

Monsanto

FROM (NAME & LOCATION) St. Louis - General Office

DATE February 3, 1969

CC:

SUBJECT GENERAL ELECTRIC, ROME,
GEORGIA - TRANSFORMER DEPT.

REFERENCE

TO : H. S. Bergen - HBERG
J. G. Bryant
D. A. Hall - AKRON
R. C. Hamil - ATLANTA
N. T. Johnson
W. A. Kuhn - WKUHN
~~R. H. Munch - SECOND STREET~~
D. A. Olson - DOLSO
D. R. Pogue - DPOGU
W. R. Richard - WRICH
K. Schlegel - KSCHL
R. P. Sullivan - WILMINGTON

Present for G.E. - John Dutton, Manager Insulation Engineering
Jim Kinney, Assistant Insulation Engineering
William Gordon, Manager Secondary Substation Design
Ken Cox, Manager Product Planning and Market Research
Frank McCan, Asst. Product Planning & Market Research

Present for Monsanto: Dr. R. H. Munch, P. G. Benignus

TECHNICAL

About finding limited combustibility of the arc-formed gas from Aroclor 1242, General Electric is not worried yet, and avoids "pushing the panic button." This morning Ralph and I talked with Dr. Sloat at Westinghouse as he sought to hear from us after our visit at General Electric. Westinghouse also strive to avoid "pushing the panic button."

Pursuant to switching to an Aroclor 1242-rich blend, two or three years ago Rome hired the Philadelphia Laboratories to study the arc-formed gases as compared against previously used Pyranol A13B3B. The study included the two blends, per se, and in the presence of paper. G.E. felt that the difference in the arc-formed gas from the two fluids is overshadowed by the larger amount of combustible arc-formed gas generated when the normal transformer paper insulation is present.

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As compared with our results on the fluids, per se, it appears that we found somewhat larger amounts of combustible gas than was found by G.E. While we have reason to question the reliability of the G.E. gas analysis techniques, on the other hand, after studying our laboratory work, G.E. raised valid reason to question our findings. We will run some more tests.

One important thing these laboratory studies have pointed out is that the long-time general definition of askarel needs to be revised, especially in the case of Aroclor 1242. Strictly speaking, it is no longer proper to state categorically that the arc-formed gas from Aroclor 1242 is noncombustible. This matter of definition is indeed regarded by G.E. and Westinghouse as very important in the event of a law suit and court trial (Westinghouse has such a situation at this time). Redefinition would be handled at ASTM and IEEE. However, Westinghouse will not bring it up at this time fearing that it would upset the utilities' attitudes toward askarel transformers.

In operating transformers, the conditions of operation and the possible arcing situations are so highly variable that it is extremely difficult, and perhaps impossible, to select prototype transformers and induce arcing that will comprehensively, or at least adequately, simulate the possible problem under operating conditions. Eventually Westinghouse and G.E. will need to run such tests to have at least some guide lines.

If G.E. and Westinghouse had not switched to Aroclor 1242, our transformer askarel business would have been wrecked due to lack of chlorobenzene from Hooker. If there were now an instant switch, G.E. would have to use about two and a half million more pounds of TTCB, and Westinghouse would need about two million pounds of TCB. Last week Hooker advised that this material is not available.

General Electric are also aware of the poor supply situation at Hooker. About six months ago there was an article in the Wall Street Journal that a chemical producer along the Texas gulf coast are preparing to produce large amounts of chlorobenzene on contract with our government for product "Orange" used for defoliation in Vietnam. G.E. are in process of sampling this material. They expect this material may be available by early summer. Houston Chemical may be the supplier and we should check this.

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GENERAL ELECTRIC TRANSFORMER PYRANOL FORECASTS:

<u>Year</u>	<u>Gallons</u>	<u>Pounds</u>
1968	268, 125	3, 100, 000
1969	329, 793	3, 800, 000
1970	343, 200	4, 000, 000
1971	383, 419	4, 500, 000

This is based on using Aroclor 1242. If General Electric switch back to higher chlorination, the pounds would increase significantly.

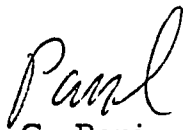
We now have the market forecasts from both General Electric and Westinghouse, and I would be pleased to make no further comment. However, as our market research people desire to pursue this, let me mention:

- a) Both G. E. and Westinghouse gave hard thought to askarel forecast and are most sincere in having given us their best estimates. They really have no more to offer.
- b) But keep in mind that askarel is a distinct "specialty", relatively small in use and definitely susceptible to judgements made quickly and usually quite obscure and with no relationship to the large use of mineral oil transformers. This makes askarel extremely difficult to forecast precisely. Unless a special study of the situation is made at a given time, the forecast is likely to be way out of gear. Indeed, the recent Westinghouse study was special and intense. Yet their study forecasts askarel consumption at less than half what it actually is and will be.
- c) We know that Rome's market forecast for askarel starts with the quite obvious 1968 use figure. This is then multiplied by keenly studied general factors for the years ahead, based on anticipation of their over all transformer making which is predominantly mineral oil. Then how accurate is the forecast for specialized Pyranol? It is the best General Electric market planners feel justified in doing on this question. The figures will be "in the ball park", and they indicate the characteristic pleasing growth. Their planners have no more to offer us.

ADVERTISING

I spoke with Rome's advertising and marketing people about Monsanto running an ad on askarel fire safety versus mineral oil in residential "back yard" pad mounts. While, as home owners, they would favor askarel they advise that such an ad by Monsanto would infuriate the utilities and lead to more bad feelings than askarel sales.

Attention Mr. Schlegel: Two years ago when we prepared our campaign and struggled about what to say for askarel over dry type, General Electric and others pointed out that superior insulation resistance is one of the few advantages we can mention. We have been doing this. However, now General Electric have changed their signals and would appreciate deleting this from our ads. As a courtesy, before we proceed with the next ads we wish to review our copy with the people at Rome in quest of their revised approval.


P. G. Benignus

/ecd

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