



NALCO CHEMICAL COMPANY

HERITAGE SQUARE □ 130 JAMESTOWN □ LAKE CHARLES, LOUISIANA 70605 □ AREA 519-478-4111

June 6, 1983

Conoco Chemical Company "VCM"
Post Office Box 605
Westlake, Louisiana 70669

Attention: Mr. Stephen C. Racca
Process Engineer

Gentlemen:

We thank you for the opportunity for Nalco to be of service to you. As we have discussed with you Stephen, iron and nickel levels continue to be higher than they should be in the blowdown from your steam generation units. This could only be caused by a severe corrosion in your steam generation system, which if left unsolved may cause some tube failures and loss of production.

Attached is the cost data for the program which is most suited for your plant as per your request.

We look forward to discussing this program with you and answering any questions you may have.

Sincerely,

M. C. Mowad
M.C. Mowad (mk)
District Representative

mk

cc: R.A. Hart

CCR 000020309

Steam Generation cost based on the following data:

- A. Boiler feed water 2.65 MM lbs/day
- B. Total acid hardness in boiler feed water < 0.2 ppm
- C. Total iron in BFWs 0.10 ppm

NALCO TRANSPORT PLUS PROGRAM:

<u>PRODUCT</u>	<u>lbs/day</u>	<u>\$/lb</u>	<u>\$ cost/day</u>	<u>\$ cost/year</u>
N-Sur-Gard	2.81	\$ 3.23	\$ 9.08	\$ 3314.00
N-356	13.25	\$ 1.62	\$ 21.47	\$ 7836.00
N-7200	15.90	\$ 1.05	\$ 16.70	<u>\$ 6096.00</u>
				\$ 17246.00

The above are our best non bulk drum prices. Drums of chemicals will be shipped, F.O.B., from our Garyville, Louisiana manufacturing plant.

CCR 000020310

Comparison of Alternate Boiler Feed Water Treatment Programs

I. Present Program (UNICHEM)

A. Present Cycles of Concentration (6.2)

- | | |
|---|----------|
| 1. Annual Cost | \$14,000 |
| 2. Annual Iron Loss Due to Corrosion (based on June through November of 1983) | 800 lbs. |

II. New Program (NALCO)

A. Present Cycles of Concentration (6.2)

- | | |
|---|------------|
| 1. Annual Cost | \$17,000 |
| 2. Annual Iron Loss Due to Corrosion (from experience with similar systems) | negligible |

B. Increase Cycles of Concentration to a Conservative Value of 25

- | | |
|--|---------------|
| 1. Annual Cost (verbal estimate) | \$ 8,000 |
| 2. Annual Iron Loss Due to Corrosion (from experience with similar systems) | negligible |
| 3. Annual Steam Savings (based on increase in oxy steam generation of 1270 lbs./hr backed out to 600# steam savings for 5 months valued at \$6.26 per 1000 lbs.) | \$25,000 |
| 4. Increased Condensate Return to LCCP | 9800 lbs./hr. |

CCR 000020311

Pat Cavanaugh



RAC

To Distribution

Date 4/2/84

This page was accidentally left out of the 1983 Vinyl Chloride Safety Association Meeting Report issued by John H. McCulley, Jr. on March 16, 1984. Please insert it in the appropriate place.

Thank you.

A handwritten signature in cursive script, appearing to read "Pat".

Pat Cavanaugh

CCR 000020312

Investigation determined that the car had been overloaded and probably ruptured due to thermal expansion. German VCM railcars do not have pressure relief valves.

There was quite a sequence of errors involved. They were:

- a. The man filling the car originally made a mistake in calculating the weight of the car. He had calculated the other 14 cars loaded at that time correctly.
- b. The second loader did not check the railcar weights and calculations.
- c. The VCM plant was supposed to weigh all cars twice before shipment but their second scale had been out of service since 1977.
- d. The German railcar inspectors did not check the weight.
- e. The same thing happened at Italian and Austrian customs.
- f. An Italian finally discovered that the car was overloaded. He notified the German authorities but it was Friday before Easter. Apparently due to the holidays, the Germans did not notify the Austrian plant before the car exploded.

13. Angio Update -- John Barr, Air Products

The latest count on angiosarcoma cases worldwide was reviewed. Every occurrence in PVC plants involved some reactor cleaning. The average latency period is 22 years. Germany has a shorter latency period than the U.S. There have been around 100 cases of AOL reported. These people had all cleaned reactors, too. Only one person has developed both angiosarcoma and AOL. Additional information is attached.

The angiosarcoma cases tend to be clustered with one plant having several cases and another not having any. This lead to the next topic.

14. Similarities of Plants with Multiple Cases of Angiosarcoma -- John Barr

Barr's analysis, plus comments from the floor, pointed toward the following similarities or factors.

- a. Often (always?) the small reactors were located in buildings. Therefore building ventilation differences could be a factor.
- b. Plant requirements for breathing air protection varied. Some plants required workers entering vessels to use breathing air equipment many years ago whereas others did not.