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**Engineering Statement
Digital Flash Cut Application for K17HA
Channel 17 at Astoria, OR
March 2010**

This Engineering Statement has been prepared on behalf of KING Broadcasting Company, licensee of TV translator station K17HA at Astoria, Oregon. This material has been prepared in connection with an application for digital flash cut.

I. Allocation Study

Study has been made of all cochannel and adjacent-channel facilities in the vicinity of the proposed operation, including a detailed Longley-Rice interference study to demonstrate that the proposed operation will not cause interference to any facilities with which contour overlap exists. This study was performed using the SunDTV program from V-Soft Communications and a 1 km grid spacing. The SunDTV program identically duplicates the FCC's OET-69 processing program.

The results of this study indicate that the proposed facility is predicted to cause zero additional interference to any of the listed stations. (It is noted that the attached study was run at higher power than is being requested in the application.)

Based on the foregoing allocation and interference study, it is believed that the proposed facility can operate without risk of interference to other stations.

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                        Summary Study

 Census data selected: 2000

 Post DTV Transition Database Selected

              TV INTERFERENCE and SPACING ANALYSIS PROGRAM


 Record Selected for Analysis

 K17HA     USERRECORD-02              ASTORIA             OR US
 Channel 17 ERP 18.      kW    HAAT  379. m  RCAMSL 00433 m STRINGENT MASK
 Latitude 046-17-11  Longitude 0123-53-45
 Status APP       Zone 2     Border
 Dir Antenna Make usr  Model USRPAT02         Beam tilt N  Ref Azimuth 0.
 Last update          Cutoff date          Docket
 Comments
 Applicant




 Cell Size for Service Analysis 1.0 km/side

 Distance Increments for Longley-Rice Analysis 1.00 km


 Not full service station

 Facility does not meet maximum power limit
 Channel 17  ERP =   18.00
    Azimuth      ERP       HAAT    51.0 dBu F(50,90)
     (Deg)      (kW)       (m)         (km)
      0.0       0.040     262.8       22.1
     45.0       0.080     322.4       27.7
     90.0       0.069     354.3       27.7
    135.0       4.756     409.3       54.3
    180.0      17.713     411.3       61.9
    225.0       3.351     431.8       53.0
    270.0       1.832     429.9       49.4
    315.0       3.850     406.9       53.0




        Contour Overlap to Proposed Station


        Station
 K17GV    17 RAINIER               OR BLTT20070209ABT       causes


 Contour overlap to Digital LPTV station
 K17HA    17 ASTORIA              OR USERRECORD02
   Required D/U ratio:   2.0

        Contour Overlap Evaluation to Proposed Station Complete



              LANDMOBILE SPACING VIOLATIONS FOUND


              NONE
 Proposed facility OK to FCC Monitoring Stations

 Proposed facility OK toward West Virginia quiet zone
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   Proposed facility OK toward Table Mountain

   Proposed facility is within the Canadian coordination distance
   Distance to border =   216.9km

   Proposed facility is beyond the Mexican coordination distance

   Proposed station is OK toward AM broadcast stations

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                     Start of Interference Analysis


                  Proposed Station
   Channel     Call        City/State              ARN
     17     K17HA      ASTORIA OR                USERRECORD02

        Stations Potentially Affected by  Proposed Station


Chan   Call      City/State        Dist(km) Status   Application Ref. No.
  16   KORS-CA  PORTLAND OR          123.0   CP     BDFCDTA  -20090630ACS
  16   KORS-CA  PORTLAND OR          123.0   APP    BMPDTA   -20091103AAL
  16   KSLM-LD  SALEM OR             156.9   CP     BPDTL    -20090107ACQ
  16   KORS-CA  SALEM OR             123.0   CP     BPTTA    -20040902AAJ
  16   KSLM-LD  SALEM OR             156.9   LIC    BLDTL    -20081009AET
  17   K17GK    ARLINGTON OR         287.7   CP     BDFCDTT  -20080325AHM
  17   K17GK    ARLINGTON OR         287.7   LIC    BLTT     -20060522ADH
  17   KABH-LD  BEND OR              317.5   CP     BDCCDTL  -20061025ADR
  17   K17AA    COOS BAY, ETC. OR    331.8   LIC    BLTT     -19840702IA
  17   KMTR     EUGENE OR            251.3   LIC    BLCDT    -20030618AAY
  17   K54BK    MAUPIN OR            252.1   APP    BDISDTT  -20090824AAC
  17   K17GV    RAINIER OR            81.5   CP     BDFCDTT  -20090821ACQ
  17   K17GV    RAINIER OR            81.5   LIC    BLTT     -20070209ABT
  17   KWVT-LP  SALEM OR             156.9   LIC    BLTTL    -20080512AFV
  17   K17IL-D  ELLENSBURG, ETC. WA  272.2   LIC    BLDTT    -20090506ACN
  17   K17IL-D  ELLENSBURG, ETC. WA  272.2   CP     BDISTT   -20061002AEO
  17   K58BW    EVERETT WA           235.5   CP     BDISDTT  -20090505ABJ
  18   K18EL    NEWBERG/TIGARD OR    125.2   LIC    BLTTL    -19940506IN
  18   K18EL    NEWBERG/TIGARD OR    125.2   CP     BDFCDTL  -20060331BBL
  18   K18EL    NEWBERG/TIGARD OR    125.2   APP    BSTA     -20060608ACM
  18   K18EL    NEWBERG/TIGARD OR    125.2   CP     BDFCDTL  -20090810ABY
  18   K18FR    NEWPORT OR           170.5   CP     BDFCDTT  -20090210AAG
  18   K18FR    NEWPORT OR           170.4   LIC    BLTT     -20021217AAQ
  18   K18FR    NEWPORT OR           170.5   CP     BPTT     -20080321ACA
  19   K19EI    PACIFIC C/CLOVERDALE OR 119.8 LIC   BLTT     -20020311AAN
  19   K67GU    SALEM OR             170.2   APP    BPTTL    -20020521AAX
  20   K20EH    HOOD RIVER OR        188.8   CP     BPTTL    -20070815ABA
  20   K20EH    HOOD RIVER OR        188.5   LIC    BLTTL    -19940114JR
  20   K63GK    PORTLAND OR          135.7   APP    BPTTL    -20020627AAR
  20   K20HT    ROCKAWAY OR           60.4   LIC    BLTT     -20030609AGF
  20   KOXI-CA  CAMAS WA             123.0   LIC    BLTTA    -20070831ACY
  21   K21HG    RAINIER OR            81.5   LIC    BLTT     -20070209ABR
  21   K21GX    SALEM OR             156.8   LIC    BLTTL    -20070103AAN
  21   K21DE    SEASIDE-ASTORIA OR     0.1   LIC    BLTTL    -19940902IE
  24   KKEI-CA  PORTLAND OR          123.0   APP    BDISTTA  -20090102ACF
  25   K25CG    ABERDEEN WA           72.8   LIC    BLTT     -19890801IB
  25   K25CH    CENTRALIA WA          70.8   LIC    BLTT     -20031124AHA


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Study of this proposal found the following interference problem(s):

    NONE.
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II. NIER Study

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(mW/cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

Power density levels produced by the proposed Channel 17 translator were calculated for an elevation of 2 meters above ground (13 meters below the antenna radiation center). The worst case power density levels occur at depression angles between 45 and 90 degrees below the horizontal. The calculations in this report assume a worst-case relative field value of 0.16 at these angles, based on the manufacturer's vertical plane pattern for the horizontally-polarized Kathrein K723147 panel array (1 degree electrical beam tilt) proposed in this application. This relative field value yields a worst-case adjusted peak effective radiated power of 169 Watts at depression angles between 45 and 90 degrees below the horizontal. Assuming this power level and the shortest distance between the antenna radiation center and 2 meters above ground level (i.e. straight down), the highest calculated power density from the proposed antenna alone occurs at the base of the antenna support structure. At this point the power density is calculated to be 33.4 μW/cm², which is 2% of 1637 μW/cm² (the FCC maximum for controlled environments such as this one at the Channel 17 frequency).

Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken. The site and tower will be posted with warning signs.

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency radiation in excess of FCC guidelines.

March 22, 2010
Erik C. Swanson, P.E.