KTNW Minor Modification
Attachment 1, Overview
Washington State University

Washington State University ("WSU"), Licensee of KTNW (DTV), licensed to Richland, WA (facility ID 71023), respectfully submits this application as our proposal to modify its authorized replacement coverage for this facility from channel 38 to channel 22, as part of the Broadcast Television Spectrum Incentive Auction Report and Order[1]. This attachment describes our proposal to modify the permitted facility in accordance with the Report and Order and with the Channel Assignment letter from the Commission with respect to KTNW. The specific modification is to replace the permitted antenna with a non-directional antenna, and increase effective radiated power to 55 kW (17.4 dBk) to better serve the public.

KTNW's antenna is side-mounted on a tower owned by WSU, which occupies land leased from the Washington State Department of Natural Resources ("DNR"). There are no other broadcast antennas mounted to this tower. The original analog channel 31 antenna is a pylon antenna at the top of the tower and is no longer in use.

WSU proposes to locate the new channel 22 antenna at the top of the tower, replacing the unused analog antenna. This will allow parallel operation with the present facility during the testing period of the transition to channel 22. Details of the proposed antenna are contained in *Attachment 2, Antenna Technical Data*.

The proposed antenna system is a Micronetixx SFN-3030-B-10(E/P) 10 bay circularly polarized UHF slotted non-directional antenna with a center of radiation at 683 meters AMSL (8 meters above the present channel 38 antenna) operating at a power level of 17.4 dBk or 55 kW ERP (effective radiated power).

Table 1 shows the results of the FCC's *TVStudy*[2] program demonstrating compliance with the Commission's interference standards. The only exception shown is the increase above replacement coverage, which is the purpose of this application.

[1] FCC DA 14-50, GN Docket No. 12-268, released June 2, 2014
[2] FCC Office of Engineering and Technology (OET) TVStudy Version 2.2.3

Table 1. TVStudy Results for Proposed Facility

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Study created: 2017.11.01 17:41:19
Study build station data: LMS TV 2017-10-30 (55)
    Proposal: KTNW D22 DT CP RICHLAND, WA
 File number: BLANK0000025245
 Facility ID: 71023
Station data: User record
   Record ID: 74
     Country: U.S.
        Zone: II
Stations affected by proposal:
Call      Chan  Svc Status  City, State              File Number             Distance
K21JQ-D   D21   DC  LIC     WALLA WALLA, WA          BLDTA20090721ABT         74.6 km
KYVE      D21   DT  LIC     YAKIMA, WA               BLEDT20030910ACL        116.3
KPXG-TV   D22   DT  LIC     SALEM, OR                BLCDT20110715ACN        287.6
No non-directional AM stations found within 0.8 km
No directional AM stations found within 3.2 km
Record parameters as studied:
    Channel: D22
   Latitude:  46  6 12.80 N (NAD83)
  Longitude: 119  7 44.60 W
Height AMSL: 683.0 m
       HAAT: 369.0 m
   Peak ERP: 55.0 kW
    Antenna: Omnidirectional
Elev Pattrn: Generic
  Elec Tilt: 1.00
39.6 dBu contour:
Azimuth      ERP       HAAT   Distance
  0.0 deg   55.0 kW   513.6 m   92.3 km
 45.0       55.0      535.9     93.9
 90.0       55.0      448.7     88.1
135.0       55.0      287.0     75.7
180.0       55.0      286.9     75.7
225.0       55.0      301.2     76.9
270.0       55.0      168.1     67.0
315.0       55.0      401.9     85.7
Database HAAT does not agree with computed HAAT
Database HAAT: 369 m   Computed HAAT: 368 m
**Proposal service area extends beyond baseline plus 1.0%
Proposal service area population is more than 95.0% of baseline
Distance to Canadian border: 321.9 km
Distance to Mexican border: 1508.8 km
Conditions at FCC monitoring station: Ferndale WA
Bearing: 322.2 degrees   Distance: 408.1 km
Proposal is not within the West Virginia quiet zone area
Conditions at Table Mountain receiving zone:
Bearing: 115.5 degrees   Distance: 1302.8 km
Study cell size: 2.00 km
Profile point spacing: 1.00 km
Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%
Proposal receives 5.54% interference from scenario 1
No IX check failures found.
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