PLAINTIFF'S EXHIBIT

CHV-875

MEMORANDUM GO-144

TO: MR. To File 6/13 19 73

FROM: MR. J.E. Davis mat. Lab.

SUBJECT: Pipe Insulation in Refinery To Replace Calcium Silicate

OUR FILE: M-280.07

YOUR FILE:

In Late 1972 "OSHA" Regulations outlawing asbestos, Silica etc for insulation were issued by the Safety dept. at the Refinery For year "Calsil" and other such materials had been used for steam lines and other hot surfaces in the Refinery.

Mr. E.C. O'Reilly Richmond Refinery Safety Engineer discussed substitutes with Mr Fred Valberg of Associated Insulation who were doing a big job in the Refinery at the time. Mr. Valberg Compiled a list of substitutes and Compared them with "Calsil" on the basis of (1) cost-sq/ft (2) K-factor (3) Ease of application (4) Speed of application (5) Water & oil resistance (6) OSHA approval. The best all around material was Eagle pitcher Epitherm #1200. Other materials approved were John manville "Micro Lock" (Fiberglass) and owens Corning "Fiberglass", however these last two were for temperatures below 400°F. Fiberglass and Epitherm 200 have a lower "K" factor than Calcium Silicate, (.200 vs .328)

The San Francisco office of the Safety Dept had tests made of Epitherm 1200 and Fiberglass to determine the silica content and freedom

WHEN REPLY IS REQUIRED, FORWARD ORIGINAL AND ONE COPY

BB 012129

MEMORANDUM GO-144

TO: MR. _____ 19 __

FROM: MR. _____

SUBJECT: OUR FILE:

YOUR FILE:

from Asbestos Fibers. Both products were approved. As a result of these tests and the data developed by Mr. Valley the Refinery switched from "Calsil" to Epitherm 1200 and "Fiberglass" about Jan. 1 1973.

The present practice is to use Epitherm 1200 on Surfaces above 400°F and on all insulation of 3 inch diameter pipe and greater. Below 3 inches and below 400°F either J.M. — "Micro Lock" or O.W. "Fiberglass" is used. The basis of which to use is speed of application.

"K" factor of all 3 are equal.
Cost are about the same
Fiberglass is faster to apply to small size pipe. Epitherm is faster for large pipe.

Since switching to Epitherm 1200 cost for insulating lines has dropped substantially over the cost for Calcium Silicate, due to the speed of application. Inexperienced insulators are able to insulate 50% to 100% more area per day with Epitherm than Experienced insulators did with Calsil. —

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CHEV
BB 012130

MEMORANDUM

Engineering Department
San Francisco, California
June 19, 1973

Insulation for Engineering Department
Designed Plants - PAM

MR. R. J. HUDACHEK:
Pascagoula Refinery

"equals" must be checked out

We propose to use "Epitherm 1200 Superglas" (or equal) for insulation in PAM plants designed by the Engineering Department. Pascagoula has a small amount of this material providing satisfactory service in Isomax II and the No. 2 Hydrogen Plant. We would like your approval to proceed on this basis.

Epitherm has several advantages over calcium silicate type materials.

1. Lower thermal conductivity.
2. Contains no asbestos.
3. Epitherm is non-friable and does not break easily so there are no handling losses and no white residue on the ground after installation.
4. When specified epitherm can be manufactured for application on austenitic stainless steel. (Soluble chlorides in the binder must be controlled).
5. Epitherm is readily distinguishable from calcium silicate. Because calcium silicate products are similar in appearance their continued use will cause confusion regarding asbestos content during future demolitions.

The Richmond Refinery has recently substituted Epitherm in place of calcium silicate for insulating new pipes. They indicate Epitherm is much easier to work with than calcium silicate.

The one disadvantage of Epitherm is its lower compressive strength. Richmond indicates the aluminum jacketing deforms under heavy foot traffic, however, they feel this is a very minor problem. Calcium silicate could be installed in places where foot traffic is expected.

May we have your approval to proceed on this basis.

J. E. HAYDEN

DBK:sf

6/29/73 PEJ checking on temp in Richmond experience. Will also run lab test to verify temp limit. Refinery survey to be done 7/2. Lab tests started 6/29; prelim results 7/6.

CHEV
BB 012131