PLAINTIFF'S EXHIBIT

CC-350

FOSTER WHEELER CORPORATION

Engineers · Manufacturers · Constructors

110 SOUTH ORANGE AVENUE, LIVINGSTON, N. J.

BRANCHES IN PRINCIPAL CITIES OF THE UNITED STATES AND CANADA ALSO LONDON AND PARIS

CABLE ADDRESS REWOP
TELEPHONE 533-1100
(AREA CODE 201)

November 14, 1966

Mr. H. A. Brown, President
Coastal States Petrochemical Company
c/o Mr. G. F. Adams, Consulting Engineer
219 South Madison
Tulsa, Oklahoma

Re: FW Contract 5-16-547
FW File O-5-161803
Pilot Plant Isobutane
Pyrolysis Runs

Gentlemen:

Confirming information telephoned to Mr. Adams on November 4 and November 7, we attach a digest of the results obtained from the two runs performed per contract.

Commenting on these determinations, for a conversion on the order of 50% (run conditions 56%) the isobutene yield is somewhat higher than we expected, and likewise the propylene yield. However, taking into account the higher degree of conversion the propylene is right in line, and the isobutene about 5% higher.

The second run at lower conversion level shows propylene over 11% above the expected yield, but isobutene about 17% lower, both in terms of the actual isobutane conversion of 36%.

We mentioned on the phone that some degree of linearity was indicated for the isobutene yield. This would permit a somewhat higher isobutane conversion level, and accordaingly lower recycle ratio without substantially affecting isobutene yield.

The conclusions which can be drawn from these runs are:

1. Operation at a pressure level in excess of 200 psig is practicable.

2. A total yield in excess of 60% by weight of isobutene plus propylene is attainable, based upon isobutane disapperance.

3. A lower level of isobutane conversion than 50% is not warranted.

4. Formation of acetylenes and diolefins in the C_4 and lighter range are nil, simplifying purification problems.

5. Conversions and attendant operating conditions are compatible with adaptions of existing furnace configurations and components.

You observed that projection of plant facilities to permit economic feasibility evaluations was the next step in consideration of this proposed operation. We await your designation of a meeting to pursue this objective.

We trust that these pilot plant runs were conducted to your satisfaction.

Very truly yours,

FOSTER WHEELER CORPORATION

Kenneth D. Demarest
General Sales Division

KDD:cv
attachment

LWO-54-660119
Contract 5-16-547
File 0-5-161803
November 14, 1966

COMPOSITE TEST RESULTS

Test No.	223	224
Run No.	1	2
Sample No.	207	211
Steam Dilution ($\frac{Mols}{Mol}$)	1.55	1.55
Part	WT.%	WT.%
N_2	0.62	0.60
H_2	0.62	0.22
CH_4	8.12	4.64
C_2H_4	1.38	0.83
C_2H_6	0.74	0.32
C_3H_6	13.67	8.68
C_3H_8	2.23	1.40
ISO C_4H_8	19.48	13.71
C_4H_8-1	.40	.24
C_4H_8-2	.07	.08
ISO C_4H_{10}	45.73	60.16
N C_4H_{10}	1.57	4.47
Undetermined in Gas	3.21	.41
TOTAL IN GAS	97.84*	95.76
C5 Plus Liquid Recovered	.50	---
Loss	1.66	4.24
TOTAL	100.00	100.00
Transfer Temp., °F.	1330	1276
Residence above 1200°F, sec.	1.2	1.25
Transfer Pressure, psig	240.0	245.0
Overall Reaction Vel. Constant, $sec.^{-1}$	0.633	0.407
Dehydrogenation Equib. Approach,%	5.5	1.76
Demethanation " " "	neg.	neg.
Wt.% ISO C_4H_{10} Conversion	53.0	36.0

Feedstock Quality

Part	Mol %	WT.%
C_3H_8	0.25	0.2
ISO C_4H_{10}	97.25	97.3
N-C_4H_{10}	2.50	2.5
	100.00	100.0

*Gas yield structure reflects inclusion of solution gas from recovered liquid.


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