

TECHNICAL EXHIBIT  
APPLICATION FOR DTV CONSTRUCTION PERMIT  
IN SUPPORT OF ITS POST-TRANSITION FACILITY  
STATION WRGB-DT (FACILITY ID 73942)  
SCHENECTADY, NEW YORK

MARCH 5, 2008

CH 6 4.64 KW 396 M

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Technical Narrative

This Technical Exhibit supports an application for digital television (DTV) station WRGB-DT for its final DTV operation at Schenectady, New York. This application requests a construction permit (CP) for a digital television operation on channel 6, using a new, side-mounted non-directional antenna.

Proposed Facilities

Station WRGB-DT proposes to operate DTV channel 6 from its digital transmitter site coordinates, with a non-directional effective radiated power (ERP) of 4.64 kilowatts and antenna height above average terrain (HAAT) of 396 meters. The transmitter site coordinates are:

42° 37' 31" North Latitude  
74° 00' 38" West Longitude

A sketch of antenna and pertinent elevations are included as Figure 1. Figure 2 depicts the proposed antenna elevation pattern.

Figure 3 is a map showing the DTV predicted coverage contours as well as the associated analog Grade B, licensed DTV and Appendix B allotment coverage contours. A 5-mile buffer has been added to the Appendix B allotment coverage contour. The extent of the proposed 4.64 kW contour has been calculated using the normal FCC prediction method. The predicted 28 dBu contour will not extend beyond the 5-mile buffer at any location.

The Schenectady city limits were derived from information contained in the 2000 U.S. Census of Population and Housing.

#### Population Served

The herein proposed WRGB-DT facility is predicted to serve 1,591,214 persons, post-transition, based upon the 2000 Census. WRGB-DT's associated Appendix B facility is predicted to serve 1,568,089 persons. Therefore, the herein proposed WRGB-DT facility would serve more than 100% of WRGB-DT's Appendix B population.

#### Allocation Considerations

Since the proposed WRGB-DT ERP exceeds the Commission's *Appendix B* allocated maximum effective radiated power in some azimuthal directions<sup>1</sup>, a waiver of the current freeze on filing DTV maximization applications is requested. In support of that waiver request, an allocation study was completed to ensure no prohibited interference would occur. The proposed WRGB-DT operation meets the FCC's post-transition interference standards to pertinent Class A and DTV allotments using the procedures outlined in the

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<sup>1</sup> See Seventh Report And Order And Eighth Further Notice Of Proposed Rule Making in the Matter of Advanced Television Systems and their Impact Upon the Existing Television Broadcast Service, MB Docket 87-268, Released August 6, 2007; Adopted August 1, 2007.

FCC's OET-69 Bulletin and a 2 kilometer grid cell size. The results of the interference analyses are summarized in Figure 4.

#### Canadian Coordination

The proposed operation is located 248 kilometers from the Canadian Border. Based on the U.S./Canadian Letter of Understanding (LOU), the proposal appears to meet the minimum separation requirements with respect to all Canadian assignments except to CJOH-TV (Ch 6) at Deseronto, Ontario. The calculated interference to CJOH-TV amounts to 1,450 people or 0.37% of CJOH-TV's service population. Coordination with Canada is requested.

#### Radiofrequency Electromagnetic Field Exposure

The proposed WRGB-DT facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna is located 304 meters above ground level with an ERP of 4.64 kW. A conservative relative field value of 0.4 was assumed for the calculation (see Figure 2). The calculated power density at a point 2 meters above ground level will not exceed  $0.0022 \text{ mW/cm}^2$ . This is less than 5% of the FCC's recommended limit of  $0.2 \text{ mW/cm}^2$  for channel 6 for an "uncontrolled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the station is at reduced

power or shut down. The proposed WRGB-DT operation appears to be otherwise categorically excluded from environmental processing.

It is noted that this statement only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already have been provided to the FCC by the tower owner.



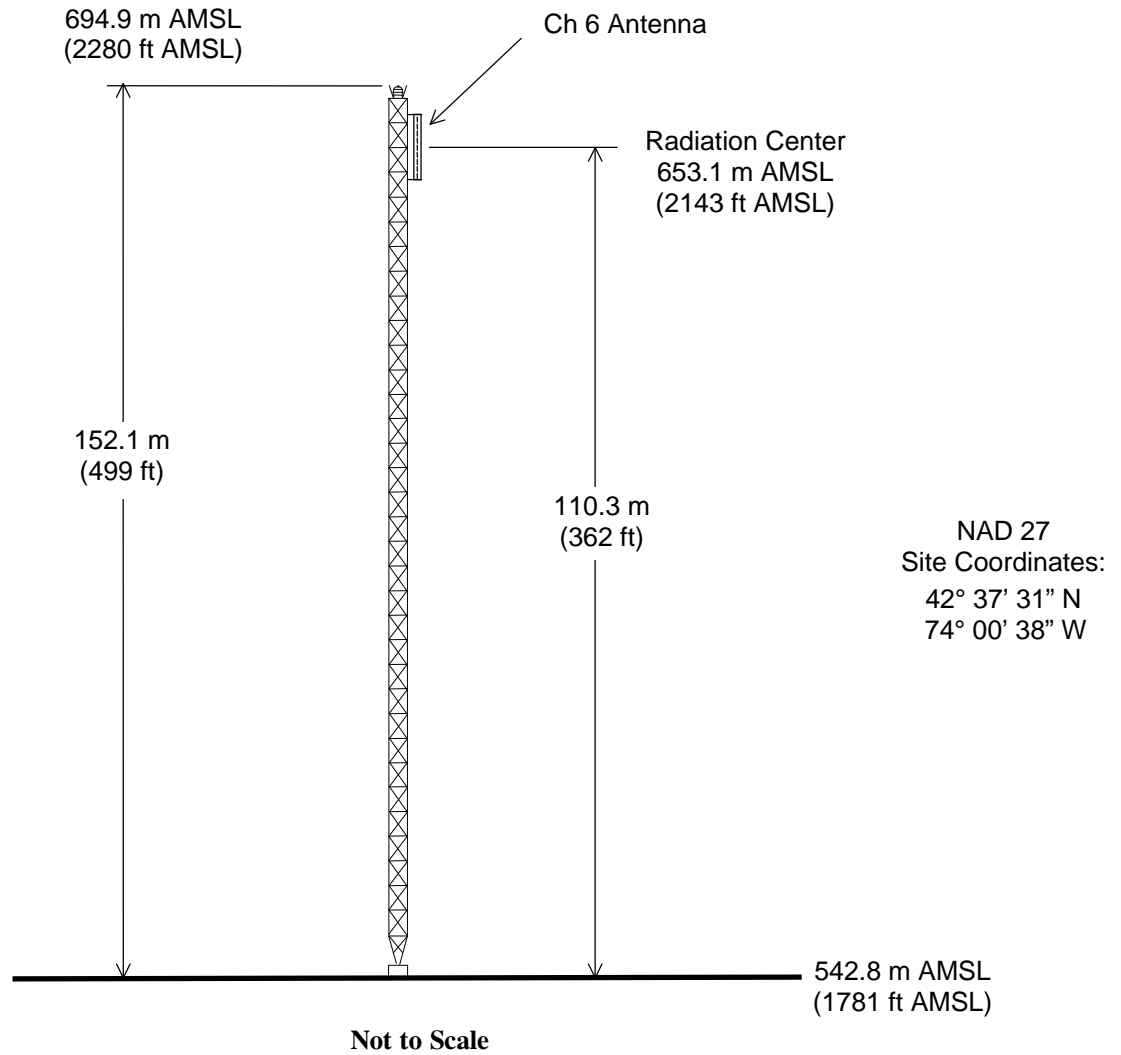
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March 5, 2008



Registration No. 1231728



## ANTENNA AND SUPPORTING STRUCTURE

STATION WRGB-DT  
SCHENECTADY, NEW YORK

CH 6 4.64 KW 396 M

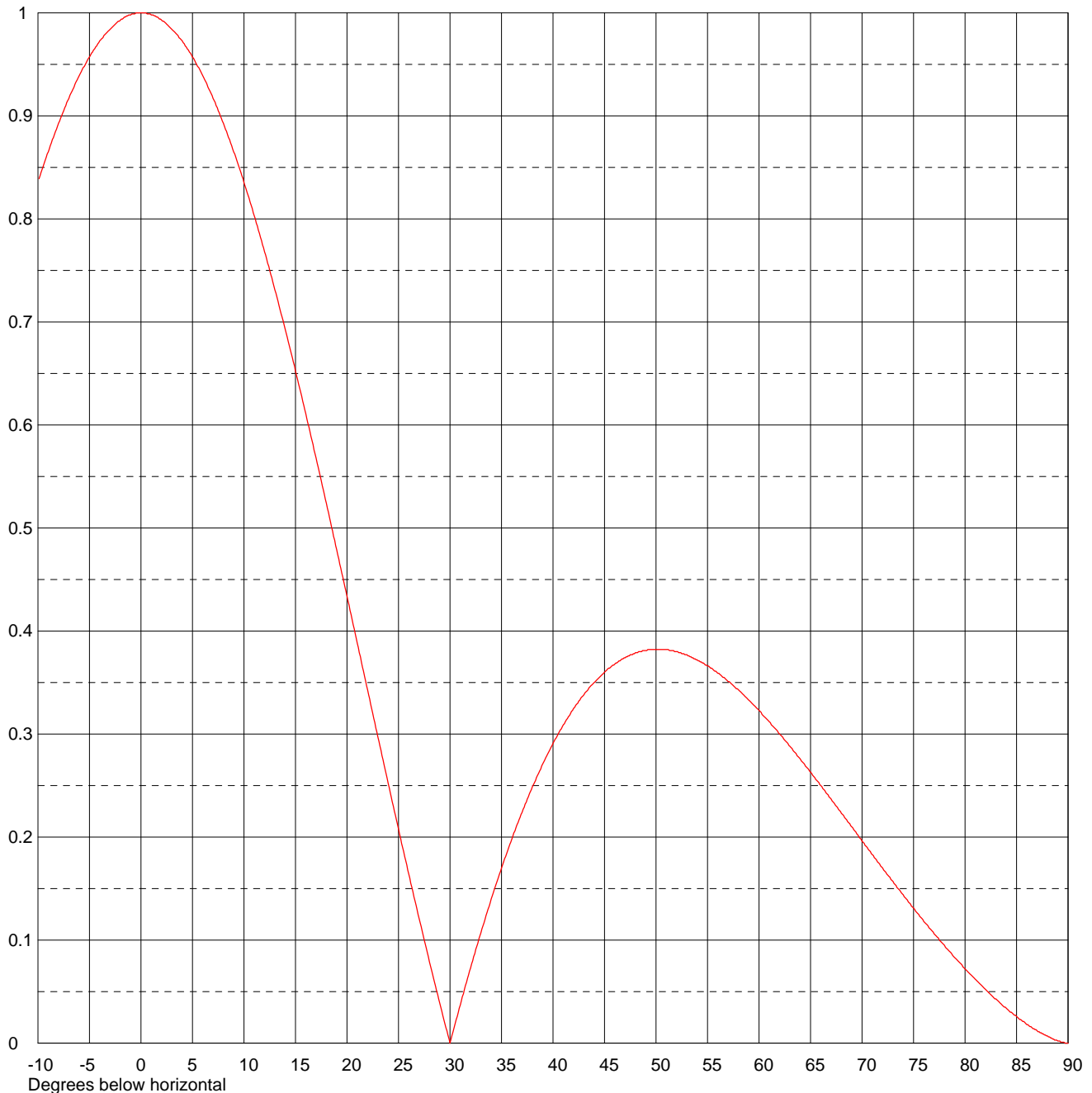
du Treil, Lundin & Rackley, Inc. Sarasota, Florida



Date	04 Mar 2008
Call Letters	WRGB-DT
Location	Channel 6
Customer	
Antenna Type	THB-O3-2/6-1

### ELEVATION PATTERN

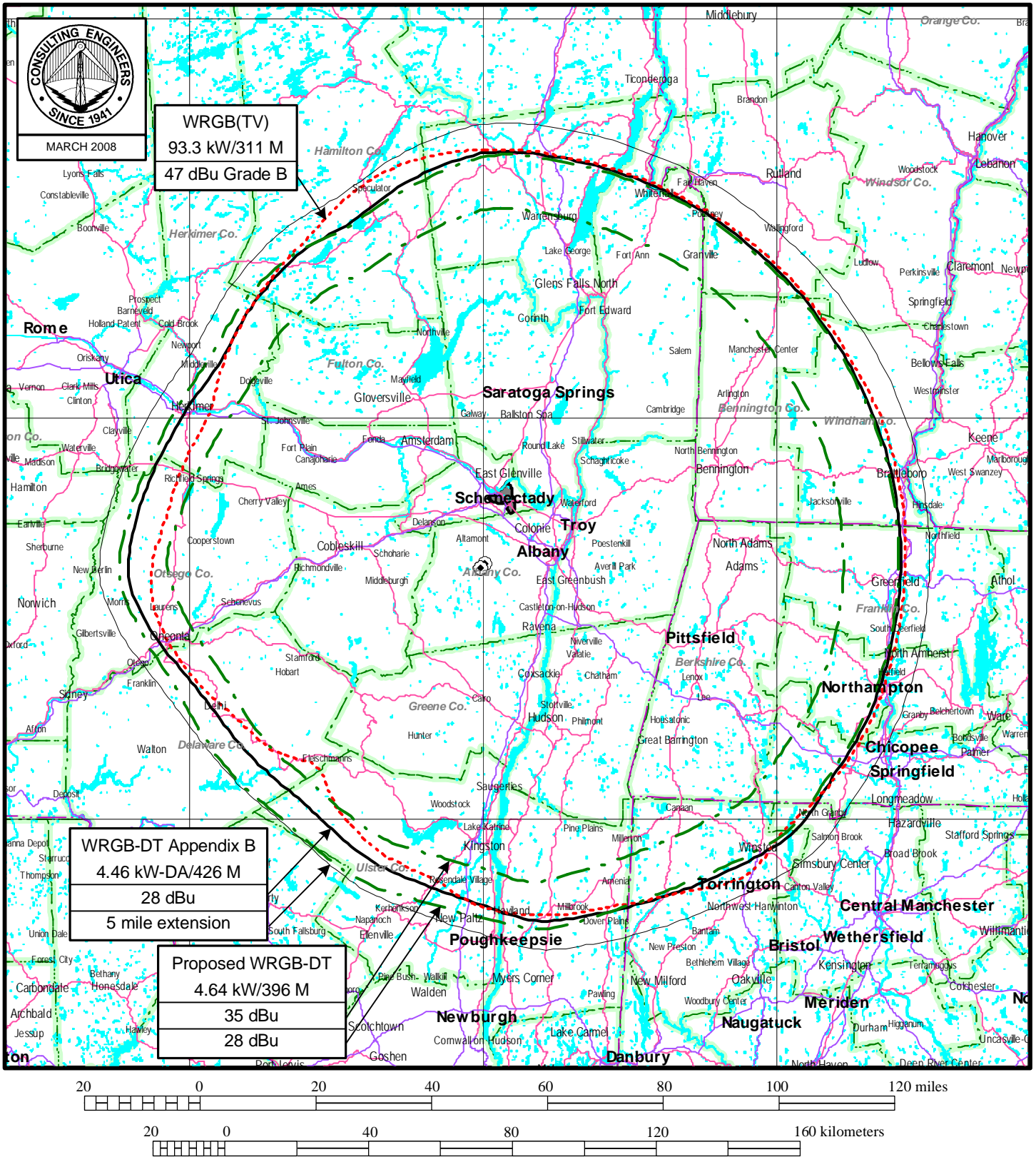
RMS Gain at Main Lobe	2.1 (3.22 dB)	Beam Tilt	0.00 Degrees
RMS Gain at Horizontal	2.1 (3.22 dB)	Frequency	85.00 MHz
Calculated / Measured	Calculated	Drawing #	02H021000-90



Remarks:



Figure 3



## PREDICTED COVERAGE CONTOURS

STATION WRGB-DT  
SCHENECTADY, NEW YORK  
CH 6 4.64 kW 396

du Treil, Lundin & Rackley, Inc Sarasota, Florida

Percent allowed new interference: 0.500  
Percent allowed new interference to Class A: 0.500  
Census data selected 2000

Post Transition Data Base Selected  
/export/home/cdbb/tvdb.sff\_G  
TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 03-05-2008 Time: 09:32:21  
Record Selected for Analysis

WRGB USERRECORD-01 SCHENECTADY NY US  
Channel 06 ERP 4.64 kW HAAT 396. m RCAMSL 00653 m  
Latitude 042-37-31 Longitude 0074-00-38  
Status APP Zone 1 Border  
Last update Cutoff date Docket

Cell Size for Service Analysis 2.0 km/side  
Distance Increments for Longley-Rice Analysis 1.00 km

Facility does not meet maximum height/power limits  
Channel 6 ERP = 4.64 HAAT = 396.

Azimuth (Deg)	ERP (kW)	HAAT (m)	28.0 dBu F(50,90) (km)
0.0	4.640	526.1	114.0
45.0	4.640	554.4	116.0
90.0	4.640	563.1	116.5
135.0	4.640	491.1	111.3
180.0	4.640	269.5	97.1
225.0	4.640	185.6	90.0
270.0	4.640	310.0	100.4
315.0	4.640	271.7	97.3

Evaluation toward Class A Stations

No Spacing violations or contour overlap to Class A stations

Class A Evaluation Complete

Proposed facility OK to FCC Monitoring Stations  
Proposed facility OK toward West Virginia quite zone  
Proposed facility OK toward Table Mountain  
Proposed facility is within the Canadian coordination distance  
Distance to border = 247.6km  
Proposed facility is beyond the Mexican coordination distance  
Proposed station is OK toward AM broadcast stations

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Start of Interference Analysis

Channel	Call	City/State	ARN
06	WRGB	SCHENECTADY NY	USERRECORD01

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
06	WEDY	NEW HAVEN CT	170.6	CP MOD	BMPEDT	-20020305AAU
06	WPVITV	PHILADELPHIA PA	304.7	LIC	BLCT	-2282

%%%

Analysis of Interference to Affected Station 1

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
06	WEDY	NEW HAVEN CT	BMPEDT	-20020305AAU

## Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
06	WPVITV	PHILADELPHIA PA	243.0	LIC	BLCT -2282
06	WRGB	SCHENECTADY NY	170.6	APP	USERRECORD-01

Total scenarios = 1

Result key: 1  
 Scenario 1 Affected station 1  
 Before Analysis

Results for: 6A CT NEW HAVEN BMPEDT 20020305AAU CP  
 HAAT 88.0 m, ATV ERP 0.4 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	3042512	9953.5
not affected by terrain losses	3017853	9841.4
lost to NTSC IX	0	0.0
lost to additional IX by ATV	304809	772.7
lost to ATV IX only	304809	772.7
lost to all IX	304809	772.7

Potential Interfering Stations Included in above Scenario 1

6A PA PHILADELPHIA	BLCT	2282	LIC
6A NY SCHENECTADY	BPCDT	19991029ADH	CP

## After Analysis

Results for: 6A CT NEW HAVEN BMPEDT 20020305AAU CP  
 HAAT 88.0 m, ATV ERP 0.4 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	3042512	9953.5
not affected by terrain losses	3017853	9841.4
lost to NTSC IX	0	0.0
lost to additional IX by ATV	317536	804.8
lost to ATV IX only	317536	804.8
lost to all IX	317536	804.8

Potential Interfering Stations Included in above Scenario 1

6A PA PHILADELPHIA	BLCT	2282	LIC
6A NY SCHENECTADY	USERRECORD01		APP

Percent new IX = 0.4691%  
 Worst case new IX 0.4691% Scenario 1

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## Analysis of Interference to Affected Station 2

## Analysis of current record

Channel	Call	City/State	Application Ref. No.
06	WPVITV	PHILADELPHIA PA	BLCT -2282

## Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
06	WEDY	NEW HAVEN CT	243.0	CP MOD	BMPEDT -20020305AAU
06	WRGB	SCHENECTADY NY	304.7	APP	USERRECORD-01

Total scenarios = 1

Result key: 2  
 Scenario 1 Affected station 2  
 Before Analysis

Results for: 6A PA PHILADELPHIA BLCT 2282 LIC  
 HAAT 332.0 m, ATV ERP 6.2 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	10329897	33265.0
not affected by terrain losses	10204102	32333.5
lost to NTSC IX	0	0.0
lost to additional IX by ATV	17792	52.4
lost to ATV IX only	17792	52.4
lost to all IX	17792	52.4

Potential Interfering Stations Included in above Scenario 1

6A CT NEW HAVEN	BMPEDT	20020305AAU	CP
6A NY SCHENECTADY	BPCDT	19991029ADH	CP

#### After Analysis

Results for: 6A PA PHILADELPHIA BLCT 2282 LIC  
HAAT 332.0 m, ATV ERP 6.2 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	10329897	33265.0
not affected by terrain losses	10204102	32333.5
lost to NTSC IX	0	0.0
lost to additional IX by ATV	19006	64.5
lost to ATV IX only	19006	64.5
lost to all IX	19006	64.5

Potential Interfering Stations Included in above Scenario 1

6A CT NEW HAVEN	BMPEDT	20020305AAU	CP
6A NY SCHENECTADY	USERRECORD01		APP

Percent new IX = 0.0119%  
Worst case new IX 0.0119% Scenario 1

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#### Analysis of Interference to Affected Station 3

#### Analysis of current record

Channel	Call	City/State	Application Ref. No.
06	WRGB	SCHENECTADY NY	USERRECORD-01

#### Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
06	WEDY	NEW HAVEN CT	170.6	CP MOD BMPEDT	-20020305AAU
06	WPVITV	PHILADELPHIA PA	304.7	LIC BLCT	-2282

Total scenarios = 1

Result key: 3  
Scenario 1 Affected station 3  
Before Analysis

Results for: 6A NY SCHENECTADY USERRECORD01 APP  
HAAT 396.0 m, ATV ERP 4.6 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	1741527	35044.3
not affected by terrain losses	1610580	31649.7
lost to NTSC IX	0	0.0
lost to additional IX by ATV	19366	717.4
lost to ATV IX only	19366	717.4
lost to all IX	19366	717.4

Potential Interfering Stations Included in above Scenario 1

6A CT NEW HAVEN	BMPEDT	20020305AAU	CP
6A PA PHILADELPHIA	BLCT	2282	LIC

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