

ENGINEERING REPORT

PROPOSED WKCR-FM
CHANNEL 210B1
NEW YORK, NEW YORK

JANUARY, 2008

C O N T E N T S

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FCC Form 340, Section V-B

The Trustees of Columbia University
in the City of New York
Station WKCR-FM
Form 340

EXHIBIT A
ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of THE TRUSTEES OF COLUMBIA UNIVERSITY in the City of New York, licensee of Noncommercial Station WKCR-FM, Channel 210B1, New York, New York, in support of its Application for Construction Permit specifying operation at Four Times Square.

It is proposed to share an antenna with several other stations that WKCR-FM presently uses under Special Temporary Authority (STA). Exhibit B is a vertical relative field pattern for that antenna. Exhibit C shows the authorized and proposed 60 db μ service contours, and Exhibit D is an allocation study. A TV Channel 6 interference study is included as Exhibit E.

We have studied the RF transmissions of this facility with regard to their environmental effect. Employing the methods set forth in *OET Bulletin No. 65*, and considering the vertical pattern of a typical single-bay antenna, we calculate the maximum power density two meters above ground from the proposed facility to be 0.0000010 mw/cm² at points approximately 236 meters from the base of the building. This is significantly less than 0.1 percent of the 0.2 mw/cm² reference for uncontrolled environments (*i.e.*, areas which have public access) surrounding an FM facility. It is important to note that the roof of the building on which the tower is located is secure from unauthorized access (meaning there are no uncontrolled environments). In addition, there are procedures in place at the building

which prevent access to the roof in cases where the total RF value exceeds the Commission's guideline for controlled environments.

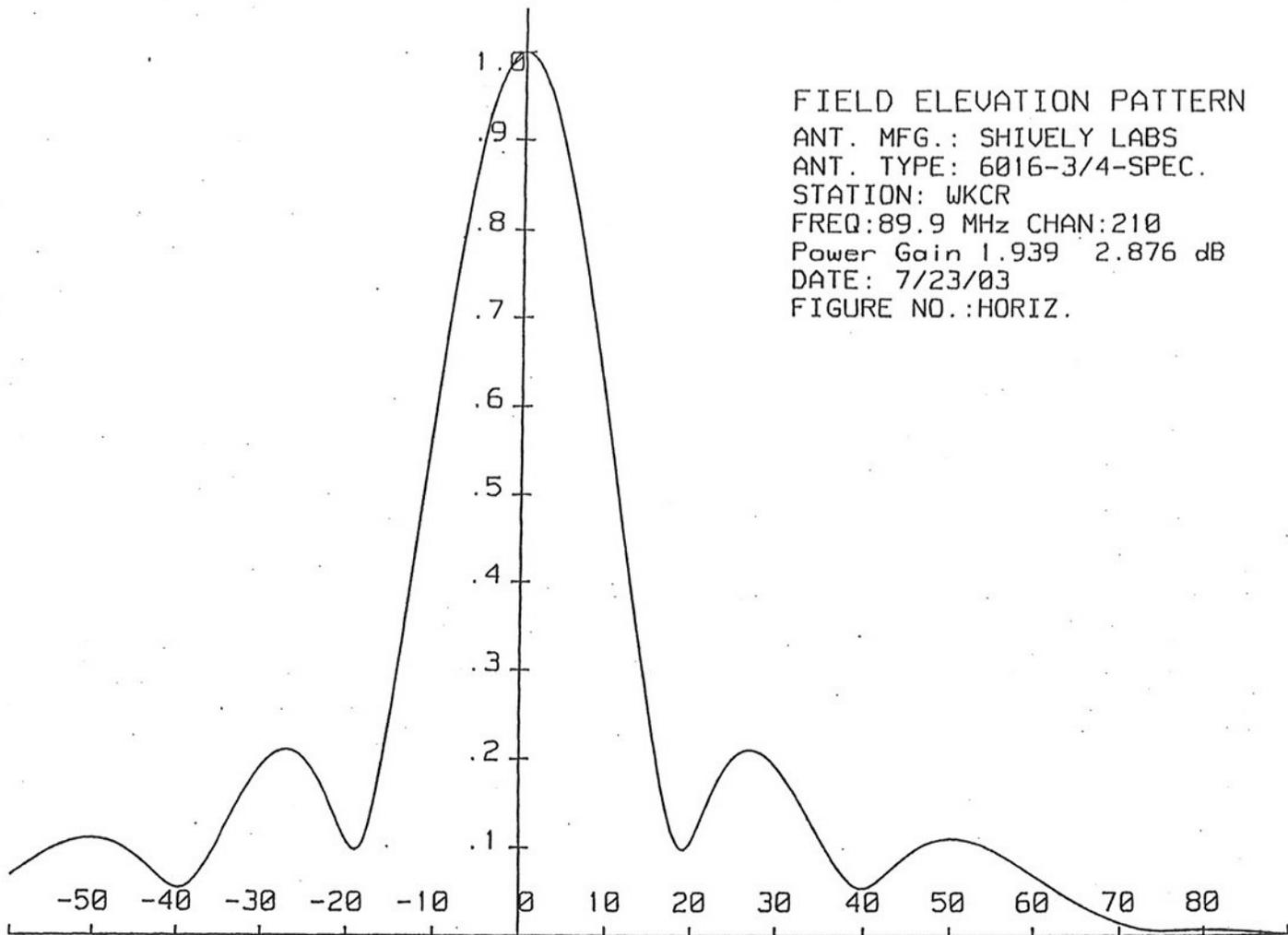
Further, WKCR-FM will take whatever preventive steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive RF energy. On this basis, a grant of this proposal would clearly be a minor environmental action with regard to human exposure to nonionizing electromagnetic radiation.

I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.



NEIL M. SMITH

January 14, 2008



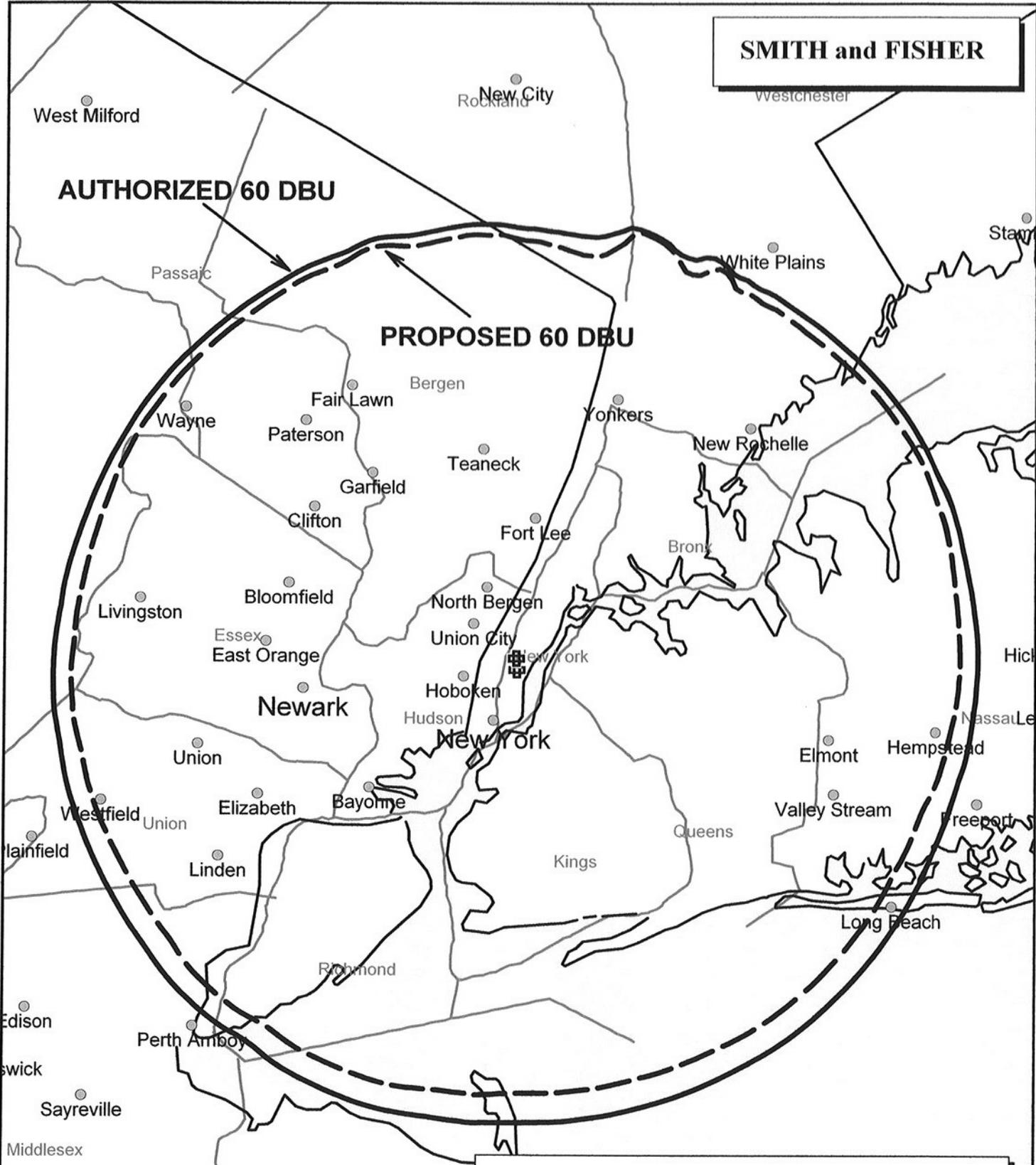
FIELD ELEVATION PATTERN
 ANT. MFG.: SHIVELY LABS
 ANT. TYPE: 6016-3/4-SPEC.
 STATION: WKCR
 FREQ: 89.9 MHz CHAN: 210
 Power Gain 1.939 2.876 dB
 DATE: 7/23/03
 FIGURE NO.: HORIZ.

EXHIBIT B
VERTICAL RELATIVE FIELD PATTERN
PROPOSED WKCR-FM
CHANNEL 210B1 - NEW YORK, NEW YORK
MODIFICATION SPED-2640807ASGJ
 SMITH AND FISHER

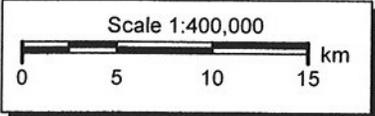
SMITH and FISHER

AUTHORIZED 60 DBU

PROPOSED 60 DBU



**EXHIBIT C
PREDICTED SERVICE CONTOURS
PROPOSED WKCR-FM
CH. 210B1 - NEW YORK, NEW YORK**



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EXHIBIT D-1

ALLOCATION STUDY

PROPOSED WKCR-FM
CHANNEL 210B1 - NEW YORK, NEW YORK

In the instant application The Trustees of Columbia University in the City of New York ("Columbia" or "Applicant"), licensee of noncommercial radio station WKCR-FM (Facility ID No. 68270), New York, New York, seeks a Construction Permit specifying operation at Four Times Square. WKCR-FM is currently licensed to operate at World Trade Center but lost this facility on September 11, 2001. It holds a Construction Permit specifying operation from Empire State Building, which it is relinquishing, and has an STA for operation at Four Times Square, the site proposed in the instant application.

The facilities proposed herein, 1.35 kw ERP at 284 meters, will produce a 60 dB μ contour that is somewhat smaller than the 60 dB μ contours for the licensed World Trade Center facility (0.68 kw at 433 meters) and the authorized Empire State Building facility (0.745 kw at 409 meters). [Note: To produce a 60 dB μ contour at Four Times Square that was equivalent to the 60 dB μ contour of the licensed World Trade Center facility, Columbia would have had to use an ERP of 1.6 kw.]

Even though the proposed Four Times Square facility will be located 0.86 kilometers from the facility authorized at Empire State Building, the 60 dB μ contour for the proposed Four Times Square facility will, by virtue of this reduction in facilities, be completely contained within the 60 dB μ contour authorized to WKCR-FM at Empire State Building under BPED-20040809ABO, as shown in Exhibit C.

The population within the WKCR-FM licensed 60 dB μ service contour is 12,273,020. The population within the 60 dB μ service contour of the WKCR-FM STA facility is 11,284,259, and the population within the 60 dB μ service contour of the proposed WKCR-FM facility is 12,183,974.

Attached as Exhibit D-2 is a tabulation of spacings to pertinent co- and adjacent-channel stations, based on the spacing criteria for commercial FM stations. This table identifies 20 stations with transmitting sites close enough to the proposed WKCR-FM site to require detailed study. Since the contours for the proposed Four Times Square facility are contained within the contours for the authorized facility at Empire State Building, any new contour overlap produced by operations at Four Times Square would have shown up in the detailed study that Columbia provided with its Empire State Building application (BPED-20040809ABO), which is incorporated by reference. The only two stations shown as being subject to new overlap in the Empire State Building application contour were WHPC(FM), Garden City, New York (increased overlap between the WHPC interfering contour and the WKCR-FM service contour) and WSOU(FM), South Orange, New Jersey (increased overlap between the WKCR-FM interfering contour and the WSOU service contour).

It must be noted that the overlap with WHPC would result in interference only to WKCR-FM but not to WHPC. This overlap would slightly reduce WKCR-FM's service from the proposed facility, and this reduction in coverage would fall in an area not previously receiving predicted 60 dB μ service from WKCR-FM's licensed facility at World Trade Center. Therefore, no actual loss of service would result. Further, the population within the contour overlap area is only 158 persons, or less than 0.01 percent of the 12,183,974 persons within the proposed

contour, and this may be considered negligible. Further, since the antenna available to WKCR-FM is omnidirectional, to eliminate this overlap would require a reduction in ERP to 0.88 kw, which would reduce the proposed service population by 160,587 persons, not a practical tradeoff.

There is already overlap between the licensed WKCR-FM 100 dB μ interfering contour and the 60 dB μ protected contour of noncommercial WSOU. Under the instant proposal the area of this overlap would be shifted slightly north. The overlap with WSOU that the Media Bureau approved in connection with the WKCR-FM Empire State Building application contains 221,922 people within an area of 10.2 square kilometers. These population and area values represent, respectively, 4.1 and 0.6 percent of those that obtain for the WSOU 60 dB μ service contour (5,396,238 people within 1,582 square kilometers). The population and area in the overlap area for the proposed WKCR-FM 100 dB μ contour are 292,213 persons and 16.2 square kilometers, which represent, respectively, 5.4 and 1.0 percent of those for WSOU's service contour.

WKCR-FM would have to reduce its proposed ERP at Four Times Square to 0.28 kw in order to limit the population in the overlap area with WSOU to the level associated with WKCR-FM's licensed operations. If WKCR-FM were to reduce its ERP to 0.28 kw, the station's 60 dB μ contour population would decline by 1,809,507 persons to 10,374,467.

Interestingly, if WKCR-FM were to operate with 1.6 kw at the proposed site, which would produce a 60 dB μ contour equivalent to its licensed 60 dB μ contour, the overlap with WSOU would include 328,523 persons, 36,310 more than are proposed herein. In addition, since any reasonable transmitter site for WKCR-FM would be *within* the WSOU 60 dB μ contour, as are its licensed, CP, and STA sites, no reduction in power could completely eliminate overlap with

WSOU.

It should be mentioned that WHCR-FM operates in New York City on Channel 212D.

Although this station does not qualify for protection from WKCR-FM, there will be no overlap of the proposed 100 dB μ contour with the 60 dB μ contour of WHCR-FM.

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EXHIBIT D-2

ALLOCATION STUDY

PROPOSED WKCR-FM
CHANNEL 210B1 - NEW YORK, NEW YORK
[MODIFICATION OF BPED-20040809ABO]

		<u>Separation (km)</u>		
		<u>Req'd.</u>	<u>Pres.</u>	<u>Prop.</u>
207A	CP, Netcong, NJ	48	62.1	61.8
208A	WSOU, South Orange, NJ	48	21.9	21.9
209B1	WRDR(CP), Freehold Township, NJ	114	81.6	82.4
209A	WDVR, Delaware Township, NJ	96	86.4	86.6
209B	WFGB, Kingston, NY	145	147.8	147.0
210B	WVIA-FM, Scranton, PA	211	165.8	165.5
210B1	WSUF, Noyack, NY	175	142.1	141.9
210A	WNJM, Manahawkin, NJ	143	118.4	119.2
210A	WAPJ, Torrington, CT	143	135.8	135.1
211B1	WUSB, Stony Brook, NY	114	80.6	80.5
211B	WRTI, Philadelphia, PA	145	132.2	132.7
211A	WXHD, Mount Hope, NY	96	90.4	89.7
211A	WGSK, South Kent, CT	96	118.8	111.0
212A	WHPC, Garden City, NY	48	33.3	33.4
212A	Appl., Sparta, NJ	48	58.9	58.4
212A	WVPH(CP), Piscataway, NJ	48	47.0	47.3
212A	WRPR, Mahwah, NJ	48	40.2	39.4
212A	WDFH, Ossinning, NJ	48	50.0	49.2
213A	WJSV, Morristown, NJ	48	43.4	43.2
213A	WBJB-FM, Lincroft, NJ	48	48.9	49.8

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EXHIBIT E

PREDICTED INTERFERENCE TO TV CHANNEL 6 FACILITIES

PROPOSED WKCR-FM
CHANNEL 210B1 - NEW YORK, NEW YORK

FCC Rules state that an applicant specifying operation on FM Channel 210 must consider interference to any TV Channel 6 facility within 196 kilometers of the proposed site. There are two Channel 6 operations within this distance of the proposed site: WPVI-TV, Philadelphia, Pennsylvania, and WCTX-DT, New Haven, Connecticut.

WKCR-FM cannot cause objectionable interference to either station because both are subject to greater interference from WNYW, Channel 5, New York, New York. The proposed WKCR-FM site is 5 kilometers from the licensed WNYW facility at the World Trade Center, and is less than 1 kilometer from the temporary WNYW facility at the Empire State Building. Under the circumstances, these two stations will receive interference in the New York area whether or not the instant application is granted.

In addition, the proposed facility is reduced from the licensed facility, at least in terms of 60 dB μ contour distance. Thus, if no interference was caused in the past, no interference should be caused in the future.