SECTION I

1.0 INTRODUCTION

This report contains data required for certification of the EMCEE Model TU1000F Television Translator which EMCEE plans to manufacture in quantity. The translator is rated to provide 1000 watts peak visual and 50 watts average aural power on any FCC specified channel extending from 470MHz to 806MHz. The output frequency of the translator tested was UHF channel 69 (800 to 806MHz) with a VHF input of channel 6 (82 to 88MHz). The data contained in this report was obtained from tests made on an EMCEE production unit. A complete list of the test equipment utilized to obtain the certification data can be found in Section 1.3 of this report. Information relating to the description, operation and maintenance of the TU1000F Translator can be found in the EMCEE TU1000F Instruction Manual.

1.1 Equipment Description

The TU1000F Television Translator is composed of a Receiver drawer, a 20 Watt Exciter/ Upconverter assembly and two 500 Watt Amplifier drawers. The Receiver is made up of two sections: the Downconverter and the IF. The Downconverter accepts any VHF or UHF channel from the receive antenna and optional remote preamplifier and converts that signal to standard IF (45.75MHz visual and 41.25MHz aural). The IF section filters and amplifies the incoming signal while providing AGC and automatic on-off circuits which will place the unit in a nonradiating condition if the receiving portion of the translator fails or if the input signal is not of the correct frequency or amplitude. A 30-second time delay circuit is also included to prevent the translator from being turned off during momentary failures or fades of the incoming signal. Also contained in this drawer, to satisfy Section 74.750(c)(7) of the FCC Rules, is an optional Code Identification Unit capable of shifting the frequency of the transmitted carriers according to the station's call sign. In the 20 Watt Exciter drawer, the IF carriers from the Receiver are shifted to any desired UHF TV frequency and amplified to the proper level to drive the four 300 watt solid-state amplifiers contained in two 500 Watt UHF Amplifier drawer assemblies. The outputs of these four amplifiers are then recombined and connected to a six-section UHF Bandpass Filter where unwanted products created by common amplification are reduced to appropriate levels. Other assemblies in the TU1000F Translator include a Front Panel Control Board for monitoring translator functions and a Power Panel to distribute AC power throughout the translator cabinet.

The Receiver, 20 Watt Exciter and Power Amplifier assemblies, in conjunction with the remote Preamplifier, are designated as the TU1000F Translator. The TU1000F Translator is designed for the express purpose of broadcasting as authorized by the Federal Communications Commission's Rules and Regulations, Part 74, Subpart G, Low Power TV, TV Translator and TV Booster Station service.