December 19, 1975

Tom

Mr. ~~Roy E. Uptegraff~~
~~R. E. UPTEGRAFF MANUFACTURING CO.~~
~~P. O. Box 182~~
Scottdale, PA 15683

Dear Mr. Uptegraff:

I have received our laboratory report based on the Askarel samples sent to us from your 2500 KVA transformer, recently returned to you from the Atlantic Richfield Hanford Company at Richland, Washington. A copy of that laboratory report was sent directly to Mrs. Crowell at Uptegraff.

Your customer claimed that their Doble tests showed the power factor of the Askarel Fluid was too high. In this respect, I'd like to refer to our Transformer Askarel Inspection and Maintenance Guide, (enclosed) Bulletin No. IC/FF-38R, March, 1975, page 14:

It states, in part: "The power factor test normally used for the detection of contamination in mineral oil filled transformers is of little use for this purpose in Askarel filled transformers, due to the extreme effect of extraneous soluable polar materials."

Further down page 14 it states:

"The different behavior of Askarel vs. mineral oil in these respects can be summarized as follows:

High power factor and low volume resistivity in transformer mineral oils are commonly regarded as "danger signals" that the oil has deteriorated and broken down chemically or excessive moisture is present.

This is NOT TRUE of Askarel liquid insulation unless the dielectric breakdown voltage is lowoor the moisture content is high."

The actual tests of dielectric breakdown voltage and moisture content showed the following results:

WATER_PCB-SPO00000367

	Jar No. 1	Jar No. 2	New Fluid Spec.
Dielectric Strength, 25°C	38 KV	43 KV	35 KV minimum
Water	15	15	30 maximum

Furthermore Mr. Uptegraff, our booklet continues on the top of page 15:

"Manufacturers of Askarel type transformers point out that it is quite well known that Askarel transformers with initial power factor of the Askarel fluid in excess of 50 percent at room temperature and 60 HZ are giving satisfactory service life. However, there needs to be assurance that both dielectric breakdown voltage and moisture are at satisfactory levels and do not show adverse trends."

As our tests show Mr. Uptegraff, dielectric strength and moisture level on the two samples submitted, meet our specifications for new fluids.

Sincerely,

Michael A. Petrilli
Industry Sales Specialist
Functional Products

MAP/kao

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