From: Fred Berrong

To: Doug Young
Date: August 18, 2009

Subject: Request for Info - File #0298-EX-PL-2009

Message:

On behalf of Northrop Grumman Systems Corporation, we have filed a revised Exhibit 1 that addresses each of the bulleted items of Section 8.3.28 of the NTIA Manual. This information is repeated immediately below. Thanks very much for your consideration.

Northrop Grumman Systems Corporation (?NGSC?) hereby requests authorization to operate a fixed experimental radio station facility, as detailed below and in the attached Form 442 application, beginning on September 1, 2009. Under the Air Force Global Hawk and Naval Unmanned Combat Vehicle (?N-UCV?) programs (pursuant to contract numbers FA8620-07-C-4015 and N00019-07-C-0055, respectively) NGSC is developing systems in an indoor, shielded area for the Department of Defense to conduct pre-flight testing of avionics on unmanned combat air vehicles. The authorization requested herein is necessary to allow NGSC to test the Global Hawk and N-UCV systems?s GPS receiver and external antenna within a shielded area within NGSC?s facilities located at Air Force Plant 42 in Palmdale (Los Angeles County), California (NAD83: NL 36-39-08.75; WL 118-00-49.57).

The fixed experimental radio station facilities utilize a GPS Networking Model L1L2 HNRRKIT repeater kit, comprised of a roof receiver antenna located on the exterior of the building that is cabled to a transmit antenna mounted inside a shielded area within the building, which re-radiates the GPS signal. The area of potential interference to GPS reception is within NGSC?s control, and GPS users in that area will be notified that GPS information may be impacted for periods of time. The repeater kit re-radiates GPS frequencies L1 at 1575.42 MHz and L2 at 1227.60 MHz, with an emission designator of 24M0G1D and a power of -84.1 dBm and -84.4 dBm EIRP, respectively. Please refer to the table below for the link budget analysis to compute the EIRP at a 100 foot distance from the radiating element.

	L1	L2
Received Power on Earth	-136.2dBm	-136.2dBm
Receive Antenna Gain	38.0dBic	38.0dBic
Losses in 10 ft./LMR-400	-4.9dB	-5.2dB
Connector Losses	-1.0dB	-1.0dB
Amplifier Gain	20.0dB	20.0dB

Power to Re-rad Antenna
-84.1dBm
-84.4dBm

Gain of Re-rad antenna
3.0dBm
3.0dBm

Re-rad eirp
-81.1dBic
-81.4dBic

Free Space loss at 100 ft.
-63.9dBm
-63.9dBm

RF Power Level at 100 ft.
-145.0dBm
-148.3dBm

The repeater kit is to be used exclusively as Experimental RNSS Test Equipment for the purpose of testing GPS receivers. If this application for frequency assignment is approved, it will be entered in the GMF. NGSC has requested a one year assignment, with possible renewal. The stop buzzer contact to terminate operations for the program is Mr. Fred Berrong, (661) 272-7033.