

ENGINEERING EXHIBIT

Request for Extension Special Temporary Authorization BDSTA-20090708AGZ prepared for

Bluestone License Holdings Inc.
WCYB-TV Bristol, VA
Facility ID 2455

Bluestone License Holdings Inc. (“Bluestone”) is the licensee of WCYB-TV, Bristol, VA, Facility ID 2455. During the pre-transition period, WCYB-TV operated on digital Channel 28 (BLCDDT-20020812ACC). A Construction Permit (“CP”, BPCDDT-20080327AFS) authorizes construction of the WCYB-TV post-transition digital facility at 7.1 kW effective radiated power (“ERP”) on Low-band VHF Channel 5, its former analog channel. WCYB-TV is presently operating on Channel 5 and a license application is pending to cover the construction (BLCDDT-20090622AEE). WCYB-TV’s current operation on Channel 5 is at an increased ERP of 29.9 kW pursuant to Special Temporary Authority (“STA” BDSTA-20090708AGZ). The STA was sought shortly after the transition date in order to recover many viewers who lost reception when WCYB-TV ceased analog transmission. This statement supports *Bluestone’s* request to extend the STA.

As discussed in the request underlying BDSTA-20090708AGZ, WCYB-TV’s Low-Band Channel 5 operation at 7.1 kW was unable to replicate the coverage achieved by its prior analog Channel 5 facility. Over 1200 calls were received regarding reception problems, particularly regarding indoor reception. WCYB-TV’s experience is similar to other stations using Low-Band VHF channels in the post-transition period. It has been found that indoor reception is difficult for digital Low-band VHF stations such as WCYB-TV due to the longer wavelength signal’s inability to readily pass through buildings (the windows are smaller than the wavelength size), the ineffectiveness of many indoor antennas many of which were designed to emphasize the shorter

wavelengths for UHF reception, and high levels of manmade and environmental noise. The STA authorizes WCYB-TV to operate at 29.9 kW ERP.

The existing STA (BDSTA-20090708AGZ) requires submission of a report describing the results of field strength measurements taken before and after the power increase. Mr. Tom Cupp of WCYB-TV has conducted measurements at 16 outdoor and 4 indoor locations for ERP levels at 7.1 kW and 29.9 kW. His report is provided separately as part of the request for STA extension. As described therein, noticeable improvement was observed at each measurement location. Of the four indoor locations, only one location had a viewable signal without the power increase, while all four locations were found to be acceptable with the power increase. Increased signal levels were recorded at all 16 outdoor locations, where 6 locations had no detectable signal without the power increase which all became measurable following the power increase.

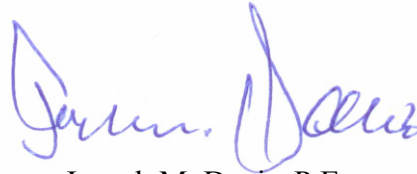
The measurement locations are plotted on the map attached as **Figure 1**. These locations are generally within the “heart” of the WCYB-TV service area, well within the 28 dBμ noise-limited contour. Color tinting on the map depicts predicted field strength levels for 29.9 kW ERP using the terrain-dependent Longley-Rice methodology. The coverage predictions show that the mountainous terrain limits the actual coverage to areas well within the 7.1 kW ERP coverage contour. Thus, the STA’s purpose is not intended to expand WCYB-TV’s coverage but rather to provide better service within its principal community and other areas close-in to the facility.

The request underlying BDSTA-20090708AGZ supplied a detailed interference study per OET Bulletin 69¹ which showed that the power increase would not cause impermissible interference to any other station. To consider any filing activity that may have occurred since the original STA request, the interference study was repeated for the purpose of this extension request. The current interference study output report is provided as **Table 1**, and confirms that no impermissible interference would occur.

¹FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 (“OET-69”). A standard cell size of 2 km was employed. Comparisons of various results of this computer program (run on a Sun Sparc processor) to the Commission’s implementation of OET-69 show excellent correlation.

Certification

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.

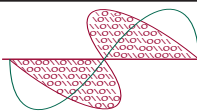


Joseph M. Davis, P.E.
January 5, 2010

Chesapeake RF Consultants, LLC
11993 Kahns Road
Manassas, VA 20112
703-650-9600

List of Attachments

Figure 1	Predicted Longley-Rice Coverage With Measurement Locations
Table 1	OET Bulletin 69 Interference Study



Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

WCYB-TV 28 dBμ Contour
CP 7.1 kW
STA 29.9 kW

Figure 1
Predicted Longley-Rice Coverage
With Measurement Locations
WCYB-TV (STA) Bristol, VA
Facility ID 2455
Ch. 5 29.9 kW 743 m

prepared for
Bluestone License Holdings Inc.

January, 2010

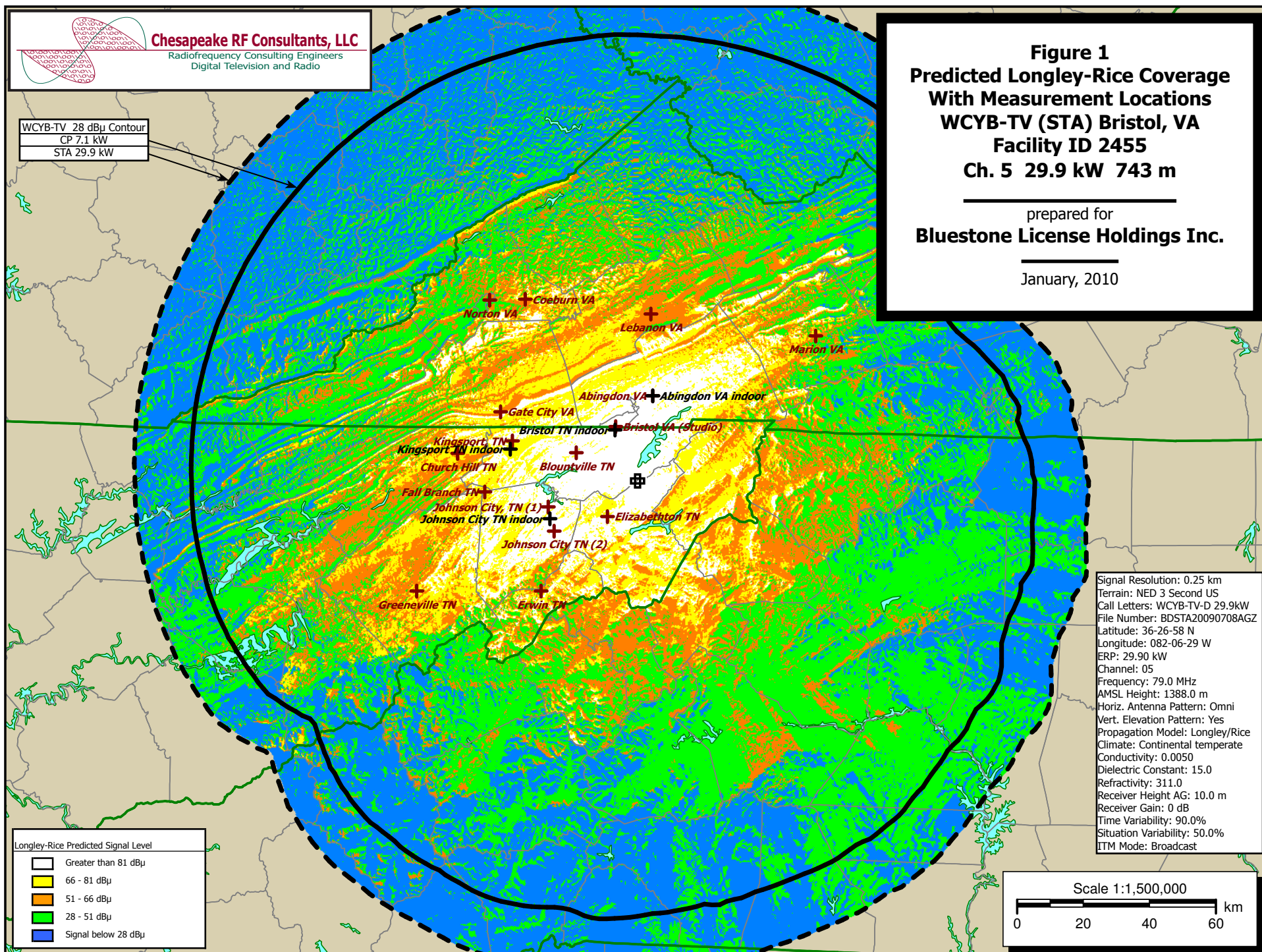


Table 1 WCYB-TV OET Bulletin 69 Interference Study
(page 1 of 6)

TW Census data selected 2000
Post Transition Data Base Selected /space/software/cdbs/pt_tvdb.sff

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 01-05-2010 Time: 09:48:47

Record Selected for Analysis

WCYB-DT USERRECORD-01 BRISTOL VA US
Channel 05 ERP 29.9 kW HAAT 743. m RCAMSL 01388 m
Latitude 036-26-58 Longitude 0082-06-29
Status APP Zone 2 Border
Last update Cutoff date Docket
Comments
Applicant

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 5 ERP = 29.90 HAAT = 743.

Azimuth (Deg)	ERP (kW)	HAAT (m)	28.0 dBu F(50,90) (km)
0.0	29.900	864.2	151.3
45.0	29.900	740.9	147.2
90.0	29.900	544.6	135.8
135.0	29.900	628.0	142.3
180.0	29.900	747.2	147.4
225.0	29.900	675.6	144.5
270.0	29.900	859.0	151.2
315.0	29.900	882.9	151.8

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 quiet zone

Proposed facility OK toward Table Mountain

Proposed facility is beyond the Canadian coordination distance

Proposed facility is beyond the Mexican coordination distance

Table 1 WCYB-TV OET Bulletin 69 Interference Study
(page 2 of 6)

Proposed station is OK toward AM broadcast stations

Start of Interference Analysis

Channel	Proposed Station Call	City/State	ARN
05	WCYB-DT	BRISTOL VA	USERRECORD01

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
05	WTVF	NASHVILLE TN	419.3	CP MOD	BMPCDT	-20080619AFB
05	WTVF	NASHVILLE TN	419.3	PLN	DTVPLN	-DTVP0028
05	WDTV	WESTON WV	352.7	CP MOD	BMPCDT	-20080618ACH
05	WDTV	WESTON WV	327.1	PLN	DTVPLN	-DTVP0032

Analysis of Interference to Affected Station 1

Analysis of current record	Channel	Call	City/State	Application	Ref. No.
	05	WTVF	NASHVILLE TN	BMPCDT	-20080619AFB

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
05	WMC-TV	MEMPHIS TN	305.1	CP MOD	BMPCDT	-20080619AJS
05	WMC-TV	MEMPHIS TN	305.1	PLN	DTVPLN	-DTVP0027
05	WCYB-TV	BRISTOL VA	419.3	PLN	DTVPLN	-DTVP0030
05	WCYB-DT	BRISTOL VA	419.3	APP	USERRECORD-01	

Total scenarios = 2

Result key: 1
Scenario 1 Affected station 1
Before Analysis

Results for: 5A TN NASHVILLE	BMPCDT	20080619AFB	CP
HAAT 425.0 m, ATV ERP 22.0 kW			
	POPULATION	AREA (sq km)	
within Noise Limited Contour	2260593	47459.4	
not affected by terrain losses	2235134	45980.0	
lost to NTSC IX	0	0.0	
lost to additional IX by ATV	39844	1967.1	
lost to ATV IX only	39844	1967.1	
lost to all IX	39844	1967.1	

Potential Interfering Stations Included in above Scenario 1

5A TN MEMPHIS	BMPCDT	20080619AJS	CP
5A VA BRISTOL	DTVPLN	DTVP0030	PLN

After Analysis

Results for: 5A TN NASHVILLE	BMPCDT	20080619AFB	CP
HAAT 425.0 m, ATV ERP 22.0 kW			

Table 1 WCYB-TV OET Bulletin 69 Interference Study
(page 3 of 6)

	POPULATION	AREA (sq km)
within Noise Limited Contour	2260593	47459.4
not affected by terrain losses	2235134	45980.0
lost to NTSC IX	0	0.0
lost to additional IX by ATV	40159	1983.1
lost to ATV IX only	40159	1983.1
lost to all IX	40159	1983.1

Potential Interfering Stations Included in above Scenario 1

5A TN MEMPHIS	BMPCDT	20080619AJS	CP
5A VA BRISTOL	USERRECORD01		APP

Percent new IX = 0.0143%

Worst case new IX 0.0143% Scenario 1

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Analysis of Interference to Affected Station 2

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
05	WTVF	NASHVILLE TN	DTVPLN	-DTVP0028

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
05	WMC-TV	MEMPHIS TN	305.1	CP MOD	BMPCDT	-20080619AJS
05	WMC-TV	MEMPHIS TN	305.1	PLN	DTVPLN	-DTVP0027
05	WCYB-TV	BRISTOL VA	419.3	PLN	DTVPLN	-DTVP0030
05	WCYB-DT	BRISTOL VA	419.3	APP	USERRECORD-01	

Proposed station is beyond the site to nearest cell evaluation distance

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Analysis of Interference to Affected Station 3

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
05	WDTV	WESTON WV	BMPCDT	-20080618ACH

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
05	WLMB	TOLEDO OH	412.5	LIC	BLCDT	-20050201AAF
05	WLMB	TOLEDO OH	412.5	PLN	DTVPLN	-DTVP0024
05	WCYB-TV	BRISTOL VA	352.7	PLN	DTVPLN	-DTVP0030
05	WCYB-DT	BRISTOL VA	352.7	APP	USERRECORD-01	

Total scenarios = 1

Result key: 3
Scenario 1 Affected station 3
Before Analysis

Table 1 WCYB-TV OET Bulletin 69 Interference Study
(page 4 of 6)

Results for: 5A WV WESTON	BMPCDT	20080618ACH	CP
HAAT 240.0 m, ATV ERP 10.0 kW			
	POPULATION	AREA (sq km)	
within Noise Limited Contour	958394	32515.7	
not affected by terrain losses	867418	30554.7	
lost to NTSC IX	0	0.0	
lost to additional IX by ATV	566	56.4	
lost to ATV IX only	566	56.4	
lost to all IX	566	56.4	

Potential Interfering Stations Included in above Scenario 1

5A VA BRISTOL	DTVPLN	DTVP0030	PLN
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After Analysis

Results for: 5A WV WESTON	BMPCDT	20080618ACH	CP
HAAT 240.0 m, ATV ERP 10.0 kW			
	POPULATION	AREA (sq km)	
within Noise Limited Contour	958394	32515.7	
not affected by terrain losses	867418	30554.7	
lost to NTSC IX	0	0.0	
lost to additional IX by ATV	1784	173.1	
lost to ATV IX only	1784	173.1	
lost to all IX	1784	173.1	

Potential Interfering Stations Included in above Scenario 1

5A VA BRISTOL	USERRECORD01	APP
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Percent new IX = 0.1405%

Worst case new IX 0.1405% Scenario 1

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Analysis of Interference to Affected Station 4

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
05	WDTV	WESTON WV	DTVPLN	-DTVP0032

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
05	WLMB	TOLEDO OH	424.9	LIC	BLCDT	-20050201AAF
05	WLMB	TOLEDO OH	424.9	PLN	DTVPLN	-DTVP0024
05	WCYB-TV	BRISTOL VA	327.1	PLN	DTVPLN	-DTVP0030
05	WCYB-DT	BRISTOL VA	327.1	APP	USERRECORD-01	

Total scenarios = 1

Result key: 4
Scenario 1 Affected station 4
Before Analysis

Results for: 5A WV WESTON	DTVPLN	DTVP0032	PLN
HAAT 268.0 m, ATV ERP 7.1 kW			

Table 1 WCYB-TV OET Bulletin 69 Interference Study
(page 5 of 6)

		POPULATION	AREA (sq km)	
within Noise Limited Contour		718972	31901.2	
not affected by terrain losses		643797	29869.5	
lost to NTSC IX		0	0.0	
lost to additional IX by ATV		3045	123.7	
lost to ATV IX only		3045	123.7	
lost to all IX		3045	123.7	
Potential Interfering Stations Included in above Scenario				1
5A VA BRISTOL		DTVPLN	DTVP0030	PLN
After Analysis				
Results for: 5A WV WESTON		DTVPLN	DTVP0032	PLN
HAAT	268.0 m, ATV ERP	7.1 kW		
		POPULATION	AREA (sq km)	
within Noise Limited Contour		718972	31901.2	
not affected by terrain losses		643797	29869.5	
lost to NTSC IX		0	0.0	
lost to additional IX by ATV		4306	275.4	
lost to ATV IX only		4306	275.4	
lost to all IX		4306	275.4	
Potential Interfering Stations Included in above Scenario				1
5A VA BRISTOL		USERRECORD01	APP	
Percent new IX = 0.1968%				
Worst case new IX		0.1968% Scenario	1	
#####				
Analysis of Interference to Affected Station				5
Analysis of current record				
Channel	Call	City/State	Application Ref. No.	
05	WCYB-DT	BRISTOL VA	USERRECORD-01	
Stations Potentially Affecting This Station				
Chan	Call	City/State	Dist(km)	Status Application Ref.
05	WTVF	NASHVILLE TN	419.3	CP MOD BMPCDT -20080619AFB
05	WTVF	NASHVILLE TN	419.3	PLN DTVPLN -DTVP0028
05	WDTV	WESTON WV	352.7	CP MOD BMPCDT -20080618ACH
05	WDTV	WESTON WV	327.1	PLN DTVPLN -DTVP0032
Total scenarios = 4				
Result key: 5				
Scenario		1 Affected station	5	
Before Analysis				
Results for: 5A VA BRISTOL		USERRECORD01	APP	
HAAT	743.0 m, ATV ERP	29.9 kW		
		POPULATION	AREA (sq km)	
within Noise Limited Contour		2872343	67687.6	
not affected by terrain losses		2516794	60337.6	

Table 1 WCYB-TV OET Bulletin 69 Interference Study
(page 6 of 6)

lost to NTSC IX		0	0.0	
lost to additional IX by ATV		11982	383.4	
lost to ATV IX only		11982	383.4	
lost to all IX		11982	383.4	
Potential Interfering Stations Included in above Scenario				1
5A TN NASHVILLE	BMPCDT	20080619AFB	CP	
5A WV WESTON	BMPCDT	20080618ACH	CP	
#####				
FINISHED FINISHED FINISHED FINISHED FINISHED FINISHED				