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19 September 1957

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MEMORANDUM TO THE FILE

FROM: [redacted]

SUBJECT: (Trip Report, [redacted] - 28 August 1957)

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1. [redacted] met with [redacted] to discuss power supply troubles in the URT-11 transmitter. [redacted] have previously, under a task order, designed for us a Modification Work Order to reduce a transient voltage peak which was causing similar transformer breakdown in the URT-11 power supply. In accomplishing this MWO on several URT-11 transmitters [redacted] reported a case of transformer breakdown after the MWO had been installed. This breakdown occurred when the transmitter was put on a key down operating test for two hours. This transmitter power supply had been delivered to the T&I shop with a burned out filament transformer. The original transformer and the replacement which had also burned out were taken with us to [redacted]. We discussed various means of testing the power supply after the modification had been completed to determine if the transient voltage had been sufficiently suppressed. I had called [redacted] the day before to discuss this problem with him. [redacted] had worked up a flip-flop relay circuit which could be used to periodically turn the plate power on and off. The speed of this unit could be varied so as to place the transient spike on the peak of the rectifier output waveform when viewed on a scope. [redacted] suggested this could also be done using a Morse code keyer that we have at the shop. [redacted] said he would like to continue on this project and test out modified transmitters but he was not equipped personnel or time wise to do this. While we were talking one of the lab technicians had opened up the two transformers and found they had shorted out by arcing over on one of the terminals of the high voltage filament winding. This is the identical trouble we had previously experienced which this modification was designed to eliminate.

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2. It was decided that [redacted] would make some investigations to determine the reason for this transformer breakdown. They still have the three GFE RT-1B and two URT-11 transmitters used in the original tests. [redacted] agreed to furnish [redacted] with 5 modification kits which they would install on these transmitters. Each of the transmitters would then be subjected to two types of tests.

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Test one would be intermittent turning on and off of the plate power switch over a reasonable (hundreds of operations) period of time.

Test two would be a key down operation over a period of hours. [redacted] would report the results of these tests and make corrective recommendations if necessary.

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3. [redacted] then asked [redacted] to come in to discuss a problem connected with the RT-4 transmitter. Phase C of this project calls for frequency extension both up and down of the RT-4 transmitter. [redacted] said it would require major modification to extend the range above the present 25 megacycle limit. No further work will be done on this part of phase C. Extending the range down from 4 mcs., to 3 mcs., is feasible but will require the installation of two 50 uuf vacuum condensers in the power amplifier and output tuning network. These cost \$25.00 each. This cost plus the switching that will be required and the engineering costs for this modification will exceed the \$1500.00 allotted for phase C. [redacted] wanted to know if they should go ahead with this phase and submit an increase cost letter to the contracting officer. I said I would check this out with the operations people and call him back. If approved [redacted] will work up a cost estimate to be submitted to us through the contracting officer for approval.

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