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UNION CARBIDE CORPORATION

ENGINEERING, MANUFACTURING AND TECHNOLOGY SERVICES DEPARTMENT
HEALTH, SAFETY AND ENVIRONMENTAL TECHNOLOGY
SOUTH CHARLESTON, WEST VIRGINIA

PLAINTIFF'S EXHIBIT
UC-2151

MEMORANDUM

October 30, 1986

TO: Mr. J. R. Dement
Mr. J. F. Dodd
Mr. D. A. Gosselin
Mr. R. L. Foster
Mr. E. D. Southard

COPY: Mr. W. D. Bradbury
Dr. P. R. Kavasmaneck
Dr. D. Liebeskind
Mr. R. R. Rankin
Mr. S. Rossi
Mr. A. D. Williamson

FROM: H. W. Wegert
G. M. Whipple

SUBJECT: Health, Safety, and Environmental Review
Insulation Upgrade Project, South Charleston

This Health, Safety, and Environmental review was based on the draft Outline of Project and the South Charleston Plant Maintenance Procedure XVIII Provisions for Asbestos Material Removal and Disposal Safety. Attached are the applicable Summary Checklists; the Project Safety Summary Checklist was not included as no product is produced as a result of this project.

The review was conducted by qualified engineers from CED's Health, Safety and Environmental Technology Section. Endorsement of the project is recommended contingent upon the items listed at the end of this memo. Written response to the contingency items by project personnel is requested prior to start of work in the field.

This project will upgrade asbestos insulation in the South Charleston Plant over the next three years. Much of the asbestos insulation in the plant is in poor condition and presents a potential exposure problem for plant personnel. The plan is to remove asbestos insulation from idle equipment, replace damaged asbestos insulation with an approved type, and seal all remaining asbestos insulation.

This project will be executed in accordance with all applicable OSHA and EPA Regulations and the South Charleston Plant procedure for handling asbestos material. The EPA will be notified that the removal of asbestos insulation could occur at the South Charleston Plant.

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The plant procedures for asbestos material removal and disposal safety was reviewed by CED Health Technologist Terry Hanning. The procedure should be revised in accordance with Terry's comments (see attached memo) for conformance with OSHA 29 CFR 1910.1001.

Additional comments on this procedure from an environmental viewpoint are:

- The procedure does not refer to review of State Air Pollution Regulation No. 15 which deals with notification of the West Virginia Air Pollution Commission.
- The procedure does not refer to state requirement to notify the West Virginia Department of National Resources before land filling.
- The procedure does not refer to NESHAPS 40 CFR 61.152 (Disposal Container labels) or 40 CFR 61.156 (Warning Signs at Landfill). However, the procedure does refer to OSHA warning label requirements and these are probably equivalent to the NESHAPS requirements. The procedure should clarify this issue, particularly the signs required at the landfill.

Based on review of the draft Outline of Project and Maintenance Procedure XVIII, endorsement of the project is recommended contingent upon the following:

1. Maintenance Procedure XVIII Provisions for Asbestos Material Removal and Disposal Safety be revised to be in compliance with the latest OSHA Standard 29 CFR 1910.1001 per Terry Hanning's memo.
2. Procedure XVIII be revised in accordance with the environmental concerns listed above.

Harvey W. Wegert
H. W. Wegert

Gary M. Whipple
G. M. Whipple

HWW:GMW:mw
65360

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HS&E REVIEW SUMMARY

Reviewers

EP - L. K. (Linda) Scholl, Senior Chemist in CED's Land Disposal Technology Group

HS - H. W. (Harvey) Wegert, Group Leader of CED's Safety & Fire Protection Technology Group

Project Data

a. Material Balance - Not applicable

b. Environmental Releases - Asbestos removal wastes will be landfilled.

c. Governmental Requirements - HS&E regulations that apply to this project include OSHA 29 CFR 1910.1001, W. Va. State Air Pollution Regulation No. 15, and NESHAPS 40 CFR 61.152 & 156.

d. Corporate HS&E Policy Requirements - No variances are required.

e. Project Reviews

- o Process Safety/Health Review - Not applicable
- o Safety/Health Review Board - Not applicable
- o Pre-startup Safety/Health Review - Not applicable

Concerns

There are no HS&E concerns that had not been adequately discussed in the checklists or the endorsement review memo.

HWW:GMW:mw
6001D

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ENGINEERING, MANUFACTURING AND TECHNOLOGY SERVICES DEPARTMENT
HEALTH, SAFETY AND ENVIRONMENTAL TECHNOLOGY
SOUTH CHARLESTON, WEST VIRGINIA

MEMORANDUM

October 28, 1986

TO: Mr. H. W. Wegert

COPY: Mr. S. W. Clark
Mr. J. F. Dodd
Mr. D. A. Gosselin
Dr. P. R. Kavasmaneck
Mr. J. E. Neff

FROM: T. E. Hanning

SUBJECT: Review of South Charleston Plant Procedures
Removal and Disposal of Asbestos Materials

The following updates/changes apply to the 514 Maintenance Department's procedure for handling and disposal of asbestos insulation:

Definitions

1. The OSHA allowable limit for personnel exposure to asbestos was revised in July 1986.

2. The 8-hour time-weighted average for asbestos shall not exceed 0.2 fibers, longer than five micrometers, per cubic centimeter of air.

3. There is no ceiling concentration in the revised standard.

4. The revised standard calls for an action level of 0.1 fibers, no longer than five micrometers, per cubic centimeter of air. This level triggers monitoring, medical, and employee information and training requirements.

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Overview of Procedure

1. The warning signs mentioned in Item 4 should state:

   DANGER - ASBESTOS:
   CANCER AND LUNG DISEASE
   HAZARD-AUTHORIZED PERSONNEL ONLY:
   RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED
   IN THIS AREA

2. Item 7 should be expanded to read: Remove asbestos to special containers for handling/disposal. These containers should be properly labeled as follows:

   DANGER - CONTAINS ASBESTOS FIBERS:
   AVOID CREATING DUST;
   CANCER AND LUNG DISEASE HAZARD.

   Disposal containers should be leak-tight and discarded in an approved landfill.

3. Item 6 should be expanded to state: Where feasible, the employer shall establish negative-pressure enclosures before commencing removal, demolition, and renovation operations.

Respirators

Disposable (throw away) respirators are not permitted under the July 1986 asbestos revision. Respirators are to be selected by the following scheme.

Airborne Concentration	Required Respirator
1. Not in excess of 2.0 f/cc (10 X PEL)	1. Half-mask air-purifying respirator equipped with high-efficiency filters.
2. Not in excess of 10.0 f/cc (50 X PEL)	1. Full-facepiece air purifying respirator equipped with high-efficiency filters.
3. Not in excess of 20 f/cc (100 X PEL)	1. Any powered air-purifying respirator equipped with high efficiency filters. 2. Any supplied-air respirator operated in continuous flow mode.
4. Not in excess of 200 f/cc (1000 X PEL)	1. Full facepiece supplied-air respirator operated in pressure demand mode.

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5. Greater than 200 f/cc (greater than 1000 X PEL or unknown concentration)	1. Full facepiece supplied-air respirator operated in pressure demand mode equipped with auxiliary positive pressure self-contained breathing apparatus.

OSHA has also required that employers provide powered air-purifying respirators for employees who request them for concentrations of asbestos-fibers less than 100 times the PEL. This recognizes that the proper use of respirators may depend on the worker's comfort and preference for various types of respirators.

Work Area Precautions

Warning signs should contain the same message as stated in Number 1 under Overview of Procedure in this letter.

Wet Cleanup

Any asbestos insulation left in place will contain a visible label, where feasible. The label will contain the same information as stated in Number 2 under Overview of Procedure in this letter.

Clothing Storage

Two separate lockers or containers shall be provided each employee, so separated or isolated as to prevent contamination of the employee's street clothes from his work clothes. Employees exposed to asbestos during their work shift must shower before leaving the plant and must not leave wearing contaminated work clothing. Employees working in asbestos areas must have ready access to filtered air lunchrooms and must wash their face and hands prior to eating or smoking. Protective clothing must not be worn in the lunchroom unless cleaned beforehand.

We question the use of vacuums to clean asbestos - contaminated clothing unless high-efficiency filters are attached to the vacuum exhaust. This action could also prevent an employee from properly disposing his clothing after a designated work period.

Laundering

Caution labels will contain the same information as stated in Number 2 under Overview of Procedure in this letter.

Disposal by Trucking

Under RCRA truck drivers do not need a properly filled-out manifest for asbestos disposal.

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References

The 1972 standard is redesignated as 29 CFR 1910.1101 to distinguish it from the revised standard for general industry which is designated as 29 CFR 1910.1001. Asbestos information for construction activities is under 29 CFR 1926.58.

Terry E. Hanning

Terry E. Hanning

TEH:mw
6284D

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UCC 006725

UNION CARBIDE CORPORATION
CAPITAL PROJECT PROPOSAL
RISK 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?	☑	☐	☐	1.1 Nitrate is a hazardous air pollutant. Location of plant is acceptable for use. Design of the scrubber system will provide proper precautions for control. Building will be designed to minimize airborne emissions. Monitoring will be performed to confirm our conclusions.
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?	☑	☐	☐	1.2 - see 1.1 above.
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?	☐	☐	☑	2.1 - NA
2.2	Will proposed air emissions require offsets or exceed available increments in the Air Quality Control Region?	☐	☑	☐	2.3 NA
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)?	☐	☐	☑	

01728

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

01728

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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?	☑	—	☐	2.6 - OSHA regs have been reviewed. Plan does not discuss NESHAPS. State regs (reg. 15-) require notification, State APC.
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?	—	☐	☑	2.8 NA
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?	—	☐	☑	2.10 NA
2.11	Will underground storage tanks be used for this project?	☐	☑	☐	
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 NA
3.2	Have all proposed hazardous waste streams been identified?	—	☐	☑	3.3 See 1.1 and 2.6; Regulations have been reviewed and Project Work Plans specifies compliance tasks except for notification of WV APC and WV DNR prior to landfilling.
3.3	Do proposed air emissions contain any material classified as hazardous under federal, state, or local regulations?	☑	—	☐	

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		YES	NO	OTHER	COMMENTS:
3.4	Do proposed wastewater discharges contain any substances on EPA's priority pollutant list or on EPA's list of toxic materials?	☐	—	☑	3.4 NA
3.5	Are any proposed wastes classified as hazardous under Federal, State, or Local regulations?	☑	—	☐	3,5 See 1.1, 2.6, and 3.3
3.6	Will the total quantity of hazardous waste generated at the site be more than 100 kilograms per month?	☐	✓	☐	3.6 Work will generate intermittant amounts of waste over a 2 year period.
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%?	✓	☐	☐	None to follow.
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?	☐	✓	☐	3,8 Project work plan specifies pollutant release minimization activities and air monitoring during work.
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?	☐	—	☑	4.1 None that apply to this project
4.2	Are there any Compliance Orders or other legal actions that affect the existing site or operation?	☐	—	☑	4.2 " " " " " "
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?	✓	☐	☐	4.4 Provisions are outlined in Project work plan.
4.5	Are modifications to an existing or an entirely new Spill Prevention, Control, and Containment (SPCC) Plan required?	☐	✓	☐	5.1 No modifications 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 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?	(✓)	( )	( )	6.1 Not applicable to this project
6.2	If there are proposed wastewater discharges to surface water, is background water quality data available?	(✓)	( )	( )	6.2 no proposed waste water discharges are associated with the work with the exception of some possible wash water – the water is not regulated.
6.3	Is there presently any known or suspected ground water contamination at the project site or facility?	( )	—	(✓)	6.3 Not applicable
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?	( )	—	(✓)	6.4 NA
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?	( )	(✓)	( )	

UCC 006728

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Any answer in brackets requires explanation 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?	☑	☐	☐	7.3 Removed material will be disposed of at Goff Mountain Landfill. All applicable DOT regs for transporting material and OSHA regs will be followed. Need to specify 40CFR 61.152.b + 61.156
8	Plant Site Expansion				
8.1	Are there any inactive or active waste storage, treatment or disposal facilities located on the new plot?	☐	☑	☐	8.3 NA
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?	☐	☑	☐	8.4 NA
8.3	Is there any material containing PCBs located on the new plot?	☐	☐	☑	8.6 No buildings razed; asbestos will be removed and replaced or immobilized.
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?	☐	☑	☐	

L. K Scholl
Reviewer

10/24/86
Date

UCC 006729

01T2D

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01T2D

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UCC 006730

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.	(✓)	___	(__)	1.1 Asbestos will be handled in the construction phase of this project. Asbestos is a carcinogen.
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?	(✓)	___	(__)	2.1 OSHA has recently revised its regulations regarding handling of asbestos insulation. These should be incorporated into the procedures.
2.2	Have all Department of Transportation requirements been identified for all substances that will be shipped?	___	(__)	(✓)	2.2 Not applicable
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:				2.4 OSHA 29 CFR Part 1910.1001 requirements must be followed in the execution of the construction phase of this project
	a) exposure monitoring?	(✓)	___	(__)	
	b) engineering controls?	(__)	✓	(__)	

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.

0738C/0739C

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UCC 006731

		YES	NO	OTHER
	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?	(__)	✓	(__)

COMMENTS:

3.1, 3.2, 3.3 Not applicable

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.

0738C/0739C

		YES	NO	OTHER	COMMENTS:
4.3	Will recognized industry practices be followed in the layout of the facility?	___	(__)	(✓)	4.3, 4.4 Not applicable
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 Not applicable 4.6 Not required
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, 4.9, 4.10 Not applicable
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 seperate pages if necessary). Use "NA" where question is not applicable.

UCC 006732

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	YES	NO	OTHER	COMMENTS:
4.11 Are process monitoring and control devices adequate?	___	(__)	(✓)	4.11 thru 5.2 Not applicable
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?	(__)	___	(✓)	

H. W. Wegert
Reviewer

10-24-86
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.

UCC 006733

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