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Engineering Statement
Displacement Application for K67BF Wallowa, OR
For Operation on Channel 36+
May 2005

This Engineering Statement has been prepared on behalf of Rural Oregon Wireless Television, licensee of TV translator station K67BF at Wallowa, Oregon. This material has been prepared in connection with a displacement application for this facility, which presently operates on Channel 67, outside the "core" television spectrum of Channels 2 through 51. Operation is proposed on Channel 36+.

I. Allocation Study

Cochannel

Study has been made of all cochannel operations within 400 km of the proposed Ch. 36+ operation. The attached allocation study map demonstrates that there will be no prohibited contour overlap with any authorized analog cochannel facilities close enough to require detailed study.

With regard to co-channel digital station KSKN-DT Spokane, a detailed Longley-Rice interference study has been conducted to demonstrate that the proposed operation will not cause interference to that station.

The time-shared “HDTV” computer program offered by the National Telecommunications and Information Administration’s *TA Services* in Boulder, Colorado was employed as the method for coverage and interference protection. The HDTV computer program has been developed in close coordination with the Commission’s OET staff, and utilizes similar methodology as the computer program used by the Commission to develop the DTV Table of Allotments. Predictions included “clipping” the extent of protected coverage as specified under §73.623(c)(2) at the Grade B contour distance for analog stations, at the 74 dBu contour distance for UHF translators, and at the DTV coverage contour distance for DTV assignments per §73.625(b). It is believed that the HDTV program offered by *TA Services* is compliant with the FCC’s OET Bulletin 69 Longley-Rice Methodology for Evaluating TV Coverage and Interference (“OET-69”).

Study was made using the Ch. 36+ technical facility described herein, including the proposed horizontal pattern. The vertical pattern used comports with the Commission’s Report and Order in MB Docket No. 03-185, released on September 30, 2004.

Stations that are actually interfered with.				
Name	NTSC Int	HDTV Int	Population(1990)	
DKSKN-DTC	4.43 sq km	0.00 sq km	5.	

The results indicate that the proposed Ch. 36+ facility is predicted to cause only *de minimus* interference to KSKN-DT. Specifically, interference is predicted to 5 persons served by KSKN-DT, but this figure is less than 0.5% of the population served by that station and therefore considered to round to zero per Commission policy.

First-Adjacent

There are no first-adjacent-channel facilities close enough to require detailed study.

N+7

There are no analog television stations on Channel 43 within 100 km of the proposed translator.

N-14 and N-15

There are no existing N-14 or N-15 operations close enough to require detailed study.

Based on the foregoing allocation and interference study, it is believed that the proposed Ch. 36+ facility can operate without risk of interference to other stations.

II. NIER Study

OET Bulletin 65 Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (Edition 97-01) states in part that:

When performing an evaluation for compliance with the FCC's RF guidelines all significant contributors to the ambient RF environment should be considered. . . For purposes of such consideration, significance can be taken to mean any transmitter producing more than 5% of the applicable exposure limit (in terms of power density or the square of the electric or magnetic field strength) at accessible locations.

As will be demonstrated below, the proposed translator operation will produce less than 5% of the applicable exposure limit for both controlled environments such as this one. Thus, the proposed facility is categorically excluded from the requirement of further study. Therefore, pursuant to §1.1307(b)(3) of the Commission's Rules no calculations are required for the other FM and TV facilities in the vicinity, and precise calculations are made only with regard to the levels from this proposal.

Power density levels produced by the proposed translator were calculated for an elevation of 2 meters above ground (6 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 0.2 at these angles, based on the manufacturer's vertical plane pattern for the horizontally-polarized Kathrein K723147 broadband panel antenna array proposed in this application. This relative field value yields a worst-case adjusted peak effective radiated power of 22 Watts at depression angles between 45 and 90 degrees below the horizontal. Assuming an average effective radiated power of 11 Watts, 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 $10.2 \mu\text{W}/\text{cm}^2$, which is 2.5% of $402 \mu\text{W}/\text{cm}^2$ (the FCC maximum at the Channel 36 visual carrier frequency for uncontrolled environments).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed translator operation alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 1000 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicants proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 et seq and no further analysis of non-ionizing radiation at this site is required in this application.

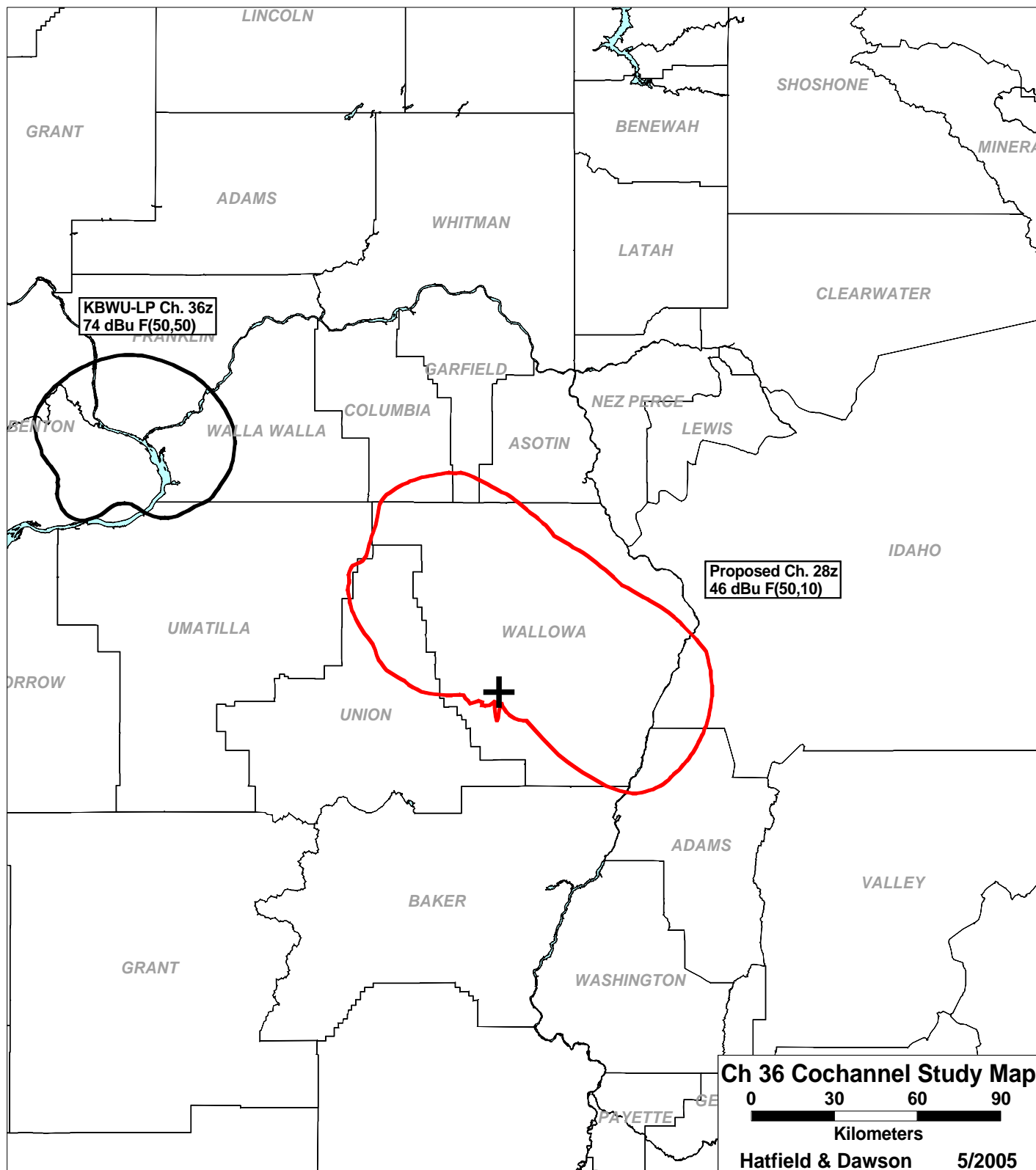
Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken. The site and tower will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

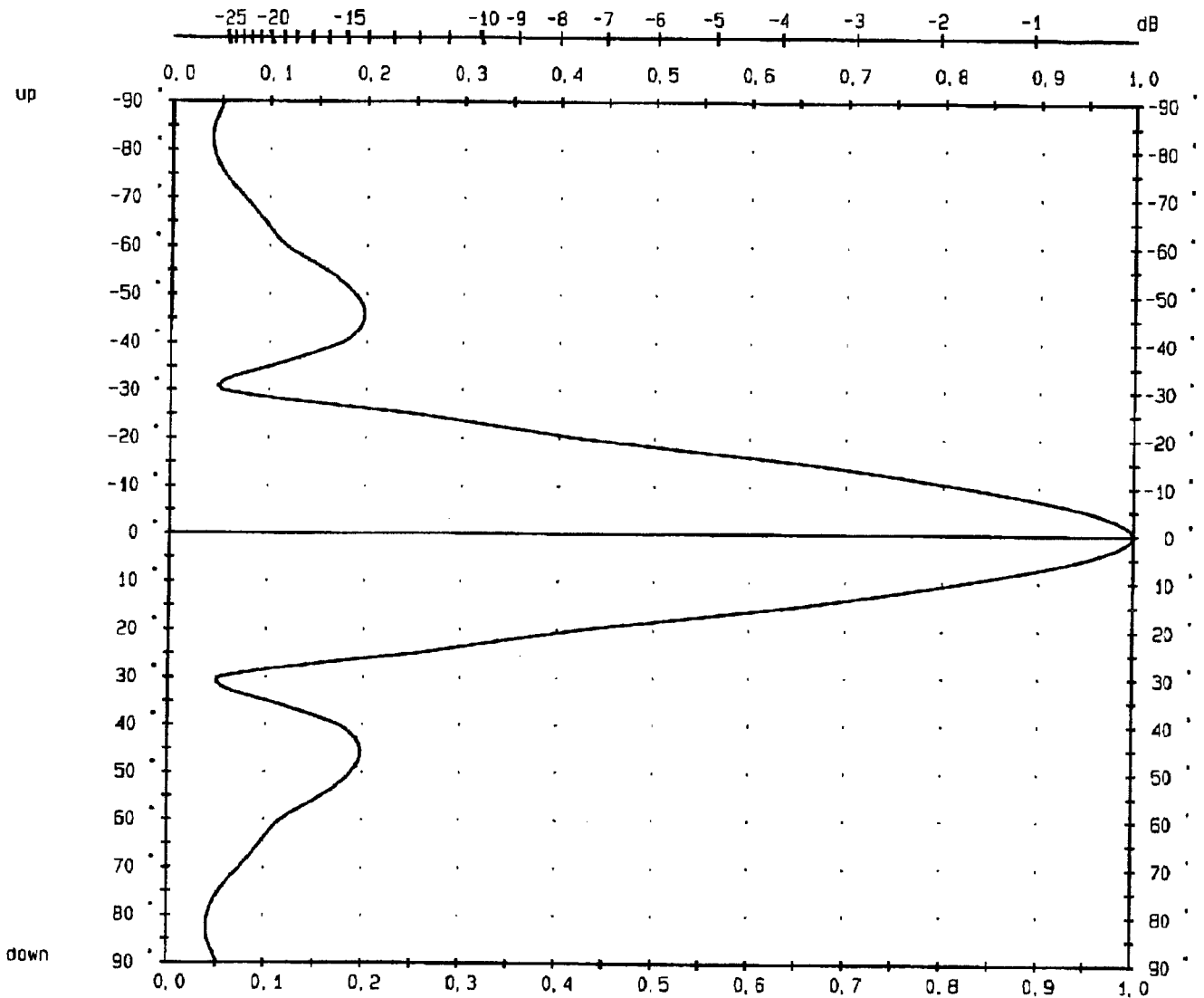
The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency radiation in excess of FCC guidelines.

May 4, 2005

Erik C. Swanson

Hatfield & Dawson Consulting Engineers





frequency in MHz 603.250
 azimuth in 330.0
 omni-dir in dBd 3.95

Hatfield & Dawson Consulting Engineers

SCALA Medford Oregon	1 x 2 K723147 Broadband Panel Array	Typ. Nr.
MB 28.4.5 9:6	Rural Oregon Wireless Television	Bl.

