

MINOR CHANGE APPLICATION
NEW AUXILIARY FM ANTENNA SYSTEM
105.1 FM, LLC
KFME-FM RADIO STATION
CH 286C1 - 105.1 MHZ - 29.0 KW
GARDEN CITY, MISSOURI
December 2002

TECHNICAL STATEMENT

This technical statement and attached exhibits were prepared on behalf of 105.1 FM, LLC ("105.1"), permittee of KFME, Channel 286C1, Garden City, Missouri.¹ 105.1 herein proposes to make minor changes in the facilities of KFME by proposing a new auxiliary FM antenna system to be used at times when the main system is out of operation for repair or maintenance. The proposed auxiliary site is located 8.41 kilometers from the authorized KFME main transmitter site. The power of the KFME auxiliary facility will be limited to no more than 29.0 kilowatts to contain the auxiliary 60 dBu contour within the authorized KFME contour (see Exhibit A).

105.1 proposes to locate the auxiliary antenna for KFME on an existing tower, therefore, the Federal Aviation Administration has not been apprised of this proposal. The tower has been registered with the FCC and assigned tower registration #1064715.² Since there are numerous

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- 1) 105.1 is presently operating KFME under program test authority. A license to cover the permit is pending before the Commissions (BLH-20010620AAM).
 - 2) The site for station KCCV, 760 kHz, Overland Park, Kansas, is located 2.07 kilometers from the proposed KFME site. The KFME auxiliary transmitter will share a master antenna system with other FM stations currently located at the site. The owners of the tower have already conducted a series of computer calculations regarding the potential impact of this tower to KCCV. A second existing tower is located immediately adjacent to the KFME tower and will be removed before post-construction measurements are taken on KCCV. This tower is scheduled for removal in the spring of 2003. As such, post-construction measurements will be coordinated between the tower owner and KCCV. After completion, these measurements will be available for submission to the Commission by 105.1, upon request. A copy of the pre-construction computer-based data is currently available and can be submitted to the Commission on request. By the time the KFME auxiliary application will be ready for grant by the Commission, the master antenna system and line should be installed on the tower (for the use of previously authorized stations). As such, since no construction on the tower is needed to implement this proposal, there will be no impact on the operation of KCCV. As such, it is respectfully requested that no condition requiring pre- or post-construction field strength measurements of KCCV be placed on the herein requested construction permit.

high power FM stations and TV stations co-located at this site, it was not possible to demonstrate radio frequency radiation compliance using the worksheets provided by the Commission.

Attached as Exhibit B is an environmental assessment demonstrating that the proposed KFME auxiliary facility, when considered with the co-located stations, is in compliance with the FCC's radio frequency radiation limits. All other exhibits prepared to certify compliance with the Commission's rules have been forwarded to the applicant and are available for submission to the Commission upon request.

Graham Brock, Inc. - Broadcast Technical Consultants

KFME-FM Aux.

Latitude: 39-01-20 N
Longitude: 094-30-49 W
ERP: 29.00 kW
Channel: 286
Frequency: 105.1 MHz
AMSL Height: 609.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

KFME-FM MAIN 60 dBu

KFME-FM PROPOSED AUX 60 dBu

KFME-FM Main

BMPH20010420ABA
Latitude: 39-05-26 N
Longitude: 094-28-18 W
ERP: 69.00 kW
Channel: 286C1
Frequency: 105.1 MHz
AMSL Height: 610.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC

EXHIBIT A
MINOR CHANGE APPLICATION
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Scale 1:1,250,000

0 10 20 30 km

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EXHIBIT B

Radio Frequency and Environmental Assessment

Due to co-located FM and TV stations, compliance with the Commission's radio frequency radiation limits cannot be determined using the RFR worksheets. Therefore, a study has been made to determine whether this proposal is in compliance with 47 C.F.R. §1.1307 of the Commission's rules and with OET Bulletin #65, dated August 1997 ("Bulletin"), regarding human exposure to radio frequency radiation in the vicinity of broadcast towers. This study considers all nearby stations and utilizes the appropriate formulas contained in the Bulletin.

Environmental Analysis

The tower proposed for the KFME auxiliary antenna system does not involve the use of high intensity white lighting (strobes) in a residential neighborhood. The structure is not located in an officially designated wilderness area or wildlife preserve, nor does it threaten the existence or habitat of endangered species. The facility does not affect districts, sites, buildings, structures or objects significant in American history, architecture, archaeology, engineering or culture that are listed in the National Register of Historic Places, or are eligible for listing, nor does it affect Indian religious sites. Further, the site is not located in a floodplain and did not, to the knowledge of the applicant, require significant change in surface features (wetland fill, deforestation or water diversion) at the time of construction.

Radio Frequency Radiation Study

This radio frequency radiation study is being conducted to determine whether this proposal is in compliance with OET Bulletin Number 65, dated August 1997, regarding human exposure to radio frequency radiation in the vicinity of broadcast towers. This study considers all nearby contributing stations, specifically co-located FM stations KQRC-FM, KCMO-FM (aux), KRBZ, KYYS, KCFX and television stations K14JU, K26CR, K32FH, KPXE, KPXE-DT and a new NTSC station on Channel 68, and utilizes the appropriate formulas contained in the OET Bulletin.³

The proposed KFME auxiliary antenna system is mounted with its center of radiation 340.9 meters (1,118.4 feet) above the ground at the proposed tower location and will operate with an effective radiated power of 29.0 kilowatts in the horizontal and vertical planes (circularly polarized). At two meters, the height of an average person, above the ground at the base of the tower, the proposed KFME auxiliary antenna system will contribute 0.0092 mw.⁴ Based on exposure limitations for a controlled environment, 0.9% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 4.6% of the ANSI limit is reached at two meters above the ground at the base of the tower.

The authorized or proposed KQRC-FM, KRBZ, KYYS and KCFX antenna systems will be mounted with a center of radiation 341.0 meters (1,118.8 feet) above the ground at the tower location and each will operate with an effective radiated power of 100.0 kilowatts in the

3) The FMModel program was used for all FM calculations. The EPA dipole antenna was used, unless otherwise noted. Since all the FM stations use a ten bay antenna system, it was used for modeling purposes.

4) This level occurs at 52.8 meters out from the base of the tower and is considered worst case.

horizontal and vertical planes (circularly polarized). At two meters, the height of an average person, above the ground at the base of the tower, each antenna system will contribute 0.0320 mw.⁵ Based on exposure limitations for a controlled environment, 3.2% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower by each of the four stations. For uncontrolled environments, 16.0% of the ANSI limit is reached at two meters above the ground at the base of the tower by each of the four systems. Based on this data, the four FM stations will contribute 12.8% of the limit for controlled environments and 64.0% of the limit for uncontrolled environments.

The authorized KCMO-FM auxiliary antenna system will be mounted with its center of radiation 340.9 meters (1,118.4 feet) above the ground at the tower location and will operate with an effective radiated power of 40.0 kilowatts in the horizontal and vertical planes (circularly polarized). At two meters, the height of an average person, above the ground at the base of the tower, the KCMO-FM auxiliary antenna system will contribute 0.0128 mw.⁶ Based on exposure limitations for a controlled environment, 1.3% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 6.4% of the ANSI limit is reached at two meters above the ground at the base of the tower.

The KPXE Channel 50 antenna system is mounted with its center of radiation 346.0 meters (1,135.0 feet) above the ground at the existing tower location and operates with an effective radiated power of 1,170 kilowatts in the horizontal plane. As denoted in OET Bulletin

5) This level occurs at 52.8 meters out from the base of the tower and is considered worst case.

6) This level occurs at 52.8 meters out from the base of the tower and is considered worst case.

#65, Supplement A, Page 31, the typical UHF antenna system has a downward radiation field of 0.1. As such, the KPXE antenna system radio frequency radiation calculations were made based on an effective radiated power of 11.7 kilowatts. At two meters, the height of an average person, above the ground at the base of the tower, the KPXE antenna system contributes 0.0020 mw. Based on exposure limitations for a controlled environment, 0.1% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 0.4% of the ANSI limit is reached at two meters above the ground at the base of the tower.

The KPXE-DT Channel 51 antenna system is mounted with its center of radiation 346.0 meters (1,135.0 feet) above the ground at the existing tower location and operates with an effective radiated power of 1,000 kilowatts in the horizontal plane. As denoted in OET Bulletin #65, Supplement A, Page 31, the typical UHF antenna system has a downward radiation field of 0.1. As such, the KPXE-DT antenna system radio frequency radiation calculations were made based on an effective radiated power of 10.0 kilowatts. At two meters, the height of an average person, above the ground at the base of the tower, the KPXE-DT antenna system contributes 0.0020 mw. Based on exposure limitations for a controlled environment, 0.1% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 0.4% of the ANSI limit is reached at two meters above the ground at the base of the tower.

An application for a new TV station on Channel 68 will have an antenna system mounted with its center of radiation 305 meters (1,000.6 feet) above the ground at the existing tower

location and will operate with an effective radiated power of 2,630 kilowatts in the horizontal plane. As denoted in OET Bulletin #65, Supplement A, Page 31, the typical UHF antenna system has a downward radiation field of 0.1. As such, the Channel 68 antenna system radio frequency radiation calculations were made based on an effective radiated power of 26.3 kilowatts. At two meters, the height of an average person, above the ground at the base of the tower, the Channel 68 antenna system will contribute 0.0059 mw. Based on exposure limitations for a controlled environment, 0.2% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 1.1% of the ANSI limit is reached at two meters above the ground at the base of the tower.

The K14JU antenna system will be mounted with its center of radiation 350.0 meters (1,148.3 feet) above the ground at the existing tower location and will operate with an effective radiated power of 150 kilowatts in the horizontal plane. At two meters, the height of an average person, above the ground at the base of the tower, the K14JU antenna system will contribute 0.0257 mw. Based on exposure limitations for a controlled environment, 1.6% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 8.2% of the ANSI limit is reached at two meters above the ground at the base of the tower.

The K26CR antenna system is mounted with its center of radiation 160.0 meters (524.9 feet) above the ground at the existing tower location and operates with an effective radiated power of 23.9 kilowatts in the horizontal plane. At two meters, the height of an average person,

above the ground at the base of the tower, the K26CR antenna system contributes 0.0198 mw. Based on exposure limitations for a controlled environment, 1.1% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 5.5% of the ANSI limit is reached at two meters above the ground at the base of the tower.

The K32FH antenna system will be mounted with its center of radiation 353.0 meters (1158.1 feet) above the ground at the existing tower location and will operate with an effective radiated power of 119.6 kilowatts in the horizontal plane. At two meters, the height of an average person, above the ground at the base of the tower, the K32FH antenna system will contribute 0.0201 mw. Based on exposure limitations for a controlled environment, 1.0% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 5.2% of the ANSI limit is reached at two meters above the ground at the base of the tower.

Combining the contributions of FM station KFME (aux), KQRC-FM, KCMO-FM (aux), KRBZ, KYYS, KCFX and television stations K14JU, K26CR, K32FH, KPXE, KPXE-DT and a new NTSC station on Channel 68, a total of 95.8% of the uncontrolled environment limit is reached at two meters above the ground at the base of the tower. Since this level is below the 100% limit defined by the Commission, the proposed KFME auxiliary facility is believed to be in compliance with the radio frequency radiation exposure limits as is required by the Federal Communications Commission. Further, 105.1 FM, LLC ("105.1") will verify that warning signs

are posted in the vicinity of the tower warning of potential radio frequency radiation hazards at the site. In addition, 105.1 will reduce the power of the proposed facility or cease operation, in cooperation and coordination with other tower users, as necessary, to protect persons having access to the site, tower or antenna from radio frequency radiation in excess of FCC guidelines. Based on the above factors, this proposal is categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.