to persons other than the employee, only as noted below. Whenever OSHA, NIOSH, and/or a designated representative (generally a union) asks to see and/or copy exposure or medical records, the Law Department and C&P Group Medical Director is to approve viewing or release of copies of records prior to honoring such a request.

   a. The employee specifically consents to disclosure and waives his or her right to confidentiality, and/or;

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REQUIREMENTS (Cont'd)

b. The employee waives a right to confidentiality by bringing his or her mental or physical condition into question in such situation as: filing of a grievance under a union contract; filing or threatening to file an administrative claim or court action, including but not limited to claims of violation of the Vocational Rehabilitation Act of 1973 (or other similar statements) with the Department of Labor; Equal Employment Opportunity cases; Workers Compensation or Health Insurance and/or wrongful death or other third party liability actions; or by using physical or mental condition as a defense to Company action or proceeding; or under other appropriate circumstances where disclosure may be made pursuant to administrative or other legal subpoenas or orders, and/or;

c. The law requires such disclosure, and/or:

d. Failure to disclose such information could result in serious injury or illness to other persons, and/or;

e. The information is needed/used by management to make an assessment of an individual's ability to safely perform work assignments. In this assessment, management is provided with guidance as to the functional capabilities or limitations required for health or safety at work and the extent and appropriateness of absences for illnesses or injuries.

5. Under the "OSHA Access to Employee Exposure and Medical Records Rule", access to an employee's medical record is limited to the employee and/or his/her "designated representatives" who have written permission from the employee. Such written authorization can be given by an employee to his/her union, spouse, attorney or other individual. Access to an employee's exposure records is also limited to the employee and/or his/her designated representatives; however, OSHA automatically deems a union representative to be a designated resentative of the employee for this purpose and thus, written permission is not required as a prerequisite for access to employee exposure records.

SCOPE: These requirements are applicable to all information generated in the course of providing medical services for C&P Purchasing and Distribution employees and contract personnel.

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SUBJECT: Occupational Health Program
Odor/Taste Testing

PURPOSE: To provide reasonable assurance that odor or taste testing does not adversely affect the health of the testor.

BACKGROUND: C&P HS&EA Supplement CP 3.5 S1, "Odor/Taste Testing"

REQUIREMENTS:

1. Approval and Authorization

Odor/taste testing is conducted only on the substances and under the conditions/procedures approved by the appropriate functional line management after consultation with and endorsement of the C&P Medical Director. Reauthorization is required every three years.

2. Required Information

The formal request for approval of an odor/taste test is submitted by the appropriate management and includes as a minimum the following information:

- Need for the test and other alternatives considered.
- Listing of all identifiable components to which the tester would be exposed.
- Conditions/procedures defining how test is to be conducted.
- Duration of exposure.
- Magnitude of exposure (estimated or measured).
- Frequency of testing (average and maximum).
- Precautions to be taken to prevent presence of harmful contaminants; for example, in the event of process upsets.

3. Medical Surveillance

All individuals performing odor/taste testing will be kept under medical surveillance, and a record of their exposure will be maintained. The level of medical surveillance will be specified by the C&P Medical Director based on his knowledge of the toxicity of the individual products and the frequency and degree of exposure.

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REQUIREMENTS (Cont'd)

4. New Information

New health/medical information on chemicals being tested is reviewed routinely by the C&P Medical Director.

SCOPE: This procedure applies to raw materials, intermediates, final products, or other substances subject to odor/taste testing at all C&P Purchasing and Distribution facilities, whether owned or contracted.

This procedure does not apply to the detection of chemical odors which may occur as an incidental result of normal operations/activities.

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4.1

BRC 1632

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SUBJECT: Environmental Management Program

PURPOSE: To establish environmental performance requirements which comply with corporate and business group standards.

BACKGROUND: Corporate HS&EP Procedure 1.0, "Management Systems." Corporate HSEP Procedure 2.7, "General Health, Safety and Environmental Requirements." C&P Supplement CP 1.0 S1, "Environmental Management Program."

REQUIREMENTS:

1. Organization and Commitment

   a. Management concern for the environment will be demonstrated by involvement and actions that are visible to employees and the community. All environmental complaints will be treated with concern, and action plans will be developed to expeditiously resolve valid complaints.

   b. Environmental accountabilities are documented and understood by location personnel. Personnel participate in, understand, and accept responsibility for development, implementation and control of the location's Environmental Management Program.

   c. Environmental objectives are established annually by location managers and included in their MOP's. MOP's include the results to be achieved and the critical activities necessary to achieve the results.

   d. The ENVIRONET and/or equivalent service(s) will be used to monitor existing and proposed federal, state and local environmental requirements that may affect operation of facilities owned by the department. Significant changes are communicated to the departmental HSEA Manager who will inform C&P and Corporate Environmental Management.

   e. Adequate resources are available to assure that owned facilities comply with governmental and corporate requirements and that deficiencies are identified and corrected promptly. Resources include a recognized source of environmental expertise; a designated representative to coordinate the location's environmental matters; and identified resources inside and outside the corporation to assist in dealing with the location's environmental matters.

2. Procedures and Standards

   a. The location manager will assure that written procedures are used to establish and implement Corporate and C&P requirements, legal requirements and critical needs. Such procedures include:

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- o SOPs for maintaining environmental discharges within limits
- o Response plans to minimize and control adverse impact during environmental emergencies, i.e., releases or spills of hazardous materials, utility failures, fires and explosions.
- o Internal and external environmental incident reporting
- o Response to requests for environmental information from the media, public or government agencies
- o Coordination of response to legal action
- o Application, review, approval and certification of environmental permits, licenses, compliance plans, variances and contracts
- o Response to regulatory agency inspections
- o Air emissions protection
- o Waste management
- o Groundwater protection
- o Surface water protection
- o Application of environmental requirements to on-site and off-site contractors
- o Environmental records maintenance

b. New and revised procedures will be approved by the location manager before issue.

c. Departmental and location procedures will be reviewed by appropriate management at least every three years and updated as required.

3. Training

a. The location manager will assure that a program exists to train applicable employees and contractor personnel receive environmental training. The program will include a feedback system to indicate the effectiveness of training. Training responsibilities are defined and understood.

b. Critical knowledge/skill requirements are defined for management, supervisory and operating positions.

c. Training records indicate current training status and proficiencies achieved. Records are monitored to assure that training and updates are being conducted as required.

4. Communications

a. Environmental requirements are effectively communicated to appropriate employees and contractors. Individual responsibilities are clearly identified and understood.

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b. The location manager will assure that departmental management is promptly informed of all environmental incidents which are reported to governmental agencies and/or incidents which may result in legal action, area-wide publicity or external inquiries.

c. The location manager will assure that state and local legislative and regulatory issues, of which he is aware, are brought to the attention of departmental management. Departmental management will assure that such issues are examined and responded to in a manner consistent with established corporate or business group positions.

d. Departmental management will assure that corporate management is advised of all incidents which may affect other components of the corporation.

5. Facilities/Equipment

a. The location manager will assure that environmental pre-construction, construction and operating permits are obtained from federal, state, and local agencies. Permit applications and renewals will be reviewed for thoroughness and accuracy and approved by location management prior to submission.

b. Location management will authorize new facilities, process, procedural and/or material changes before implementation. Environmental considerations are addressed during design and pre-operational stages.

c. The location manager will assure that a Test and Inspection program is implemented for all environmental control and monitoring equipment. The program will include T/I frequencies, T/I procedures, recordkeeping, and action plans for correcting deficiencies.

d. Operation of pollution control equipment is regularly inspected by operating personnel. Pollution control equipment functions to maintain environmental standards.

e. Design, construction and operation of facilities meet all departmental engineering and environmental standards, accepted good practice and conform to governmental requirements. New facilities are designed to minimize emissions to the environment.

6. Control

a. The location manager will assure that an environmental control system is in place and functioning to accomplish these minimum standards:

- Monitoring equipment, procedures, and programs are used, as appropriate, to measure the quality and quantity of all significant environmental discharges. Monitoring results are reviewed and analyzed periodically to identify areas requiring management attention.

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- All environmental incidents, including all spills or releases, are investigated. Incident causes and management system deficiencies which allowed the incident to happen are accurately determined. Appropriate corrective action is taken to minimize adverse effects of the incident and to prevent similar occurrences. Periodic reviews of location incident data are conducted to reveal trends in causes.

- The location records and reports information as required by law and internal procedures.

- Performance against established annual goals is reviewed and reported quarterly. Appropriate management action is taken to assure that environmental goals are met.

- Audits and inspections are made on an established schedule. Audit and inspection procedures are defined in writing. Deficiencies found are communicated to the accountable manager. Action plans to correct the deficiencies noted are implemented.

- Legal counsel is obtained, as appropriate, to assure that legal aspects of environmental activities are properly addressed.

- Routine performance appraisals of applicable location staff include a review of agreed-upon environmental Measures of Performance.

- Appropriate corrective action is taken for failure to comply with established environmental standards.

SCOPE: These requirements apply to all operating facilities administered by C&P Purchasing and Distribution.

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4.2

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SUBJECT: Environmental Management Program
Waste Management

PURPOSE: To establish program requirements and provide reasonable assurance that waste resulting from the department's operations is minimized and that waste management practices do not adversely affect the health or safety of employees, the public, or the environment.

BACKGROUND: Corporate HSEP Procedure 5.1, "Waste Management." C&P Supplement CP 5.1 S1, "Waste Management Supplemental Procedure." C&P Supplement CP 5.1 S2, "Waste Management Strategic Plan Supplemental Procedure."

REQUIREMENTS:

1. Waste Inventories

Location managers will assure that Waste Inventories exist and contain the following information for each type of waste: description, quantities generated, sources of the waste and treatment, storage, recycling, or disposal methods utilized.

2. Minimization

Managers of owned facilities will assure that Waste Minimization Programs exist to reduce or eliminate waste volume, mobility, or hazards whenever practical.

Sponsors of new projects or facilities, whether owned or contracted, require assessment of waste minimization opportunities as part of the project/facility review process.

3. Waste Management

Managers of owned facilities select waste management strategies based on consideration of human health and environmental risks and long-term liability to the corporation as well as expense and capital costs. Such strategies will assure consideration is given to:

- Inherent Waste Hazards
- Degree of effectiveness in destroying or otherwise eliminating hazardous constituents of wastes
- Residues or by-products created
- Handling and transportation risks
- Applicable governmental and internal requirements

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REQUIREMENTS: (Cont'd)

Waste management strategies are selected based on a consideration of long-term liability as well as capital and expense costs. Preferred waste management options include by order of preference:

- Source reduction
- Recycle and reuse within UCC
- Recycle and reuse by a third party
- Conversion to a less hazardous form
- Incineration, biotreatment and other destruction methods
- Disposal in secure landfills or surface impoundments:
  - owned and operated by UCC
  - owned and operated by an approved outside contractor

Managers responsible for contracted facilities will be familiar with the contractors' waste management practices and will encourage the contractors to adopt waste management strategies as outlined above. Questionable practices or concerns relating to contractors' waste management are brought to the attention of the UCC manager of facilities and the department's HSEA Manager.

4. Strategic Plans

The department's HSEA Manager will coordinate the preparation of the department's annual Waste Management Strategic Plan which will be integrated into the appropriate annual business budgets and strategic plan updates. The plan will be prepared in accordance with C&P Supplemental CP 5.1 S2, "Waste Management Strategic Plan Supplemental Procedure," attached.

5. Land Disposal

5.1 Land disposal of wastes (see definition) is minimized and only used in the absence of practical alternatives.

5.2 Each waste stream currently being disposed of in landfills or surface impoundments are evaluated for alternate treatment and/or disposal techniques.

5.3 Approval for land disposal of new wastes is obtained in advance from the Director of Operations.

5.4 Prior to land disposal, special wastes are pretreated, incinerated or stabilized whenever practical.

5.5 Transformers, electrical switches, fluorescent light ballasts and capacitors which contain PCB will not be subject to land disposal.

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6. Off-Site Contractors

Owned Sites:

Contracts for treatment, storage, disposal, and recycling of special wastes generated at C&P sites are subject to agreements that are authorized by C&P's Purchasing and Law Departments. See "Procedure for Contracting Hazardous Waste Disposal," attached.

Hazardous wastes may only be sent to contract facilities that have been approved by the UCC Waste Site Review Board.

Non-hazardous special wastes may only be sent to contract facilities that have been audited and approved using a protocol approved by C&C HS&EA. The protocol must assess operating and management practices, compliance with applicable laws and regulations, and financial resources of facility. The audit report must be reviewed and approved by (1) the C&P Purchasing and Distribution HS&EA Manager, (2) the C&P Purchasing and Distribution Director of Operations, and (3) the C&P HS&EA staff.

Contract Sites:

Hazardous wastes resulting from handling C&P chemicals at contract sites must be segregated from other hazardous materials at the site.

Hazardous wastes may only be sent to contract facilities that have been approved by the UCC Waste Site Review Board.

Accountabilities:

The UCC&P site manager is accountable for assuring that a contract waste facility is qualified to handle special wastes before any special wastes are sent to that facility. This includes arranging for necessary audits.

The UCC&P site manager is accountable for assuring that all contracts with waste management contractors meet the requirements of C&P's Purchasing and Law Departments.

The UCC&P site manager is accountable for assuring that the waste contractor is provided with adequate information to handle the wastes in compliance with governmental and internal requirements and in a manner protective of human health and the environment.

The UCC&P manager who is responsible for contract distribution facilities is accountable for assuring that the contractor manages hazardous wastes properly.

The UCC&P Purchasing and Distribution HS&EA Manager is accountable for keeping distribution facility managers informed about approved contract waste management facilities and for overseeing any contractor audits being performed.

SCOPE: These requirements apply to all the Department's facilities which generate waste under a UCC EPA generator's permit and to contracted facilities as noted.

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Definitions: Waste: All (1) garbage, refuse, sludge and any other material to be discarded, which resulted from industrial, commercial, mining or agricultural operations (excluding air emissions) and (2) any waste-like material that is reused, recycled, reclaimed or burned for energy recovery and is subject to governmental waste management regulations.

This procedure does not apply to materials disposed of before the effective date of this procedure or to remedial or cleanup actions unless wastes are generated as a result of those actions.

Special waste: Any waste except for the following:

- Chemically uncontaminated cafeteria, office and sanitary wastes and similar materials
- Chemically uncontaminated construction debris
- Wastewater, cooling water, storm water run-off and similar, primarily aqueous, streams that are discharged to surface waters or municipal sewers

Land application: Storage, treatment, recycling or disposal that occurs on or into land.

BRC 1641

4.3

BRC 1642

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SUBJECT: Environmental Management
External Reporting of Releases of Hazardous Substances

PURPOSE: To establish requirements for compliance with the reporting provisions of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as Superfund and the Superfund Amendments and Reauthorization Act of 1986 (SARA).

BACKGROUND: CERCLA, SARA, H. W. Lichtenberger's letter of January 15, 1987.

REQUIREMENTS: CERCLA requires that the person in charge of a facility immediately report to the National Response Center (NRC) any releases of a Hazardous Substance (identified in a listing) to the environment in excess of a designated Reportable Quantity (RQ). SARA requires that releases of Extremely Hazardous Substances (also identified in a listing) in excess of the RQ be reported to state and local emergency planning committees in addition to the NRC. Activities are underway to consolidate the two lists and simplify the reporting requirements. In the interim, until these revisions are forthcoming, we will report releases of RQ's of substances on either list to the NRC and the state and community emergency planning committees.

Location managers will insure that procedures are in place and personnel are trained to comply with the following requirements:

1. In the event of a non-federally permitted release (i.e., a spill, container failure, equipment failure, safety valve or rupture disc discharge, etc.) of a reportable quantity (RQ) of any Hazardous Substance listed on Table 302.4 attached and/or of any Extremely Hazardous Substance listed on Appendix D attached, the person in charge of the facility will immediately report the release to the National Response Center, telephone number (800) 424-8802*. Immediate reporting is also required to the state and local emergency planning committees which will require the following information:

    - chemical name
    - estimated quantity released
    - time and duration of release
    - medium into which the release occurred
    - precautions to take
    - anticipated acute and chronic health effects
    - name and telephone number of contact person

    *Underway waterborne transportation releases which cannot reach the NRC telephone should report by radio to the U.S. Coast Guard.

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REQUIREMENTS (Cont'd)

A written follow-up notice must be provided ASAP after the release describing the actions taken to contain the release and, where appropriate, advice regarding medical attention. In the event there are no state or local emergency planning committees, contact the governor's office and the fire department.

A release of an RQ of these substances during transportation also requires emergency reporting. Transportation releases are to be reported by the carrier, owner or operator by dialing 911 or, in absence of 911 emergency number, by calling the telephone operator.

2. The location manager will assure that the reporting procedure addresses the following:

   a. The persons accountable for reporting.

   b. A list of reportable substances, including mixtures, which are handled at the location and the applicable RQ's.

   c. The method to be used to determine if a release is or is not reportable.

   d. The various agencies which must be notified, i.e., NRC, Coast Guard, state and local agencies.

3. The location manager will assure that all persons who may be accountable for reporting understand the procedure and their obligations. Inasmuch as the person in charge can incur criminal penalties for failure to report, the general rule should be: if in doubt - REPORT.

4. It is essential that each location manager be proactive in contacting state and local authorities to work out mutually agreeable reporting procedures. We must comply with the spirit as well as the letter of these laws.

SCOPE: This procedure is applicable to facilities owned or operated by C&P Purchasing and Distribution which handle hazardous substances. Management of contract vessels, terminals, and warehouses should be made aware of their obligation with respect to release of applicable Union Carbide substances by written correspondence.

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hazardous substances. Elements and compounds are listed first, in alphabetical sequence. Following the listing of elements and compounds is a listing of waste streams and their corresponding "F numbers". They are listed in numerical sequence by "F number". Column 2 of the list, entitled *"Synonyms"*, contains the names of synonyms for certain of the elements and are listed for waste streams. Synonyms are useful in identifying hazardous substances and in selecting proper shipping names. Column 3 of the list, entitled *"Reportable quantity (RQ)"*, contains the reportable quantity (RQ), in pounds and kilograms, for each hazardous substance listed in Column 1.

3. The procedure for selecting a proper shipping name for a hazardous substance is set forth in § 172.101(c)(9).

4. A series of notes is used throughout the list to provide additional information concerning certain hazardous materials. These notes are explained at the end of the list.

BILLING CODE 4910-60-M

List of Hazardous Substances and Reportable Quantities

Hazardous Substance	Synonyms	Reportable Quantity(RQ) Pounds(Kilograms)
Acenaphthene		100 (45.4)
Acenaphthylene		5000 (2270)
• Acetaldehyde *		1000 (454)
Acetaldehyde, chloro-	Ethanal	1000 (454)
Acetaldehyde, trichloro-	Chloroacetaldehyde	1000 (454)
Acetamide, N-(aminothioxomethyl)-	Chloral	1 (0.454)
Acetamide, N-(4-ethoxyphenyl)-	1-Acetyl-2-thiourea	1000 (454)
Acetamide, N-fluoren-2-yl-	Phenacetin	1 (0.454)
Acetamide, 2-fluoro-	2-Acetylaminofluorene	1 (0.454)
• Acetic acid *	Fluoroacetamide	100 (45.4)
Acetic acid, ethyl ester		5000 (2270)
Acetic acid, fluoro-, sodium salt	Ethyl acetate	5000 (2270)
Acetic acid, lead salt	Fluoroacetic acid, sodium salt	10 (4.54)
Acetic acid, thallium(I) salt	Lead acetate	5000 (2270)
• Acetic anhydride *	Thallium(I) acetate	100 (45.4)
Acetimidic acid, N-[(methylcarbamoyl)oxy]thio-,methyl ester		5000 (2270)
• Acetone *	Methomyl	100 (45.4)
Acetone cyanohydrin *	2-Propanone	5000 (2270)
	Propanenitrile, 2-hydroxy-2-methyl-	10 (4.54)
• Acetonitrile *	2-Methyllactonitrile	
3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts	Ethanenitrile	5000 (2270)
• Acetophenone	Warfarin	100 (45.4)
2-Acetylaminofluorene	Ethanone, 1-phenyl-	5000 (2270)
Acetyl bromide *	Acetamide, N-fluoren-2-yl-	1 (0.454)
Acetyl chloride *		5000 (2270)
1-Acetyl-2-thiourea	Ethanoyl chloride	5000 (2270)
• Acrolein *	Acetamide, N-(aminothioxomethyl)-	1000 (454)
Acrylamide	2-Propenal	1 (0.454)
Acrylic acid *	2-Propenamide	5000 (2270)
Acrylonitrile *	2-Propenoic acid	5000 (2270)
Adipic acid	2-Propenenitrile	100 (45.4)
Alanine, 3-[p-bis(2-chloroethyl)amino]phenyl-, L-		5000 (2270)
• Aldicarb	Melphalan	1 (0.454)
	Propanal, 2-methyl-2-(methylthio)-,	1 (0.454)
Aldrin *	O-[(methylamino)carbonyl]oxime	
	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-	1 (0.454)
	1,4:5,8-endo,exo-dimethanonaphthalene	
• Allyl alcohol *	2-Propen-1-ol	100 (45.4)
Allyl chloride *		1000 (454)
Aluminum phosphide *		100 (45.4)
Aluminum sulfate *		5000 (2270)
2-Amino-1-methyl benzene	o-Toluidine	1 (0.454)
4-Amino-1-methyl benzene	p-Toluidine	1 (0.454)
5-(Aminomethyl)-3-isoxazolol	3(2H)-Isoxazolone, 5-(aminomethyl)-	1000 (454)
4-Aminopyridine	4-Pyridinamine	1000 (454)
Amitrole	1H-1,2,4-Triazol-3-amine	1 (0.454)
• Ammonia *		100 (45.4)
Ammonium acetate		5000 (2270)
Ammonium benzoate		5000 (2270)
Ammonium bicarbonate		5000 (2270)
Ammonium bichromate	Ammonium dichromate @	1000 (454)
Ammonium bifluoride *		100 (45.4)
Ammonium bisulfite *		5000 (2270)
Ammonium carbamate *		5000 (2270)
Ammonium carbonate *		5000 (2270)
Ammonium chloride		5000 (2270)
Ammonium chromate		1000 (454)
Ammonium citrate, dibasic		5000 (2270)
Ammonium dichromate @	Ammonium bichromate	1000 (454)
Ammonium fluoborate *		5000 (2270)
• Ammonium fluoride *		100 (45.4)
• Ammonium hydroxide *		1000 (454)
Ammonium oxalate *		5000 (2270)
Ammonium picrate *	Phenol, 2,4,6-trinitro-, ammonium salt	10 (4.54)
Ammonium silicofluoride *		1000 (454)
Ammonium sulfamate		5000 (2270)
Ammonium sulfide *		100 (45.4)
Ammonium sulfite		5000 (2270)
Ammonium tartrate		5000 (2270)
Ammonium thiocyanate		5000 (2270)
Ammonium thiosulfate		5000 (2270)
Ammonium vanadate	Vanadic acid, ammonium salt	1000 (454)
• Amyl acetate *		5000 (2270)
iso-Amyl acetate		
sec-Amyl acetate		
tert-Amyl acetate		
Aniline *	Benzenamine	5000 (2270)
Anisidine		5000 (2270)

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LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity (RQ) Pounds (Kilograms)
Antimony *		5000 (2270)
ANTIMONY AND COMPOUNDS		**
Antimony pentachloride *		1000 (454)
Antimony potassium tartrate *		100 (45.4)
Antimony tribromide *		1000 (454)
Antimony trichloride *		1000 (454)
Antimony trifluoride *		1000 (454)
Antimony trioxide		1000 (454)
Aroclor 1016	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1221	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1232	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1242	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1248	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1254	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Aroclor 1260	POLYCHLORINATED BIPHENYLS (PCBs)	10 (4.54)
Arsenic * ¢		1 (0.454)
Arsenic acid *		1 (0.454)
ARSENIC AND COMPOUNDS		**
Arsenic disulfide *		5000 (2270)
Arsenic(III) oxide	Arsenic trioxide *	5000 (2270)
Arsenic(V) oxide	Arsenic pentoxide *	5000 (2270)
Arsenic pentoxide *	Arsenic(V) oxide	5000 (2270)
Arsenic trichloride *		5000 (2270)
Arsenic trioxide *	Arsenic(III) oxide	5000 (2270)
Arsenic trisulfide *		5000 (2270)
Arsine, diethyl-	Diethylarsine	1 (0.454)
Asbestos * ff		1 (0.454)
Auramine	Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl-	10(4.54)
Azaserine	L-Serine, diazoacetate (ester)	1 (0.454)
Azinphos	Ethylestrenol	1 (0.454)
Azinphos methyl @	Guthion *	1 (0.454)
Azirino(2',3',3,4)pyrrolo(1,2-a)indole-4,7-dione,6-amino-8-[((aminocarbonyl)oxy) methyl)-1,1a,2,8,8a, 8b-hexahydro-8a-methoxy-5-methyl-	Mitomycin C	1 (0.454)
Barium cyanide *		10 (4.54)
Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	3-Methylcholanthrene	1 (0.454)
Benz[c]acridine	3,4-Benzacridine	1 (0.454)
3,4-Benzacridine	Benz[c]acridine	1 (0.454)
Benzal chloride	Benzene, dichloromethyl-	5000 (2270)
Benz[a]anthracene	Benzo[a]anthracene	1 (0.454)
2-Benzanthracene	1,2-Benzanthracene	
	Benz[a]anthracene	1 (0.454)
1,2-Benzanthracene, 7,12-dimethyl-	Benzo[a]anthracene	
Benzenamine	7,12-Dimethylbenz[a]anthracene	1 (0.454)
Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl-	Aniline *	5000 (2270)
Benzenamine, 4-chloro-	Auramine	1(0.454)
Benzenamine, 4-chloro-2-methyl-, hydrochloride	p-Chloroaniline	1000 (454)
Benzenamine, N,N-dimethyl-4-phenylazo-	4-Chloro-o-toluidine, hydrochloride	1 (0.454)
Benzenamine, 4,4'-methylenebis(2-chloro-	Dimethylaminoazobenzene	1 (0.454)
Benzenamine, 2-methyl-, hydrochloride	4,4'-Methylenebis(2-chloroaniline)	1 (0.454)
Benzenamine, 2-methyl-5-nitro-	o-Toluidine hydrochloride	1 (0.454)
Benzenamine, 4-nitro-	5-Nitro-o-toluidine	1 (0.454)
Benzene *	p-Nitroaniline	5000 (2270)
Benzene, 1-bromo-4-phenoxy-	4-Bromophenyl phenyl ether	1000 (454)
Benzene, chloro-	Chlorobenzene *	100 (45.4)
Benzene, chloromethyl-	Benzyl chloride *	100 (45.4)
Benzene, 1,2-dichloro-	o-Dichlorobenzene *	100 (45.4)
	1,2-Dichlorobenzene	100 (45.4)
Benzene, 1,3-dichloro-	m-Dichlorobenzene	
	1,3-Dichlorobenzene	100 (45.4)
Benzene, 1,4-dichloro-	p-Dichlorobenzene *	
	1,4-Dichlorobenzene	5000 (2270)
Benzene, dichloromethyl-	Benzal chloride	100 (45.4)
Benzene, 2,4-diisocyanatomethyl-	Toluene diisocyanate *	1000 (454)
Benzene, dimethyl-	Xylene * (mixed)	
m-Benzene, dimethyl-	m-Xylene	
o-Benzene, dimethyl-	o-Xylene	
p-Benzene, dimethyl-	p-Xylene	
Benzene, hexachloro-	Hexachlorobenzene	1 (0.454)
Benzene, hexahydro-	Cyclohexane *	1000 (454)
Benzene, hydroxy-	Phenol *	1000 (454)
Benzene, methyl-	Toluene *	1000 (454)
Benzene, 1-methyl-2,4-dinitro-	2,4-Dinitrotoluene *	1000 (454)
Benzene, 1-methyl-2,6-dinitro-	2,6-Dinitrotoluene *	1000 (454)
Benzene, 1,2-methylenedioxy-4-allyl-	Safrole	1 (0.454)
Benzene, 1,2-methylenedioxy-4-propenyl-	Isosafrole	1 (0.454)
Benzene, 1,2-methylenedioxy-4-propyl-	Dihydrosafrole	1 (0.454)
Benzene, 1-methylethyl-	Cumene	5000 (2270)
Benzene, nitro-	Nitrobenzene *	1000 (454)
Benzene, pentachloro-	Pentachlorobenzene	10 (4.54)
Benzene, pentachloronitro-	Pentachloronitrobenzene	1 (0.454)
Benzene, 1,2,4,5-tetrachloro-	1,2,4,5-Tetrachlorobenzene	5000 (2270)
Benzene, trichloromethyl-	Benzotrichloride	1 (0.454)
Benzene, 1,3,5-trinitro-	sym-Trinitrobenzene *	10 (4.54)
Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester	Ethyl 4,4'-dichlorobenzilate	1 (0.454)
1,2-Benzenedicarboxylic acid anhydride	Phthalic anhydride	5000 (2270)
1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	Bis(2-ethylhexyl)phthalate	1 (0.454)
1,2-Benzenedicarboxylic acid, dibutyl ester	Di-n-butyl phthalate	10 (4.54)
	Dibutyl phthalate	
	n-Butyl phthalate *	
1,2-Benzenedicarboxylic acid, diethyl ester	Diethyl phthalate	1000 (454)

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LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	Synonyms	Reportable Quantity (RQ) Pounds (Kilograms)
1,2-Benzenedicarboxylic acid, dimethyl ester	Dimethyl phthalate	5000 (2270)
1,2-Benzenedicarboxylic acid, di-n-octyl ester	Di-n-octyl phthalate	5000 (2270)
1,3-Benzenediol	Resorcinol *	5000 (2270)
1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-	Epinephrine	1000 (454)
Benzenesulfonic acid chloride	Benzenesulfonyl chloride	100 (45.4)
Benzenesulfonyl chloride	Benzenesulfonic acid chloride	100 (45.4)
Benzenethiol	Phenyl mercaptan @	100 (45.4)
	Thiophenol	
Benzidine *	[1,1'-Biphenyl]-4,4'-diamine	1 (0.454)
1,2-Benzisothiazolin-3-one, 1,1-dioxide, and salts	Saccharin and salts	1 (0.454)
Benzo[a]anthracene	Benz[a]anthracene, 1,2-Benzanthracene	1 (0.454)
Benzo[b]fluoranthene		1 (0.454)
Benzo[k]fluoranthene		1 (0.454)
Benzo[j,k]fluorene	Fluoranthene	100 (45.4)
Benzoic acid		5000 (2270)
Benzonitrile *		5000 (2270)
Benzo[ghi]perylene		5000 (2270)
Benzo[a]pyrene	3,4-Benzopyrene	1 (0.454)
3,4-Benzopyrene	Benzo[a]pyrene	1 (0.454)
p-Benzoquinone	1,4-Cyclohexadienedione	10 (4.54)
Benzotrichloride	Benzene, trichloromethyl-	1 (0.454)
Benzoyl chloride *		1000 (454)
1,2-Benzphenanthrene	Chrysene	1 (0.454)
Benzyl chloride *	Benzene, chloromethyl-	100 (45.4)
Beryllium c	Beryllium dust c	1 (0.454)
BERYLLIUM AND COMPOUNDS		**
Beryllium chloride *		5000 (2270)
Beryllium dust c	Beryllium c	1 (0.454)
Beryllium fluoride *		5000 (2270)
Beryllium nitrate *		5000 (2270)
alpha - BHC		1 (0.454)
beta - BHC		1 (0.454)
delta - BHC		1 (0.454)
gamma - BHC	Hexachlorocyclohexane (gamma isomer)	1 (0.454)
	Lindane *	
2,2'-Bioxirane	1,2:3,4-Diepoxybutane	1 (0.454)
[1,1'-Biphenyl]-4,4'-diamine	Benzidine *	1 (0.454)
[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-	3,3'-Dimethylbenzidine	1 (0.454)
[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-	3,3'-Dichlorobenzidine	1 (0.454)
[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-	3,3'-Dimethoxybenzidine	1 (0.454)
Bis(2-chloroethoxy) methane	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-	1000 (454)
Bis(2-chloroethyl) ether	Dichloroethyl ether	1 (0.454)
	Ethane, 1,1'-oxybis[2-chloro-	
Bis(2-chloroisopropyl) ether	Propane, 2,2'-oxybis[2-chloro-	1000 (454)
Bis(chloromethyl) ether	Methane, oxybis[chloro-	1 (0.454)
Bis(dimethylthiocarbamoyl) disulfide	Thiram	10 (4.54)
Bis(2-ethylhexyl)phthalate	1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)] ester	1 (0.454)
Bromine cyanide	Cyanogen bromide *	1000 (454)
Bromoacetone *	2-Propanone, 1-bromo-	1000 (454)
Bromoform	Methane, tribromo-	100 (45.4)
4-Bromophenyl phenyl ether	Benzene, 1-bromo-4-phenoxy-	100 (45.4)
Brucine	Strychnidin-10-one, 2,3-dimethoxy-	100 (45.4)
1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	Hexachlorobutadiene *	~~1 (0.454)~~
1-Butanamine, N-butyl-N-nitroso-	N-Nitrosodi-n-butylamine	1 (0.454)
Butanoic acid, 4-[bis(2-chloroethyl)amino]benzene-	Chlorambucil	1 (0.454)
1-Butanol	n-Butyl alcohol *	5000 (2270)
2-Butanone	Ethyl methyl ketone @	5000 (2270)
	Methyl ethyl ketone *	
2-Butanone peroxide	Methyl ethyl ketone peroxide *	10 (4.54)
2-Butenal	Crotonaldehyde *	100 (45.4)
2-Butene, 1,4-dichloro-	1,4-Dichloro-2-butene *	1 (0.454)
Butyl acetate *		5000 (2270)
iso-Butyl acetate		
sec-Butyl acetate		
tert-Butyl acetate		
n-Butyl alcohol *	1-Butanol	5000 (2270)
Butylamine *		1000 (454)
iso-Butylamine		
sec-Butylamine		
tert-Butylamine		
Butyl benzyl phthalate		100 (45.4)
n-Butyl phthalate *	Di-n-butyl phthalate	10 (4.54)
	Dibutyl phthalate	
	1,2-Benzenedicarboxylic acid, dibutyl ester	
Butyric acid *		5000 (2270)
iso-Butyric acid		
Cacodylic acid	Hydroxydimethylarsine oxide	1 (0.454)
Cadmium c		1 (0.454)
Cadmium acetate		100 (45.4)
CADMIUM AND COMPOUNDS		**
Cadmium bromide		100 (45.4)
Cadmium chloride		100 (45.4)
Calcium arsenate *		1000 (454)
Calcium arsenite *		1000 (454)
Calcium carbide *		10 (4.54)
Calcium chromate	Chromic acid, calcium salt	1000 (454)
Calcium cyanide *		10 (4.54)
Calcium dodecylbenzene sulfonate		1000 (454)
Calcium hypochlorite *		10 (4.54)
Camphene, octachloro-	Toxaphene *	1 (0.454)

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