

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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

IB Docket No. 95-91
RM No. 8610
GEN Docket No. 90-357
DA No. 01-2570

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Reply Comments of Sirius Satellite Radio Inc.

Sirius Satellite Radio Inc. ("Sirius") herein responds to the comments filed December 14, 2001 on proposed rules for satellite Digital Audio Radio Service ("satellite DARS") terrestrial repeater networks. In its initial comments, Sirius demonstrated that the rules proposed in the *Public Notice*¹ were too complex and unduly burdensome. The other comments filed in this proceeding further prove that adoption of many aspects of those rules would thwart, without justification, flexibility for the satellite DARS licensees to deploy repeaters needed to ensure high quality service.

The WCS Coalition members are admittedly "still in the design phase of their networks and are not likely to have significant deployment within the 18-month compensation period" proposed by the November 1, 2001 *Public Notice*.² The WCS Coalition members—licensed

¹ *Satellite Policy Branch Information*, Public Notice, Rep. No. SPB-176, IB Docket No. 95-91, DA 01-2570, GEN Docket No. 90-357 (Nov. 1, 2001) ("*Public Notice*").

² *Comments of the WCS Coalition* at 14 (filed Dec. 14, 2001) ("*WCS Coalition Comments*"); *Public Notice* at 6. The WCS Coalition agrees with Sirius that the Commission's proposed liability zone takes into account the directivity of sectorized satellite DARS terrestrial repeaters. See *WCS Coalition Comments* at 9; *Comments of Sirius Satellite Radio Inc.* at 14 n.36 (filed Dec. 14, 2001) ("*Sirius Comments*").

within months of Sirius and XM³—*have no idea* which services or equipment they will offer, have made minimal investments in network development, and have few actual customers.⁴ In contrast, Sirius has had a business in mind from its outset, and has built and launched three satellites years in advance of the “milestone” dates set by its license. It has also developed the complete infrastructure (*e.g.*, uplink facilities), established programming and built a number of studios. There is no justification for protecting the WCS Coalition when most of its members’ businesses are dormant.⁵ Rather, the Federal Communications Commission (“Commission” or “FCC”) should eliminate most of the proposals in the *Public Notice* and adopt a simpler less intrusive approach that preserves only the portions of pages 7 and 8 that provide a logical and fair approach to resolution of the equities and actual business interests affected. Accordingly, the Commission should adopt—only and immediately—the post-18 month power cap proposed in the *Public Notice* (with the slight modifications proposed in Sirius’ Comments).

I. THE COMMISSION IS NOT REQUIRED TO REGULATE IDENTICALLY SATELLITE DARS AND WCS

The WCS Coalition asks the FCC to regulate identically satellite DARS and WCS (*e.g.*, a 2 kW power limitation).⁶ The WCS Coalition’s request is premised on the assumption that

³ Sirius and XM secured their spectrum rights at auction prior to the WCS licensees. *See FCC Announces Auction Winners for Digital Audio Radio Service*, 12 FCC Rcd 18727, 18727 (1997) (Public Notice) (noting that the satellite DARS auction ended on April 2, 1997); *WCS Auction Closes Winning Bidders in the Auction of 128 Wireless Communications Service Licensees*, 12 FCC Rcd 21653, 21653 (1997) (noting that the WCS auction ended on April 25, 1997).

⁴ In fact, the last time a “WCS coalition” came before the Commission, it asked the agency to license WCS Spectrum for satellite DARS, which suggests just how unfocused is the WCS “industry”. *Application of WCS Radio, Inc. for Authorization to Construct, Launch and Operate Two Communications Satellites In the Digital Audio Radio Service*, SAT-LOA-19981113-00085/86 (filed Nov. 13, 1998) (“WCSR Application”).

⁵ *See generally Public Notice* at 7-8; *Sirius Comments* at 11-13.

⁶ Elsewhere the WCS Coalition ignores its self-proclaimed desire for equal treatment and seeks compensation even within the 2 kW inner portion of a 40 kW repeater. *WCS Coalition*

satellite DARS is similar to WCS and the Commission is legally obligated to treat satellite DARS terrestrial repeaters the same as WCS base stations. This premise is erroneous for several reasons.

First, the WCS service was created by the FCC in a manner to protect satellite DARS, not the reverse.⁷ The Commission established WCS as a service that must accept interference from satellite DARS, noting that the Commission “must ensure that WCS operations do not cause harmful interference or disturbance to adjacent satellites DARS reception.”⁸ Second, the service offerings and customer expectations differ. Satellite DARS is a mass-market entertainment service, for which the public demands high reliability. As with all such radio services, transmit power higher than 2 kW EIRP is the best way to provide quality service to consumers.⁹ Even the WCS licensees concede that Sirius’ service deploys the “single frequency repeater architecture” commonly employed by similar widely-distributed high quality radio services.¹⁰ In contrast, the WCS licensee spectrum might be used—at some future time—for fixed wireless high-speed

Comments at 13. This argument lacks technical merit—a receiver either experiences blanketing interference or it does not, it is not a matter of degree. The only basis offered for the alleged “tremendous qualitative difference” in blanketing interference is the unsubstantiated argument that the “strategies that allow operation in the [2 kW] case”—which “strategies” the WCS Coalition is careful not to elaborate on—“are patently insufficient in the [40 kW] case.” *WCS Coalition Comments* at 13. The WCS Coalition relies on hyperbole (hurricane vs. light rain) to conclude that the proposed safe harbor would essentially be a “dead zone” for WCS operators in the presence of a 40 kW repeater. This conclusion is long on imagery and devoid of substance.

⁷ Given the “step-child” nature of WCS, Sirius agrees with the WCS Coalition that the *Public Notice’s* compensation scheme has no logic or rationale, but for a different reason, *i.e.*, because it is overly protective of WCS. *WCS Coalition Comments* at ii (expressing the view that the Bureau’s proposals are “ineffectual, arbitrary and capricious.”).

⁸ *Amendment of the Commission’s Rules to Establish Part 27, the Wireless Communications Service (“WCS”),* 12 FCC Rcd 10785, 10787, 10854-855 (1997) (Report and Order) (holding that limits must be established in order to protect satellite DARS licensees even though it may make mobile operations in the WCS spectrum “technologically infeasible”).

⁹ *Comments of Sirius Satellite Radio Inc.* at 5 (filed Dec. 14, 2001) (“*Sirius Comments*”).

¹⁰ *WCS Coalition Comments* at 16.

Internet access and other commercial mobile radio services.¹¹ Third, because WCS always was required to yield to adjacent-spectrum satellite DARS, the WCS licensees acquired their spectrum at a significantly lower auction price.¹² In sum, because the satellite DARS and WCS licensees are not similarly-situated, the Commission is not required to impose the “regulatory parity” requested by the WCS licensees.¹³

II. SIRIUS AND XM HAVE NOT AND WILL NOT BENEFIT IMPROPERLY FROM THEIR EXPERIMENTAL AUTHORIZATIONS

The WCS Coalition insists that the satellite DARS licensees constructed their terrestrial repeater networks in order to leverage their experimental licenses into permanent grants of authority.¹⁴ However, the facts belie these claims. The DARS licensees have consistently followed the Commission’s Rules and have met all milestones well ahead of schedule. In order to achieve this—and with the reasonable expectation that the Commission would adopt final terrestrial repeaters rules shortly after the 1997 satellite DARS service rules—Sirius and XM developed and built “at their own risk” complementary terrestrial repeater networks, which are expressly contemplated by the FCC’s definition of satellite DARS.¹⁵ It would be ironic for the WCS Coalition to maintain that the satellite DARS licensees leveraged their experimental

¹¹ At present, some Internet queries and mobile phone calls occasionally are lost and must be re-initiated.

¹² *Sirius Comments* at 3 n.9.

¹³ The Commission does not treat dissimilarly situated parties alike. *See Melody Music, Inc. v. FCC*, 345 F.2d 730, 732-33 (D.C. Cir. 1965); *License Renewal Applications of Certain Broadcast Stations Licensed to Communities in Maryland, Virginia, West Virginia, and the District of Columbia*, 9 FCC Rcd 2143, 2145-46 (1994) (Memorandum Opinion and Order) (holding that *Melody Music* does not require dissimilar companies to be treated equally), *aff’d*, *Achernar Broadcasting Co. v. FCC*, 62 F.3d 1441 (D.C. Cir. 1995).

¹⁴ *WCS Coalition Comments*, ii and 11.

¹⁵ 47 C.F.R. § 25.201 (2001) (defining satellite DARS as “[a] radiocommunication service . . . which may involve complementary repeating terrestrial transmitters, telemetry, tracking and control facilities.”).

authorizations while at the same time arguing that the STAs obtained by the satellite DARS licensees this fall set a ceiling on the numbers, locations, and parameters of terrestrial repeaters that Sirius and XM may deploy.¹⁶ In such circumstances, it would be the WCS Coalition—and not the DARS licensees—that would benefit improperly from the STAs that Sirius and XM obtained.

III. THE INDIVIDUAL LICENSING AND “SUNSET” SUGGESTED BY THE WCS COALITION WOULD HARM THE PUBLIC INTEREST

The WCS Coalition asks the Commission to erect two unnecessary procedural barriers to the provision of satellite DARS to consumers: (1) individual licensing of repeaters above 2 kW;¹⁷ and (2) a “sunset” on repeater operation above 2 kW.¹⁸ Blanket licensing of terrestrial repeaters is preferable to individual licensing for a variety of reasons.¹⁹ As the Commission recognized in 1997, blanket licensing will not pose an undue burden on agency staff and the satellite DARS licensees.²⁰ Blanket licensing is also the norm for multiple technically similar earth stations used

¹⁶ *WCS Coalition Comments* at 19 (proposing a rule that limits deployment of high power repeaters to “those repeaters previously identified by XM and Sirius in their applications for special temporary authorization” and coordinated with WCS licensees.).

¹⁷ *WCS Coalition Comments* at 17.

¹⁸ *WCS Coalition Comments* at 18-20.

¹⁹ Sirius’ preference for blanket licensing assumes that the Commission seeks regulatory oversight tailored more precisely to the terrestrial repeater component of satellite DARS. However, the Commission need not license terrestrial repeaters at all—Sirius and XM already possess the right to operate terrestrial repeaters based on their existing license to provide satellite DARS, the definition of which includes complementary gap-fillers. *See* note 15, *infra*.

²⁰ *Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band*, 12 FCC Rcd 5754, 5812 (1997) (Report and Order, Memorandum Opinion and Order, and Further Notice of Proposed Rulemaking) (proposing to issue “blanket authorizations” “to permit deployment of satellite DARS gap-fillers, on an as-needed basis by satellite DARS licensees to meet their service requirements” and “agree[ing] that it would be burdensome for both the Commission and the licensees if the licensees were to seek separate authorization for each terrestrial repeater.”).

for nationwide service offerings.²¹ Furthermore, 18 months from now—when the WCS licensees might begin deploying their networks, and well after the satellite DARS licensees have made most modifications and terrestrial repeater additions to ensure nationwide coverage—the WCS Coalition’s obligation to protect satellite DARS will be the same whether the terrestrial repeaters were licensed individually or by blanket authorization.²² In any event, Sirius’ agreement to publish the parameters of its terrestrial repeaters on the Internet 30 days prior to operation should adequately satisfy the WCS licensees’ curiosity regarding its terrestrial repeater plans.²³

The WCS Coalition’s “sunset” proposal is misleading and anti-competitive. On its face the proposal would allow operation of high power terrestrial repeaters until December 31, 2006. In reality, the WCS Coalition could force a satellite DARS licensee to shut down its repeaters with six months’ notice. The network reconfiguration required following a WCS “veto” will imperil service to the public and will be time consuming and expensive. And, the WCS Coalition would gain no benefit because a system of 2 kW satellite DARS repeaters will not decrease the potential for interference to WCS licensees because the multiple 2 kW repeaters must provide the same signal strength over the same coverage area as the single higher-powered repeater they replace.²⁴

²¹ *Regulation of the 17.7-19.7 Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.5 GHz Frequency Bands for Broadcast Satellite-Service Use*, 15 FCC Rcd 13430 (2000) (Report and Order) (establishing blanket licensing for Ka-band earth stations); 47 C.F.R. §25.115(c) (2001) (allowing “blanket operating authority” for VSAT networks in the Ku-band); 47 C.F.R. §25.115(d) (2001) (authorizing “blanket applications” for NVNG and 1.6/2.4 GHz Mobile-Satellite Service transceivers).

²² In addition, the satellite DARS licensees already have a coordination trigger with neighboring nations, which eliminates any international need for individual licensing as a prerequisite to operation of a particular terrestrial repeater.

²³ *WCS Coalition Comments* at 17. Furthermore, the WCS Coalition’s acknowledgement that high power terrestrial repeaters be “authorized in batches” is really no different than blanket licensing (*i.e.*, licensing in one large batch).

²⁴ *See Ex Parte Filing of Sirius Satellite Radio Inc. in IB Docket No. 95-91* (Feb. 5, 2001).

Instead, the WCS licensees could operate successfully—should they operate at all—under the administratively simple power-cap compromise recommended by Sirius.

IV. WCS RECEIVERS ARE MORE SUSCEPTIBLE TO INTERMODULAR DISTORTION FROM NEARBY WCS TRANSMITTERS THAN FROM SATELLITE DARS HIGHER POWER REPEATERS

The WCS Coalition alleges that the *Public Notice* is flawed because it does not address intermodular distortion (“IMD”) interference from satellite DARS. However, the record is already replete with evidence that interference from neighboring WCS receivers far exceeds the minimal threat of IMD from DARS higher power repeaters.²⁵ Notably, XM’s *Supplement to White Paper* makes clear that WCS licensees’ same engineering solutions that minimize the potential for blanketing interference—equipment redesign or filters—also eliminate any potential IMD interference from satellite DARS.²⁶ Sirius’ proposed simplified regulatory structure will more than adequately protect WCS operations from IMD.

V. LIABILITY TO ADJACENT SERVICES, IF ANY, SHOULD BE NO GREATER THAN THAT IMPOSED ON THE WCS LICENSEES

Sirius agrees with the Wireless Communications Association International (“WCAI”) that the obligation for the satellite DARS licensees to remedy or compensate for interference to analog MDS/ITFS equipment—if any—should “mirror in all material respects the notice and cure provisions of Section 27.58.”²⁷ In particular, satellite DARS liability should extend only to interference complaints received on or before February 20, 2002. The MDS/ITFS licensees have long known that any compensation would expire on that date and, thus, by now, should have

²⁵ See generally *Letter of Lon C. Levin, XM Satellite Radio Inc. to Magalie Roman Salas, Secretary, FCC, IB Docket No. 95-91 at 9-10* (filed Sept. 24, 2001) (“*XM Supplement to White Paper*”). Analysis demonstrates that the potential IMD susceptibility zone for a 2 kW WCS base station would be considerably larger than for satellite DARS repeaters up to 20 kW.

²⁶ *Id.* at 3-10.

converted analog equipment to more selective digital technology.²⁸ At this date no further relief is warranted.

VI. THE NAB'S REQUEST FOR INTERFERENCE PROTECTION FOR BAS IS NOT REQUIRED AND COMES TOO LATE

The National Association of Broadcasters' ("NAB") request for coordination of Broadcast Auxiliary Services ("BAS") lacks any merit, comes too late, and should be denied. NAB's last-minute request lacks adequate technical analysis, and what little analysis NAB offers is flatly wrong. Further, despite its active participation in this proceeding, the NAB stalled until now—the eleventh hour—to seek coordination of satellite DARS terrestrial repeaters with BAS.

Satellite DARS transmissions will be attenuated in the BAS frequencies—located over 100 MHz away²⁹—to a much greater extent (*i.e.*, an additional 20 dB) than NAB suggests.³⁰ In addition, a BAS antenna will receive interference only if pointed almost directly (26 db gain antenna corresponds to 8 degree beamwidth) at a satellite DARS repeater, and, if such interference would exist, can be solved in many cases by moving its mobile truck. Third, NAB seems to have forgotten about free space path loss—even with separation distances of as little as 6 feet, path loss will attenuate satellite DARS repeater transmissions an additional 44 dB.³¹ The additional 64 dB

²⁷ *WCAI Comments In Response To Public Notice* at 3 (filed Dec. 14, 2001) ("*WCAI Comments*").

²⁸ *Sirius Comments* at 24-25.

²⁹ *Comments of the National Association of Broadcasters* at 8 n.16 (filed Dec. 14, 2001) ("*NAB Comments*") (stating that BAS operates in the 1990-2110 MHz and 2450-2500 MHz bands). Sirius' DARS terrestrial repeaters operate in the 2324-2328 MHz band.

³⁰ *See Supplemental Comments of Sirius Satellite Radio Inc.* at Exhibit 2 (filed Jan. 18, 2000) (satellite DARS repeaters could not interfere with MDS, MMDS and ITFS systems operating near 2 GHz).

³¹ *See NAB Comments*, at 9 n.18. Indeed, in Houston, Sirius coordinated its terrestrial repeater tests with a co-located TV ENG (Electronic news gathering) receiver using frequencies in the range 2450 to 2483.5 MHz and no interference was detected. *Supplemental Comments of*

isolation not reflected in the NAB calculation eliminates the possibility of interference to BAS. Sirius also notes that the BAS licensees will deploy solely digital equipment as they relocate to make room for mobile satellite services in the 2 GHz band.³²

VII. SIRIUS HAS NO PLANS TO USE TERRESTRIAL REPEATERS TO ORIGINATE LOCAL PROGRAMMING

The NAB is concerned that local broadcasters will lose local advertising revenue if the satellite DARS terrestrial repeaters originate programming. Sirius' position has always been and continues to be that it has no plans to use terrestrial repeaters to originate local programming.³³ Nevertheless, NAB proposes to delete the "nearly simultaneous" language contained in Sirius' prior proposals and thus require that the DARS satellite signal and the repeater signal arrive at the DARS receiver at precisely the same time.³⁴ In making this request, NAB agrees that "simultaneous" transmission is next to impossible as a technical matter due to constraints on the speed of signal propagation through different physical facilities that are not co-located and suggests that "simultaneous" could be read to mean "nearly simultaneously." To ensure that the satellite DARS licensees are not penalized because their satellite and terrestrial signals will not

Sirius Satellite Radio Inc., Exhibit 4 at 14 (filed Jan. 18, 2000). In other cities, Sirius tested its repeaters without any interference complaints from BAS licensees.

³² See *Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service*, 15 FCC Rcd 12315, 12323 (2000) (Second Report and Order and Second Memorandum Opinion and Order).

³³ In 1997, Sirius affirmed that "terrestrial devices will not be used to originate programming." *Comments of CD Radio Inc.* at 3 (filed June 13, 1997). A year later, Sirius urged the Commission to "promulgate rules permitting satellite DARS licensees to operate terrestrial repeaters...so long as they are not used to originate programming." *Reply Comments of CD Radio Inc.* at 5 (filed Jan. 21, 1998). Again last year, Sirius reiterated that "[t]he plain meaning of the revised rule does not permit satellite DARS to provide locally originated programming over terrestrial repeaters, and Sirius does not harbor any ulterior motive to do so." *Reply Comments of Sirius Satellite Radio Inc.* at 4 (filed Mar. 8, 2000).

³⁴ *NAB Comments* at 7.

arrive at the DARS receiver at exactly the same time, Sirius urges the Commission to adopt the clear rule proposed in the September 2001 Joint Rules:

Terrestrial repeaters shall be used only to transmit programming that is also transmitted by an authorized DARS satellite and in such a way that the DARS satellite signal and the terrestrial repeater signal are received *nearly simultaneously*.³⁵

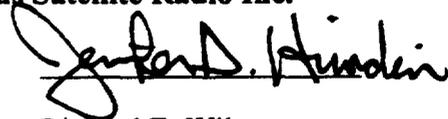
VIII. CONCLUSION

For these reasons, the Commission should promptly issue final terrestrial repeater rules that give the satellite DARS licensees flexibility to fill gaps in satellite coverage as they introduce nationwide service and acquire more customers.

Respectfully submitted,

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³⁵ Letter from Carl Frank, Counsel for Sirius and Bruce D. Jacobs, Counsel for XM, to Magalie Roman Salas, Secretary, FCC at 5 (filed Sept. 26, 2001) (emphasis added).

CERTIFICATE OF SERVICE

I, Christopher E. Ryan, legal assistant at Wiley Rein & Fielding LLP, hereby certify that a copy of the foregoing **Reply Comments of Sirius Satellite Radio Inc.** were hand-delivered (*), delivered by first-class mail, postage pre-paid (**), or sent via e-mail (***) to the following parties on December 21, 2001:

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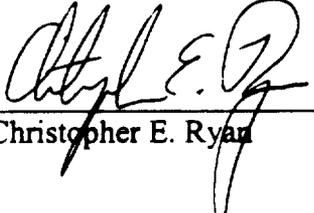
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