

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

In the Matter of	)	
	)	
Advanced Television Systems	)	MB Docket No. 87-268
and Their Impact upon the	)	
Existing Television Broadcast	)	
Service	)	
	)	

**JOINT REPLY COMMENTS OF  
QUINCY BROADCASTING COMPANY AND WREX TELEVISION, LLC**

Quincy Broadcasting Company (“Quincy”), licensee of NTSC television station WGEM-TV, Channel 10, and permittee of WGEM-DT, Channel 54, Quincy, Illinois (Facility ID No. 54275), and WREX Television, LLC (“WREX Licensee”), licensee of NTSC television WREX-TV, Channel 13, and permittee of WREX-DT, Channel 54 (Facility ID No. 73940) (collectively, the “Joint Commenters”), by their attorneys and pursuant to Section 1.415 of the FCC’s rules, hereby file their joint reply comments in the above-captioned proceeding.<sup>1</sup>

The initial comments from engineering firm Cohen, Dippell, and Everist, P.C. (“CDE”) raise the important issue of how to treat television stations on high VHF NTSC channels that certified replication and intended to return to their VHF channels for post-transition DTV operation.<sup>2</sup> CDE and numerous other commenters<sup>3</sup> urge the Commission to allow such stations to operate post-transition with the equivalent of the technical parameters of their licensed analog VHF facilities. This would serve to eliminate the

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<sup>1</sup> *Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, MB Docket No. 87-268, FCC 06-150 (“7<sup>th</sup> FNPRM”).

<sup>2</sup> Comments of Cohen, Dippell, and Everist, P.C., January 26, 2007, at 3.

<sup>3</sup> *See, e.g.*, Comments of Hoak Media, LLC at 2-3; Comments of WQED Multimedia at 2-3; Comments of Georgia Public Telecommunications Commission, engineering statement at 2-3.

apparently unintended reduction in post-transition VHF DTV facilities caused by conversion of the licensed VHF (NTSC) parameters to allotted UHF (DT) parameters that may not fully replicate analog VHF coverage and then converting the reduced UHF (DT) parameters back to proposed post-transition VHF (DT) operation.

The Joint Commenters support the proposal of CDE and other commenters on this issue. As indicated in the attached engineering statement (Attachment A), the DTV parameters for WGEM-DT and WREX-DT specified in Appendix B of the 7<sup>th</sup> FNPRM fall significantly short of replicating the stations' analog coverage, and the stations deserve relief.

Specifically, WGEM-TV and WREX-TV faced similar circumstances in the DTV transition. Both stations operate analog on high VHF channels, and both were awarded out-of-core interim DTV channel assignments. Each station timely filed FCC Form 381 certifying "replication"; and each station also submitted an e-mail to "Form381@fcc.gov" explaining that its certification of "replication" meant that it intended to replicate its analog coverage, which exceeded the coverage of the DTV allotment assigned to the station for its out-of-core UHF channel.<sup>4</sup>

Specifically, each station was assigned an out-of-core UHF channel as its interim digital channel with an assigned power of 1000 kW, the maximum the FCC assigned to any UHF channel. The note to 47 C.F.R. § 73.622(e)(2) explains that in cases where the assigned power of a UHF DTV Station is 1000 kW "the Grade B contour of the associated analog television station ... shall be used instead of the noise limited contour of the DTV station in determining the DTV station's service area." Thus, as further

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<sup>4</sup> Copies of the e-mails for WGEM-TV and WREX-TV are appended as Attachment B and Attachment C, respectively.

described in the attached engineering statement, WGEM-DT and WREX-DT should be assigned ERP that will allow them to replicate the Grade B contour of their associated analog coverage.

Respectfully submitted,  
Quincy Broadcasting Company  
WREX Television, LLC

\_\_\_\_\_/s/\_\_\_\_\_  
Kenneth E. Satten  
Timothy J. Cooney

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February 26, 2007

**ENGINEERING STATEMENT  
RE: JOINT REPLY COMMENTS OF  
QUINCY BROADCASTING CO. AND WREX TELEVISION, LLC**

**INTRODUCTION**

Quincy Broadcasting Company, licensee of analog TV station WGEM-TV, Channel 10, and permittee of DTV station WGEM-DT, Channel 54, Quincy, Illinois (Facility ID No. 54275), and WREX Television, LLC, licensee of analog TV station WREX-TV, Channel 13, and permittee of DTV station WREX-DT, Channel 54, Rockford, Illinois (Facility ID No. 73940) (collectively, the “Joint Commenters”), advocate that both WGEM-DT and WREX-DT should be afforded additional effective radiated power in connection with their tentative channel designations (“TCD”) in Appendix B of the *Seventh Further Notice of Proposed Rulemaking*, MB Docket 87-268, FCC 06-150 (“7<sup>th</sup> FNPRM”). Specifically, WGEM-DT and WREX-DT both involve special circumstances that necessitate determination of their replication facilities based on the Grade B contour of their associated analog TV station.

WGEM-DT and WREX-DT certified that they would construct replication facilities using FCC Form 381 and since they were both assigned out-of-core UHF channels in the initial DTV Table, each station elected to return to its in-core analog channel for post-transition DTV operation. Additionally, each station described the special circumstances surrounding its Form 381 certification by email correspondence to the Commission in accordance with Public Notice, “Electronic Mailbox Established for FCC

Form 381”, DA 04-3495. Copies of those emails are supplied in the attachments to the Reply Comments of the Joint Commenters.

This statement provides technical information to demonstrate that additional effective radiated power to enable WGEM-DT and WREX-DT to fully replicate the Grade B contour of their associated analog TV facilities can be afforded in accordance with the Commission's interference guidelines for stations like WGEM-DT and WREX-DT that had an out-of-core DTV channel and chose their in-core analog channel for post-transition DTV operation in Round 1. See Public Notice, “DTV Channel Election: First Round Conflict Decision Extension and Guidelines For Interference Conflict Analysis”, 20 FCC Rcd 13415 (MB 2005)

## **REPLICATION FACILITIES AND INTERFERENCE ANALYSIS**

The pre-election certifications for WGEM-DT and WREX-DT were timely filed on November 4, 2004 in which both stations certified that they would construct replication facilities. Each station also notified the Commission staff by email that their assigned UHF power of 1,000 kW in the initial DTV Table was not sufficient to replicate the larger Grade B contour of its associated analog VHF-TV station. Use of the Grade B contour to determine the DTV service area in lieu of the noise-limited contour in such cases is stipulated in the Commission's rules. See note to Paragraph (e)(2) in 47 C.F.R. Section 73.622. Upon close examination of the proposed replication facilities for WGEM-DT and WREX-DT in the 7<sup>th</sup> FNPRM, it is clear that effective radiated power for each of the stations was derived from the original paired UHF facilities in the initial DTV Table. The Joint Commenters therefore wish to establish higher power for both WGEM-DT and

WREX-DT, sufficient enough to enable each station to replicate its analog Grade B service area.

In both cases, it has been established that 12 kW of effective radiated power is sufficient for WGEM-DT and WREX-DT to effectively replicate Grade B service based on the transmitter location and antenna height information described in the 7<sup>th</sup> FNPRM. Since WGEM-TV and WREX-DT each plan to employ the existing nondirectional antennas used by their analog facilities, both stations are proposing to substitute nondirectional radiation in lieu of their directional envelope patterns. Maps depicting the proposed noise-limited coverage contour in comparison to the analog TV Grade B contour, as authorized prior to April 3, 1997, and the initial TCD parameters in the 7<sup>th</sup> FNPRM for WGEM-DT and WREX-DT are attached to this statement as Figure 1 and 2, respectively.

Interference studies have been conducted for both WGEM-DT and WREX-DT based on the effective radiated power and nondirectional antenna proposed for each of the stations. The computer software used to analyze these proposals is similar to software that the Commission staff has used to evaluate requests for modification of DTV facilities and changes in channel allotments. This analysis software, developed by Techware, Inc., was utilized to examine interference based on a database of the post-transition tentative channel assignments. A summary of results for WGEM-TV is attached as Figure 3 and the results for WREX-TV are summarized in Figure 4. The analysis results demonstrate that WGEM-DT and WREX-DT can each operate in a nondirectional mode with an effective radiated power of 12 kW and not result in new unmasked interference exceeding the permissible interference tolerance when the

interference masked by each station's analog TV facilities is considered, which is the same methodology implemented by the Commission in evaluating the DTV elections in Round 1. Accordingly, the technical information in Appendix B of the 7<sup>th</sup> FNPRM should be revised to reflect following information for WGEM-DT and WREX-DT:

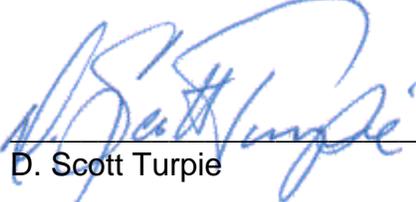
Facility ID	State & City	NTSC	DTV								
		Chan	Chan	ERP (kW)	HAAT (m)	Antenna ID	Latitude (DDMMSS)	Longitude (DDMMSS)	Area (sq km)	Population (thousand)	% Interference Received
54275	IL QUINCY	10	10	12	238		395703	911954	25410	312	0.5%
73940	IL ROCKFORD	13	13	12	216		421750	891424	22162	1450	9.7%

With respect to the proposal for WREX-DT, it should be noted that CBS Corporation submitted comments in this proceeding to request the substitution of Channel 12 in lieu of the present TCD for WBBM-DT in Chicago, IL. It has been determined that although the additional power for WREX-DT will not impact the channel change sought by WBBM-DT as demonstrated in Figure 4, WREX-DT's proposal is subject to receive 0.6% interference (in excess of the Commission's 0.1% interference guideline) as a result of the new channel assignment requested for WBBM-DT. It also does not appear that the WBBM-DT proposal meets the interference protection criteria in regard to the Channel 12 designation for WINM-DT in Angola, IN, which is calculated to receive 0.8% new interference from WBBM-DT on Channel 12. The interference analysis that was submitted in support of the WBBM-DT proposal relies on the baseline service population for WINM that was determined using the Commission's certification database that was developed to process channel elections, which includes both digital and analog stations. It is presumed that an acceptable alternate channel proposal must

cause no more than 0.1% of new interference to any licensee's TCD based on an analysis using the post-transition database, consisting of only the approved TCDs. In the event that the proposal for WBBM-DT is deemed to be acceptable by the Commission, WREX-DT will work to resolve any conflict with WBBM-DT.

Respectfully submitted,

**LOHNES AND CULVER**



D. Scott Turpie

February, 2007

**FIGURE 1**

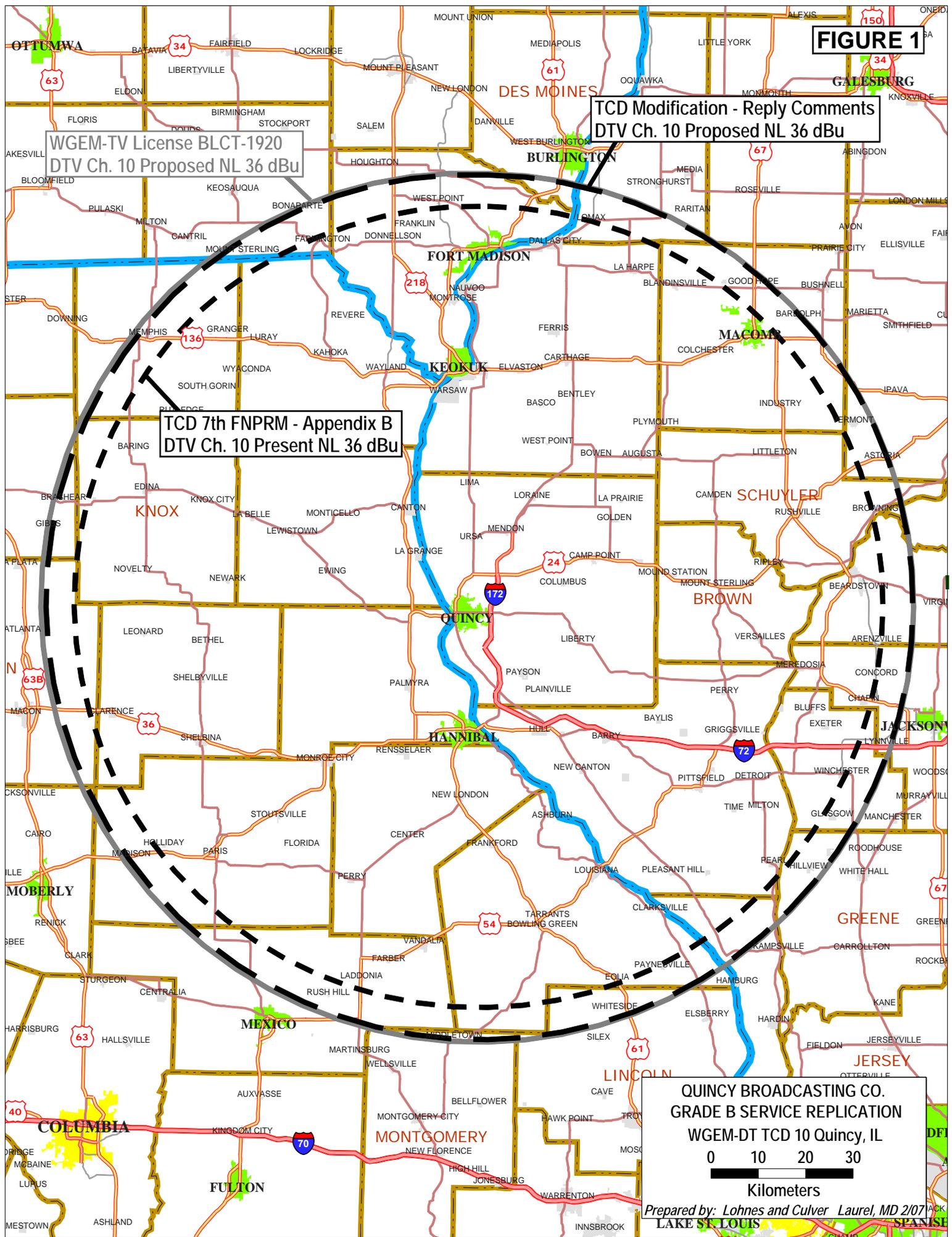
**TCD Modification - Reply Comments**  
**DTV Ch. 10 Proposed NL 36 dBu**

**WGEM-TV License BLCT-1920**  
**DTV Ch. 10 Proposed NL 36 dBu**

**TCD 7th FNPRM - Appendix B**  
**DTV Ch. 10 Present NL 36 dBu**

**QUINCY BROADCASTING CO.**  
**GRADE B SERVICE REPLICATION**  
**WGEM-DT TCD 10 Quincy, IL**  
0 10 20 30  
**Kilometers**

*Prepared by: Lohnes and Culver Laurel, MD 21077*  
**LAKE ST. LOUIS**



**FIGURE 2**

TCD Modification - Reply Comments  
DTV Ch. 13 Proposed NL 36 dBu

WREX-TV License BLCT-1372  
NTSC Ch. 13 Grade B 56 dBu

TCD 7th FMPRM - Appendix B  
DTV Ch. 13 Present NL 36 dBu

WREX TELEVISION, INC.  
GRADE B SERVICE REPLICATION  
WREX-DT TCD 13 Rockford, IL

0 10 20 30  
Kilometers

Prepared by: Lohnes and Culver Laurel, MD 2/07

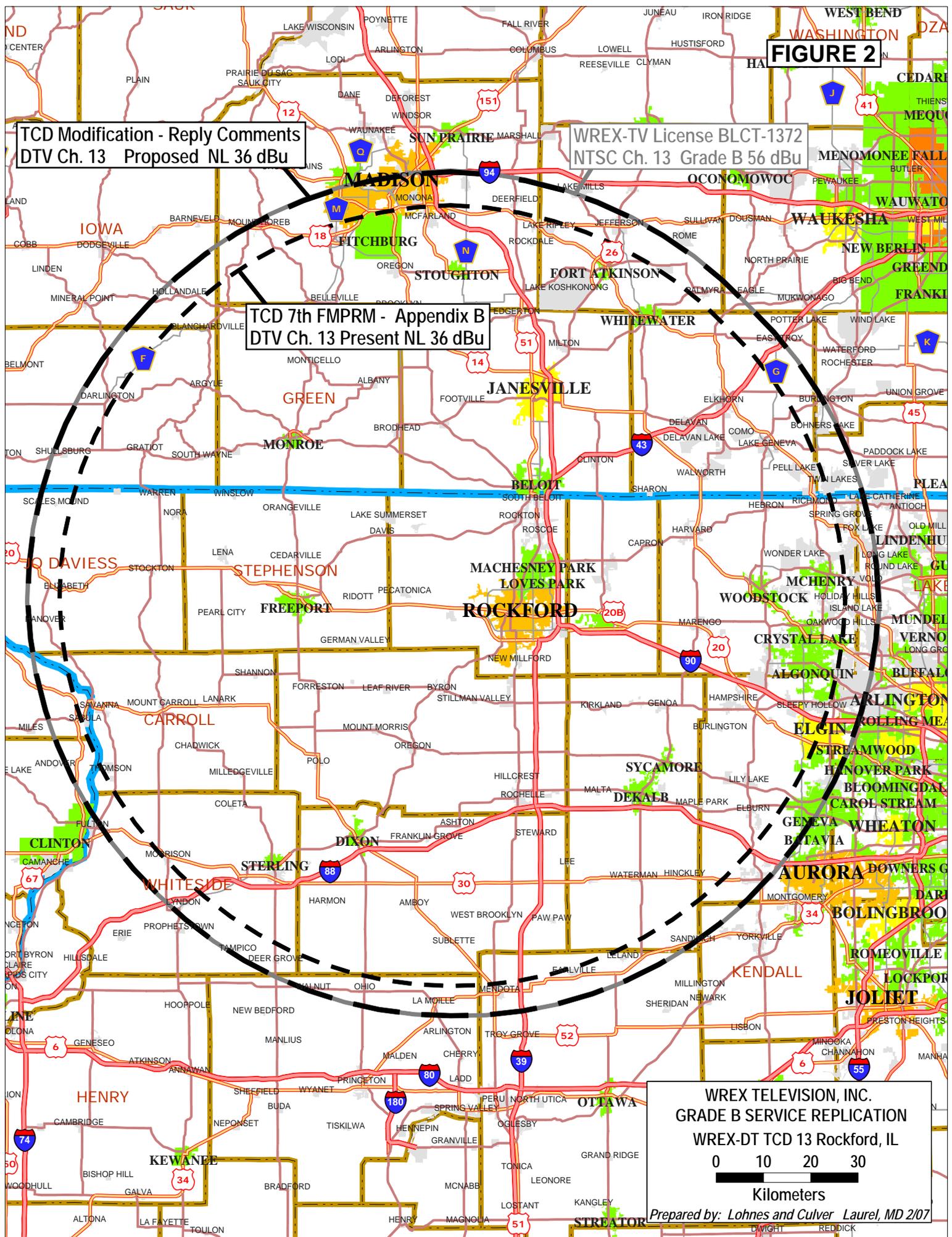


FIGURE 3  
INTERFERENCE ANALYSIS SUMMARY  
WGEM-DT 12KW-ND 238 M HAAT  
10A IL QUINCY

Affected Stations	Before 10A IL QUINCY ANALYSIS	After 10A IL QUINCY	
		DTV Service REPLICATION	NTSC Service REPLICATION
<b>Results for: 10A IL LASALLE</b>			
HAAT 403.0 m, ERP 16.0 kW			
Population within NL Contour	2,971,046	2,971,046	2,971,046
not affected by terrain losses	2,896,835	2,896,835	2,896,835
lost to NTSC IX by 10N IL QUINCY	88,991	0	0
lost to additional IX by digital TCD(s)	108,912	142,859	158,410
lost to IX by digital TCD(s) only	126,512	142,859	158,410
lost to all IX	197,903	142,859	158,410
Percentage of received IX	6.83%	4.93%	5.47%
<b>Results for: 10A IN TERRE HAUTE</b>			
HAAT 293.0 m, ERP 14.2 kW			
Population within NL Contour	775,398	775,398	775,398
not affected by terrain losses	761,710	761,710	761,710
lost to NTSC IX by 10N IL QUINCY	7,155	0	0
lost to additional IX by digital TCD(s)	15,545	18,482	18,732
lost to IX by digital TCD(s) only	18,482	18,482	18,732
lost to all IX	22,700	18,482	18,732
Percentage of received IX	2.98%	2.43%	2.46%
<b>Results for: 10A MO SPRINGFIELD</b>			
HAAT 573.0 m, ERP 19.6 kW			
Population within NL Contour	873,060	873,060	873,060
not affected by terrain losses	840,971	840,971	840,971
lost to NTSC IX by 10N IL QUINCY	3,455	0	0
lost to additional IX by digital TCD(s)	1,302	2,749	2,855
lost to IX by digital TCD(s) only	1,302	2,749	2,855
lost to all IX	4,757	2,749	2,855
Percentage of received IX	0.57%	0.33%	0.34%

FIGURE 4  
INTERFERENCE ANALYSIS SUMMARY  
WREX-DT 12KW-ND 216 M HAAT  
13A IL ROCKFORD

AFFECTED STATIONS	Before 13A IL ROCKFORD ANALYSIS	After 13A IL ROCKFORD	
		DTV Service REPLICATION	NTSC Service REPLICATION
<b>Results for: 13A IA DES MOINES</b>			
HAAT 609.0 m, ERP 36.1 kW			
Population within NL Contour	1,077,046	1,077,046	1,077,046
not affected by terrain losses	1,062,380	1,062,380	1,062,380
lost to NTSC IX by <b>13N IL ROCKFORD</b>	26,055	0	0
lost to additional IX by digital TCD(s)	986	23,784	23,852
lost to IX by digital TCD(s) only	23,745	23,784	23,852
lost to all IX	27,041	23,784	23,852
Percentage of received IX	2.55%	2.24%	2.25%
<b>Results for: 13A IL SPRINGFIELD</b>			
HAAT 183.0 m, ERP 5.08 kW			
Population within NL Contour	558,333	558,333	558,333
not affected by terrain losses	554,396	554,396	554,396
lost to NTSC IX by <b>13N IL ROCKFORD</b>	6,264	0	0
lost to additional IX by digital TCD(s)	195	1,046	1,682
lost to IX by digital TCD(s) only	871	1,046	1,682
lost to all IX	6,459	1,046	1,682
Percentage of received IX	1.17%	0.19%	0.30%
<b>Results for: 13A IN INDIANAPOLIS</b>			
HAAT 265.0 m, ERP 13.1 kW			
Population within NL Contour	2,474,784	2,474,784	2,474,784
not affected by terrain losses	2,445,039	2,445,039	2,445,039
lost to NTSC IX by <b>13N IL ROCKFORD</b>	3,778	0	0
lost to additional IX by digital TCD(s)	16,347	17,042	17,042
lost to IX by digital TCD(s) only	17,042	17,042	17,042
lost to all IX	20,125	17,042	17,042
Percentage of received IX	0.82%	0.70%	0.70%
<b>Results for: 13A MI GRAND RAPIDS</b>			
HAAT 305.0 m, ERP 15.1kW			
Population within NL Contour	1,412,985	1,412,985	1,412,985
not affected by terrain losses	1,394,477	1,394,477	1,394,477
lost to NTSC IX by <b>13N IL ROCKFORD</b>	3,040	0	0
lost to additional IX by digital TCD(s)	1,311	1,679	1,679
lost to IX by digital TCD(s) only	1,679	1,679	1,679
lost to all IX	4,351	1,679	1,679
Percentage of received IX	0.31%	0.12%	0.12%
<b>Results for: 13A WI EAU CLAIRE</b>			
HAAT 607.0 m, ERP 22.9 kW			
Population within NL Contour	925,833	925,833	925,833
not affected by terrain losses	875,916	875,916	875,916
lost to NTSC IX by <b>13N IL ROCKFORD</b>	19,589	0	0
lost to additional IX by digital TCD(s)	7,108	15,049	17,858
lost to IX by digital TCD(s) only	14,877	15,049	17,858
lost to all IX	26,697	15,049	17,858
Percentage of received IX	3.05%	1.72%	2.04%
<b>Results for: 12A IL CHICAGO (Comments in MB Docket 87-267)</b>			
HAAT 497.0 m, ERP 13.6 kW			
Population within NL Contour		9,606,869	9,606,869
not affected by terrain losses		9,600,133	9,600,133
lost to NTSC IX		0	0
lost to additional IX by digital TCD(s)		11,762	11,992
lost to IX by digital TCD(s) only		11,762	11,992
lost to all IX		11,762	11,992
Percentage of received IX		0.12%	0.12%

## **ATTACHMENT B**

**Cooney, Timothy**

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**From:** Cooney, Timothy  
**Sent:** Thursday, November 04, 2004 8:46 PM  
**To:** 'form381@fcc.gov'  
**Subject:** FCC Form 381 for WGEM-TV, Quincy, IL, Application Reference No. 20041104AZL

On behalf of Quincy Broadcasting Company of WGEM-TV Quincy, IL, we hereby notify the Commission that in certifying "replication" by checking Box 1.C. on FCC Form 381 filed November 4, 2005, Licensee seeks to replicate the coverage of its NTSC signal 10. The Station's NTSC coverage exceeds the coverage of the DTV allotment assigned to the Station in Appendix B of the DTV Second MO&O, 14 FCC Rcd 1348.

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202-783-4141 (receptionist)  
tcooney@wbklaw.com

## ATTACHMENT C

**Cooney, Timothy**

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**From:** Cooney, Timothy**Sent:** Thursday, November 04, 2004 8:44 PM**To:** 'form381@fcc.gov'**Subject:** FCC Form 381 for WREX-TV, Rockford, IL, Application Reference No. 20041104AYM

On behalf of WREX Television, LLC of WREX-TV, Rockford, IL, we hereby notify the Commission that in certifying "replication" by checking Box 1.C. on FCC Form 381 filed November 4, 2005, Licensee seeks to replicate the coverage of its NTSC signal 13. The Station's NTSC coverage exceeds the coverage of the DTV allotment assigned to the Station in Appendix B of the DTV Second MO&O, 14 FCC Rcd 1348.

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