

BENJAMIN F. DAWSON III, PE
THOMAS M. ECKELS, PE
STEPHEN S. LOCKWOOD, PE
DAVID J. PINION, PE

PAUL W. LEONARD, PE
ERIK C. SWANSON, PE
THOMAS S. GORTON, PE
MICHAEL H. MEHIGAN, EIT

HATFIELD & DAWSON
CONSULTING ELECTRICAL ENGINEERS
9500 GREENWOOD AVE. N.
SEATTLE, WASHINGTON 98103

TELEPHONE (206) 783-9151
FACSIMILE (206) 789-9834
E-MAIL hatdaw@hatdaw.com

JAMES B. HATFIELD, PE
CONSULTANT

MAURY L. HATFIELD, PE
CONSULTANT
OAKHURST, NSW
AUSTRALIA

**Engineering Statement
Application for new Digital LPTV Station
Channel 33 at Grenada, MS
July 2009**

This Engineering Statement has been prepared on behalf of Commonwealth Broadcasting Group in connection with an application for a new digital LPTV station at Grenada, MS.

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.

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

Summary Study

Census data selected: 2000

Post DTV Transition Database Selected

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 07-30-2009 Time: 11:31:17

Record Selected for Analysis

GREN USERRECORD-07 GRENADA MS US
Channel 33 ERP 15. kW HAAT 573. m RCAMSL 00607 m STRINGENT MASK
Latitude 033-22-23 Longitude 0090-32-25
Status APP Zone 2 Border
Dir Antenna Make usr Model USRPAT07 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 meets maximum power limit

Azimuth (Deg)	ERP (kW)	HAAT (m)	51.0 dBu F(50,90) (km)
0.0	3.051	573.1	56.6
45.0	14.795	572.6	66.4
90.0	1.479	572.5	52.1
135.0	0.706	574.2	47.5
180.0	0.541	574.1	45.9
225.0	2.466	575.4	55.3
270.0	14.850	572.4	66.5
315.0	2.485	572.4	55.3

Contour Overlap to Proposed Station

NEW Station 33 MONROE LA BNPTTL20000828BGP causes

Contour overlap to Digital LPTV station

GREN 33 GRENADA MS USERRECORD07
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

Proposed facility OK toward Table Mountain

Proposed facility is beyond the Canadian coordination distance

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

Start of Interference Analysis

Channel	Proposed Station	Call	City/State	ARN
33	GREN	GRENADA	MS	USERRECORD07

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
32	K32HT	EL DORADO AR	201.2	CP MOD	BMPTTL	-20070510ABV
32	WABG-TV	GREENWOOD MS	0.0	LIC	BLCDT	-20051024ABR
32	W32BH	TUPELO MS	199.2	LIC	BLTTL	-19970728JE
33	WCFT-TV	TUSCALOOSA AL	288.7	APP	BMPCDT	-20090611ACX
33	WCFT-TV	TUSCALOOSA AL	288.7	CP MOD	BMPCDT	-20080620AHJ
33	K33HE	FORT SMITH AR	365.2	LIC	BLTTL	-20051208ACS
33	K33IF	DELHI LA	144.7	CP	BNPTTL	-20000831BNT
33	NEW	MONROE LA	173.2	APP	BNPTTL	-20000828AWE
33	NEW	MONROE LA	173.2	APP	BNPTTL	-20000828AFW
33	NEW	MONROE LA	174.9	APP	BNPTTL	-20000828BGP
33	NEW	MONROE LA	185.3	APP	BNPTTL	-20000831EKK
33	WDYR-CA	DYERSBURG TN	314.9	LIC	BLTTA	-20011221ABF
33	NEW	HENDERSON TN	287.3	APP	BNPTTL	-20000831EKN
33	NEW	JACKSON TN	301.7	APP	BNPTTL	-20000825AJU
33	NEW	JACKSON TN	294.8	APP	BNPTTL	-20000831ANY
33	NEW	JACKSON TN	300.9	APP	BNPTTL	-20000829AUW
33	WFBI-LP	SOUTH EAST MEMPHIS TN	214.9	CP	BDISDTL	-20060301ACO
34	W34BI	BIRMINGHAM AL	342.3	LIC	BLTTL	-19930412IN
34	K69HO	MONROE LA	156.7	APP	BPTTL	-20020605ABD
34	W34BJ	CALHOUN CITY MS	131.2	LIC	BLTTL	-20050121ADT
34	WRBJ	MAGEE MS	167.2	CP MOD	BMPCDT	-20080620AJG
34	W35CQ	MERIDIAN MS	192.7	APP	BMPTTL	-20001031ABY
35	W35CQ	MERIDIAN MS	182.7	CP	BPTTL	-20071207ACT
35	W35CQ	MERIDIAN MS	182.7	LIC	BLTTL	-20070828ACN
35	W35CQ	MERIDIAN MS	182.7	APP	BSTA	-20061025AEB
36	K36DR	EL DORADO AR	201.2	LIC	BLTTL	-20001219AAW
36	W36BT	GRENADA MS	73.2	CP	BPTTL	-20071130BHL
36	W36BT	GRENADA MS	73.2	LIC	BLTTL	-20001211ACS
36	W36BY	MERIDIAN MS	182.7	CP	BPTTL	-20071207ACW
36	W36BY	MERIDIAN MS	182.7	LIC	BLTTL	-20070828ACU
40	K40EF	EL DORADO AR	201.2	LIC	BLTTL	-20001213ABD
40	WMRQ-LP	MERIDIAN MS	205.5	LIC	BLTTL	-20070625AAZ
40	W40CC	TUPELO MS	199.1	CP	BNPTTL	-20000830BBO
40	W40BZ	TUPELO MS	196.5	LIC	BLTTL	-20070730ALP
41	W41BV	GRENADA MS	73.2	LIC	BLTTL	-20001208ABA
41	W41BV	GRENADA MS	73.2	CP	BPTTL	-20071130BGY

%%%

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

NONE.

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 operation will produce less than 5% of the applicable exposure limit for both controlled and uncontrolled environments. 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.

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.

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

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 facility were calculated for an elevation of 2 meters above ground (570 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 0.077 at these angles, based on the manufacturer's vertical plane pattern for the horizontally-polarized Dielectric TFU-30DSC-R 3BP300 antenna proposed in this application. This relative field value yields a worst-case adjusted average effective radiated power of 89 Watts at depression angles between 45 and 90 degrees below the horizontal. Assuming this power 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 $0.01 \mu\text{W}/\text{cm}^2$, which is less than 0.1% of $391 \mu\text{W}/\text{cm}^2$ (the FCC maximum for uncontrolled environments at the Channel 33 frequency).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed 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 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.

July 30, 2009

Erik C. Swanson, P.E.