APPLICATION FOR CONSTRUCTION PERMIT

NCE FM STATION AUXILIARY FACILITY
WHPK-FM - CHICAGO, ILLINOIS
FACILITY ID: 69000

UNIVERSITY OF CHICAGO

DECEMBER, 2015

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APPLICATION FOR CONSTRUCTION PERMIT

The following engineering statement and attached exhibits have been prepared for the **University of Chicago** ("UofC"), licensee of non-commercial educational station WHPK-FM at Chicago, Illinois, and are in support of their application for construction permit for an auxiliary facility.[1]

The proposed auxiliary facility would be located with the main facility at the South Campus Residence Halls. The auxiliary facility proposed under this application is intended to be utilized only during times when the main antenna system is not usable for technical reasons.

The proposed auxiliary facility would operate with a maximum effective radiated power of 52 Watts circularly polarized utilizing a single-section Phelps-Dodge antenna. This particular antenna is of a ring-stub design. The proposed center of radiation is to be located at 36.1 meters above ground level. The site elevation, based on survey, is 180.7 meters AMSL, which results in a center of radiation of 216.8 meters AMSL. The proposed center of radiation would be 36.9 meters above average terrain.

WHPK-FM has an outstanding construction permit to relocate the facility. This permit has a pending application to change some of the elevation and location data based on an actual survey of the site.[2] Exhibit E-1 provides a comparison between the predicted 60 dBu service contour for the licensed and proposed WHPK-FM facilities and the proposed auxiliary facility. The proposed auxiliary 60 dBu contour is colored blue, while the licensed and proposed main 60 dBu contours

[1] The Facility ID for WHPK-FM at Chicago, Illinois is 69000.
[2] See FCC File Nos. BPED-20130618ABI and BMPED-20151214ABD.

are depicted in red and green respectively. Additional detail in the southern portion of the contours is provided in Exhibit E-2 to confirm that the proposed auxiliary contour remains within both of the main contours.

The proposed facility would not constitute a significant environmental impact, and is exempt from environmental processing. The proposed facility would be located at the WHPK-FM site, which has been constructed. The addition of auxiliary antenna to this structure will not increase the existing environmental impact from the tower, which is constructed at the top of the campus building.

Due to the low effective radiated power, the proposed facility will not result in human exposure to radiofrequency radiation in excess of the applicable safety standards. Using the equations in Appendix A of *OET Bulletin 65*, the closest approach permissible under the uncontrolled environment condition of the Commission's safety standard is 4.2 meters.[3] This value is less than the height of the antenna above the penthouse roof, but exceeds the height of the antenna above the main roofline. Thus, no regions at the main level of the building rooftop exist where the predicted worst-case power density would exceed the uncontrolled environment condition. By extension, no other area of the facility, including ground level regions, would exist where the uncontrolled environment condition would be exceeded.

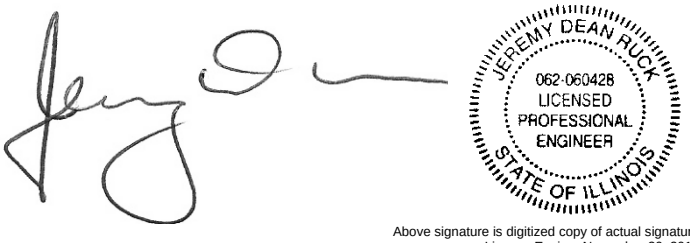
Although the general population/uncontrolled environment condition would be exceeded at the rooftop of the penthouse, this area would not exceed the power density limit imposed on the *controlled environment* condition. As a result, the penthouse rooftop will be considered a

[3] Calculations assume a relative field of 1.0, and by extension a worst-case scenario.

controlled environment. Appropriate warning signs and access controls will be installed to indicate the potential hazard in this region that will only potentially exist in those extremely rare instances when the auxiliary antenna is operational.

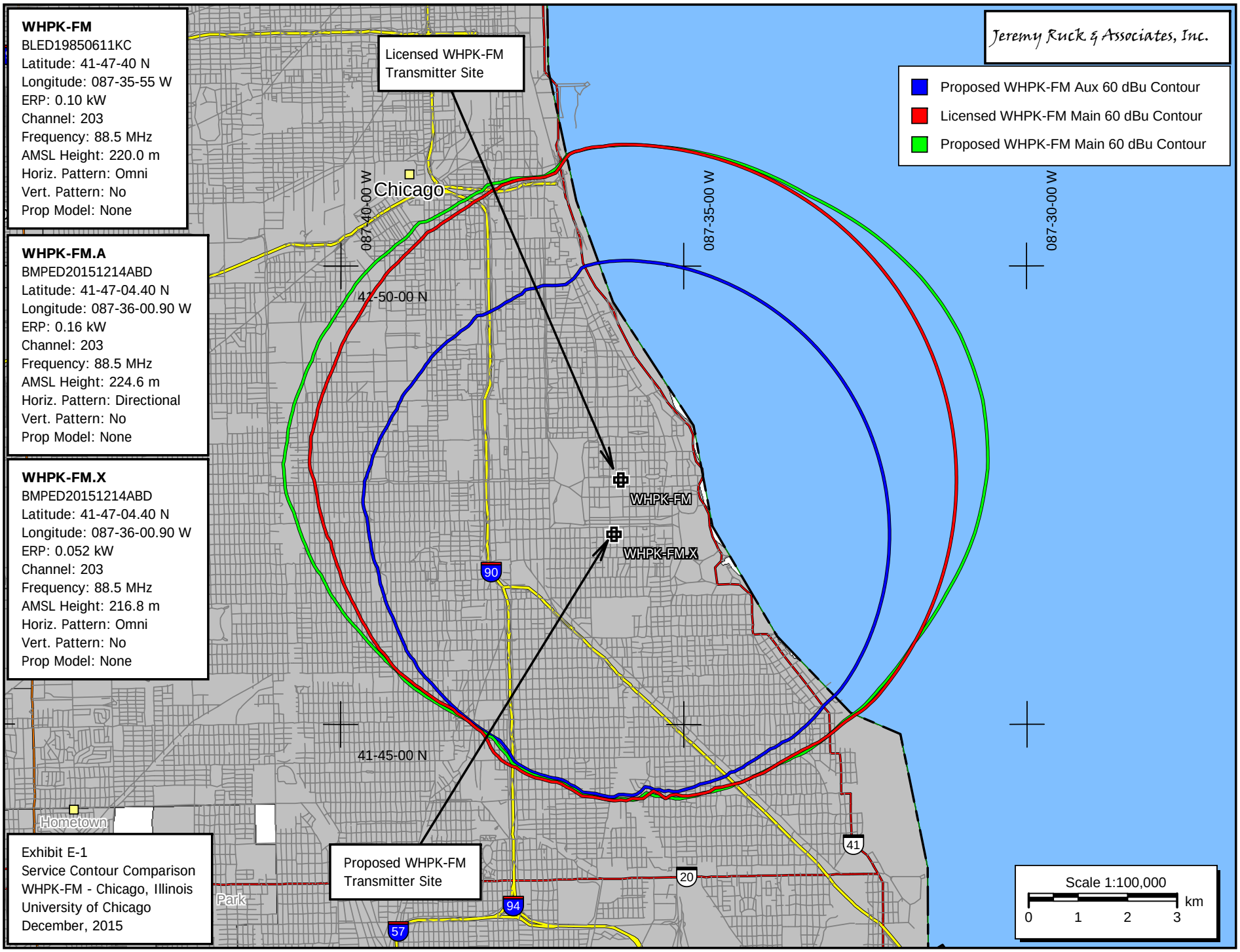
UofC certifies that it will coordinate with all other users of the site to ensure that workers and other personnel are not exposed to levels of radiofrequency radiation in excess of the applicable safety standards. Such coordination will include, but is not necessarily limited to a reduction in transmitter power or cessation of operation.

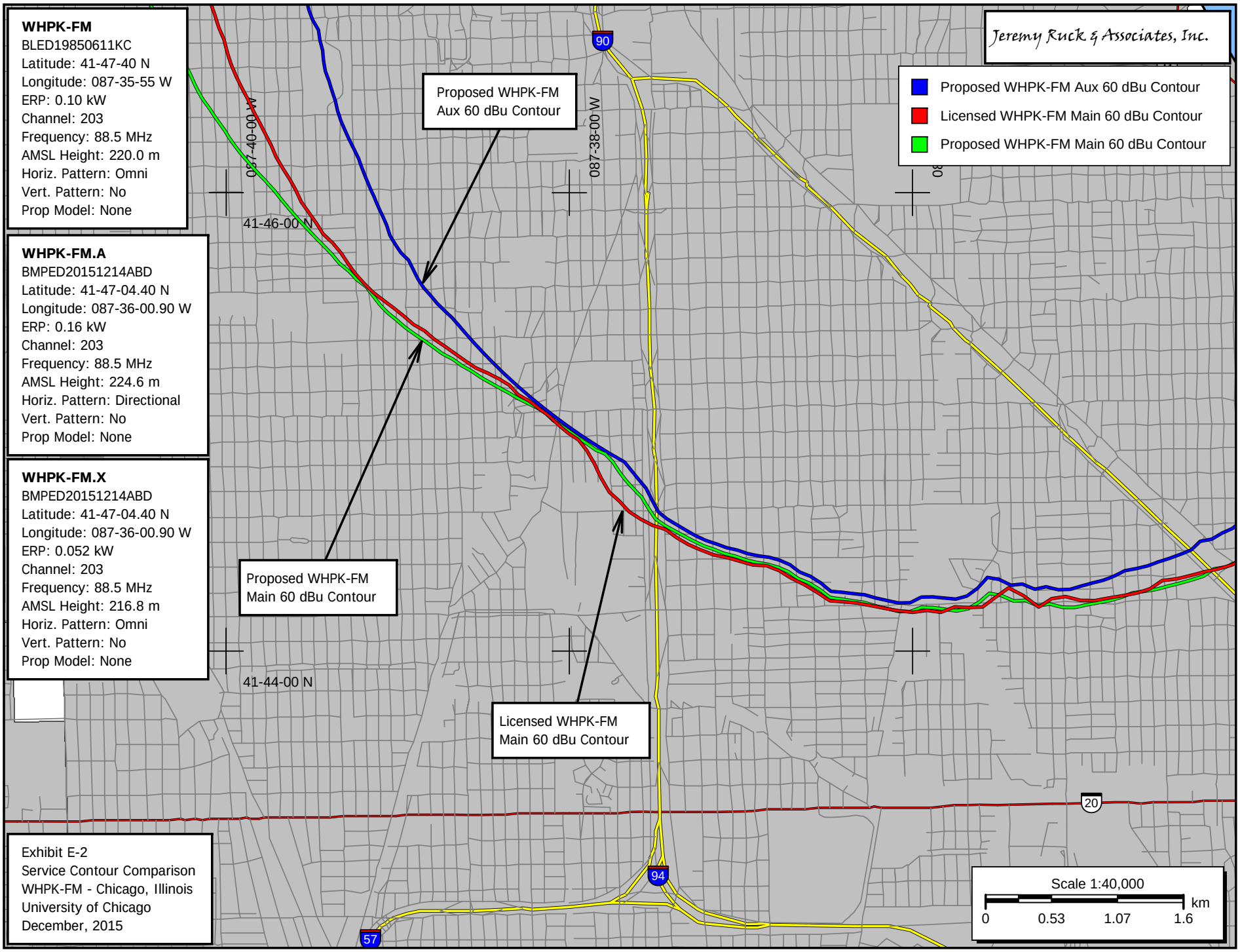
The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature
License Expires November 30, 2017

Jeremy D. Ruck, PE
December 24, 2015


WHPK-FM
BLED19850611KC
Latitude: 41-47-40 N
Longitude: 087-35-55 W
ERP: 0.10 kW
Channel: 203
Frequency: 88.5 MHz
AMSL Height: 220.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None
WHPK-FM.A
BMPED20151214ABD
Latitude: 41-47-04.40 N
Longitude: 087-36-00.90 W
ERP: 0.16 kW
Channel: 203
Frequency: 88.5 MHz
AMSL Height: 224.6 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None
WHPK-FM.X
BMPED20151214ABD
Latitude: 41-47-04.40 N
Longitude: 087-36-00.90 W
ERP: 0.052 kW
Channel: 203
Frequency: 88.5 MHz
AMSL Height: 216.8 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None
Exhibit E-1
Service Contour Comparison
WHPK-FM - Chicago, Illinois
University of Chicago
December, 2015
Jeremy Ruck & Associates, Inc.
Proposed WHPK-FM Aux 60 dBu Contour
Licensed WHPK-FM Main 60 dBu Contour
Proposed WHPK-FM Main 60 dBu Contour
Licensed WHPK-FM Transmitter Site
Proposed WHPK-FM Transmitter Site
Chicago
Hometown
Park
087-40-00 W
087-35-00 W
087-30-00 W
41-50-00 N
41-45-00 N
WHPK-FM
WHPK-FM.X
90
94
57
20
41
Scale 1:100,000
0 1 2 3 km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Channel: 203
Frequency: 88.5 MHz
AMSL Height: 216.8 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None
Exhibit E-2
Service Contour Comparison
WHPK-FM - Chicago, Illinois
University of Chicago
December, 2015
Jeremy Ruck & Associates, Inc.
Proposed WHPK-FM Aux 60 dBu Contour
Licensed WHPK-FM Main 60 dBu Contour
Proposed WHPK-FM Main 60 dBu Contour
Proposed WHPK-FM Aux 60 dBu Contour
Proposed WHPK-FM Main 60 dBu Contour
Licensed WHPK-FM Main 60 dBu Contour
087-40-00 W
087-38-00 W
41-46-00 N
41-44-00 N
90
94
57
20
Scale 1:40,000
km
0
0.53
1.07
1.6