

Northrop Grumman Systems Corporation**Form 405****File No. 0053-EX-RR-2003****Amendment**

In its Form 405 application for the renewal of the experimental radio station license under Call Sign KA2XGP (File No. 0053-EX-RR-2003), Northrop Grumman Systems Corporation ("Northrop Grumman") requests authorization to operate at the following revised frequencies and power levels, with both CW and pulsed emissions:

<u>Frequency</u>	<u>Station Class</u>	<u>Emission Designator</u>	<u>Authorized Power</u>
138-144 MHz	FX	N0N	100 W (ERP)
162.1-173 MHz	FX	N0N	100 W (ERP)
225-328.6 MHz	FX	N0N	100 W (ERP)
335.4-399.9 MHz	FX	N0N	100 W (ERP)
420-608 MHz	FX	N0N	1 W (ERP)
614-806 MHz	FX	N0N	1 W (ERP)
902-928 MHz	FX	N0N	100 W (ERP)
1025 MHz	FX	N0N	100 W (ERP)
1035 MHz	FX	N0N	100 W (ERP)
1084 MHz	FX	N0N	100 W (ERP)
1090 MHz	FX	N0N	1 W (ERP)
1096 MHz	FX	N0N	100 W (ERP)
1215-1390 MHz	FX	N0N	1 W (ERP)
1427-1429.5 MHz	FX	N0N	100 W (ERP)
1710-2025 MHz	FX	N0N	100 W (ERP)
2200-2500 MHz	FX	N0N	100 W (ERP)
2305-2319 MHz	FX	N0N	100 W (ERP)
2346-2360 MHz	FX	N0N	100 W (ERP)
2385-2390 MHz	FX	N0N	100 W (ERP)
2450-2690 MHz	FX	N0N	100 W (ERP)
2700-2900 MHz	FX	N0N	1 W (ERP)
2900-4200 MHz	FX	N0N	100 W (ERP)
4400-4990 MHz	FX	N0N	100 W (ERP)
5250-5600 MHz	FX	N0N	100 W (ERP)
5650-9000 MHz	FX	N0N	100 W (ERP)
9000-9200 MHz	FX	N0N	1 W (ERP)
9200-10500 MHz	FX	N0N	100 W (ERP)
10700-12200 MHz	FX	N0N	100 W (ERP)

Northrop Grumman requests the renewal of the authorization under Call Sign KA2XGP in order to continue to operate its antenna measurement range facility, which provides Northrop Grumman the flexibility to evaluate a wide range of antenna design concepts and to verify the performance of production units. Northrop Grumman has numerous contracts with various agencies of the U.S. Government that involve matters of national defense and homeland security, and this antenna measurement range facility enables Northrop Grumman to fulfill those

contracts. The facility also enables Northrop Grumman to develop and test new systems in anticipation of future U.S. Government contracts, and fulfill its contracts with various foreign military and civil aviation agencies.

The antenna measurement facility range consists of a range control building with numerous antenna positioners, which are located at various elevations on the building, and a 500 meter ground range. The antenna range has an assortment of source antennas from 12dBi gain horns to 31dBi gain parabolic dishes. The selection of source antenna varies with frequency, distance, and size of antenna to be tested. An antenna under evaluation is illuminated by an unmodulated radio frequency position such that the boresight faces the source and the reference receive signal strength is taken. The antenna is positioned at various angles of azimuth and elevation, with relative receive signal strength measurements taken as the antenna moves. This test method makes the most precise measurement of antenna gain patterns possible.

Northrop Grumman requests this amount of spectrum to measure the greatest range of antennas possible with minimal cost to its customers and lead time. Antenna pattern measurements requiring higher radiated power levels will continue to operate under separate authorizations.