

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)
)
Request by Itron, Inc. for Waivers of the) WT Docket No. 13-195
Commission’s Rules)
)
)
)
)

ORDER ON RECONSIDERATION

Adopted: September 25, 2015

Released: September 25, 2015

By the Chief, Mobility Division, Wireless Telecommunications Bureau:

I. INTRODUCTION

1. This Order addresses a petition by Itron, Inc. (Itron)¹ for reconsideration of our denial² of Itron’s request for waivers³ of certain of the Commission’s rules⁴ to operate an advanced smart grid half-duplex, non-paging communications using its licenses in the 931 MHz band. As explained below, we grant the Petition in part, and otherwise deny, and therefore grant a waiver of sections 22.355, 22.515, and 22.531 for certain Itron licenses.⁵

II. BACKGROUND

¹ Petition for Reconsideration filed on March 2, 2015, by Itron, Inc. (Petition).

² Letter from Roger Noel, Chief, Mobility Division, Wireless Telecommunications Bureau, to Ms. Laura Stefani and Mr. Joseph A. Godles, Goldberg, Godles, Wiener & Wright LLP, 30 FCC Rcd 137 (Jan. 13, 2015) (Waiver Denial).

³ Itron, Inc. Request for Waiver, WT Docket No. 13-195, filed Dec. 17, 2012 (Waiver Request). The Waiver Request is attached to the Universal Licensing System (ULS) record for each license listed in Attachment 1. See <http://wireless.fcc.gov/uls/index.htm?job=home>.

⁴ In its waiver request, Itron sought waiver of 47 C.F.R. §§ 22.355, 22.515, 22.531, and 22.561. In the *Public Notice* the Commission issued in connection with Itron’s waiver request, we stated that “[i]t appears to us that section 22.561 does not apply to Itron’s requested waiver, since that rule section does not apply to 931 MHz band paging operations.” Wireless Telecommunications Bureau Seeks Comment on Itron, Inc. Request for Waivers of Part 22 Rules to Facilitate Provision of Non-Paging Operations Over 931 MHz Licenses, *Public Notice*, WT Docket No. 13-195, 28 FCC Rcd 11829, 11829 (2013) (*Itron Public Notice*). We further stated that “it does appear that Itron might require a waiver of section 22.531 in order to conduct its half-duplex operations, and we therefore will treat Itron’s filings as seeking a waiver of section 22.531 (instead of section 22.561) to the extent necessary.” *Id.* In addition, in the Petition, Itron seeks waiver of sections 22.355, 22.515, and 22.531, but not section 22.561. We therefore continue to treat Itron’s as seeking a waiver of section 22.531 rather than section 22.561 where applicable.

⁵ 47 C.F.R. §§ 22.355, 22.515, and 22.531.

2. In 2010, the Wireless Telecommunications Bureau (Bureau) auctioned 9,603 geographic-area paging licenses, with 1,851 of those licenses being in the upper paging bands (929-931 MHz).⁶ In announcing Auction 87, the Bureau explained that paging incumbent licenses existed in the bands, and these “[i]ncumbent (non-geographic) paging licensees operating under their existing authorizations are entitled to full protection from co-channel interference.”⁷ Itron was the winning bidder in Auction 87 for 155 Major Economic Areas paging licenses in the 931 MHz band,⁸ and the Bureau granted the licenses on November 3, 2010.⁹

3. On December 17, 2012, pursuant to sections 1.3 and 1.925 of the Commission’s rules, Itron filed the Waiver Request so that it may use its paging licenses to support and improve its automatic meter reading (AMR) and advanced metering infrastructure (AMI) systems, which are smart grid components.¹⁰ In the Waiver Request, Itron requested waivers of sections 22.515¹¹ and 22.531,¹² to the extent necessary, to allow it to engage in half-duplex transmissions to facilitate transmissions both to and from Itron’s meter module end points.¹³ Taken together, sections 22.515 and 22.531 limit the operation of channels in the 931 MHz band to base transmitters¹⁴ that provide paging services, whereas Itron proposes to utilize non-base transmitters to offer a non-paging data service; accordingly, Itron sought a waiver of sections 22.515 and 22.531.¹⁵

4. Itron also requested a waiver of section 22.355¹⁶ to permit its fixed and mobile stations that operate with an effective radiated power (ERP) of less than 2 watts to be subject to a frequency

⁶ See Auction of Lower & Upper Paging Bands Licenses Scheduled for May 25, 2010, *Public Notice*, 25 FCC Rcd 6156 (2009) (*Auction 87 Announcement PN*).

⁷ *Auction 87 Announcement PN* at 6157 ¶ 6 (citing Revision of Part 22 and Part 90 of the Commission’s Rules to Facilitate Future Development of Paging Systems, Implementation of Section 309(j) of the Communications Act – Competitive Bidding, WT Docket No. 96-18, *Memorandum Opinion and Order on Reconsideration and Third Report and Order*, 14 FCC Rcd 10030, 10059-60 ¶¶ 42-44 (1999); Revision of Part 22 and Part 90 of the Commission’s Rules to Facilitate Future Development of Paging Systems, Implementation of Section 309(j) of the Communications Act – Competitive Bidding, WT Docket No. 96-18, *Second Report and Order and Further Notice of Proposed Rulemaking*, 12 FCC Rcd 2732, 2764 ¶¶ 57-58 (1997); 47 C.F.R. § 22.503(i)).

⁸ See Auction of Lower & Upper Paging Bands Licenses Closes Winning Bidders Announced for Auction 87, *Public Notice*, 25 FCC Rcd 18164 (2010).

⁹ See Wireless Telecommunications Bureau Grants Lower & Upper Paging Bands Licenses, *Public Notice*, 25 FCC Rcd 15324 (2010).

¹⁰ See Waiver Request at 1, 2. Specifically, Itron seeks “to provide service, on a non-common carrier basis, to support fixed and mobile functions, including smart grid functions, such as system monitoring, system control, and smart metering.” *Id.* at 2.

¹¹ Section 22.515 provides that, for all paging services, “[m]obile stations may communicate only with and through base stations. Base stations may communicate only with mobile stations and receivers on land or surface vessels.” 47 C.F.R. § 22.515.

¹² Section 22.531 provides that “[t]he following channels [specifically including 931 MHz frequencies] are allocated for assignment to base transmitters that provide paging service” 47 C.F.R. § 22.531.

¹³ See Waiver Request at 3.

¹⁴ Section 22.99 defines a base transmitter as “[a] stationary transmitter that provides radio telecommunications service to mobile and/or fixed receivers, including those associated with mobile stations.”

¹⁵ See Waiver Request at 3-7.

¹⁶ Section 22.355 of the Commission’s rules requires that, as relevant to Itron’s proposed 931 MHz band operations, the carrier frequency of each transmitter must satisfy a frequency tolerance limit of 1.5 ppm. 47 C.F.R. § 22.355.

tolerance of 5 ppm rather than 1.5 ppm.¹⁷ Itron stated that its planned system architecture would consist of: (1) fixed and mobile readers that generally operate with an ERP of 40 watts or less, and that will always operate with an ERP of 100 watts or less, and (2) customer-premises end points (EPs) that are located on utility meters and that will transmit to the readers at a very low power of between 0.5 to 2 watts ERP.¹⁸ Itron argued that, because these power levels are well below the maximum power that is permitted under the 931 MHz paging rules, the risk for interference to co-channel users of the 931 MHz band will be no more than the risk of interference from other licensed one-way paging systems.¹⁹ Specifically, Itron stated that “[a]lthough the rules permit operation at up to 3500 watts ERP, Itron’s readers typically will operate with an ERP of 40 watts or less, and never will operate with an ERP above 100 watts[,] [and] [t]he power levels for EPs will be even lower, on the order of 0.5 to 2 watts ERP.”²⁰ Itron further argued that even with a frequency tolerance of 5 ppm rather than 1.5 ppm, its low-power, battery-powered EPs would afford as much or more protection to adjacent channels as devices that satisfy the 1.5 ppm standard.²¹

5. USA Mobility, Inc. opposed the Waiver Request, claiming that the proposed waivers would pose a potentially serious risk of interference to USA Mobility’s paging systems.²² USA Mobility argued that Itron did not provide enough detail about how its proposed system would operate, and therefore USA Mobility could not ascertain how its own operations would be affected.²³ For example, USA Mobility states that Itron does not specify what type of access methodology will be used by end-point devices communicating with readers, nor does Itron make clear whether the EPs might act as repeaters.²⁴ USA Mobility also stated its concern “that Itron’s proposed half-duplex transmissions could experience interference from USA Mobility’s high-powered paging transmissions – and that Itron in turn would seek to limit USA Mobility’s operations in some manner.”²⁵ In addition, USA Mobility argued that Itron’s proposed use is a fundamental change to the technical rules that should be accomplished through a rulemaking rather than by waiver.²⁶

6. On January 13, 2015, the Bureau denied the Waiver Request, finding that, despite Itron’s references to regulatory power limits, it was not clear how Itron would protect its co-channel site-based incumbents or co-channel geographic area licensees from harmful interference.²⁷ We therefore found that Itron had “not shown that a waiver here would be consistent with the underlying purpose of the rules it seeks to waive, namely interference protection to other licensees.”²⁸

¹⁷ See Waiver Request at 9.

¹⁸ See *id.* at 3-4.

¹⁹ See *id.* at 5-7.

²⁰ *Id.* at 6.

²¹ See *id.* at 9-11.

²² See Comments of USA Mobility, Inc., WT Docket No. 13-195, filed Sept. 9, 2013, at 4-7 (USA Mobility Opposition).

²³ See *id.* at 4-7.

²⁴ See *id.* at 4-5.

²⁵ *Id.* at 5.

²⁶ *Id.* at 9-11.

²⁷ Waiver Denial, 30 FCC Rcd at 141. We did, however, find that Itron had demonstrated how it would provide protection to adjacent channel licensees. *Id.*

²⁸ *Id.*

7. On February 12, 2015, in accordance with section 1.106 of the Commission's rules,²⁹ Itron filed the Petition seeking reconsideration of our decision. In the Petition, Itron claims that its fixed and mobile readers (which serve as base stations) and its EPs all will observe the co-channel protection requirements for 931 MHz paging system base stations as set forth in sections 22.537³⁰ and 22.503³¹ of the Commission's rules.³² As such, if the interfering contour of one of Itron's readers and/or EPs overlaps with the service contour of a co-channel base station in an adjacent market, then Itron will coordinate with the adjacent market licensee in accordance with section 22.503(h).³³ In addition, Itron states that it will comply with section 22.503(i) by applying this interfering contour/service contour methodology for its fixed and mobile reader stations and EPs to protect co-channel site-based incumbent licensees.³⁴ Itron further states that its mobile readers "have GPS functionality that enables Itron to program protection zones for them to observe based on interfering contour/service contour overlaps and the terms of coordination agreements Itron enters into with the licensees of co-channel stations."³⁵

8. Spok, Inc. (Spok), formerly known as USA Mobility, filed an opposition to the Petition reiterating its previous comments, stating that "[b]ecause Itron has merely rehashed its unsupported assertion that its proposed operations will not result in harmful interference, while failing to grapple with the other fundamental flaws that preclude grant of a waiver, the Bureau should summarily deny Itron's Petition."³⁶ Spok also contends that "one-way paging systems simply were not designed to operate in an environment with mobile transmitters. While fixed base stations are sufficiently removed from one another to prevent harmful interference, Itron's operation of mobile transmitters in proximity to paging devices may well cause critical paging messages to be dropped. Unlike the case with base-station interference, Spok would be unable to detect and respond to such intermittent interference from mobile readers because its source would be impossible to identify."³⁷ Spok also argues that Itron fails to justify a waiver here because it does not show that it lacks reasonable alternatives for operating a two-way communications network.³⁸ Additionally, Spok argues that the Petition does not meet the procedural criteria for reconsideration under section 1.106 of our rules³⁹ because it merely supplements Itron's previous technical showing.⁴⁰

9. Itron filed comments in reply to Spok⁴¹ reiterating its contention that it "will provide at least as much protection to co-channel stations as the rules contemplate" and that "in practice, by virtue of low power levels, limited duty cycles, and other factors, its system will be more protective of co-channel

²⁹ *Id.*

³⁰ 47 C.F.R. § 22.537. Section 22.537 provides the technical criteria for 931 MHz licensees to provide interference protection to co-channel licensees.

³¹ 47 C.F.R. § 22.503. Section 22.503 provides service rules for Part 22 paging geographic licensees.

³² Petition at 4-5.

³³ *Id.*

³⁴ *Id.*

³⁵ *Id.* at 5.

³⁶ Opposition of Spok, Inc., WT Docket No. 13-195, filed Sept. 9, 2013 at 1 (Spok Opposition).

³⁷ *Id.* at 3.

³⁸ *Id.* 47 C.F.R. § 1.925(b)(3)(ii) states that the Commission may grant a request for waiver if "the applicant has no reasonable alternative."

³⁹ 47 C.F.R. § 1.106.

⁴⁰ Spok Opposition at 2.

⁴¹ Reply of Itron, Inc., WT Docket No. 13-195, filed March 2, 2015 (Itron Reply).

stations than a maximum-facility base station in a traditional one-way paging system.”⁴² It also stated that it does need to show that it has no reasonable alternative to a waiver because it is seeking a waiver under sections 1.3⁴³ and 1.925(b)(3)(i)⁴⁴ of our rules rather than section 1.925(b)(3)(ii).⁴⁵ Finally, Itron counters that it “did not just repeat what it had said before and it did not make a new interference argument. Rather, Itron responded to the Bureau’s concerns by clarifying how it will avoid co-channel interference.”⁴⁶

III. DISCUSSION

10. The Commission’s rules require that a petition for reconsideration shall “state with particularity the respects in which a petitioner believes the action taken should be changed” and must specifically state the relief sought.⁴⁷ A petition for reconsideration that relies on facts or arguments not previously presented to the Commission may be granted where it is determined that consideration of the facts or arguments relied upon is “required in the public interest.”⁴⁸ Pursuant to section 1.925 of the Commission’s rules,⁴⁹ waiver may be granted if the petitioner establishes that: (1) the underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and the grant of the waiver would be in the public interest; or (2) in light of unique or unusual factual circumstances, application of the rule(s) would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative.⁵⁰ The Commission also may waive any provision of its rules if good cause is shown.⁵¹ In this case, Itron has requested waiver under the first prong of section 1.925(b)(3), as well as section 1.3. We agree with Itron that, in compliance with our rules, it has clarified its previous statement that it would provide at least as much protection as our Part 22 paging rules require⁵² by specifying to which service rules it referred and elucidating that it will treat all of its readers and EPs as base stations under the rules. As described below, we find that the underlying purpose of sections 22.355, 22.515, and 22.531 of the Commission’s rules would not be frustrated by granting waiver in the instant case.

11. As we stated in the Waiver Denial, “[t]aken together, the rules that govern the operation of 931 MHz systems provide protection to co-channel site-based incumbents, co-channel geographic licensees, and adjacent-channel licensees from inference caused by a 931 MHz licensee.”⁵³ In this case, Spok, has opposed the Waiver Request and Petition due to the possibility of interference to its systems.

⁴² Itron Reply at 2.

⁴³ 47 C.F.R. § 1.3.

⁴⁴ 47 C.F.R. § 1.925(b)(3)(i).

⁴⁵ See Itron Reply at 6.

⁴⁶ *Id.* at 5.

⁴⁷ 47 C.F.R. § 1.106(d)(1).

⁴⁸ See 47 C.F.R. § 1.106(c)(2). Itron states that is not presenting new facts or arguments and is “only is clarifying the manner in which it will protect co-channel licensees . . . [but] that consideration of the facts and arguments presented in this Petition is appropriate because it is in the public interest.” Petition at 1, n. 3.

⁴⁹ 47 C.F.R. § 1.925.

⁵⁰ 47 C.F.R. § 1.925(b)(3).

⁵¹ 47 C.F.R. § 1.3.

⁵² See *supra* note 19. Tables E-1 (service contour) and E-2 (interfering contour) of 47 C.F.R. § 22.537 permit operation at up to 3500 watts ERP.

⁵³ Waiver Denial, 30 FCC Rcd at 140.

Based upon the clarification in the Petition that Itron will provide protection per sections 22.503 and 22.537, the Bureau conducted an interference analysis of how Spok's Part 22 paging licenses⁵⁴ would be impacted by Itron's proposed operations. For Spok's co-channel Part 22 paging site-based licenses, we plotted the largest possible service⁵⁵ and interference⁵⁶ contours under section 22.537 and then analyzed the potential for interference from each of Itron's market areas. The analysis took into consideration the distance between the licensed geographic service area of Itron and Spok's licenses and the channel spacing, coupled with the fact that pursuant to section 22.503(h), operations outside the licensed geographic areas require consent of the relevant co-channel licensee. The Mobility Division determined that out of 155 of Itron's licenses, 128 will not cause interference to Spok's licenses, regardless of whether Itron's transmitters are fixed or mobile.⁵⁷ This approach provides Spok the same protections under our rules as if any of Itron's readers and EPs – including those that are mobile – actually are base stations.

12. The Commission long has encouraged flexible and innovative use of Part 22 paging spectrum.⁵⁸ More recently, the Bureau sought comment on how it might update the Part 22 paging rules to provide flexibility in the types of uses and technologies that can operate on these channels, recognizing that additional technical and operational flexibility may promote more intensive use of these paging licenses, benefiting users nationwide.⁵⁹ The Bureau stated that “[s]uch an update could result in licensees deploying innovative technologies, deploying narrow band equipment, or using offset frequencies if they hold adjacent channel blocks.”⁶⁰ We find that Itron's proposed use of its Part 22 paging licenses meets the Commission's goals of fostering technological innovation and is in the public interest.

13. With regard to these 128 licenses, listed in Attachment 3, we find that the underlying purpose of sections 22.355, 22.515, and 22.531 would not be frustrated by waiver in this case. And, as stated above, we also find that it is in the public interest to grant a waiver of these rules so that Itron may implement its smart grid technology. In addition, as we have found Itron has met the waiver standard of section 1.925(b)(3)(i), we need not assess it under section 1.925(b)(3)(ii), as Spok argues. In light of all of the above, we find reconsideration here proper under our rules, and, as such, we find that a waiver of sections 22.355, 22.515, and 22.531 is warranted under the circumstances presented.

14. We also disagree with Spok's contention that this essentially is a rulemaking by waiver. The fact pattern in this case is unique, and Itron's proposal is a novel application of current technology in this band. Further, this Order is not an “agency statement ... of future effect” such as would constitute a

⁵⁴ The Bureau used the Part 22 paging licenses assigned to Spok in the Universal Licensing System. The complete list of licenses is in Attachment 2.

⁵⁵ 47 C.F.R. § 22.537, Table E-1. This created a contour with a radius of 83.7 kilometers.

⁵⁶ 47 C.F.R. § 22.537, Table E-2. This created a contour with a radius of 191.5 kilometers.

⁵⁷ We also determined the reverse, *i.e.*, that Spok's operations are highly unlikely to cause interference to these 128 Itron licenses.

⁵⁸ *See, e.g.*, Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems, *Second Report and Order and Further Notice of Proposed Rulemaking*, 12 FCC Rcd 2732 (1997).

⁵⁹ *See* Wireless Telecommunications Bureau Reminds Paging & Radiotelephone Serv. Licensees of Certain Technical Rules & Seeks Comment on the Need for Technical Flexibility, Public Notice, 29 FCC Rcd 12673, 12674 (2014) (*Paging Public Notice*).

⁶⁰ *Id.*

rule under the Administrative Procedure Act.⁶¹ Rather, this waiver is granted on a case-specific basis and is well within the scope of the Bureau's delegated authority.⁶²

15. Finally, for the remaining 27 Itron licenses, we find that Itron still has not sufficiently shown how it would protect from interference its co-channel site-based incumbents and co-channel geographic licensees. For these licenses, listed in Attachment 4, we affirm our decision in the Waiver Denial and these 27 licenses are excluded from this waiver.

16. This waiver is specifically conditioned on the following:

- (1) This waiver is limited to the Itron licenses listed in Attachment 3.
- (2) The licenses listed in Attachment 4 are excluded from this waiver.
- (3) Itron must provide interference protection to its co-channel site-based incumbents, co-channel geographic licensees, and adjacent-channel licensees by treating all of its readers and EPs – including those that are mobile – as base stations under the Commission's rules.
- (4) Itron must operate its system as described in its Waiver Request and Petition.
- (5) Any readers (cell control units, mobile collectors, or hand held mobile devices) operated in connection with this waiver must be operated only within Itron's licensed areas that are covered by this waiver.
- (6) Itron must exercise effective operational control over any covered mobile stations receiving service through their fixed stations.
- (7) If Itron receives a report that station(s) operating in the areas covered by this waiver are causing harmful interference to co-channel site-based incumbents, co-channel geographic licensees, or adjacent-channel licensees, it shall immediately suspend operation under this waiver of such station(s) except for test transmissions to identify and eliminate the interference. Itron may resume operation under this waiver of such station(s) after the interference has been successfully mitigated.

17. Accordingly, IT IS ORDERED that, pursuant to Sections 4(i), 303(r), and 405 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(r), 405, and sections 0.331, 1.3, 1.106, and 1.925 of the Commission's Rules, 47 C.F.R. §§ 0.331, 1.3, 1.106, 1.925, the Petition for Reconsideration filed by Itron, Inc., on March 2, 2015, is GRANTED IN PART AND OTHERWISE DENIED, as described above.

FEDERAL COMMUNICATIONS COMMISSION

Roger S. Noel
Chief, Mobility Division
Wireless Telecommunications Bureau

⁶¹ See 5 U.S.C. § 551(4).

⁶² See 47 C.F.R. § 0.131.

Attachment 1
List of Itron 931 MHz Licenses

Call Sign	Market Code	Channel Block
1. WQMX694	MEA001	AL
2. WQMX695	MEA001	AM
3. WQMX696	MEA001	AN
4. WQMX697	MEA002	AP
5. WQMX698	MEA002	AQ
6. WQMX699	MEA002	BK
7. WQMX700	MEA003	AC
8. WQMX701	MEA003	AF
9. WQMX702	MEA003	AG
10. WQMX703	MEA004	AP
11. WQMX704	MEA004	AZ
12. WQMX705	MEA004	BK
13. WQMX706	MEA005	AJ
14. WQMX707	MEA005	AM
15. WQMX708	MEA005	AN
16. WQMX709	MEA005	BK
17. WQMX710	MEA006	AP
18. WQMX711	MEA006	AQ
19. WQMX712	MEA006	BF
20. WQMX713	MEA007	AC
21. WQMX714	MEA007	AG
22. WQMX715	MEA007	AM
23. WQMX716	MEA008	AW
24. WQMX717	MEA008	AY
25. WQMX718	MEA008	AZ
26. WQMX719	MEA009	AA
27. WQMX720	MEA009	AB
28. WQMX721	MEA009	AC
29. WQMX722	MEA010	AA
30. WQMX723	MEA010	AB
31. WQMX724	MEA010	AC
32. WQMX725	MEA011	AG
33. WQMX726	MEA011	AM
34. WQMX727	MEA011	BD
35. WQMX728	MEA012	AC
36. WQMX729	MEA012	AJ
37. WQMX730	MEA012	AK
38. WQMX731	MEA012	AL
39. WQMX732	MEA013	AB
40. WQMX733	MEA013	AC
41. WQMX734	MEA013	AG
42. WQMX735	MEA014	AB
43. WQMX736	MEA014	AC
44. WQMX737	MEA014	AG

45. WQMX738	MEA015	AF
46. WQMX739	MEA015	AG
47. WQMX740	MEA015	AH
48. WQMX741	MEA015	AI
49. WQMX742	MEA016	AB
50. WQMX743	MEA016	AY
51. WQMX744	MEA016	AZ
52. WQMX745	MEA016	BK
53. WQMX746	MEA017	AA
54. WQMX747	MEA017	AB
55. WQMX748	MEA017	AC
56. WQMX749	MEA018	AG
57. WQMX750	MEA018	BI
58. WQMX751	MEA018	BK
59. WQMX752	MEA019	AP
60. WQMX753	MEA019	BB
61. WQMX754	MEA019	BC
62. WQMX755	MEA020	AF
63. WQMX756	MEA020	AG
64. WQMX757	MEA020	BJ
65. WQMX758	MEA020	BK
66. WQMX759	MEA021	AA
67. WQMX760	MEA021	AB
68. WQMX761	MEA021	AO
69. WQMX762	MEA022	AA
70. WQMX763	MEA022	AB
71. WQMX764	MEA022	AC
72. WQMX765	MEA023	AA
73. WQMX766	MEA023	AB
74. WQMX767	MEA023	AC
75. WQMX768	MEA024	BH
76. WQMX769	MEA024	BI
77. WQMX770	MEA024	BJ
78. WQMX771	MEA025	AA
79. WQMX772	MEA025	AB
80. WQMX773	MEA025	AC
81. WQMX774	MEA026	AA
82. WQMX775	MEA026	AB
83. WQMX776	MEA026	AG
84. WQMX777	MEA027	AA
85. WQMX778	MEA027	AG
86. WQMX779	MEA027	AJ
87. WQMX780	MEA027	AK
88. WQMX781	MEA028	AA
89. WQMX782	MEA028	AB
90. WQMX783	MEA028	AC
91. WQMX784	MEA028	AG

92. WQMX785	MEA029	AA
93. WQMX786	MEA029	AB
94. WQMX787	MEA029	AF
95. WQMX788	MEA030	AA
96. WQMX789	MEA030	AB
97. WQMX790	MEA030	AK
98. WQMX791	MEA031	AA
99. WQMX792	MEA031	AE
100. WQMX793	MEA031	AJ
101. WQMX794	MEA031	AK
102. WQMX795	MEA032	AE
103. WQMX796	MEA032	AG
104. WQMX797	MEA032	AW
105. WQMX798	MEA033	AF
106. WQMX799	MEA033	AZ
107. WQMX800	MEA034	AA
108. WQMX801	MEA034	AB
109. WQMX802	MEA034	AF
110. WQMX803	MEA035	BE
111. WQMX804	MEA035	BI
112. WQMX805	MEA035	BK
113. WQMX806	MEA036	AA
114. WQMX807	MEA036	AB
115. WQMX808	MEA036	AC
116. WQMX809	MEA037	BC
117. WQMX810	MEA037	BD
118. WQMX811	MEA037	BE
119. WQMX812	MEA038	AD
120. WQMX813	MEA038	AE
121. WQMX814	MEA038	AW
122. WQMX815	MEA039	AD
123. WQMX816	MEA039	AI
124. WQMX817	MEA040	AL
125. WQMX818	MEA040	AY
126. WQMX819	MEA040	BC
127. WQMX820	MEA040	BF
128. WQMX821	MEA041	AJ
129. WQMX822	MEA041	AK
130. WQMX823	MEA041	AL
131. WQMX824	MEA041	BK
132. WQMX825	MEA042	AJ
133. WQMX826	MEA042	AM
134. WQMX827	MEA042	BE
135. WQMX828	MEA043	AI
136. WQMX829	MEA043	AJ
137. WQMX830	MEA043	AN
138. WQMX831	MEA043	AW

139. WQMX832	MEA044	AD
140. WQMX833	MEA044	AO
141. WQMX834	MEA044	AW
142. WQMX835	MEA045	AV
143. WQMX836	MEA045	AW
144. WQMX837	MEA045	AX
145. WQMX838	MEA046	AT
146. WQMX839	MEA046	AU
147. WQMX840	MEA046	AV
148. WQMX841	MEA047	AA
149. WQMX842	MEA047	AB
150. WQMX843	MEA047	AC
151. WQMX844	MEA048	AF
152. WQMX845	MEA048	AG
153. WQMX846	MEA048	AH
154. WQMX847	MEA050	AA
155. WQMX848	MEA050	AB

Attachment 2
List of Spok Part 22 Paging Licenses

Call Sign	Market Code	Channel Block
1. WPQM446	MEA033	AA
2. WPQM447	MEA042	AA
3. WPQM449	MEA044	AA
4. WPQM473	MEA043	AG
5. WPQM474	MEA044	AG
6. WPQM481	MEA028	AI
7. WPQM482	MEA029	AI
8. WPQM483	MEA030	AI
9. WPQM485	MEA032	AI
10. WPQM487	MEA036	AI
11. WPQM488	MEA037	AI
12. WPQM490	MEA045	AI
13. WPQM491	MEA047	AI
14. WPQM507	MEA031	AT
15. WPQM508	MEA032	AT
16. WPQM509	MEA038	AT
17. WPQM510	MEA031	AU
18. WPQM511	MEA032	AU
19. WPQM512	MEA038	AU
20. WPQM513	MEA039	AU
21. WPQM516	MEA043	AV
22. WPQM517	MEA044	AV
23. WPQM518	MEA017	AW
24. WPQM519	MEA018	AW
25. WPQM520	MEA001	AY
26. WPQM521	MEA002	AY
27. WPQM524	MEA043	AY
28. WPQM525	MEA044	AY
29. KNLN884	MEA033	AA
30. KNKE385	MEA020	AB
31. KNKJ371	MEA040, MEA043 & MEA044	AG
32. KNKP278	MEA043 & MEA044	AG
33. KNKF684	MEA036 & MEA037	AI
34. KNKL914	MEA046	AI
35. KNKL939	MEA045	AI
36. KNKO969	MEA029	AI
37. KNKP862	MEA036	AI
38. KTS256	MEA033	AI
39. KWU327	MEA036 & MEA037	AI
40. KNKE387	MEA004, MEA005 & MEA012	AL
41. KNKG839	MEA006	AL
42. KNKM814	MEA005 & MEA006	AL
43. KNKO694	MEA005 & MEA006	AL
44. KNKO735	MEA004 & MEA005	AL

45.	KNKP215	MEA002	AL
46.	KNKO803	MEA004 & MEA005	AO
47.	KNKP224	MEA005 & MEA006	AO
48.	KNKO564	MEA031, MEA032 & MEA038	AT
49.	KNKP213	MEA015 & MEA016	AT
50.	KPE466	MEA031, MEA032 & MEA038	AT
51.	KNKP212	MEA043 & MEA044	AV
52.	KNKS216	MEA043 & MEA044	AV
53.	KNKE335	MEA017 & MEA018	AW
54.	KNKG834	MEA043, MEA044 & MEA045	AY
55.	KNKL939	MEA045	AY
56.	KOR233	MEA043 & MEA044	AY
57.	KNKE385	MEA020	BB
58.	KNKF684	MEA029, MEA035, MEA036 & MEA037	BB
59.	KNKM814	MEA005	BB
60.	KNKO735	MEA004 & MEA005	BB
61.	KNKP215	MEA002	BB
62.	KNKJ371	MEA040, MEA043 & MEA044	BC
63.	KNKJ205	MEA031, MEA032 & MEA038	BI
64.	KNKO386	MEA031, MEA032 & MEA038	BI
65.	KNKO927	MEA039	BI
66.	KNKO997	MEA018	BI
67.	KNKP201	MEA001 & MEA002	BI
68.	KNKP275	MEA002	BI
69.	KNKM447	NW	NW
70.	KNKO694	MEA005 & MEA006	AL
71.	KNKO735	MEA004 & MEA005	AL

Attachment 3
List of Itron Licenses Included in Waiver

Call Sign	Market Code	Channel Block
1. WQMX694	MEA001	AL
2. WQMX695	MEA001	AM
3. WQMX696	MEA001	AN
4. WQMX698	MEA002	AQ
5. WQMX699	MEA002	BK
6. WQMX700	MEA003	AC
7. WQMX701	MEA003	AF
8. WQMX702	MEA003	AG
9. WQMX705	MEA004	BK
10. WQMX706	MEA005	AJ
11. WQMX709	MEA005	BK
12. WQMX711	MEA006	AQ
13. WQMX712	MEA006	BF
14. WQMX713	MEA007	AC
15. WQMX714	MEA007	AG
16. WQMX716	MEA008	AW
17. WQMX717	MEA008	AY
18. WQMX718	MEA008	AZ
19. WQMX719	MEA009	AA
20. WQMX720	MEA009	AB
21. WQMX721	MEA009	AC
22. WQMX722	MEA010	AA
23. WQMX723	MEA010	AB
24. WQMX724	MEA010	AC
25. WQMX725	MEA011	AG
26. WQMX726	MEA011	AM
27. WQMX727	MEA011	BD
28. WQMX728	MEA012	AC
29. WQMX729	MEA012	AJ
30. WQMX732	MEA013	AB
31. WQMX733	MEA013	AC
32. WQMX734	MEA013	AG
33. WQMX735	MEA014	AB
34. WQMX736	MEA014	AC
35. WQMX737	MEA014	AG
36. WQMX738	MEA015	AF
37. WQMX739	MEA015	AG
38. WQMX740	MEA015	AH
39. WQMX741	MEA015	AI
40. WQMX742	MEA016	AB
41. WQMX743	MEA016	AY
42. WQMX744	MEA016	AZ
43. WQMX745	MEA016	BK
44. WQMX746	MEA017	AA

45. WQMX747	MEA017	AB
46. WQMX748	MEA017	AC
47. WQMX749	MEA018	AG
48. WQMX751	MEA018	BK
49. WQMX752	MEA019	AP
50. WQMX753	MEA019	BB
51. WQMX754	MEA019	BC
52. WQMX755	MEA020	AF
53. WQMX756	MEA020	AG
54. WQMX757	MEA020	BJ
55. WQMX758	MEA020	BK
56. WQMX759	MEA021	AA
57. WQMX760	MEA021	AB
58. WQMX761	MEA021	AO
59. WQMX762	MEA022	AA
60. WQMX763	MEA022	AB
61. WQMX764	MEA022	AC
62. WQMX765	MEA023	AA
63. WQMX766	MEA023	AB
64. WQMX767	MEA023	AC
65. WQMX768	MEA024	BH
66. WQMX770	MEA024	BJ
67. WQMX771	MEA025	AA
68. WQMX772	MEA025	AB
69. WQMX773	MEA025	AC
70. WQMX774	MEA026	AA
71. WQMX775	MEA026	AB
72. WQMX776	MEA026	AG
73. WQMX777	MEA027	AA
74. WQMX778	MEA027	AG
75. WQMX779	MEA027	AJ
76. WQMX780	MEA027	AK
77. WQMX781	MEA028	AA
78. WQMX782	MEA028	AB
79. WQMX783	MEA028	AC
80. WQMX784	MEA028	AG
81. WQMX785	MEA029	AA
82. WQMX786	MEA029	AB
83. WQMX787	MEA029	AF
84. WQMX788	MEA030	AA
85. WQMX789	MEA030	AB
86. WQMX790	MEA030	AK
87. WQMX791	MEA031	AA
88. WQMX792	MEA031	AE
89. WQMX794	MEA031	AK
90. WQMX795	MEA032	AE
91. WQMX796	MEA032	AG

92. WQMX797	MEA032	AW
93. WQMX798	MEA033	AF
94. WQMX799	MEA033	AZ
95. WQMX802	MEA034	AF
96. WQMX803	MEA035	BE
97. WQMX805	MEA035	BK
98. WQMX806	MEA036	AA
99. WQMX807	MEA036	AB
100. WQMX808	MEA036	AC
101. WQMX810	MEA037	BD
102. WQMX811	MEA037	BE
103. WQMX812	MEA038	AD
104. WQMX813	MEA038	AE
105. WQMX814	MEA038	AW
106. WQMX815	MEA039	AD
107. WQMX817	MEA040	AL
108. WQMX819	MEA040	BC
109. WQMX820	MEA040	BF
110. WQMX822	MEA041	AK
111. WQMX823	MEA041	AL
112. WQMX824	MEA041	BK
113. WQMX826	MEA042	AM
114. WQMX827	MEA042	BE
115. WQMX830	MEA043	AN
116. WQMX832	MEA044	AD
117. WQMX833	MEA044	AO
118. WQMX838	MEA046	AT
119. WQMX839	MEA046	AU
120. WQMX840	MEA046	AV
121. WQMX841	MEA047	AA
122. WQMX842	MEA047	AB
123. WQMX843	MEA047	AC
124. WQMX844	MEA048	AF
125. WQMX845	MEA048	AG
126. WQMX846	MEA048	AH
127. WQMX847	MEA050	AA
128. WQMX848	MEA050	AB

Attachment 4
List of Itron Licenses Excluded from Waiver

Call Sign	Market Code	Channel Block
1. WQMX697	MEA002	AP
2. WQMX703	MEA004	AP
3. WQMX704	MEA004	AZ
4. WQMX707	MEA005	AM
5. WQMX708	MEA005	AN
6. WQMX710	MEA006	AP
7. WQMX715	MEA007	AM
8. WQMX730	MEA012	AK
9. WQMX731	MEA012	AL
10. WQMX750	MEA018	BI
11. WQMX769	MEA024	BI
12. WQMX793	MEA031	AJ
13. WQMX800	MEA034	AA
14. WQMX801	MEA034	AB
15. WQMX804	MEA035	BI
16. WQMX809	MEA037	BC
17. WQMX816	MEA039	AI
18. WQMX818	MEA040	AY
19. WQMX821	MEA041	AJ
20. WQMX825	MEA042	AJ
21. WQMX828	MEA043	AI
22. WQMX829	MEA043	AJ
23. WQMX831	MEA043	AW
24. WQMX834	MEA044	AW
25. WQMX835	MEA045	AV
26. WQMX836	MEA045	AW
27. WQMX837	MEA045	AX