

January 12, 2011

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, DC 20554



Re: Request for Special Temporary Authority for Waiver of Section 25.283(c) for the De-Orbit of Intelsat 2, Call Sign S2459

Dear Ms. Dortch:

PanAmSat Licensee Corp. (“PanAmSat”), pursuant to Section 25.210 of the rules of the Federal Communications Commission (“FCC” or “Commission”),<sup>1</sup> herein requests Special Temporary Authority (“STA”) for 30 days—from January 12, 2011 through February 10, 2011—for a waiver of Section 25.283(c) of the Commission’s rules to the extent the rule requires PanAmSat to discharge all propellant remaining in the Intelsat 2 satellite (Call Sign S2459) upon de-orbiting.<sup>2</sup>

Intelsat 2 is a Boeing 601 model spacecraft, which has a liquid propulsion system that includes two helium pressurant tanks and two pairs of fuel and oxidizer tanks. The fuel and oxidizer tanks will be vented in the end-of-life shutdown procedure, but there is no mechanism for venting the helium tanks. Instead, the helium tanks were sealed by firing pyrotechnic valves shortly after launch in 1994. The helium tanks have an enclosed volume of 42.53 and 42.51 liters. PanAmSat estimates that the mass and pressure of residual helium in each tank will not exceed 129 grams and 262 psi, respectively, upon completion of de-orbit.

The Commission previously approved end-of-life maneuvers for the Intelsat 2 spacecraft in File No. SAT-MOD-20080811-00153. However, that de-orbit authority did not include a waiver of Section 25.283(c).<sup>3</sup> All other aspects of the authority granted for the de-orbit of Intelsat 2 remain accurate.

<sup>1</sup> Intelsat has filed this STA request, an FCC Form 159 and a filing fee electronically via the International Bureau’s Filing System.

<sup>2</sup> 47 C.F.R. § 25.283(c) (“ . . . a space station licensee shall ensure, unless prevented by technical failures beyond its control, that all stored energy sources on board the satellite are discharge by venting excess propellant, discharging batteries, relieving pressure vessels, and other appropriate measures.”).

<sup>3</sup> On October 1, 2010, the Satellite Industry Association sought a blanket waiver of Section 25.283(c) for certain satellites, including Intelsat 2. Pleading Cycle Established for Comment on Satellite Industry Association’s Blanket Waiver Request Concerning Relieving Satellite Pressure Vessels, IB Docket No. 02-54, DA 10-2291 (Dec. 14, 2010) (Public Notice).

Grant of this STA is in the public interest. Under Section 1.3 of the Commission's rules, the Commission has authority to waive its rules "for good cause shown."<sup>4</sup> Good cause exists if "special circumstances warrant a deviation from the general rule and such deviation will serve the public interest" better than adherence to the general rule.<sup>5</sup> In determining whether waiver is appropriate, the Commission should "take into account considerations of hardship, equity, or more effective implementation of overall policy."<sup>6</sup> As shown below, there is good cause for the requested waiver.

Waiver is appropriate in this case because grant would not undermine the purpose of these rules, which is to reduce the risk of accidental explosion and post de-orbit debris. PanAmSat will ensure that all active units on the Intelsat 2 satellite are turned off and that all propellant tanks are depleted. In addition, the satellite's manufacturer, Boeing, has designed the Intelsat 2 spacecraft so that risk of accidental explosion causing additional orbital debris is minimal. First, the risk of accidental explosions is minimized because the pressures will be very low at end of life of the satellite, especially after the spacecraft is powered down and the temperature in the tanks drops. Additionally, Boeing has designed the tanks so that they leak before they burst. If a leak were to occur, there would not be sufficient energy in the gas stream to damage structurally the spacecraft and generate debris. Moreover, a leak would not significantly perturb the satellite's orbit because the expulsion of the pressurant gas would cause the spacecraft to tumble and the change in the spacecraft's velocity (i.e., the thrust) would be randomly distributed, with the resulting impact on the satellite orbit's apogee and perigee being very small.

Grant of the waiver is also supported on hardship grounds. Intelsat 2 is an in-orbit spacecraft. As such, a design change cannot be accomplished at this time. Avoiding such hardship is particularly appropriate where, as here, the licensee acted in good faith. Specifically, the Intelsat 2 satellite was licensed, launched, and operational prior to adoption of the rule requiring discharge of

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<sup>4</sup> 47 C.F.R. § 1.3; *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969).

<sup>5</sup> *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990).

<sup>6</sup> *WAIT Radio*, 418 F.2d at 1159.

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remaining fuel at end-of-life.<sup>7</sup> Under these circumstances, good cause exists to waive Section 25.283(c).<sup>8</sup>

For the reasons set forth herein, Intelsat respectfully requests that the Commission expeditiously grant this request for special temporary authority for a waiver of Section 25.283(c) of the rules for the de-orbit of the Intelsat 2 satellite.

Sincerely,

*/s/ Susan H. Crandall*

Susan H. Crandall  
Assistant General Counsel  
Intelsat Corporation

cc: Karl Kensinger  
Stephen Duall

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<sup>7</sup> The Commission's orbital debris mitigation rule requiring discharge of all propellant, Section 25.283(c), was adopted in an order released June 21, 2004 that became effective October 12, 2004. *Mitigation of Orbital Debris*, Second Report and Order, 19 FCC Rcd 11567 (2004); *Mitigation of Orbital Debris*, 69 Fed. Reg. 54581-54589 (Sept. 9, 2004).

<sup>8</sup> See *PanAmSat Licensee Corp. Amendment to Application for Modification of Authority to Launch and Operate*, SAT-AMD-20070716-00102 (filed July 16, 2007) (stamp grant with conditions Oct. 4, 2007).