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Federal Communications Commission  
Washington, DC 20554

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Federal Communications Commission  
Office of the Secretary

In the Matter of

Establishment of Rules and Policies for the  
Digital Audio Radio Satellite Service in the  
2310-2360 MHz Frequency Band

Amendment of Part 27 of the  
Commission's Rules to Govern the  
Operation of Wireless Communications  
Services in the 2.3 GHz Band

To: The Commission

IB Docket No. 95-91  
GEN Docket No. 90-357  
RM No. 8610

WTB Docket No. 06-\_\_\_  
RM No. \_\_\_\_\_

**PETITION FOR RULEMAKING, AND COMMENTS**

Sirius Satellite Radio Inc. ("Sirius"), by its attorneys, hereby submits a proposal for final rules to govern the operation of terrestrial repeaters in the satellite Digital Audio Radio Service ("DARS") and Wireless Communications Service ("WCS") transmitters in the 2.3 GHz band. As the Commission is aware, nine years after auction and licensing and five years into commercial DARS offerings, satellite DARS rules are incomplete—the 1997 *Notice of Proposed Rulemaking* on satellite radio repeaters remains stillborn.<sup>1</sup> Over the same period, licensees in the neighboring WCS band have only sparsely deployed, citing uncertainty about Part 25 rules.

<sup>1</sup> *Establishment of Rules and Policies for the Digital Audio Radio Service in the 2310-2360 MHz Band, Report and Order, Memorandum Opinion and Order, and Further Notice of Proposed Rulemaking, 12 FCC Rcd 5754 (1997) ("1997 FNPRM").*

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In an attempt to focus the process, Sirius has drafted suggested rules for both satellite DARS and WCS in coordination with XM Radio, Inc., the other satellite DARS licensee. The bedrock of the proposal, attached as Appendix A and B, is equal and mutual obligations upon both services. For example, the draft would impose essentially parallel emission limits, based on empirical data. Where mutuality is impractical, the rules provide sufficient flexibility to accommodate the networks and services contemplated in each allocation. Conceding the claim of WCS licensees, the proposal treats DARS and WCS together, making the text and timing of Part 25 and Part 27 revisions inseparable.

Sirius' recommendations represent a fair and comprehensive effort, employing appropriate give-and-take, to resolve the current stalemate. Therefore, Sirius requests that the Commission consider and modify the Part 25 (satellite) and Part 27 (WCS) rules concurrently. In particular, Sirius requests that the Commission seek comment on the proposed Part 25 rules in Dockets 95-91 and 90-357, thus providing interested parties with the opportunity to refresh the record. At the same time, Sirius suggests the FCC launch a Part 27 *Notice of Proposed Rulemaking* based on the attached draft, seeking public comment tied to, and to be concluded simultaneously with, the Part 25 repeater docket.

**I. Adoption of Final Rules for Satellite DARS Terrestrial Repeaters and WCS Transmitters is Clearly in the Public Interest**

A resolution to this nine-year rulemaking is imperative for both satellite DARS and WCS licensees. From the beginning, it was understood that satellite DARS required complementary terrestrial repeaters to fill shortfalls in service availability resulting from

satellite signal blockage and multipath interference.<sup>2</sup> It was also understood that WCS operations carved out of the adjacent band required stringent technical limitations<sup>3</sup> to protect satellite DARS,<sup>4</sup> even should the resulting Part 27 technical standards narrow the range of possible WCS offerings. For example, the FCC warned that mobile operations in the band could be “technologically infeasible,”<sup>5</sup> and alerted potential WCS auction bidders that “wide area, full mobility systems and services” already offered or contemplated in other spectrum were “likely to be of questionable feasibility.”<sup>6</sup>

Pending the adoption of final repeater rules, satellite DARS repeaters today operate under grants of special temporary authority (“STA”).<sup>7</sup> Five years ago, no party could have anticipated this continuing impasse or that seamless and high-quality DARS service to millions still depends on STA.<sup>8</sup> Both satellite DARS and WCS licensees

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<sup>2</sup> *Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band*, Notice of Proposed Rulemaking, 11 FCC Rcd 1, 18 (¶ 55) (1995) (“1995 NPRM”); see also ITU Table of Frequency Allocations n. 5.393 (allocating the 2310-2360 MHz band for the broadcasting-satellite service (sound) and “complementary terrestrial sound broadcasting service”); 47 C.F.R. § 2.106 note US327 (same in U.S. Table of Frequency Allocations).

<sup>3</sup> *See Amendment of the Commission’s Rules To Establish Part 27, the Wireless Communications Service (“WCS”)*, Memorandum Opinion and Order, 12 FCC Rcd 3977, 3992 (¶ 27) (1997) (“WCS Reconsideration Order”) (“We also recognize that the 2320-2345 MHz frequency band is the only spectrum specifically available for provision of Satellite DARS in the United States. Accordingly, if Satellite DARS in this spectrum is subject to excessive interference, the service will not be successful and the American public will not benefit from the service.”); see also 47 C.F.R. § 27.64.

<sup>4</sup> *WCS Reconsideration Order*, 12 FCC Rcd at 3978 (¶ 3) (noting need to “protect prospective satellite DARS licensees from interference from WCS operations”).

<sup>5</sup> *Id.*

<sup>6</sup> *Id.*, 12 FCC Rcd at 3979 (¶ 5).

<sup>7</sup> *See, e.g., Application of Sirius Satellite Radio for Special Temporary Authority to Operate Satellite DARS Complementary Terrestrial Repeaters*, Order and Authorization, 16 FCC Rcd 16,773 (2001) (“*Sirius STA*”).

<sup>8</sup> When granting the STA, the FCC said it was “preparing to conclude [the terrestrial repeater rulemaking] proceeding.” *Sirius STA*, 16 FCC Rcd at 16,774 (¶ 2). The Commission last called for further comments in the Part 25 proceeding in November 2001. *Request for Further Comment on Selected Issues*

sincerely seek an end to any uncertainty; indeed, the WCS trade association argues WCS networks cannot deploy “[u]nless and until SDARS rules are promulgated.”<sup>9</sup> Adoption of the rules proposed by Sirius thus will promote both the continuity of robust satellite DARS offerings and the deployment of networks and services in the 2.3 GHz WCS spectrum.

## **II. The FCC Should Apply an Emission Limit of -44 dBm (100 dB $\mu$ V/m) to All New Satellite DARS Repeaters and WCS Transmitters**

The draft rules in Appendices A and B elaborate upon and refine the “principles” that Sirius proposed in its August 11, 2006 meeting with staff of the Wireless Telecommunications Bureau, International Bureau, and the Office of Engineering and Technology.<sup>10</sup> The heart of the proposal is a ground-level emission limit of -44 dBm (100 dB $\mu$ V/m) applying equally to new satellite DARS repeaters as well as new WCS transmitters. This emission limit is derived from laboratory tests conducted by Sirius, the methodology and results of which are matters of record,<sup>11</sup> which were rooted in

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*Regarding the Authorization of Satellite Digital Audio Radio Service Terrestrial Repeater Networks*, Public Notice, 16 FCC Rcd. 19,435 (2001). After five years, the wisdom of the FCC’s statement that “it would be burdensome for both the Commission and the licensees if licensees were to seek separate authorization for each terrestrial repeater” has been proved. *1997 FNPRM*, 12 FCC Rcd at 5812 (¶ 142).

<sup>9</sup> WCS License Subsidiary, LLC Request for Waiver of the Section 27.714(a) Build-Out Requirements, WT Docket No. 06-102, at 5 (filed May 12, 2006). *See also* WCS Coalition Consolidated Request for Limited Extension of Deadline for Establishing WCS Compliance with Section 27.14 Substantial Service Requirement, WT Docket No. 06-102, at 3 (filed Mar. 22, 2006) (“the WCS Coalition agrees that the Commission should consider all of the issues surrounding interference between and among WCS and DARS licensees (including appropriate power levels and spectral masks for both services) on a consolidated basis. The WCS Coalition is prepared to work towards the earliest possible resolution of those issues, and believes that if all parties show good faith, a resolution this year is possible.”).

<sup>10</sup> *See* “Proposed Principles for SDARS and WCS,” attachment to *ex parte* letter from Carl R. Frank, Counsel to Sirius, to Marlene H. Dortch, Secretary, FCC, IB Docket No. 95-91 (filed Aug. 14, 2006).

<sup>11</sup> *See* White Paper, “Interference to the SDARS Service from WCS Transmitters” (Mar. 28, 2006), submitted as attachment to *ex parte* letter from Carl R. Frank, Counsel to Sirius, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 05-256, WT Docket No. 03-264, and IB Docket No. 95-91 (Mar. 29, 2006) (“SDARS-WCS White Paper”).

recognition that satellite DARS networks are designed to deliver two time, frequency and path-diverse downlinks to consumer receivers at any given time. Sirius therefore sought to quantify the received interference level that blocks one signal and allows marginal reception of the other satellite signal at the bare minimum necessary to continue satellite DARS service to the user. Sirius' tests demonstrated that received signal levels of approximately -43 dBm from a WCS C-block transmitter would interfere with and prevent a Sirius subscriber from receiving signal from either of the two satellites,<sup>12</sup> with similar results for XM receivers and WCS -D-block emissions.<sup>13</sup> In addition, Sirius found that a received interference level of -40.4 dBm from a WCS D-block base station collocated with an XM terrestrial repeater would block both satellite transmissions to Sirius subscribers. Based on these results, Sirius concluded that where the level of interference exceeded -44 dBm, both satellite channels likely would be blocked, preventing satellite service to satellite DARS subscribers.

In order to achieve the certainty of final rules, Sirius is willing to accept a level of interference that could significantly compromise the time, frequency and spatial diversity upon which Sirius relies to provide robust service to the public. Networks in the 2.3 GHz band operating as envisioned by the *WCS Report and Order*<sup>14</sup> and *WCS Reconsideration Order* can be designed and deployed to operate under the same interference environment. Sirius thus recommends that the -44 dBm emission limit *be applicable to both satellite DARS and WCS*, placing a mutual burden on satellite DARS and WCS licensees and

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<sup>12</sup> *Id.* at 13-14.

<sup>13</sup> *Id.* at 14.

<sup>14</sup> *Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service ("WCS")*, Report and Order, 12 FCC Rcd 10785 (1997) ("*WCS Report and Order*").

codified in both Parts 25 and 27. In order to preserve the service expectations of current subscribers, however, the rules permit grandfathering of existing terrestrial transmitters in both services.

Because they are based on a single criterion, the draft rules are simple to administer and maximize flexibility in system design, so long as licensees meet the single emission limit. For example, the rules permit collocation of satellite DARS terrestrial repeaters and WCS base stations, based on specific, workable, and mutually applicable definitions of “collocation” and acceptable “interference.” The proposed rules also require both satellite DARS and WCS licensees to provide advance notice of their proposed deployments and to make available predictive analyses, in accordance with pre-defined parameters, that show compliance with the limit.<sup>15</sup> Such notice will ensure all licensees have ample opportunity to investigate whether their operations will be affected by the new deployment and request adjustments, in advance, to avoid interference.

Finally, the proposal recognizes that despite the best efforts of both satellite DARS and WCS licensees, terrain, clutter and other factors will generate ground-level variations in the received power level of both satellite DARS repeaters and WCS base stations that will exceed -44 dBm in some locations. Therefore, the rules permit both satellite DARS and WCS licensees to designate, up to a specified number of square meters within a specified distance from each transmitter, areas in which a repeater or base station may generate greater average power levels, up to -32 dBm (112 dB $\mu$ V/m). In these “exclusion zones,” the affected satellite DARS or WCS licensee may have to deploy additional transmitter(s) to compensate for the increased interference.

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<sup>15</sup> In the case of WCS subscriber stations, the draft rules add the compliance showing to the equipment authorization process, consistent with the current regulations applicable to such stations.

### **III. Proposed Rules**

The text of the proposed rules is provided in Appendices A (Part 25) and B (Part 27).

#### **IV. Conclusion**

Sirius respectfully requests that the Commission use the proposed Part 25 rules as a basis to refresh the Docket 95-91 and 90-357 records<sup>16</sup> and seek an expeditious conclusion to the rulemaking. So that both satellite DARS and WCS obligations are considered and concluded in parallel, Sirius suggests the FCC concurrently launch a Part 27 rulemaking based on the attached proposal. These rules will provide a mutual solution that will benefit both satellite DARS and WCS licensees and ultimately the public. In view of the wait to date, the FCC should minimize any further delay.

Respectfully submitted,

By:

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October 17, 2006

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<sup>16</sup> The FCC recognizes that a Public Notice refreshing a stale record provides interested parties sufficient notice and opportunity to comment. See *OET Seeks Additional Comment on Petitions for Reconsideration for Unlicensed National Information Infrastructure Devices*, Public Notice, ET Docket No. 03-122, DA 06-927 (Apr. 26, 2006); *Further Comment Requested to Update and Refresh the Record on Computer III Requirements*, Public Notice, 16 FCC Rcd. 5363 (2001).

## CERTIFICATE OF SERVICE

I, Cheryl Hearn, do hereby certify that on October 17, 2006, I served a copy of Sirius' **Petition for Rulemaking** upon the following parties by U.S. first-class mail, postage pre-paid:

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## Appendix A

### **Proposed Amendments to Part 25 of the FCC Rules**

#### **Title 47 – Telecommunication Chapter I – Federal Communications Commission Part 25 – Satellite Communications**

##### **New Subsection 25.214(d):**

##### **d) Terrestrial Repeaters.**

(1) Blanket licensing. Satellite DARS licensees may construct and operate terrestrial repeaters consistent with the provisions of this sub-section without prior Commission approval. Such blanket license will not expire as long as the licensee maintains a valid space station authorization.

##### **(2) Technical standards.**

##### **A) Emission limits.**

i) Satellite DARS repeaters commencing commercial service after the effective date of this subsection shall not exceed an average power level of -44 dBm (100 dB $\mu$ V/m) measured at 2 meters above ground level at any distance beyond the radiation center height above ground level from the base of the repeater antenna.

ii) Exception: Within the area, as measured from the base of the repeater antenna, between (1) the radiation center height above ground level and (2) 5000 meters, each satellite DARS licensee may designate and identify up to 20,000 square meters, with no contiguous area greater than 8,000 square meters, where such repeater shall not exceed an average power level of -32 dBm (112 dB $\mu$ V/m) measured at 2 meters above ground level.

B) Predictive analysis. No later than 90 days prior to commencement of commercial service on any terrestrial repeater other than an Exempt repeater, a satellite DARS licensee must conduct a predictive analysis showing power levels that satisfy the respective emission requirements, by employing the following parameters:

i) An isotropic equivalent antenna at 2 meters AGL, recent clutter data with higher than 10 meter or better resolution, and minimum 10 meter resolution terrain data;

ii) Averaging the power over a 5 MHz bandwidth when the transmitter transmits full power in a continuous transmission mode;

iii) Using commercially available computer based planning tools mutually agreed to within 60 days of the effective date of this rule by all satellite DARS and 2.3 GHz WCS

licensees offering commercial "substantial service" at that time. The propagation model used shall be based on the CRC, TIREM or similar model used for broadcast systems network planning.

(Note: Examples of compliant tools are EDX SignalPro and dB Planner/Planet EV.)

(3) Collocation.

A) Duty to Mitigate. A satellite DARS licensee may collocate a terrestrial repeater with one or more satellite DARS repeaters licensed to an unrelated party or with a 2.3 GHz WCS base station only upon a showing that the collocation will not increase aggregate interference (i.e., from overload, intermodulation and out-of-band emissions) above interference levels from a single site radiating an average power level of -44 dBm. Mitigation is the responsibility of the licensee adding an antenna.

B) Definition. For the purpose of this rule, a satellite DARS repeater shall be considered to be collocated with another satellite DARS repeater licensed to an unrelated party or a 2.3 GHz WCS base station if the two satellite DARS repeaters, or the satellite DARS repeater and the 2.3 GHz WCS base station, as applicable, are located within 50 meters of each other.

(4) Exempt repeaters. Subsections (d)(2) and (d)(3) of this rule shall not apply to:

A) Grandfathered repeaters. Repeater placed into commercial service prior to the effective date of this subsection; or

B) Substitute repeaters. For the purposes of this subsection, a Substitute repeater is a satellite DARS repeater that is intended to replace a Grandfathered repeater, the site for which has become physically unusable or economically impractical, and:

i) is within 3 km of the Grandfathered repeater it replaces;

ii) does not increase the size of the area within the -44 dBm contour of the Grandfathered repeater it replaces; and

iii) does not extend the -44 dBm contour of the Grandfathered repeater it replaces more than 3 km in any direction.

C) Very low power repeaters. Repeaters with an EIRP of 10 watts or less measured by averaging the power over a 5 MHz bandwidth with the transmitter operating at full power in a continuous transmission mode.

(5) Other limitations.

A) Authorized services. Satellite DARS repeaters may transmit only information also transmitted by a licensee's DARS space station.

B) Border coordination. Satellite DARS repeaters must conform to the terms of the U.S.-Mexico Agreement on the Use of the 2310-2360 MHz Band dated July 24th, 2000, or any successor.

C) Out-Of-Band Limits. Satellite DARS repeater emissions shall be reduced by a factor not less than  $75 + 10 \log(p)$  dB measured in Watts in a 1 MHz bandwidth outside 2320 and 2345 MHz.

(6) Notice and record keeping. Except with respect to those repeaters operating pursuant to (d)(4)(C), satellite DARS licensees must:

A) Maintain and make available on a secure Internet web site, providing password access to all 2.3 GHz WCS and satellite DARS licensees:

i) A list of all operating terrestrial repeaters specifying, for each terrestrial site, location (lat/long), height AGL, number of transmitting sectors, EIRP per sector, azimuth per sector, polarization and down tilt;

ii) The telephone number and email address of an emergency contact authorized to investigate and complaints of harmful interference;

iii) No later than 90 days before any transmitter begins commercial operations, the results and methodology of the analysis required by subsection (d)(2)(B) for non-Exempt repeaters placed into commercial operation.

iv) Radiation patterns for all transmit antenna types deployed along with manufacturer name and model number.

B) Report annually the information required by § 25.144(c)(4).

**New Subsection 25.144(c)(4):**

(4) A listing of operating Satellite DARS terrestrial repeaters including the information specified in § 25.214(d)(6)(A)(i).

## Appendix B

### Proposed Amendments to Part 27 of the FCC Rules

#### **Title 47 – Telecommunication**

#### **Chapter I – Federal Communications Commission**

#### **Part 27 – Miscellaneous Wireless Communications Services**

#### **Revised Subsection 27.4: Definitions. [Add the following:]**

*2.3 GHz WCS base station.* A fixed station in the 2.3 GHz WCS service that is not a 2.3 GHz WCS subscriber station, but provides one-way or two-way communication with 2.3 GHz WCS subscriber stations.

*2.3 GHz WCS subscriber station.* A fixed station in the 2.3 GHz WCS service located at subscriber premises, or a mobile station in the 2.3 GHz WCS service.

#### **New Subsection 27.50(a): Power and antenna height limits (replacing (a)(1) and (a)(2)):**

a) The following power limits apply to the 2305-2320 MHz and 2345-2360 MHz bands:

1) Emission limits.

A) Base Stations: 2.3 GHz WCS base stations commencing commercial service after the effective date of this subsection shall not exceed an average power level -44 dBm (100 dB $\mu$ V/m) measured at 2 meters above ground level at any distance beyond the radiation center height above ground level from the base of the 2.3 GHz WCS base station antenna.

B) Exception for base stations: Within the area, as measured from the base of the 2.3 GHz WCS base station, between (i) the radiation center height above ground level and (ii) 5000 meters, each WCS licensee may designate and identify up to 20,000 square meters, with no contiguous area greater than 8,000 square meters, where such base station shall not exceed an average power level of -32 dBm (112 dB $\mu$ V/m) measured at 2 meters above ground level.

C) Subscriber stations: 2.3 GHz WCS subscriber stations commencing commercial service after the effective date of this subsection shall not exceed an average power level of -44 dBm (100 dB $\mu$ V/m) at a distance more than one meter from the subscriber station antenna.

2) Collocation.

A) Duty to Mitigate. A 2.3 GHz WCS service licensee may collocate a 2.3 GHz WCS base station transmitter with one or more satellite DARS repeaters or with another 2.3 GHz WCS base station only upon a showing that collocation will not increase the aggregate interference (i.e., from overload, intermodulation and out-of-band emissions) above interference levels from a

single site radiating an average power level of -44 dBm. Mitigation is the responsibility of the licensee adding an antenna.

B) Exception. A WCS-C or a WCS-D block 2.3 GHz base station may only collocate with satellite DARS repeaters, subject to the mitigation restrictions in subsection (a)(2)(A).

C) Definition. For the purpose of this rule, 2.3 GHz WCS base stations shall be considered to be collocated with a satellite DARS repeater or a 2.3 GHz WCS base station if the 2.3 GHz WCS base station and the satellite DARS repeater, or the two 2.3 GHz WCS base stations, as applicable, are located within 50 meters of each other.

3) Exempt 2.3 GHz WCS base stations. Subsections (a)(1), (a)(2), and (j) of this rule shall not apply to:

A) Grandfathered 2.3 GHz WCS base stations. 2.3 GHz WCS base stations placed into commercial service prior to the effective date of this subsection; or

B) Substitute 2.3 GHz WCS base stations. For the purposes of this subsection, a Substitute 2.3 GHz WCS base station is a 2.3 GHz WCS base station that is intended to replace a Grandfathered 2.3 GHz WCS base station, the site for which has become physically unusable or economically impractical, and:

i) is within 3 km of the Grandfathered 2.3 GHz WCS base station it replaces;

ii) does not increase the size of the area within the -44 dBm contour of the Grandfathered 2.3 GHz WCS base station it replaces; and

iii) does not extend the -44 dBm contour of the Grandfathered 2.3 GHz WCS base station it replaces more than 3 km in any direction.

C) Very low power 2.3 GHz WCS base stations. 2.3 GHz WCS base stations with an EIRP of 10 watts or less measured by averaging the power over a 5 MHz bandwidth with the transmitter operating at full power in a continuous transmission mode.

#### **New Subsection 27.50(j)**

j) Predictive analysis. No later than 90 days prior to commencement of commercial service on any 2.3 GHz WCS base station transmitter, other than an Exempt 2.3 GHz WCS base station as defined in subsection (a)(3), a 2.3 GHz WCS licensee must conduct a predictive analysis showing power levels that satisfy the respective emission requirements, by employing the following parameters:

1) An isotropic equivalent receive antenna at 2 meters AGL, recent clutter data utilizing 10 meter or better resolution, and minimum 10 meter resolution terrain data;

2) Averaging the power over a 5 MHz bandwidth when the transmitter transmits full power in a continuous transmission mode;

3) Using commercially available computer based planning tools mutually agreed within 60 days of the effective date of this rule by all satellite DARS and 2.3 GHz WCS licensees offering commercial "substantial service" at that time. The propagation model used shall be based on the CRC, TIREM, or similar model used for broadcast system network planning.

(Note: Examples of compliant tools are EDX SignalPro and dB Planner/Planet EV.)

#### **New Subsection 27.50(k): Filter Requirement**

k) Filter. In assessing 2.3 GHz WCS licensees' claims of harmful interference from Part 25 or Part 27 licensees, measurements and calculations shall assume 2.3 GHz WCS receivers (base station and subscriber stations) include a front-end band-pass filter attenuating out-of-band emissions by 16 dB.

#### **New Subsection 27.50(l): Notice and Recordkeeping**

(l) Except with respect to Exempt 2.3 GHz WCS base stations as defined in Section (a)(3), WCS licensees must maintain and make available on a secure Internet web site, providing password access to all 2.3 GHz WCS and satellite DARS licensees:

1) A list of all operating 2.3 GHz WCS base station transmitters specifying, for each terrestrial site, location (lat/long), height AGL, number of transmitting sectors, EIRP per sector, azimuth per sector, polarization and down tilt;

2) A list of all model numbers of WCS subscriber stations specifying transmitter power and antenna gain;

3) The telephone number and email address of an emergency contact authorized to investigate and complaints of harmful interference;

4) No later than 90 days before any transmitter begins commercial operations, the methodology and results of the analysis required by subsection (j) for transmitters placed into commercial operation, except for Exempt 2.3 GHz WCS base stations; and

5) Radiation patterns for all transmit antenna types deployed along with manufacturer name and model number.

### **New Subsection 27.51(c): Equipment Authorization (2.3 GHz WCS Subscriber Stations)**

(c) Applications for equipment authorizations for 2.3 GHz WCS subscriber stations must demonstrate power levels that comply with the requirements of Section 27.50(a)(1)(B) by employing the parameters in Section 27.50(j)(1) through (j)(3).

### **Revised Subsection 27.53(a): Emission limits**

(a) For operations in the bands 2305-2320 MHz and 2345-2360 MHz, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by the following amounts:

(1) *For fixed land stations:* By a factor not less than  $75 + 10 \log (p)$  dB on all frequencies between 2320 and 2345 MHz;

(2) *For mobile and radiolocation land stations:* By a factor not less than  $110 + 10 \log (p)$  dB on all frequencies between 2320 and 2345 MHz;

(3) *For fixed, land, mobile, radiolocation land and radiolocation mobile stations:* By a factor not less than  $70 + 10 \log (p)$  dB on all frequencies below 2300 MHz and on all frequencies above 2370 MHz; and not less than  $43 + 10 \log (p)$  dB on all frequencies between 2300 and 2320 MHz and on all frequencies between 2345 and 2370 MHz that are outside the licensed bands of operation.

All additional subsections renumbered.

### **Section 27.57: International Coordination**

(a) WCS operations in the border areas shall be subject to coordination with those countries and provide protection to non-U.S. operations in the 2305-2320 and 2345-2360 MHz bands as appropriate.

(b) Border coordination. 2.3 GHz WCS operations must conform to the terms of the U.S.-Mexico Agreement on the Use of the 2310-2360 MHz Band, dated July 24th, 2000, or any successor.

All additional subsections renumbered.