

**Comprehensive Technical Exhibit**  
*Application for License*  
WJYS-DT - Hammond, Indiana  
Oxford Media Group  
August, 2010

**Application for License**

The following engineering statement and attached exhibits have been prepared for **Oxford Media Group** ("Oxford"), permittee of digital television station WJYS at Hammond, Indiana, and are in support of their application for license to cover a construction permit for modified facilities.<sup>1</sup>

On July 24, 2008, Oxford was granted construction permit BPCDT-20080619AIZ. The construction permit authorized the change from the antenna utilized during the pre-transition period to a multiplexed shared antenna. Both antennas are located on Willis Tower; however the location authorized under the construction permit is higher than the pre-transition location.<sup>2</sup> In addition, the maximum effective radiated power was increased from 50 kW to 145 kW, and a different directional pattern was utilized.

In addition to WJYS, the multiplexed antenna is also utilized by digital television facilities for WCIU-TV, WCPX-TV, and WXFT-DT.<sup>3</sup> Sharing of the antenna, which is of a panel design, is accomplished through the use of a manifold combiner. WJYS is currently connected to the wideband port of the combiner.

The specified transmitter power output will achieve the authorized effective radiated power. Between the transmitter and the combiner, which is located on a different floor of the building, there are 75 feet of HJ8-50A semi-flexible air-dielectric coaxial cable connected to 36 feet of WR-1500 rectangular waveguide. The combination of these components has an insertion loss of

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<sup>1</sup> The facility ID for WJYS at Hammond, Indiana is 32334.

<sup>2</sup> Willis Tower is the multi-purpose office building formerly known as Sears Tower.

<sup>3</sup> The facility ID for WCIU-TV, WCPX-TV, and WXFT-DT are 71428, 10981, and 60539 respectively. WXFT-DT is licensed to Aurora, Illinois while the other two are licensed to Chicago, Illinois.

0.3232 dB, thus the specified TPO of 8.00 dBk (6.31 kW) results in an input power to the combiner of 7.68 dBk or 5.86 kW.

The insertion loss of the combiner and the transmission line leading up to the antenna input is specified by RFS to be 1.18 dB. The combiner input power therefore results in an antenna input power of 6.50 dBk or 4.47 kW. The peak gain of the antenna is specified as 15.1 dB, resulting in a maximum effective radiated power of 21.6 dBk, which is 145 kW.<sup>4</sup>

The main studio complies with the provisions of Section 73.1125 of the Commission's Rules. The main studio is located in Tinley Park, Illinois, which is within the city grade coverage of the authorized WJYS facilities. No change in the location of the main studio from that on record with the Commission has been made.

The facility was constructed in accordance with the conditions of the construction permit. In addition, the facility also complies with the special condition concerning notification of healthcare facilities listed on the construction permit. The transmitter complies with the provisions of Section 73.1660 of the Commission's Rules. Documentation concerning this compliance is contained in the public file.

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<sup>4</sup> ERP in kW rounded from the obtained value of 144.5 kW.

**Affidavit**

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature  
License Expires November 30, 2011

**Jeremy D. Ruck, PE**  
**August 31, 2010**