

**ENGINEERING EXHIBIT  
APPLICATION FOR  
MODIFICATION OF LICENSE  
TELEVISION TRANSLATOR STATION K13OC  
SMITH TELEVISION LICENSE HOLDINGS, INC.  
DOUGLAS, ETC., ALASKA  
CH 13+ 0.28 KW (MAX-DA) 507 METERS AMSL**

**ENGINEERING STATEMENT**

The Engineering Exhibit, of which this statement is part, was prepared in accordance with the Rules of the Federal Communications Commission (FCC) and pursuant to the provisions of Section III of FCC Form 346 on behalf of the Smith Television License Holdings, Inc. (hereinafter Smith) in support of an application for a construction permit to modify the facilities of television translator station K13OC , Douglas, Etc., Alaska.

Smith proposes to modify the K13OC operation to specify operation on channel 13, employing plus 10 kHz frequency offset with a maximum peak visual ERP of 0.28 kilowatts. The antenna structure registration for the proposed K13OC operation is 1220012.

**DENNY & ASSOCIATES, P.C.**  
**CONSULTING ENGINEERS**  
**WASHINGTON, D.C.**

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Engineering Statement  
K13OC, Douglas, Etc., Alaska

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Smith proposes to employ a Scala, type CA-5-150. The proposed antenna will be mounted with the main lobe of radiation oriented at 325° True. The proposed Scala, type CA-5-150, antenna is on the FCC list of “off-the-shelf” directional antennas.

The proposed facility fulfills the interference requirements of Sections 74.705, 74.706, 74.707 and 74.709 of the FCC Rules with respect to existing NTSC, DTV, low power television, television translator, Class A television, and land mobile allotments and assignments with two exceptions. K13TG, Cube Cove, Alaska, and K13TW, Freshwater Bay, Alaska, are both licensed for operation on Channel 13 near to the proposed K13OC operation. The proposed K13OC operation is predicted to result in contour overlap with these stations based on the FCC methodology. Smith request a waiver of the contour protection requirements of 74.706 to permit the use of the terrain dependent Longley-Rice propagation model to demonstrate protection of K13TG and K13TW. For the cochannel nonoffset relationship the controlling desired-to-undesired (D/U) signal strength ratio is 45 dB. Applying this D/U ratio to the K13TG and K13TW 68 dBu F(50,50) protected contour yields a interfering contour value of 23 dBu F(50,10). Figure 1 is a map showing the FCC predicted protected service areas of both K13TW and K13TG. The map

also shows areas where a field strength of 23 dBu F(50,10) or better for the proposed K13OC operation is predicted to exist based on the Longley-Rice model. Since the proposed K13OC operation is not predicted to yield signal strengths within the K13TW and K13TG protected service areas in excess of 23 dBu F(50,10), interference to K13TW or K13TG is not predicted to occur.

The proposed modification of the K13OC facilities will not have a significant environmental impact. The existing K13OC transmitter site is a multiple-user site located in a rural, sparsely populated area. Neither workers nor the general public will be exposed to electromagnetic field strengths exceeding the maximum permissible exposure (MPE) levels set forth in Section 1.1310 of the FCC Rules. At a reference point two meters above ground level (AGL) at the base of the supporting structure, the calculated exposure arising from the K13OC operation proposed herein is predicted to be 0.006 milliwatt per square centimeter ( $\text{mW}/\text{cm}^2$ ) or 3.0 percent of the MPE level for general public/uncontrolled exposures of  $0.2 \text{ mW}/\text{cm}^2$  at 210 MHz, the lower edge of channel 13. The foregoing calculation is based on a worst case exposure prediction and assumes a ground reflection coefficient of 1.6, and an aural ERP equal to 10 percent of the maximum peak visual ERP. Since the proposed K13OC operation will contribute less than 5.0 percent of the MPE for general

population/uncontrolled exposure at any location on the ground at the multiple-user site, K13OC is not considered a “significant contributor” to the RF exposure environment pursuant to *OET Bulletin 65, Edition 97-01*. Thus, contributions to exposure from other sources in the vicinity of the K13OC site were not taken into account in this analysis.

With respect to occupational exposures, Smith and the other licensees at the existing site will employ procedures to assure that workers on the tower in the vicinity of energized antennas are not exposed to levels in excess of the FCC MPE’s for Occupational/Controlled exposure.

Other environmental concerns do not apply in this case as K13OC proposes use of an supporting structure that is not located in an area of environmental interest as defined by 1.1307 of the FCC rules. Use of high intensity lighting does not apply because the proposed structure does not require lighting.

