

TECHNICAL SUMMARY  
APPLICATION FOR CONSTRUCTION PERMIT  
TV STATION WFUT-DT  
NEWARK, NEW JERSEY  
CHANNEL 26 70 KW (ND) 437 m

1. The instant application is the initial 90 day application for the reassigned facilities of WFUT-DT, Newark, New Jersey (Ch. 26). WFUT-DT operates from the Empire State Building. WFUT-DT's current antenna is side-mounted to the uppermost section of the Building's tower, above the building's iconic "mooring mast" structure. Under the Building's Tower Reconfiguration Plan, the existing antenna and tower section will be removed and replaced by a two-antenna pylon stack, with the proposed WFUT antenna to be located at the top. The antenna radiation center height will change from 441.8 meters AMSL to 449.8 meters AMSL. There will be no change in the overall height of the existing building/antenna structure (ASRN 1007048).

2. The proposed maximum nondirectional effective radiated power was adjusted to 70 kW to account for differences in the current and proposed antenna patterns and antenna height. Although there is some extension of the predicted service area relative to the baseline reassignment facility listed in the FCC's *Closing and Reassignment Public Notice*, the extension will not exceed 1% in any direction. The proposed facility is also compliant with the 95% population service requirement. See attached FCC *TVStudy* analysis exhibit. Also, the proposal complies with the city coverage requirements as demonstrated in the Predicted Coverage Contours exhibit.

3. As also demonstrated in the *TVStudy* analysis exhibit, the proposal complies with the FCC's interference protection requirements based on a cell size of 2.0 km and profile resolution of 1.0 points/km.

4. RFR Compliance: The proposed facilities were evaluated in terms of potential radiofrequency radiation (RFR) exposure to workers and the general public at the 86<sup>th</sup> floor Observation Deck of the Empire State Building, which is the closest "open air" point of public access. The radiation center for the proposed DTV antenna will be located 115 meters from the 86<sup>th</sup> floor Observation Deck. The total DTV ERP is 91 kW (70 kW-horizontal, 21 kW-vertical). A conservative vertical plane relative field value of 0.2 is presumed for the antenna's downward radiation in both the horizontal and vertical planes of polarization (for angles below 10 degrees downward, see attached antenna data). The calculated power

density at a point 2 meters above the Observation Deck is  $9.5 \text{ uW/cm}^2$  which is 2.6% of the FCC's recommended limit of  $363.3 \text{ uW/cm}^2$  for channel 26 for an uncontrolled environment. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the RF emission rules.

The Empire State Building is an established FM and TV transmitter site, shared by many broadcast users. Access to antenna mast is restricted by locked doorways and access hatches. Appropriate RFR signage are posted and there exists a formal RFR management protocol governing access to the mast and all outdoor areas above the 86<sup>th</sup> floor public observation deck. Furthermore, RFR levels on the 86<sup>th</sup> floor Observation Deck and 102<sup>nd</sup> floor observatory are periodically surveyed by the building's RF exposure consultant.