

TECHNICAL SUMMARY
SPECIAL DISPLACEMENT WINDOW
APPLICATION FOR CONSTRUCTION PERMIT
LOW POWER DIGITAL STATION WFBI-LD
SOUTH EAST MEMPHIS, TENNESSEE
CHANNEL 34 15 KW (DA)

1. Application Purpose: The instant application is a special displacement window application for WFBI-LD currently on channel 33 at South East Memphis, Tennessee (FCC File No. BLDTL-20100715AFO).¹ As detailed below, WFBI-LD is eligible for displacement due to impermissible interference caused and received with the authorized operation of full power station WPXX-TV on repacked channel 33 at Memphis, Tennessee (LMS File No. 0000034919). Therefore, it is proposed to operate WFBI-LD on “in core” channel 34 with a directional antenna maximum effective radiated power (ERP) of 15 kW using a MCI model 955318 horizontally polarized directional antenna (antenna ID 20061). The antenna radiation center height will be 270.4 m AMSL. There will be no change in the overall structure height (ASRN 1249321).

2. Eligibility to File in Special Displacement Window: Station WFBI-LD is eligible to file in the special displacement window as it was operating with its currently licensed facilities (FCC File No. BLDTL-20100715AFO) prior to April 13, 2017 – the release date of the *Closing and Channel Reassignment Public Notice*.² In addition, WFBI-LD is considered to be displaced due to impermissible interference caused and received with the authorized operation of full power station WPXX-TV on repacked channel 33 at Memphis, Tennessee (LMS File No. 0000034919). Specifically, as indicated by the attached *TVStudy* analysis, WFBI-LD’s licensed channel 33 operation is predicted to cause 24.35% new interference to WPXX-TV (up to 0.5% new interference is permitted) and will receive 98.56% new interference from WPXX-TV (a 2% threshold was used by the FCC for determination of displacement in the FCC Special Displacement Window PN).

¹ See FCC Public Notice dated February 9, 2018 entitled “*Incentive Auction Task Force and Media Bureau Announce Post-Incentive Auction Special Displacement Window April 10, 2018 through May 15, 2018 and Make Location and Channel Data Available*” (DA 18-124, MB Docket No. 16-306, GN Docket No. 12-268) (“FCC Special Displacement Window PN”).

² See *Media Bureau Announces Date by Which LPTV and TV Translator Stations Must Be “Operating” In Order to Participate In Post-Incentive Auction Special Displacement Window, Public Notice*, 31 FCC Rcd 5383 (MB 2016).

3. Interference Compliance: As indicated in the attached *TVStudy* analysis, WFBI-LD's proposed channel 34 displacement operation meets the FCC's interference protection requirements with respect to all protected facilities based on both a pre-transition and post-transition environment. A cell size of 1.0 km and a profile resolution of 1.0 points/km were utilized for the *TVStudy* analysis.

4. RFR Compliance: The proposed facilities were evaluated in terms of potential radiofrequency radiation (RFR) exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna will be located 186 meters above ground level. The total DTV ERP is 15 (horizontal polarization). A worst-case vertical plane relative field value of 1.0 is presumed for the antenna's downward radiation (-60° to -90° elevation). The calculated power density at a point 2 meters above ground level is 14.8 uW/cm^2 which is 3.7% of the FCC's recommended limit of 395.3 uW/cm^2 for channel 34 for an uncontrolled environment. Thus, as this is less than the 5% threshold value, it is believed that the WFBI-LD facility is in full compliance with the FCC's requirements with regard to radio frequency radiation exposure.

Access to the transmitting site will be restricted and appropriately marked with RFR warning signs. Furthermore, as this is a multi-user site, a formal RFR protection protocol is in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measure will be taken to assure worker safety with respect to RFR exposure. Such measures include limiting the exposure time, wearing protective clothing, reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.