# Auxiliary Main Modification

## KUDD 107.9 FM

Simmons-SLC, LS, LLC. Licensee of KUDD is requesting a modification of licensed facility BXLH-20090414AGQ as it prepares to move its current facilities to fulfill construction permit BMPH-20140206AJU. As such the Commission is requiring a modification to bring the facility into compliance with Section 73.1675 (a) (1). The follow is the documentation of compliance being submitted with the 302-FM application for license.

The following will demonstrate new compliance for KUDD's auxiliary main. Exhibit #1 shows the new operating parameters for transmitter power output calculations, antenna type, model, etc.

# Exhibit #1

# KUDD Auxiliary Main

Transmitter Power Output Calculations

This exhibit has been included to explain the basis for the transmitter power output utilized to achieve the authorized effective radiated power 2.1 kW. The antenna system consists of a circularly polarized Shively 6016/2 Antenna. The antenna has a power gain of 6.089 at 107.9 MHz. Therefore, an antenna input power of 345 watts is required to achieve 2.1 kW ERP.

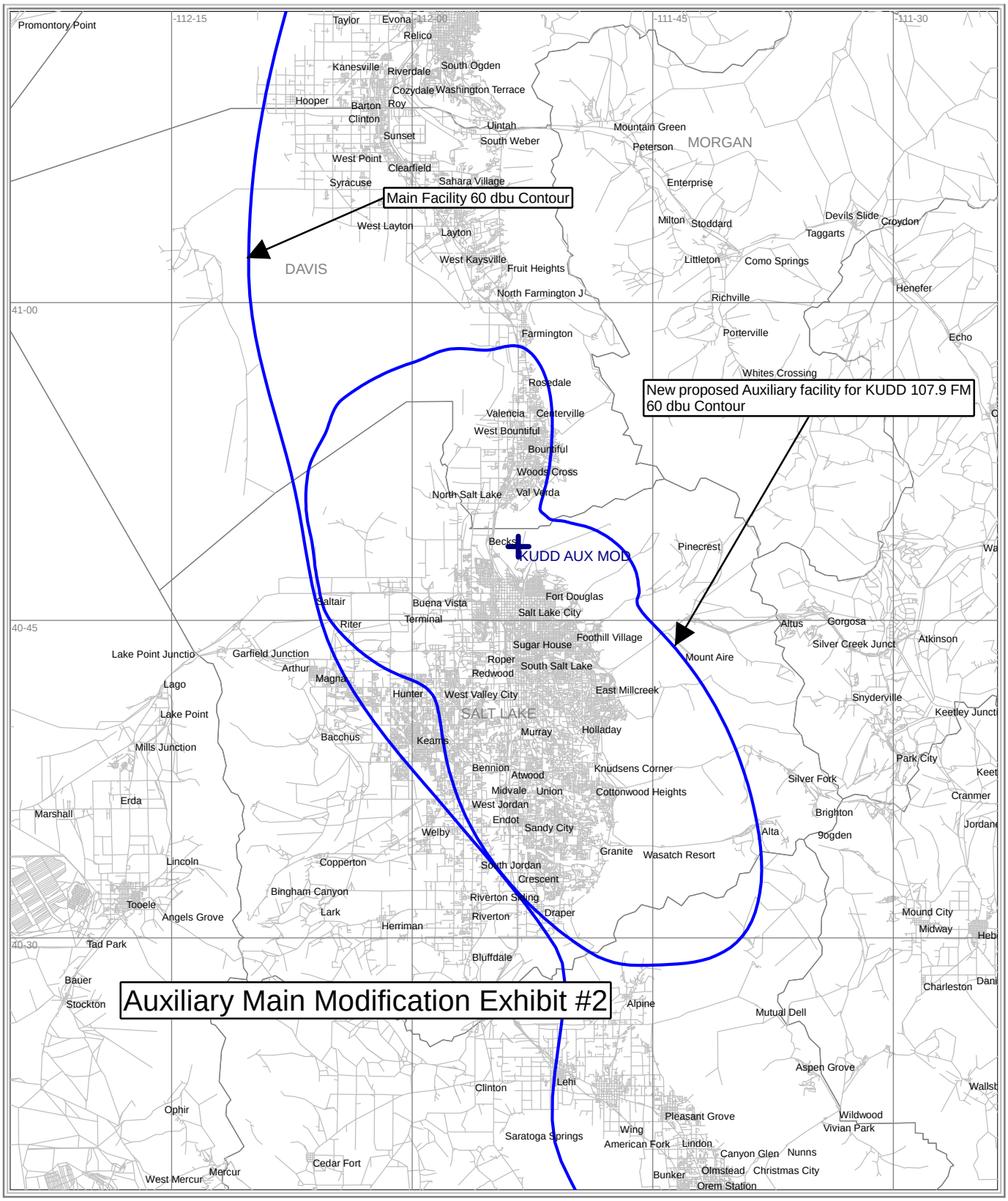
To get the signal from the transmitter to the antenna, it must pass through 7 meters of Andrew HJ4-50 (1/2") transmission line (0.22 dB loss), a Jampro RCCC.8 Balanced Combiner (0.8 dB loss), and 30 meters of Andrew HJ7-50 (1 5/8") transmission line (0.24 dB loss). Total insertion losses encountered between the transmitter and antenna are 1.17 dB yielding an efficiency of 74.89%. Therefore, a power of 461 watts is required at the transmitter output to achieve the authorized effective radiated power.

**PO Calculations:**

$$\frac{\text{Effective Radiated Power}}{\text{(Antenna Power Gain * Feed System Efficiency)}} = \text{TPO}$$

$$\frac{\text{2.1 kW}}{\text{(6.089 * 74.89\%)}} = \textbf{0.461 kW TPO}$$

Exhibit #2 shows the new contour for the auxiliary main for KUDD within the 60 dbu contour of the main facility. The new ERP for the auxiliary will be 2.1kw with an azimuth of 130 degrees. This will bring the auxiliary main into compliance as requested in the CP by the commission.


Main Facility 60 dbu Contour
New proposed Auxiliary facility for KUDD 107.9 FM
60 dbu Contour
KUDD AUX MOD
Auxiliary Main Modification Exhibit #2
DAVIS
MORGAN
SALT LAKE
Promontory Point
Taylor
Evona
Relico
Kanesville
Riverdale
South Ogden
Cozydale
Washington Terrace
Hooper
Barton
Roy
Clinton
Uintah
Sunset
South Weber
Mountain Green
Peterson
West Point
Clearfield
Syracuse
Sahara Village
Enterprise
West Layton
Layton
Milton
Stoddard
Devils Slide
Croydon
Taggarts
West Kaysville
Fruit Heights
Littleton
Como Springs
North Farmington J
Richville
Henefer
Farmington
Potterville
Echo
Whites Crossing
Rosedale
Valencia
Centerville
West Bountiful
Bountiful
Woods Cross
North Salt Lake
Val Verda
Pinecrest
Fort Douglas
Salt Lake City
Saltair
Buena Vista
Terminal
Riter
Altus
Gorgosa
Silver Creek Junct
Atkinson
Foothill Village
Sugar House
Mount Aire
Lake Point Junctio
Garfield Junction
Arthur
Roper
South Salt Lake
Redwood
Magna
Lago
Hunter
West Valley City
East Millcreek
Snyderville
Lake Point
Keetley Junct
Murray
Holladay
Bacchus
Kearns
Mills Junction
Park City
Bennion
Atwood
Knudsens Corner
Silver Fork
Midvale
Union
Cottonwood Heights
Cranmer
Erda
West Jordan
Marshall
Brighton
Endot
Sandy City
Welby
Alta
9ogden
Granite
Wasatch Resort
Lincoln
Copperton
South Jordan
Crescent
Bingham Canyon
Tooele
Riverton Stirling
Lark
Angels Grove
Riverton
Draper
Herriman
Mound City
Midway
Tad Park
Bluffdale
Bauer
Stockton
Charleston
Alpine
Mutual Dell
Aspen Grove
Clinton
Lehi
Ophir
Pleasant Grove
Wildwood
Vivian Park
Wing
Saratoga Springs
American Fork
Lindon
Canyon Glen
Nunns
Cedar Fort
Mercur
West Mercur
Bunker
Olmstead
Christmas City
Orem Station
112-15
112-00
111-45
111-30
41-00
40-45
40-30