

## Station WISC-TV • Channel 11 • Madison, Wisconsin

### Statement of Hammett & Edison, Inc., Consulting Engineers

Hammett & Edison, Inc., Consulting Engineers, has been retained by Television Wisconsin, Inc. licensee of Station WISC-TV, post-incentive auction Channel 11 (former Channel 50 and Virtual Channel 03), Madison, Wisconsin, to prepare a minor-change application for construction permit to implement that station's post-incentive auction operation.

### Power versus Effective Height Waiver Request

WISC-TV is located in TV Zone I.\* For a VHF high band station with an effective height of 466 meters, the maximum allowable effective radiated power ("ERP") specified in Section 73.622(f)(7)(ii) of the FCC Rules is 7.33 kW. However, the Commission's February 8, 2017, post-incentive auction channel assignment letter specified an ERP of 10.2 kW. It is therefore requested that this implicit waiver of the maximum height vs. power rule be continued, to allow the proposed 10.2 kW ERP operation with a slightly increased antenna center-of-radiation due to changing from a UHF Channel 50 transmitting antenna to a VHF high band Channel 11 transmitting antenna. Because WISC-TV is a band change station, the restriction to not extend the assigned contour by more than 1% in any direction does not apply. The proposed operation is not predicted to cause greater than 0.5% additional interference to any other full-service or Class A TV station, even with the "before" case as Channel 11 with an incorrect directional antenna rather than an omnidirectional antenna.† The greatest incremental interference for the proposed operation to other post-incentive auction stations is only 0.01%, to Stations WGVU-TV, DT11 (D11/V35), Grand Rapids, MI and KARE, DT11 (D1/V11), Minneapolis, MN. Further, some of this incremental interference is due to the incorrect use of a directional antenna pattern for the WISC-TV as Channel 11 "before" case. Since the purpose of having lower height/power limits for Zone I stations versus Zone II/III stations is the minimization of interference, and since the requested WISC-TV post-incentive auction operation meets the 0.5% *de*

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\* Most of the state of Wisconsin is in TV Zone II; however, the lower southeast corner of Wisconsin is included in Zone I, and WISC-TV is in that portion of the state.

† The February 8, 2017, post-incentive auction channel assignment letter issued to WISC-TV as Channel 11 incorrectly used a directional antenna pattern (pattern number 36653). The current WISC-TV operation on Channel 50 is licensed as an omnidirectional station, so the letter should have specified omnidirectional operation, and not directional operation, for the post-incentive auction operation. Although pattern number 36653 is near-omnidirectional, having departures from omnidirectional of no greater than -0.67 dB, this inappropriate use of a directional pattern alone is sufficient to cause more than a 1% extension of the contour for Channel 11 omnidirectional operation, even with no change in site or height. Because the channel assignment letter used geographic coordinates to a hundredth of a second precision, whereas the Licensing and Management System (LMS) requires using the coordinates of record for towers with Antenna Structure Registrations (ASRs), and the ASR system truncates (not rounds) geographic coordinates to integer seconds, there is a small shift in the tower location with respect to the coordinates used in the February 8 letter, even though there is no physical change to the tower location or height. Additionally, the center-of-radiation height is increasing by 2.5 meters due to the antenna substitution. Finally, TVStudy V2.2.2 uses 1-second terrain data rather than the previously acceptable 30-second or 3-second terrain data, and has changed from a 72-radial average to an 8-radial average, further making small changes to the average terrain accruing to the coordinates, and thereby resulting in a changed height above average terrain (HAAT).



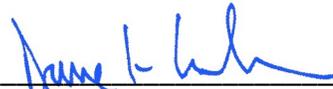
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*minimis* criteria, it would be in the public interest to continue the already granted waiver of Section 73.622(f)(7)(ii).

**Authorship**

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration No. E-11654, which expires on September 30, 2018. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



  
Dane E. Ericksen, P.E.

May 31, 2017

