

PUBLIC INTEREST STATEMENT

1. Introduction

By the instant application (“Application”), BAE Systems Information and Electronic Systems Integration Inc. (“BAE Systems”) requests that the Commission grant a two year experimental license to permit BAE Systems to operate the facilities (the “Facilities”) specified in the instant Form 442.

The instant application seeks a two year license for the same facilities that were granted under Special Temporary Authority (“STA”) pursuant to File No. 0552-EX-ST-2005, and under the same terms and conditions.

2. Purpose of the Operation

BAE Systems Information & Electronic Warfare Systems (IEWS), a business unit of the Information and Electronic Systems Integration Sector (IESI) within BAE Systems North America, will conduct the testing specified in this Application at the company’s Litchfield Antenna Test Range. IEWS is a major producer of electronic warfare systems, protection systems, and tactical surveillance and intelligence systems for all branches of the armed forces. IEWS’ lines of business include Electronic Warfare/Electronic Protection, Electronic Warfare/Information Warfare, Integrated Defense Solutions, and Mission Electronics with products and services spanning the whole electromagnetic spectrum.

The testing at the Litchfield Antenna Test Range is a critical part of the manufacture and delivery of the military system required under the specified Navy Contract. As a general matter, the purpose of the facilities for which consent is requested herein is to measure individually the performance of scale model antennas of various types (i.e., loop, monopole, dipole), then install arrays of these antennas on scale models of various military fixtures, and measure the performance of the antennas in their installed configuration. More specifically, the testing under the requested license is for the purpose of implementing the following contracts:

- A contract awarded to BAE Systems by the U.S. Navy for the manufacture, integration, test and installation of a Cooperative Outboard Logistics Upgrade (COBLU) Communications Electronic Support Measures system. This system is being procured by the U.S. Naval Sea Systems Command under a Foreign Military Sales Contract for a Mediterranean NATO Ally. The testing required at the Litchfield Antenna Test Range is in support of this contract. The following information regarding the relevant contract is provided pursuant to Commission requirements:

Agency:	Naval Sea Systems Command
Point of Contact:	Kemal Atam (of NAVSEA) 202-781-0420
Contract #:	N00024-04-C-4210

- By e-mail dated February 2, 2006, BAE Systems notified the Commission that certain of the Facilities granted under File No. 0552-EX-ST-2005 would be operated with respect to an additional Classified Contract, with a contract number of F33657-03-G-3027 ("First Additional Classified Contract"). Accordingly, for the purpose of this Application, the First Additional Classified Contract should be associated with the instant filing. (Please note that BAE Systems separately submitted to the Commission's Security Office, under applicable classified submission procedures, the relevant agency and point of contact for the First Additional Contract - See classified submission of BAE Systems associated with File No. 0017-EX-ST-2006).
- By e-mail dated February 16, 2006, BAE Systems notified the Commission that certain of the Facilities granted under File No. 0552-EX-ST-2005 would be operated with respect to a second Classified Contract ("Second Additional Classified Contract"). Accordingly, for the purpose of this Application, the Second Additional Classified Contract should be associated with the instant filing. (Please note that BAE Systems separately submitted to the Commission's Security Office, under applicable classified submission procedures, the file number, relevant agency and point of contact for the Second Additional Contract - See classified submission of BAE Systems associated with File No. 0081-EX-ST-2006).

3. Discussions Regarding the Specified Frequency Bands

A. Generally

The Application seeks Commission authority to operate on a number of different frequencies. Although BAE Systems is aware that requesting authority for such a broad selection of frequencies will require significant review and coordination efforts, BAE Systems notes that the subject system's capabilities will span the HF to Millimeter-wave frequency spectrum. As contractually specified by all government procurement agencies, any development and/or product sell-off requires realistic measurement of a system. Should BAE Systems be denied the critical ability to perform radiation measurement over a broad range of frequencies, such denial would severely hinder the execution of the programs and systems to be developed under the underlying contract. Accordingly, authorization under such a broad variety of frequencies is necessary in this context.

B. Coordination of Frequencies Relevant to Part 74

BAE Systems is aware that a number of the requested frequencies fall within bands that are assigned for Part 74 operations. In this regard, BAE Systems has already coordinated – in the context of the underlying STA under File 0552-EX-ST-2005 – the use of these Part 74 frequencies with the appropriate Society of Broadcast Engineers ("SBE") coordinator. BAE Systems hereby confirms that it will continue the same coordination procedures for these frequencies once the 2 year license is granted.

4. Other Issues

A. Requested Area of Operation

The Litchfield Antenna Test Range is comprised of multiple separate testing locations on the BAE Systems campus at which the subject experiment may be conducted. In addition, depending on the particular requirements of the experiment (i.e., when generating signals at zero degree elevation), it may be necessary to move a given antenna along the bore site line on the range up to a distance of 100 feet. ***Accordingly, in order to accommodate these requirements, by this Application, BAE Systems is requesting authority to operate all of the specified facilities within a 1,500 foot radius from the centerpoint geographic coordinates identified in the Application*** (i.e., 42-48-22 N.Lat.; 071-25-33 W.Long. [NAD 83]). Commission approval of such area of operation will provide BAE Systems with the flexibility it requires to move the specified test equipment to any appropriate testing location on the Litchfield Antenna Test Range during the authorized term of operation, in response to the requirements of the experiment.

B. Directionality and Height of Antennas

A single Antenna Registration has been submitted for the instant Application, and such Antenna Registration specifies “Yes” in response to the questions: “Is a directional antenna used?”, and “Will the antenna extend more than 6 meters above the ground....” In accordance with discussions with Commission staff, such approach was taken in order to simplify the filing process and to reduce the amount of duplicative information contained in the application. However, as further discussed with Commission staff, certain of the antennas involved in the subject experiment are not directional in nature, and certain of the antennas do not exceed 6 meters in height. Therefore, the following breakdown of antenna groupings is set forth to provide an accurate understanding of the directionality and height of the antennas involved in the experiment:

i. Non-Directional (Omni-directional) Antennas With Heights Lower Than 6 Meters

This antenna grouping relates to 5 different antennas which are non-directional (omni-directional) in nature, and which do not exceed 6 meters in height above the ground (or above any structure). These antennas are as follows:

Manufacturer	Model #	Quantity	Gain (Nominal)	3dB BW E (Vertical)	3dB BW H (Horizontal)
Shakespeare	229B	2	-15 to +5 dBi	OMNI	N/A
Sanders	1/4Mon	4	-5.2 dBi	OMNI	N/A
Sanders	TASES 36	2	-60 to -5dBi	OMNI	N/A
Sanders	TASES 24	2	-31.5 to +1.1 dBi	OMNI	N/A
Sanders	Slant	1	-20 to -5	OMNI	N/A

ii. Directional Antennas
With Heights Above 6 Meters

This antenna grouping relates to 6 different antennas which are directional in nature, and which exceed 6 meters in height above the ground (or above any structure).¹ These antennas are as follows:

Manufacturer	Model #	Quantity	Gain (Nominal)	3dB BW E (Vertical)	3dB BW H (Horizontal)
KMA	26500	1	-6dBi	90°	90°
SA	26-0.1	1	+8 dBi	60°	120°
SA	29-0.1	2	+8 dBi	60°	120°
SA	27-1.0/8	1	+8 dBi	9°	1.5°
SA	28-1.0/8/10	1	+8 dBi	9°	4.5°
SA	28-2.0/8/10	1	+8dBi	60-30°	60-30°

C. Note Regarding Output Power/ERP Figures

For the purpose of completion of the attached form, antenna efficiency has been assumed to be 100%. Therefore, the transmitter power and the radiated power are reported as equal (i.e., both the Output Power and the ERP are reported as “.007 W”). In practice the antenna efficiency and cable loss between the transmitter and the antenna will be considered and the transmitter power adjusted to achieve the approved output radiated power level.

D. Note Regarding “Mean” Power Designation

In the attached form, the power levels are reported as a “Mean” value. The transmitter will not be left on continuously due to the nature of the experiment and the need to physically reposition the unit under test between measurements, cycle through frequencies, change elevation angles of the transmit antenna, etc. where the transmit power is reduced to zero. The actual duty cycle of the transmit system is approximately 7%. Mean power is therefore a more accurate representation of the applicant’s proposed activity.

¹ In the attached form, the “overall height of above ground to tip of antenna” is identified as 36.6 meters. It should be noted that this figure represents the highest point to which the subject antennas would be raised in the course of the experiment. Based on the particular requirements of the experiment, a given antenna in this grouping may be lowered, or raised to the 36.6 meter limit, to generate appropriate receive angles.

E. Transmitting Equipment

In response to the question in the Application, the following information is provided with respect to the transmitting equipment to be involved in the experiment. It is noted that each of these transmitters is non-experimental in nature:

Manufacturer	Model	Quantity
HP	HP8341	1
HP	HP8643A	2
HP	HP8340B	2
HP	HP8662A	1
HP	HP8671A	1
HP	HP8753A	2
HP	HP8753D	2
HP	HP8753E	2
HP	HP8510B	1
HP	HP8510C	1

F. Additional Signal Amplification

Due to the low gain of the transmit antennas, an additional signal amplification may be utilized as follows:

Power Amplifiers	Model	Frequency Band	Power Output	Quantity
OPHIR	5069	.5MHz to 500MHz	8W	1
OPHIR	5094	1MHz to 1000MHz	3W	1
OPHIR	5160	.8GHz to 4.2GHz	7W	1
ENI	510L	1.7MHz to 500MHz	9.5W	2
ENI	603L	.8 MHz to 1000MHz	3W	1

G. Prevention of Interference

BAE Systems hereby advises the Commission that the tests to be conducted under the requested Commission authorization are to be conducted solely on the campus of BAE Systems' Litchfield, New Hampshire facilities. Such location will result in the separation of the test facilities from other existing transmit or receive facilities. BAE Systems' Richard C. Ball will be personally conducting the test and will be available by wireless telephone at (603) 318-6913. Mr. Ball will act as a "stop buzzer" if any issues regarding interference arise during testing.