FORM 442 QUESTION 7:
EXPERIMENTATION DESCRIPTION

Moog Navigation and Surveillance Systems (NaSS) designs, develops, and manufactures Tactical Air Navigation (TACAN) equipment and Distance Measuring Equipment (DME) for military and commercial applications.

As the equipment is developed, it must be tested in real-world conditions in order to ensure that it operates as intended and required. Also, equipment returned to NaSS for repair often must be tested before being returned to the customer. In addition, existing models of equipment must be tested after being modified for any of the following reasons:

- Redesign to replace obsolete components
- Redesign to improve performance and/or efficiency
- Modification due to requirements of a specific customer.

The existing equipment that would be covered by the license being applied for includes:

- MM-7000 Series – A family of TACAN systems for fixed-base, shipboard, mobile, and portable applications. The MM-7000 is available in various sizes and configurations and with many options, and is now in use in the United States and several other countries throughout the world. Various models and configurations of the MM-7000 are currently in production, including the portable MM-7000 MP and a reduced-cost version of the full-size MM-7000.
- AN/URN-32 – A derivative of the MM-7000 used by the U.S. Navy as a replacement for the obsolete AN/URN-25 in both fixed-base and shipboard applications. The system is currently in production.
- AN/TRN-47 – A derivative of the AN/TRN-41 used by the U.S. Marine Corps. The system is currently in production.
- 2010 – A TACAN system used in several countries throughout the world in both fixed-base and mobile applications. The system is currently in production.
- 2020 – A DME system used in fixed-base applications in several countries throughout the world. The system is currently in production.
- 2030 – An HRDF system used in fixed-base applications in several countries throughout the world. The system is currently in production.
- AS-3240A – A TACAN antenna used primarily with shipboard applications, but which can also be used with fixed-base and mobile applications. The antenna is currently in production.
- AS-4502 – A TACAN antenna used with the AN/TRN-41 and AN/TRN-47 portable TACAN systems. The antenna is currently in production.
- dBS 900E – A TACAN antenna used with fixed-base applications. The antenna is currently in production.
- dBS 950ET – A TACAN antenna used with mobile and fixed-base applications. The antenna is currently in production.
- dBS 990ES – A TACAN antenna meant to succeed AS-3240A with shipboard applications. The antenna is currently in development, and will soon be in production.

Current research and experimentation includes development and testing of a portable TACAN system using MM-7000 technology and the development and testing of the dBS 950 TACAN antenna.

The ongoing research and experimentation by NaSS will provide TACAN and DME systems and antennas with increased efficiency and reliability over systems currently in use, as well as providing faster and easier diagnostic and repair procedures and lower power requirements, all of which will contribute to lower cost and energy usage, with less down time, for customers.

For over 40 years, the research and development efforts of NaSS and its predecessor organizations have provided continual improvement in TACAN systems, and this will continue in the future.

EXPLANATION OF REQUEST FOR MODIFICATION

Moog Navigation and Surveillance Systems (NaSS) recently applied for, and received, an experimental radio station license, File Number 0684-EX-CN-2018, Call Sign WJ2XUA.

This license was a renewal of a previous license, with one change: Moog requested in its application that the authorized power for the new license be increased from the 400 W (ERP) permitted on the previous license to 15 kW (ERP).

Moog hereby requests that the current license be modified to allow an authorized power of 35 kW (ERP) on all five authorized frequencies, viz.: 962 MHz, 1021 MHz, 1081 MHz, 115MHz, and 1198 MHz.

The reason for this request is that, the new generation of TACAN systems now in development, and current MM7000 systems have a maximum transmitter power of 5 kW which, when coupled with new antenna gain, yields a maximum ERP of 35 kW depending on system configuration.

Unless the power authorized on the license is increased as requested, Moog will not be able fully test its current and future TACAN systems.

Thank you for your help in this matter.