PLAINTIFF'S EXHIBIT

UC-2127

SPECIALTY CHEMICALS DIVISION

SOUTH CHARLESTON PLANT ENGINEERING

May 28, 1987

RECEIVED
MAY 29 1987
R. G. HULL

TO: 1) W. D. Bradbury, Jr.
2000-4335

2) M. G. Dwyer
L3489

CC: J. R. Dement
G. R. Hattiangadi
G. F. Hayes
~~R. G. Hull, Jr.~~
R. G. Link/B. N. Gliatta
A. Lynch

SUBJECT: 930-WORK ORDER REQUEST 514-0586
ASBESTOS INSULATION UPGRADE - PHASE I
SPECIALTY CHEMICALS DIVISION
SOUTH CHARLESTON PLANT

The attached Work Order Request has been approved by local management. Please obtain additional approval signatures and process through regular channels.

J F Dodd

wdm
Attachment
3405G

UCC 006569

UNION CARBIDE

SPECIALTY CHEMICALS DIVISION
ENGINEERING DEPARTMENT

CAPITAL WORK ORDER 930-
JOB NUMBER NP-8009
PAGE 1 OF 8

TITLE:

ASBESTOS INSULATION UPGRADE - PHASE I
SOUTH CHARLESTON PLANT

REQUEST OR JOB NO.: 514- 0586

SPONSOR: Specialty Chemicals Div
DEPT: Maintenance
PROJECT: JFDodd

BUDGET NUMBER:

OPR.DPT.SYS. 326100 PROFIT CENTER See Attached

ENDORSEMENT / APPROVAL ROUTING:

PROJECT PRIORITY (A) B, C, D,

LOCATION 514 BLDG.NO.

ADMINISTERED BY: (X) 464 (AD.CODE 1) ( ) PLANT (AD.CODE 2) ( ) DISTRIBUTION (AD.CODE 3)

TITLE (24 SPACES)	ACCOUNT	ORDER NO.	DATE	AUTHORIZATION
Asbes Insul Upgrd PHI	9 3 1 0 1 0 1 0 1 0		0 5 1 8 7	$900,000

The justification of this project is Occupational Health. The asbestos insulation throughout the Plant must be upgraded to comply with Occupational Safety and Health Administration (OSHA) Standards. The long-term plan is to remove asbestos from idle equipment, replace damaged asbestos insulation with an approved type, and seal all remaining asbestos insulation. This project is Phase 1 of the program for work to be completed in 1987 on that asbestos insulation with the highest exposure potential to employees.

PRINCIPLE TYPE OF PROJECT: Occupation Health

NPV #@ NA , NA %

AUDIT REQ. YES [X] NO [ ] DATE 4088

CAPITAL COST: RANGE* 10 % CR ISSUE NA $900,000

LOCAL ENDORSEMENT		SIGNIFICANT IMPACT YES	SIGNIFICANT IMPACT NO
ENVIRONMENTAL	JLW	X	
OCC. HEALTH	MJS	X	
SAFETY	MJS	X	
ENERGY	TGS		X
ENERGY CONSERVA.	TGS		X

INCLUDES:

AIR POLLUTION CONTROL	
WATER POLLUTION CONTROL	
RESIDUE (SOLIDS) DISPOSAL	
OCC. HEALTH	$900,000
SAFETY	
NOISE CONTROL	
TOTAL H.S. & ER	$900,000

RETIREMENT OF PROPERTY	(1)	838000		270,000
EXPENSE (REARRANGEMENTS, REVISIONS, ETC.)	(2)	838000		
CAPITAL EXCLUSION TO PROFIT CENTER				

EST.CONSTR.COMP.DATE 4Q87

TOTAL ESTIMATE # $1,170,000

DISTRIBUTION OF APPROVED WORK ORDER:

W. D. BRADBURY, JR.
J. R. DEMENT
B. N. GLIATTA
J. F. DODD
A. WALKER
G. F. HAYES
M. G. DWYER
R. G. LINK
M. D. FAIRALL
G. M. ROSENGARTEN, JR(2)
A. LYNCH
A. B. WILLIAMSON
G. R. HATTIANGADI
J. E. McKEON
D. G. MOSHIER
R. G. HULL
J. L. WORSTELL
M. J. SHOGER

DATE	APPROVALS
5/22/87	J. F. Dodd
5/26/87	R. G. Hull Jr.
5/26/87	J. R. Dement
5/27/87	B. N. Gliatta
5/27/87	R. G. Link

COST SUMMARY TO: JF Dodd 82-712 (514)(2)

CAD421 10/11/85

UCC 006570

OBJECTIVE

The objective of this project is to minimize hazards of airborne asbestos in the South Charleston Plant. The potential highest exposure areas throughout the Plant will be brought into compliance with Occupational Safety and Health Administration (OSHA) Standards.

JUSTIFICATION

The justification of this project is Occupational Health.
The asbestos insulation throughout the South Charleston Plant must be upgraded to comply with the OSHA Standards. The long-term plan is to remove asbestos from idle equipment, replace damaged asbestos insulation with an approved type, and seal all remaining asbestos insulation. Based on the recently enacted OSHA Standards, the overall plant program will cost about $8,000,000 to $10,000,000 over the next several years. This project is Phase 1 of the program for work to be completed in 1987 on that asbestos insulation with the highest exposure potential to employees; the cost of the Phase 1 project is $900,000 capital and $270,000 expense. The remaining work on the overall Plant program is planned for execution over the next four years at about a $2,000,000 a year expenditure.

The recently enacted OSHA Standard 29 CFR 1926.58 has significantly increased the cost of removing and repairing asbestos insulation due to increased job preparation, execution, and cleanup requirements. Negative pressure enclosures are required "where feasible" for large scale removal, demolition and renovation operations.

FACILITIES REVISIONS

Asbestos removal/upgrading will take place throughout the Plant. The project will focus on correcting the worst case potential exposure in each unit of the Plant and the preliminary dollar-value of work in each area is shown in Table 1 on page 7.

ENVIRONMENTAL PROTECTION/OCCUPATIONAL HEALTH AND SAFETY CONSIDERATIONS

This project will correct an Occupational Health concern by replacing or sealing exposed asbestos insulation that has the highest exposure potential throughout the Plant. When the insulation is being replaced or removed, Safety and Health Guidelines will be followed which includes: installing barricades and clearing the area of plant personnel, posting of warning signs, proper bagging and disposal of insulation, and monitoring of surrounding work areas. In addition, assuring that personnel adhere to guidelines such as: wet clean-up, wearing of appropriate respirators, wearing and disposal of proper protective clothing, construction of negative pressure enclosures, etc.

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Project execution will be in compliance with all applicable OSHA and EPA Regulations. The EPA will be notified that the removal of asbestos insulation could occur at the South Charleston Plant.

A designated, trained "competent person" will oversee the removal/repair activities.

The required Health, Safety, and Environmental review of the overall plantwide replacement or sealing of asbestos insulation was completed on October 30, 1986, for a proposed Outline of Project (O/P) by the Engineering, Manufacturing, and Technology Services Department (EM&TS). The initial phase of the work will now be executed on a working budget project and the review was updated on May 19, 1987 by EM&TS. This project is endorsed contingent upon the following:

1. Maintenance Procedure XVIII Provisions for Asbestos Material Removal and Disposal Safety will be revised to be in compliance with the latest OSHA Standard 29 CFR Parts 1910.1001 and 1926.58.

2. Procedure XVIII will be revised in accordance with the environmental concerns listed in the review.

This procedure has been issued for final review. The complete O/P review and the subsequent review along with endorsement letters from Messrs. R. R. Rankin and D. B. Marsh are attached.

This project has been endorsed by the Plant Environmental Protection Department Head, J. L. Worstell, and the Plant Safety Department Head, M. J. Shoger.

EFFECT ON SUPPORTING FACILITIES

The project will have no effect on support requirements. However, Energy Conservation will be improved with this insulation upgrade.

PROJECT PLAN

The project will be supervised by the Maintenance Department. Insulation specification consultation will be supplied by Engineering. Field construction will be provided by an outside contractor. Project Management, including cost control and reporting, will be provided by Plant Engineering.

The work associated with this project will be performed by outside contractors. Powerhouse Equipment Company, an outside insulation contractor, will perform the work. Work priorities and schedules will be developed based on the criteria contained in the following "Asbestos Project Criteria".

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1. Analytical tests are used to identify the composition of insulation materials.

2. Work priorities and schedules are developed based upon:

   - o verification of the insulation as asbestos
   - o degree of deterioration of the insulation
   - o interior locations with greater exposure potential are given priority over exterior locations with low exposure potential
   - o scheduled or pending shutdowns are considered
   - o potential for interference with other work activities, i.e. paint program
   - o efficient utilization of the contractor resources (minimize skipping around)

3. All insulation material identified or applied under this program is clearly labeled for future reference.

4. Records are maintained documenting removal and repair activities, quantities of asbestos insulation removed, and associated costs.

5. All applicable Federal and State regulations are followed.

6. A schedule is developed projecting 30-day work activity and is updated every two weeks.

The Goff Mountain landfill will be used for disposal of the asbestos insulation. The cost of disposal is included in the project cost.

The Project Team organization follows:

Maintenance Department Head	R. G. Hull
Maintenance Coordinator/Supervisor	H. Price
Project Manager (Cost Control)	J. R. Maier

SCHEDULE

All work will be completed in 1987.

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COST ESTIMATE

The estimate for the project is based on doing $1,170,000 of work in 1987 throughout the Plant (see Table 1 on page 7):

	Capital	838 Expense
o Labor	$ 570,000	$ 220,000
o Materials	270,000	30,000
o Engineering/Maintenance*	60,000	20,000
Total	$ 900,000	$ 270,000

* Insulation specification consultation, project management and field coordinator of contractor.

COST ALLOCATIONS TO DIVISIONS

The project costs are allocated to the tenant divisions as follows:

Division	Percent	Costs	
		Capital	Expense
Specialty Chemicals	74.4	$669,600	$200,900
Solvents & Coatings	22.1	198,900	59,700
Industrial Chemicals	3.5	31,500	9,400
Total	100.0	$900,000	$270,000

A Division Profit Center Breakdown is shown in Table 2 on page 8.

JFD
05/22/87
3346G

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BASIS FOR AUDIT REVIEW

I. PROJECT TITLE Asbestos Insulation Removal/Upgrade
South Charleston Plant

II. AUDIT CRITERIA TO BE USED IN REVIEW

	Estimated	Actual
Date of Mechanical Completion	4Q87	
Capital Costs	$900,000	
Non-capital Costs	$270,000	

Specific Performance

Asbestos insulation exposure will be corrected in the highest exposure potential areas throughout the Plant.

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TABLE I

ASBESTOS REMOVAL/UPGRADE PROJECT

PRELIMINARY WORK BREAKDOWN

	AREA	M$ Capital	M$ Expense
001	Water Treating Bldg. 102	5.0	3.0
004	Powerhouse	40.0	20.0
007260	600# Steam Distribution Headers	15.0	3.0
007270	200# Steam Distribution Headers	15.0	3.0
007280	30# Steam Distribution Headers	15.0	
019	Raw Material Pipeline	5.0	1.0
049100	Chemical Mix	57.5	18.0
064	Upper Island	57.5	18.0
077	Mainland Chemicals	57.5	18.0
082	PVA	57.0	18.0
083	Solvent Vinyl Resins	57.5	18.0
106	Polyols	57.5	18.0
113	Specialty Catalyst	57.0	18.0
115	Specialty Chemicals	57.0	18.0
121	Middle Island	57.0	18.0
169	Oxide Adducts	57.5	18.0
222	Drumming @ 303	57.0	18.0
224	Automated Warehouse	10.0	3.0
226	Tank Truck Load/Unload	35.0	8.0
227	Tank Car Loading/Unload/Cleaning	22.5	8.0
228	NC Bulk Terminal	22.5	8.0
300	Buildings	20.0	2.0
326	Maintenance Facilities	30.0	8.0
342	Stores Facilities	3.0	1.0
355	Plant Laboratory	22.0	3.0
391	Fire Station	10.0	1.0
	TOTALS	900.0	270.0

RGHull
5/8/87
3352G

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TABLE 2

ASBESTOS REMOVAL/UPGRADE PROJECT

DIVISION/PROFIT CENTER ALLOCATION BREAKDOWN

DIVISION	PROFIT CENTER	ALLOCATION %
Industrial Chemicals	156	0.3
	170	1.8
	174	1.4
	Sub-Total	3.5
Solvents & Coatings Materials	163	1.4
	181	0.7
	188	0.3
	270	0.3
	271	0.6
	307	0.3
	311	0.3
	313	0.3
	314	2.0
	315	0.7
	316	0.2
	324	1.4
	326	0.6
	331	0.3
	332	0.4
	333	0.5
	381	9.7
	485	2.1
	Sub-Total	22.1
Specialty Chemicals	139	11.6
	143	2.5
	147	5.6
	162	15.3
	165	2.6
	175	4.3
	184	4.5
	351	7.8
	353	12.8
	384	7.4
	Sub-Total	74.4
	TOTAL	100.0

G. F. Hayes
3346G

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