

TECHNICAL EXHIBIT  
APPLICATION FOR MODIFICATION OF  
DTV CONSTRUCTION PERMIT  
FCC FILE NO. 19991012ABH  
STATION WPRI-DT  
FACILITY ID 47404  
PROVIDENCE, RHODE ISLAND  
CH 13 18 KW 299 M

Technical Narrative

This Technical Exhibit supports an application for modification of the construction permit for WPRI-DT at Providence, Rhode Island. Station WPRI-DT is presently authorized by outstanding construction permit (BPCDT-19991012ABH, Facility ID 47404) to operate on DTV channel 13 with a nondirectional antenna effective radiated power (ERP) of 15 kilowatts and a antenna radiation center height above average terrain (HAAT) of 299 meters. By means of this instant application it is proposed to modify the WPRI-DT construction permit to increase the nondirectional ERP to 18 kW. No other changes are proposed.

Specifically, WPRI-DT proposes to operate on DTV channel 13 from its authorized tower located at N41°52'36", W71°16'57". The antenna structure registration number is 1021703. It is proposed to operate with a nondirectional DTV antenna system maximum ERP of 18 kW and an HAAT of 299 meters.

Response to Paragraph 11 - NTSC/DTV Allocation Considerations

Figure 1 is the separation study for DTV channel 13 from the proposed WPRI-DT site. The study has been used to determine the assignments requiring interference studies using the procedures outlined in the FCC's OET-69 bulletin. Interference calculations for the proposed WPRI-DT DTV operation are summarized below.

An interference analysis has been conducted using the procedures outlined in the FCC's OET-69 bulletin which demonstrates that the proposal complies with the interference protection provisions of Section 73.623(c)(2).<sup>1</sup> Interference

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<sup>1</sup> The du Treil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 2 km was employed. An Alpha based

calculations for the proposed WPRI-DT DTV operation are summarized below. It is noted that the summary only includes stations with which interference (masked or unmasked) is calculated.

Protected NTSC/DTV Station	FCC Service Population	Current Interference	Proposed Unique Interference Population*
WGME-TV NTSC Ch. 13 (License) Portland, ME	1,170,970	8.6%	9,099 (0.78%)
WNET, NTSC Ch. 13 (License) Newark, NJ	18,247,850	1.6%	6,292 (0.03%)
WNYT, NTSC Ch. 13 (License) Albany, NY	1,362,371	0.4%	19 (0.00%)

\*Considers interference "masking" from other NTSC and DTV assignments.

From the above, it is apparent that the proposed WPRI-DT DTV operation on channel 13 complies with the FCC's 2%/10% interference standard towards all authorized NTSC (analog) and DTV assignments.

#### Class A Allocation Considerations

A study has been conducted which indicates that the WPRI-DT proposal will not create prohibited interference to other existing, authorized or proposed Class A stations with the exceptions of WRDM-LP on channel 13 at Hartford, CT (BLTVL-19991207AAR) and WYCN-LP on channel 13, Nashua, NH (BLTVL-19950728IC). However, based on the provisions of the OET-69 Bulletin as permitted by FCC rules [Section 73.623(5)(iii)] it is believed that WPRI-DT's proposed operation complies with the FCC's interference criteria towards these stations. Specifically, calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin and a 2 square kilometer grid. The results of the OET Bulletin No. 69 are summarized below and, as indicated, the proposal complies with the FCC's 0.5% interference threshold.

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processor computer system was employed. The results have been found to be in very close agreement with the results of the FCC implementation of OET Bulletin No. 69.

Protected Class A Station	FCC Service Population	Proposed Interference Population
WRDM-LP, NTSC Ch. 13 (License) Hartford, CT	135,465	0(0.0%)
WYCN-LP, NTSC Ch. 13 (License) Nashua, NH	29,710	0 (0.0%)

#### Response to Paragraph 12 - City Coverage

Figure 2 is a map showing the predicted 43 dBu and 36 dBu, F(50,90), coverage contours. The Providence city limits were derived from information contained in the 2000 U.S. Census for Rhode Island. As indicated, all of Providence is located within the proposed 43 dBu contour. The distances to the predicted contours were determined in accordance with the provisions of Section 73.625. The average elevations from 3.2 to 16.1 kilometers from the transmitter site, were obtained from the NGDC 30-second terrain database and were used for determining the distances to coverage contours.

#### US-Canadian LOU Compliance

The proposed transmitter site is located 350 kilometers from the closest point of the Canadian border, or 50 kilometers within the US/Canadian border area. Hence, coordination of the proposed WPRI-DT operation on channel 13 with Canada will be necessary. It is noted that the proposed WPRI-DT operation complies with the requirements of the distance tables in Appendix 2 of the Letter of Understanding (LOU) between the FCC and Industry Canada.<sup>2</sup>

#### Objectionable Interference

There are no known authorized full service AM stations within 5 kilometers (3 miles) of the proposed transmitter site. Figure 3 provides a tabulation of all known authorized full service FM and TV stations within 16 kilometers (10 miles) of the proposed site. Although no

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<sup>2</sup> See Letter of "Understanding Between the Federal Communications Commission of the United States of American and Industry Canada Related to the Use of the 54-72 MHz, 76-88 MHz, 174-216 MHz and 470-806 MHz Bands for the Digital Television Broadcasting Service Along the Common Border".

adverse electromagnetic impact is expected, the applicant recognizes its responsibility to correct problems, which are a result of its proposed operation.

The proposed transmitter site is located more than 2687 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is located at Belfast, ME, more than 336 kilometers to the north-northeast. The closest point of the National Radio Quiet Zone (VA/WV) is more than 675 kilometers to the west-southwest. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 2835 kilometers to the west. The closest radio astronomy site operating on TV channel 37 is at Hancock, NH, located more than 130 kilometers to the northwest. It is believed that these separations are sufficient to not be a concern for coordination purposes.

Response to Paragraph 13 - Environmental Protection Act

The proposed 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 278 meters above ground level. The maximum DTV ERP is 18 kW (horizontal polarization). Presuming a "worst case" vertical plane relative field value of 1.0 for angles towards the tower base ( $-60^{\circ}$  to  $-90^{\circ}$  elevation), the calculated power density at a point 2 meters above ground level is  $0.0039 \text{ mW/cm}^2$ . This is 1.95% of the FCC's recommended limit of  $0.20 \text{ mW/cm}^2$  for TV channel 13 for an "uncontrolled" environment. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. Furthermore, as this is a multi-user site, an agreement will be in effect with the other stations in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that 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 or scheduling work  
when the stations are at reduced power or shut down.

If there are questions concerning the technical  
portion of this application, please contact the office of the  
undersigned.

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August 30, 2002

## DTV to NTSC Separation Study

Job Title :Proposed WPRI-DT	Separation Buffer	32 km
Zone : 1	FCC TV DB Date :	08/27/02
Channel 13 (210-216 MHz)	Coordinates :	41-52-36 71-16-57

Call Status	City St	FCC File No.	Channel Zone	ERP(kW) HAAT(m)		Latitude Longitude	Bear. True	Dist. (km)	Req. (km)
WPRI-T LIC	PROVIDENCE RI BLCT	-1750	12(+) I	316 305		41-52-37 71-16-56	36.2	0.05 8.95	9.0/125.0 CLOSE
WNYT LIC	ALBANY NY BLCT	-19800314	13(o) I	178 357	DA	42-47-08 73-37-44	298.4	218.17 -26.43	244.6 SHORT
WGME-T LIC	PORTLAND ME BLCT	-19990429	13(+) II	295 462		43-55-29 70-29-29	15.5	236.52 -8.08	244.6 SHORT
WNET LIC	NEWARK NJ BLET	-19811110	*13(-) I	60.3 500		40-42-43 74-00-49	241.3	262.81 18.21	244.6 CLEAR

\*\* End of TV Separation Study for Channel 13 \*\*

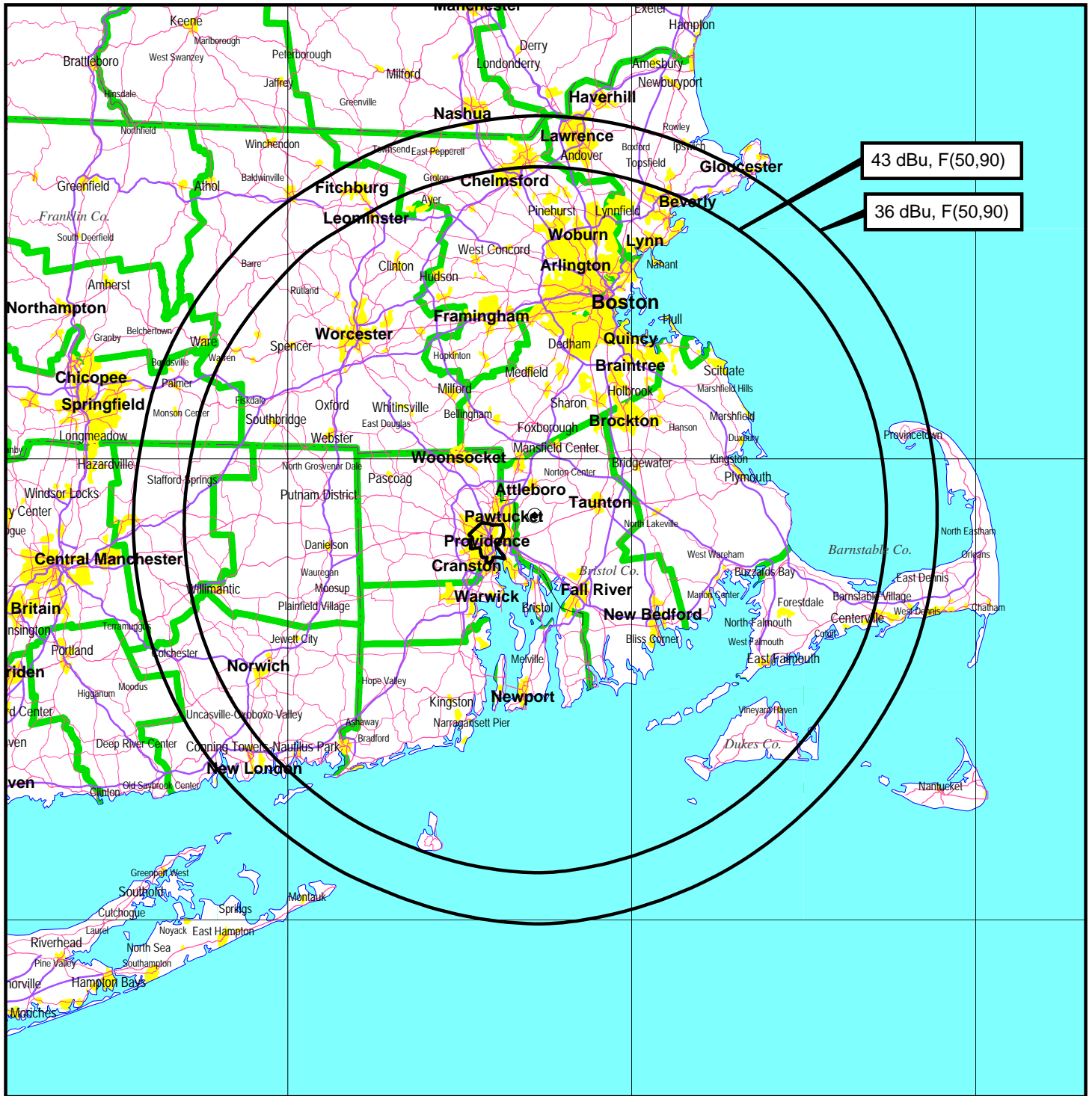
## DTV to DTV Separation Study

[illegible]

Call Status	City St	FCC File No.	Channel Zone	ERP(kW) HAAT(m)	Latitude Longitude	Bear. True	Dist. (km)	Req. (km)
DWPRITV DTVALT	PROVIDENCE RI		13 I	15.3 305	41-52-37 71-16-56	36.2	0.04	
WPRI-D CP	PROVIDENCE RI	BPCDT -19991012	13 I	15 299	41-52-36 71-16-57	0.0	0.00	

\*\* End of DTV Separation Study for Channel 13 \*\*

Figure 2



**PREDICTED COVERAGE CONTOURS**  
**DTV STATION WPRI-DT**  
**PROVIDENCE, RHODE ISLAND**  
**CH 13 18 KW 299 M**

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

**du Treil, Lundin, and Rackley****Figure 3, Sheet 1 of 2****Coordinates: 415236 711657 Channel Range: 2-69****Range: 16**

Date: 8/30/2002

**CDBS Tv Inquiry List**

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<b>Rec Type</b>	<b>Facility Id</b>	<b>Call</b>	<b>Status</b>	<b>Chan</b>	<b>Svc Class</b>	<b>Class</b>	<b>City</b>	<b>St</b>	<b>DA</b>	<b>Latitude</b>	<b>Longitude</b>	<b>ERP (kW)</b>	<b>HAAT (m)</b>	<b>RCAMSL (m)</b>	<b>Bearing</b>	<b>Dist. (km)</b>
C	47404	WPRI-T	CP	13	DT		PROVIDENCE	RI	N	41-52-36	071-16-57	15.000	299	328	105.4	0
C	47404	WPRI-T	LIC	12	TV		PROVIDENCE	RI	N	41-52-37	071-16-56	316.000	305	335	36.90	0.04
C	73311	WNAC-T	APP	54	DT		PROVIDENCE	RI	D	41-52-14	071-17-45	1000.00	295	323	238.3	1.3
C	73311	WNAC-T	LIC	64	TV		PROVIDENCE	RI	D	41-52-14	071-17-45	3720.00	315	343	238.3	1.3
C	22591	WLNE-T	CP	49	DT		NEW BEDFORD	MA	N	41-51-54	071-17-15	400.000	264	290	197.6	1.36
C	50780	WJAR	CP	51	DT		PROVIDENCE	RI	N	41-51-54	071-17-15	974.000	286	321	197.6	1.36
C	56092	WSBE-T	CP	21	DT		PROVIDENCE	RI	D	41-51-54	071-17-15	50.000	263	292	197.6	1.36
C	50780	WJAR	LIC	10	TV		PROVIDENCE	RI	N	41-51-54	071-17-15	316.000	305	335	197.6	1.36



**du Treil, Lundin, and Rackley****Figure 3, Sheet 2 of 2****Coordinates: 415236 711657 Frequency Range: 200-300****Range: 16**

Date: 8/30/2002

**CDBS FM Inquiry List**

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<b>Rec Type</b>	<b>Fac Id</b>	<b>Call</b>	<b>Status</b>	<b>Chan</b>	<b>Svc Class</b>	<b>Class</b>	<b>City</b>	<b>St</b>	<b>DA</b>	<b>Latitude</b>	<b>Longitude</b>	<b>ERP (kW)</b>	<b>HAAT (m)</b>	<b>RCAMSL (m)</b>	<b>Bear</b>	<b>Dist. (km)</b>
C	54568	WWBB	LIC	268	FM	B	PROVIDENCE	RI		41-52-13	071-17-47	13.5	290.0	321.0	238.3	1.4
C	74069	WSNE-F	LIC	227	FM	B	TAUNTON	MA	D	41-51-56	071-17-22	30	189.0	218.0	205.0	1.4
C	66656	WELH	LIC	201	FM	A	PROVIDENCE	RI	N	41-51-30	071-19-04	0.15			235.1	3.6
C	72298	WHJY	LIC	231	FM	B	PROVIDENCE	RI	N	41-49-40	071-22-09	50	139.0	170.0	232.9	9.0
C	7313	WBRU	LIC	238	FM	B	PROVIDENCE	RI	N	41-49-40	071-22-09	18.5	139.0	170.0	232.9	9.0
C	53676	WDOM	LIC	217	FM	A	PROVIDENCE	RI		41-50-39	071-26-14	0.125	40.0	67.0	254.3	13.3

