Engineering Statement

Detroit Television Station WKBD Inc.

WKBD-TV(Aux) Detroit, Michigan

Facility ID 51570

Ch. 34 290 kW(Max-DA) 226.8 m

Detroit Television Station WKBD Inc. (ViacomCBS) seeks a Construction Permit for an auxiliary antenna system. The proposed facility would utilize a directional, elliptically-polarized antenna system with a height 226.8 meters above average terrain (HAAT) and an effective radiated power (ERP) of 290 kW (Max-DA). This Statement addresses allocations, environmental, and radiofrequency factors related to this proposal.

The attached coverage map **Figure 1** demonstrates that the proposed service contour does not extend beyond that of the main WKBD-TV antenna as required by FCC Rule §73.1675.[1] The proposed facility is not within 3 kilometers of any AM broadcast stations so FCC Rule §1.30002 is not triggered. The nearest FCC monitoring station is 218 km distant at Allegan, MI, well beyond the protection radius specified in §73.1030(c). Thus, it is believed that the proposed facility satisfies all allocation matters.

The proposed facility uses an existing tower with no change in overall height, marking specifications, or lighting specifications.[2] Consequently, this application is categorically excluded from environmental processing.

The existing elliptically polarized antenna is to be located 245.4 meters above ground level and will have a maximum horizontally polarized ERP of 290 kilowatts and vertically polarized ERP of 87 kilowatts. According to the manufacturer, the proposed antenna relative field elevation pattern is 20 percent or less toward elevation angles greater than 10 degrees below the horizon. Therefore, a relative field value of 20 percent is used for the following radiofrequency exposure calculation.

[1] *See* FCC file number 0000074932. §73.1675 specifies an analysis of Grade B contours. Because "Grade B" is not defined for DTV stations, **Figure 1** provides dipole-corrected 41 dBµ contours instead.

[2] *See* Antenna Structure Registration 1007996.

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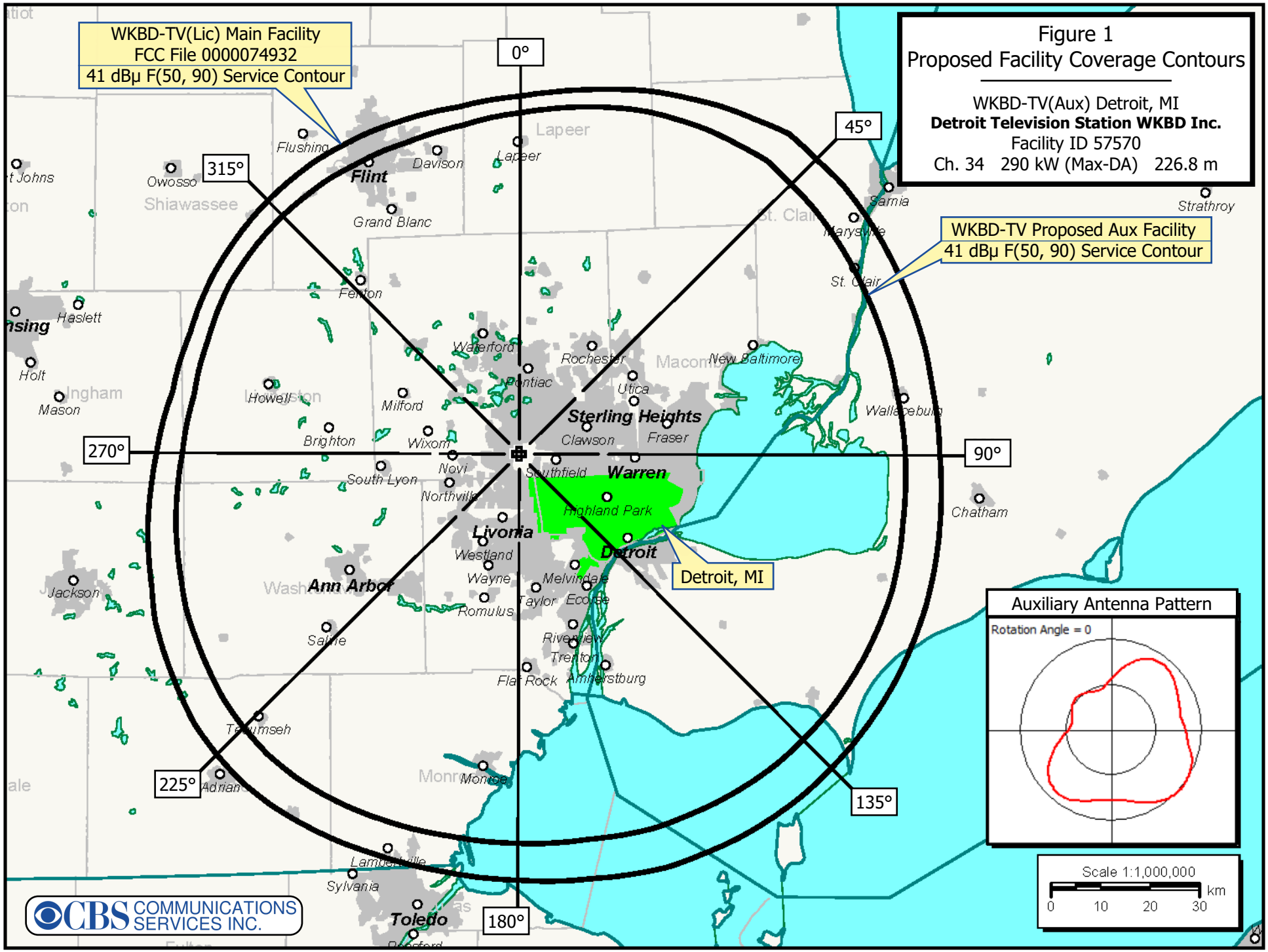
The proposed operation was evaluated for human exposure to radiofrequency energy using equation ten (10) from the Commission's OET Bulletin No. 65. Calculations show that the proposed facility would contribute a power density of 8.5 μW/cm² at two meters above ground level near antenna support structure, or 2.2 percent of the FCC's 395.3 μW/cm² "uncontrolled/general population" exposure limit for UHF Channel 34 (593 MHz). RF power density is expected to be even lower at ground level locations away from the base of the tower, due to the increasing distance from the transmitting antenna.

According to §1.1307(b)(3), facilities at locations with multiple emitters are categorically excluded from responsibility for taking corrective action in areas where their contribution is less than five percent of the limit. Since the calculated exposure is less than five percent at all ground level areas, the impact of other possible contributors should not be a factor.

Tower access will continue to be controlled and appropriate RF exposure warning signs will continue to be posted. A site exposure policy is in effect that includes restriction of access, power reduction, or the complete shutdown of facilities when work must be performed where predicted RF levels would otherwise exceed appropriate guidelines. On-site RF exposure measurements may also be undertaken to establish the bounds of safe working areas. The applicant will coordinate exposure procedures with all pertinent stations.


WKBD-TV(Lic) Main Facility
FCC File 0000074932
41 dBµ F(50, 90) Service Contour
Figure 1
Proposed Facility Coverage Contours
WKBD-TV(Aux) Detroit, MI
Detroit Television Station WKBD Inc.
Facility ID 57570
Ch. 34 290 kW (Max-DA) 226.8 m
WKBD-TV Proposed Aux Facility
41 dBµ F(50, 90) Service Contour
0°
45°
90°
135°
180°
225°
270°
315°
Detroit, MI
Auxiliary Antenna Pattern
Rotation Angle = 0
Scale 1:1,000,000
km
0
10
20
30
CBS COMMUNICATIONS SERVICES INC.
Flint
Lapeer
Davison
Owosso
Shiawassee
Grand Blanc
Fenton
Flushing
Haslett
Holt
Mason
Howell
Milford
Brighton
Wixom
Novi
South Lyon
Northville
Waterford
Pontiac
Rochester
Utica
Sterling Heights
Clawson
Fraser
Warren
Southfield
Highland Park
Detroit
Livonia
Westland
Wayne
Melvindale
Ecorse
Taylor
Romulus
Ann Arbor
Jackson
Saline
Tecumseh
Adrian
Monroe
Toledo
Sylvania
Lambertville
Riverview
Trenton
Flat Rock
Amherstburg
Sarnia
Strathroy
Marysville
St. Clair
New Baltimore
Macomb
Wallaceburg
Chatham