PLAINTIFF'S
EXHIBIT
DUP-2313

Gloria
Pls see
that DeHamm
get copy
Thanks

CC: J. J. NACZI
R. C. REBER - F. W. MAY
J. M. RINGEL
W. H. ZANE
D. SOURS - RICHMOND CONSTR.
A. F. MC ELWEE - BEAUMONT CONST
J. L. DE HAMM - " "
CENTRAL FILE - " "

MARCH 25, 1968

TO: W. J. JOHNS
SUPVR. POWER ENGR.

ATTENTION: R. C. AUER

FROM: W. S. BRIGGS - R. L. MOONEY, JR. R. L. Mooney Jr

SUBJECT: CONSTRUCTION - BEAUMONT
PROJECT 3815 - METHANOL

Regarding letter dated February 26, 1968 from W. L. Johns - R. C. Auer to J. C. Besperka in relation to insulation specification —

Paragraph 2 of letter states that aluminum jacketing will be held in place with "Type 304 S/S Bands". "No screws or rivets are to be used. The purpose for restricting the banding material is to assure that, in the event of fire, the banding will not be destroyed, with consequent loss of jackets and insulation."

The melting point of 3003 or 5005 alloy aluminum used for jacketing is between 1170°F and 1210°F. Most industrial fires exceed this temperature and the jacketing will melt between the stainless steel bands. The basic insulation is held on with stainless steel wire and should not come off. Fire fighting at Beaumont is done with foam, powder, or fog nozzles; the only time a straight stream would be used would be for cooling down a vessel. Therefore, damage to insulation due to hose play would be negligible.

The use of S/S or any type of strapping would greatly increase the cost of securing the jacketing and no appreciable gain would result.

Based on the CCE, there is approximately 24,000 L.F. of pipe to insulate. A band would be required on approximately 9" centers for a total of 32,000 bands. Using 9.5" as average O.D. it would require 2,150 lbs. of S/S bands at 69 cents a pound for a total of $1,480.00.

32,000 S/S clips at $18.50 M for	434.00
32,000 bands at .25 labor fab and installed	8,000
	9,910

DUP 1008016

DU 051096

Screws are applied mechanically here at Beaumont with a true torque automatic screw driver at a cost of -

2 cents a foot for a total of	480	Labor
72,000 screws at 3.95 per M	275	Material
	755	Total

Bands	$9,110	
Screws	755	
	$9,155	Savings

The possibility of corrosion around the screws has failed to materialize here at this site. We have used screws exclusively over calcium silicate for the past two years.

Pop rivets were used to some extent on the Acrylonitrile unit which has been installed for six years. A recent examination of the metal applied over "Unibestos" showed no corrosion of the aluminum jacketing at the rivets.

The CCE is largely based on calcium silicate, and has the advantage of better compressive strength than "Unibestos" - C.S. 60 lbs. per sq. in. at 5% deformation vs. 27 lbs. per sq. in. at 10% deformation - Dry, and does not need a special high density insert at hanger locations. A list of comments on C.S. ~~95~~ "Unibestos" is enclosed.

There is a potential savings of $6,000 by suing Code 102.1. Since the CCE is based on calcium silicate as well as aluminum, I recommend that we take advantage of these savings.

RLM/ja
Enclosure

DUP 1008017