

TECHNICAL EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT
FM STATION WSHH
FACILITY ID 55709
PITTSBURGH, PENNSYLVANIA
CH 259B 15.5 KW 274 M

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of an application for construction permit for FM station WSHH on channel 259B (99.7 MHz) at Pittsburgh, Pennsylvania. Station WSHH is currently licensed (BMLH-19890927KA) to operate on channel 259B with an effective radiated power (ERP) of 10.5 kilowatts (kW) and an antenna height above average terrain (HAAT) of 283 meters. By means of this instant application it is proposed to increase the nondirectional antenna maximum effective radiated power (ERP) from 10.5 kW to 15.5 kW and to decrease the HAAT from 283 meters to 274 meters.¹ No other changes are proposed. Therefore, the instant application is considered a "minor" change in facilities in accordance with Section 73.3573(a)(1).

Response to Paragraph 5 - Antenna Registration

The proposed antenna will be mounted at the 218 meter level on an existing tower. The tower registration number is 1032235. It is noted that the geographic coordinates for WSHH are being slightly modified to conform to the registered tower data.

Response to Paragraph 14 - Community Coverage

Figure 1 is a map showing the 70 dBu coverage contour for the proposed operation. The map demonstrates that the proposal complies with the city coverage provisions of Section 73.315. The Pittsburgh city limits depicted on Figure 1 were obtained from the 2000 U.S. Census of population.

Response to Paragraph 16 - Interference

Figure 2 is an FM separation study from the proposed antenna location for the channel 259B operation based on the Commission's CDBS database. As shown, the proposed

¹ The proposed facilities are equivalent to maximum Class B facilities pursuant to Section 73.211(b)(2).

antenna location complies with the minimum distance separation requirements of Section 73.207 for Class B operation on channel 259 towards all existing, authorized and proposed stations and allotments with the exception of a 1.96 kilometer short-spacing with WPKL on channel 257A at Uniontown, Pennsylvania. The short-spacing with WPKL resulted from the increase in the minimum distance separations in BC Docket No. 80-90 and, as such, Section 73.213(c)(1) applies. Pursuant to 73.213(c)(1), WSHH can operate with maximum Class B facilities, or equivalent, with respect to the WPKL short-spacing.

Environmental Considerations

The proposed channel 259B facilities were evaluated in terms of potential radiofrequency radiation exposure at 2 meters above ground level in accordance with OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation". This Bulletin provides assistance in determining whether FCC-regulated transmitting facilities, operations or devices comply with limits for human exposure to radiofrequency (RF) electromagnetic fields.

The proposed antenna will be mounted at the 218-meter level on the existing tower structure. The power density at 2 meters above ground level at the base of the tower was calculated using the appropriate equation contained in the Bulletin. Figure 3 is a vertical plane relative field pattern for the proposed ERI 2-bay, $1-\lambda$ spaced, nondirectional antenna. As shown on Figure 3, the maximum vertical relative field value towards the tower the tower base (-60° to -90° elevation) is less than 0.52. Therefore, using a "worst-case" vertical relative field value of 0.52, the total ERP of 31 kW (H+V) and an antenna center of radiation height above ground level of 218 meters, the calculated power density at 2 meters above ground level at the base of the tower is 0.0060 milliwatts per square centimeter (mW/cm^2), or 3.0% of the Commission's recommended limit applicable to general population/uncontrolled exposure areas ($0.2 \text{ mW}/\text{cm}^2$ for FM frequencies). Therefore, based on the responsibility threshold of 5%, the proposal will comply with the RF emission rules.

Access to the tower will be restricted and appropriately marked with warning signs. Furthermore, as this will be a multi-user site, procedures will be in effect 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 procedures 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.

Finally, it is noted that this technical exhibit only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be provided to the FCC by the tower owner as part of the tower registration process.



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COMPLIANCE WITH SECTION 73.315

FM STATION WSHH
PITTSBURGH, PENNSYLVANIA
CH 259B 15.5 KW 274 M

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

CDBS FM SEPARATION STUDY

Job Title: Proposed WSHH, Pittsburgh, PA
Channel: 259 B

Separation Buffer: 32 km
Coordinates: 40-27-48 080-00-16

Call Id	City St	File Status	File Num	Channel Freq	ERP HAAT	DA Id	Latitude Longitude	73 215	Bear	Dist. (km)	Req. (km) 215	207
WYOT 64845	EBENSBURG PA	LIC C	BMLH 19960724KA	256 B 99.1	50.000 152	N	40-24-41 078-46-29	N	92.8	104.50 30.50	68.0 Clear	74.0
Grandfathered at 50kw @ 152m, Class C with respect to Canada.												
WPKL 33828	UNIONTOWN PA	LIC C	BLH 19790907AB	257 A 99.3	3.000 90	N	39-53-09 079-46-29	N	163.0	67.04 -1.96	63.0 Short ¹	69.0
STA to remain silent expires 1/17/2002, Accepted by Canada on 940222												
WYMJ 79304	NEW MARTINS WV	LIC C	BLH 20020725AAE	258 A 99.5	2.700 147	N	39-39-10 080-54-47	N	220.9	118.79 5.79	96.0 Close	113.0
	MIDLAND MD	RM VAC C		258 A 99.5	0.000	N	39-40-19 078-57-25	N	134.3	125.33 12.33	96.0 Close	113.0
A filing window for this channel will be opened in a subsequent order., Approved by Canada as Class A on 990521												
WGAR-FMCLEVELAND 47740	OH	LIC C	BMLH 19810227AF	258 B 99.5	50.000 152	N	41-22-18 081-43-04	N	305.6	176.09 7.09	145.0 Close	169.0
WSHH 55709	PITTSBURGH PA	LIC C	BMLH 19890927KA	259 B 99.7	10.500 283	N	40-27-47 080-00-17	N	217.7	0.04 ²		
WBZX 49107	COLUMBUS OH	LIC C	BLH 19881128KA	259 B 99.7	20.000 239	N	39-58-16 083-01-40	N	258.9	263.10 22.10	211.0 Clear	241.0
WTUZ 74144	UHRICHSVILL OH	LIC C	BLH 20000612AAQ	260 A 99.9	5.300 106	N	40-26-19 081-26-01	N	269.2	121.27 8.27	96.0 Close	113.0
WXKC 32984	ERIE PA	LIC C	BLH 19880322KB	260 B 99.9	50.000 150	Y	42-05-24 079-57-12	N	1.3	180.70 11.70	145.0 Close	169.0
WCLG-FMMORGANTOWN 6553	WV	LIC C	BLH 19901214KG	261 A 100.1	6.000 91	N	39-37-40 079-58-11	N	178.2	92.82 23.82	63.0 Clear	69.0

¹ The short-spacing with WPKL resulted from the increase in the minimum distance separations in BC Docket No. 80-90 and Section 73.213(c)(1) applies. Pursuant to 73.213(c)(1) WSHH can operate with maximum Class B facilities, or equivalent with respect to this short-spacing.

² Existing WSHH facility being modified by the instant application. It is noted that the geographic coordinates for the existing WSHH tower are being slightly modified to conform to registered tower data.

