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FROM (NAME—LOCATION—PHONE): P. R. Michael - N1E (4-4838)

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SUBJECT: PROPOSED RESEARCH ON TRANSFORMER FIRES

REFERENCE:

TO: J. H. Craddock - B3NA
J. G. Nassif - E2ND

cc: W. E. Gledhill - N3A
F. D. Hileman - 1250
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The following items summarize the research projects on transformer fires we have discussed over the last several days.

| Study | Est. Cost |
|---|---|
| I. Thermal Degradation Studies at University of Dayton Research Institute (UDRI) | |
| A. Thermal decomposition profile, product identification and yield for 1,2,4 trichlorobenzene<br><br>3 temperatures<br>1 second residence time<br>3 reaction atmospheres | 25k (based on UDRI proposal 5/10/84) |
| B. Repeat of A. using Aroclore 1242<br><br>Analytical work would include quantitation of several PCDD & PCDF isomers and determination of total homolog yield, i.e., total tri, tetra, penta ... | 30k |
| C. Repeat of A. using Aroclor 1254 | 30k |
| D. Repeat of A. using two transformar fluids representative of fluids in actual incidence of fire; actual samples if possible. | 50k |
| II. Thermal Degradation of Wiring Insulation | |
| A. Solicit proposal from UDRI - Experimental design as in I.A. | 25k per insulation type |

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III. Formation of PCDD and PCDF in Transformers From Arcing

A. Solicit proposal from C. Rappe - determine if formation is enhanced by epoxides or other additives. Study trichlorobenzene, Aroclor 1242, Aroclor 1254, transformer fluid. ?

IV. Determination of Reaction Conditions and Source of Combustion in PCB Transformer Fires ?

Co-sponsor with EPRI, GE/Westinghouse, ...

The cost of studies III and IV are not known at this time. However, because they appear to be more appropriate for the late 1985-1986 time frame, we have time to obtain estimates if we wish to pursue them.

Paul Michael

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