

DOW CONFIDENTIAL

BOARD
NO. 10452

AUTHORIZATION REQUEST

COMPANY THE DOW CHEMICAL COMPANY

☐ ACQUISITION
☐ CAPACITY, QUALITY, MIX
☒ OTHER

TITLE 1986 U.S. AREA ENVIRONMENTAL
IMPROVEMENT PROJECTS - PRELIMINARY

AUTH. NO. US-168763P
 AREA: U.S.
 SPONSOR: B. A. Weaver

DATE: 1/13/86
 LOCATION: LA, MICH, TEX, WESTERN
 REVISED: 2/5/86
 START UP: 12/88

PROPOSAL SUMMARY \$22800M is requested to provide preliminary engineering and to fund initial phases of the environmental improvement projects at the major U.S. Area manufacturing locations. These projects are necessary for continued compliance with state and federal requirements. Projected annual expenditures for these projects are:

1986 - \$22800M		1987 - \$28000M		1988 - \$2500M	
FIXED CAPITAL		PROJ WORKING CAPITAL, USMS		AREA PEOPLE	MFG R&D MKT
THIS REQUEST. USMS	22800	EXPENSES, USMS	NA	CURRENT	NA
TOTAL PROJECT. USMS	53300	WRITE-OFF		CHANGE	
19 86 \$	USMS 46500	STARTUP		TOTAL	
INFLATION. USMS	2300	DEMOLITION		RELATED AUTHS.	
CAP. INTEREST. USMS	4500	LAUNCH		US168298 1984 Environmental	\$62200M
				US168570 1985 "	\$49300M

BASIS FOR REQUEST (business strategy, project fit, and principal reasons)

LOUISIANA DIVISION - TOTAL \$1100M - PRELIMINARY \$700M

Tank Farm Environ. Upgrade, Louisiana Div. - LA-75411P - Total \$1100M - Preliminary \$700M - This project is in Blocks 5 and 6 of the Marine Tank Farm. It provides diking and drainage systems to segregate storm water runoff plus collection systems for systematic recovery to comply with NPDES Permit discharge limitations.

MICHIGAN DIVISION - TOTAL \$17600M - PRELIMINARY \$8100M

New Diversion Basin - M-850750P - Total \$10000M - Preliminary \$3000M - This project is to construct four above ground storage tanks (50MM gallons) and associated piping and pumps to replace a 12 acre pond. This surface impoundment, the current Diversion Basin, will not be in compliance with RCRA regulations and therefore not usable after November 8, 1988. The Diversion Basin allows for emergency response for building spills to the plant sewer, organic load equalization to aid treatment performance, and surge capacity during heavy rains.

Ludington Environmental Upgrade - M-850787P - Total \$2900M - Preliminary \$1400M - This project is to protect the plant shoreline along the Pere Marquette Lake and to provide a collection and monitoring system for storm water runoff. The location of the Ludington site adjacent to the Pere Marquette Lake, which outfalls directly to Lake Michigan, dictates extraordinary precaution be taken to contain a major spill. This project compliments an earlier project which addressed internal containment and outfall monitoring and will complete the Ludington site environmental upgrade.

Air Emission Reduction Phase II - M-850810P - Total \$1800M - Preliminary \$1500M - This project is a second phase of air emission reduction and consists of vent scrubbers, a THROX, and associated equipment due to requirements of the new 1986 State Air Permit. This project will provide air emission reduction of approximately 600M lbs/year of methyl chloride, methylene chloride, and sulfur dioxide from the Dowfax™, Anion and Cation Plants.

AREA/GLOBAL BUSINESS REVIEW AND RECOMMENDATION

CORPORATE REVIEW

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Replace Buried Tanks - M-850811P - Total \$1500M - Project is to replace, refurbish, and repipe over 50 underground storage tanks in the Michigan Division to above ground status to avoid regulation under RCRA. This regulation will require ground water monitoring for each individual tank.

Rotary Kiln Modernization - M-850812P - Total \$1400M - Preliminary \$700M - This project will reduce maintenance costs and should improve burning efficiency from 99.99 to 99.9999% destruction removal efficiency (DRE) so acute hazardous wastes including PCB's can be incinerated on site.

TEXAS OPERATIONS - TOTAL \$29400M - PRELIMINARY \$10000M

Aeration System Retrofit - T-33175P - Total \$2500M - Preliminary \$1500M - This project will complete the upgrading of the Biological Oxidation Aeration System by installing a new air dispersion system in "A" Lagoon and revising the overall air distribution system. "A" Lagoon has lost over 60% of its treatment capacity and continues to lose capacity at an accelerated rate.

Texas Kiln - T-33177P - Total \$18000M - Preliminary \$2100M - This project is for the design, engineering and construction of a licensed RCRA waste incineration train within the Plant B facility. RCRA requirements and anticipated receipt of the RCRA Part B Permit make it necessary to complete construction and successfully perform a RCRA Part B trial burn in 1988. Preliminary reviews with the new Dow facility acquired from Upjohn at La Porte, Texas, indicate this kiln will be able to accommodate the waste generated there. This preliminary request will provide design and engineering support as well as funds to place orders for long-delivery equipment.

New Class I Landfill - T-33234P - Total \$1500M - This project is to construct a new Class I Hazardous Landfill for Texas Operations to be in operation by the 4th quarter, 1986. The existing landfill will be full by the end of 1986. This landfill will be designed to comply with the latest regulations and will have a double polyethylene liner and double leachate collection system. The alternative to constructing this facility is to dispose of waste in a commercial facility off-site.

Magnesium Slag Disposal Phase I - T-33235P - Total \$3000M - Preliminary \$2500M - This project is for the design engineering and construction of a crushing and screening plant at A401 to process 25000M# annually of slag from Magnesium operations. 1500M#/year of magnesium product will be recovered for sale. The slag is presently going to landfill. Disposal of magnesium slag is currently exempt from regulation under RCRA. However, under the new EPA proposal, this material will be considered a hazardous waste due to its reactivity. This project is the first phase of rendering magnesium slag a non-hazardous waste. The anticipated passage of this rule is September 1986 with 6 months allowed for compliance.

PO Vent/Bottoms Incinerator - T-33238P - Total \$2400M - Preliminary \$400M - This project is to install a THROX unit with an acid recovery system to incinerate the vent and bottom organic compounds from the crude propylene oxide process at B1300, including the new PDC finishing system. Chlorinated hydrocarbon liquids will be used for fuel and recovered acid will be used to neutralize the propylene oxide process bottoms stream. This unit will reduce organic compounds emissions by 1500M#/year and will incinerate 25MM pounds per year of chlorinated hydrocarbon compounds.

Groundwater Clean-up Phase III - T-33244P - Total \$2000M - This project will complete the groundwater clean-up at the A-41 inactive landfills which was begun in the 1985 Environmental Authorization. New requirements were determined after final assessment reports and a Compliance Agreement with the Texas Water Commission, which includes 8 recovery wells, 1300 feet of additional slurry wall and modifications to the steam stripper at Plant A to treat recovered groundwater.

WESTERN DIVISION - TOTAL \$5200M - PRELIMINARY \$4000M

Secondary Containment - Phase II - W-84140P - Total \$1500M - Preliminary \$300M - This project is a continuation of a spill containment program in existing diked areas. This containment is needed to prevent contamination of groundwater from existing storage. Products requiring spill containment upgrading include Telone™, trichlors, Dowanol™ DM, propylene glycol, methylene chloride and others.

Solar Pond Elimination - Phase II - W-84170P - Total \$3700M - Preliminary \$3700M - This project completes the elimination of aqueous waste from the chloropyridine complex (Symtet, N-Serve™, Lontrel™ and Lontrel™ semi-plant). Process changes include both process vent and relief valve discharge containment for recycle or combustion. In addition, chlorinolysis will be used to treat the aqueous wastes to provide suitable quality brine for recycle. The technology needs to be in place and functioning to meet both Dow's goal of eliminating hazardous waste surface impoundments by October 1987 and a new State regulatory prohibition effective July 1988.