



Kessler and Gehman Associates
Consultants • Broadcast • Wireless

MINOR MODIFICATION OF A DIGITAL TELEVISION TRANSLATOR BROADCAST STATION

CALL SIGN: W29EY-D
FACILITY ID: 43205
LOCATION: COLUMBIA, MS

Prepared For:

Mississippi Authority For
Educational Television
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Prepared By:

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1.0 MINOR MODIFICATION OF A DIGITAL TELEVISION BROADCAST STATION

Mississippi Authority for Educational Television (“*MAET*”) is the licensee of a digital Low power translator station having call sign W29EY-D, Facility ID 43205. W29EY-D is permitted¹ to operate on channel 29 with an ERP of 15KW through an omni-directional antenna using a full-service emission mask.

It is proposed to reduce the antenna height from 80.1m to 64.6m AGL and replace the Dielectric TLP-8A antenna with a TLP-12A-R which has a higher gain. Pursuant to 47 CFR Section 74.787(b) the instant application is considered a “minor” change because:

- There is no change in frequency.
- There is no change in transmitting antenna location such that the protected contour resulting from the change does not overlap some portion of the protected contour of the authorized facilities of the existing station as illustrated in Appendix C.
- There is no change in transmitting antenna location greater than 30 miles (48km) from the reference coordinates of the existing station’s antenna location.

2.0 STATION TRANSMITTER LOCATION AND ELEVATION

It is proposed to keep W29EY-D at its permitted location on an existing tower as illustrated in Appendix A. The structure has an FCC Antenna Structure Registration (“*ASR*”) number of 1205697 and will not need to be modified by the instant application.

3.0 ALLOCATION ANALYSIS

Appendix B are the summarized results from TVStudy V2.2.5. As indicated the proposed W29EY-D facility is predicted to cause no outbound interference but is

¹ FCC File No.: 0000053265

predicted to receive 7.90% aggregate inbound interference which is acceptable to MAET.

4.0 AM STATION PROXIMITY

There are no AM Stations located within 3.2 km of the proposed facility. Pursuant to 47 C.F.R. Section 1.30002(e), the construction or extension of an antenna-supporting structure shall be considered subject to the moment method analysis and prior notification requirement; however, the instant application does not propose to extend the existing structure or build a new structure. Thus, the proposed facility is exempt from further AM analysis consideration.

5.0 INTERNATIONAL COORDINATION

The W29EY-D transmitter site is 1320.7 and 907.7 km from the Canadian and Mexican borders respectively. The instant application will not require international coordination.

6.0 RADIO FREQUENCY RADIATION COMPLIANCE

A theoretical analysis has been conducted of the human exposure to radio frequency radiation ("RFR") using the calculation methodology described in OET Bulletin 65, Edition 97-01. The RFR analysis is conducted pursuant to the following methodology:

Terrain² extraction is compiled from the proposed tower site to radial lengths of 0.25 miles in 0.001 mile increments for 360 radials. The power density is calculated for each terrain point at 6 feet above ground level using the elevation and azimuth pattern of the proposed broadcast antenna. The power density calculations are conducted using the lower

² Terrain extraction is based upon a 3 arc second point spacing terrain database.

edge of the proposed channel frequency. To account for ground reflections, a coefficient of 1.6 was included in the calculation.

The resulting cylindrical polar analysis is then summarized into a coordinate plane graph using the following methodology:

Starting from the origin the maximum calculated RFR value is determined among the 360 degree radials for each 0.001 mile increment, the value is then converted into a percentage of the maximum allowable general population or uncontrolled exposure and plotted as a function of perpendicular distance from the tower.

The resulting RFR study in Appendix D demonstrates that the peak exposure is 0.811% of the most restrictive permissible exposure threshold. Pursuant to OET Bulletin 65 concerning multiple-user transmitter sites only those licensees whose transmitters produce power density levels greater than 5.0% of the exposure limit are considered significant contributors to RFR. Since the proposed operation is within 5% of the most permissible exposure at any location 2 meters above the ground, it is not considered a significant contributor to RFR exposure. Thus, contributions to exposure from other RF sources in the vicinity of the proposed facility were not taken into account. The instant application is compliant with the FCC limits for human exposure to RF radiation and is excluded from further environmental processing since no changes are proposed to the tower structure in order to accommodate the proposed antenna.

A chain link fence encloses the support structure and the applicant will cooperate with any other users of the tower by reducing the power to the antenna or if necessary completely cutting it off to protect maintenance workers on the tower.

7.0 CERTIFICATION

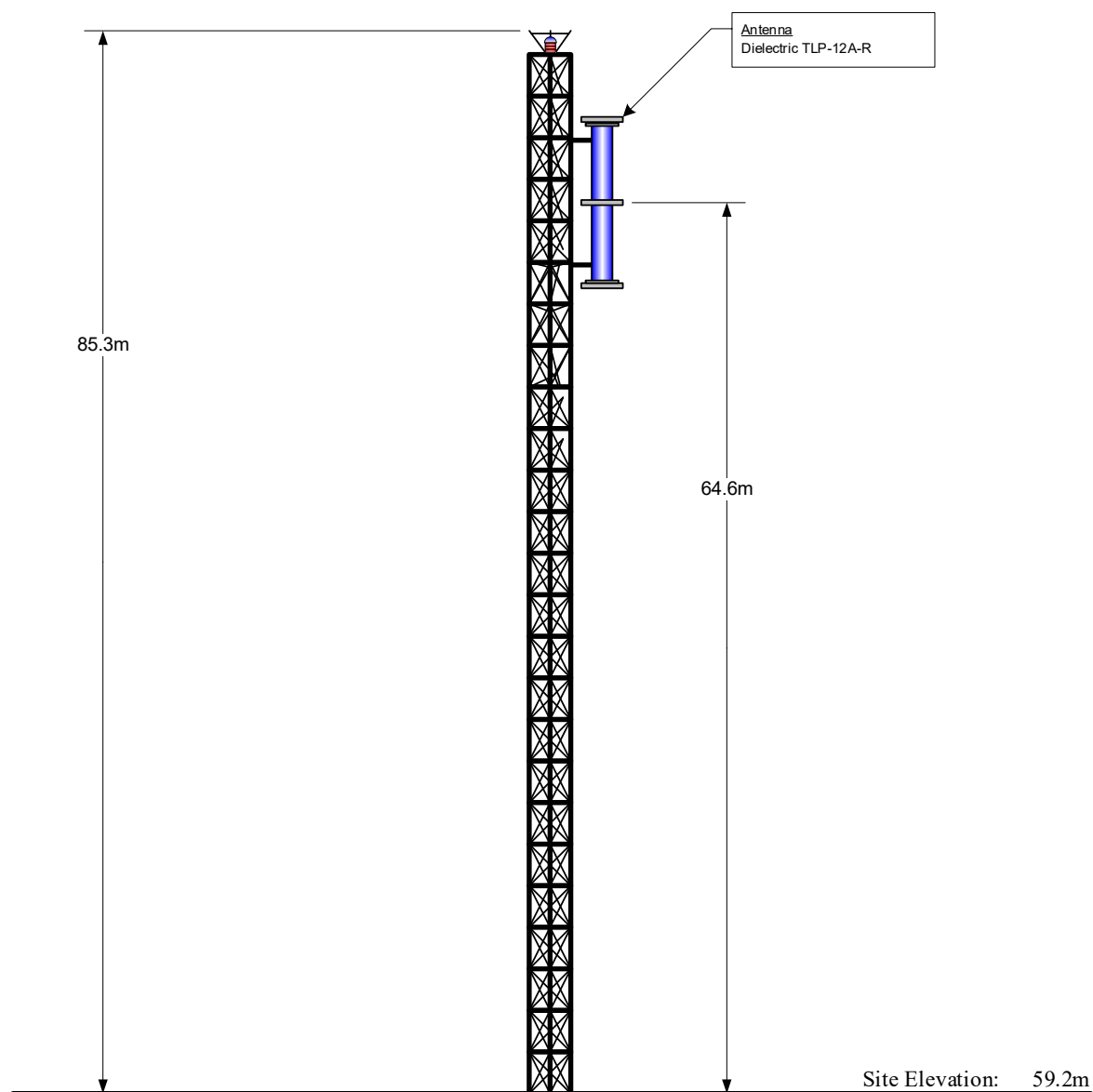
The foregoing statement and the report regarding the engineering work are true and correct to the best of my knowledge. Executed July 8, 2020.

Kessler and Gehman Associates, Inc.



Ryan Wilhour
Consulting Engineer

APPENDIX A – Tower Elevation Diagram



Antenna CRAGL:	64.6 m
Antenna CRAMSL:	123.8 m
Antenna HAAT:	50.3 m

NAD 83 Coordinates:

N. Latitude:	31° 16' 01.2"
W. Longitude:	89° 49' 57.3"

NOTE: NOT TO SCALE

FCC Tower Registration Number: 1205697

FAA Study Number 2008-ASO-5906-OE

W29EY-D Minor Modification Application

Columbia, MS

APPENDIX B – TVStudy V2.2.5 Allocation Analysis

Study created: 2020.07.08 10:39:23

Study build station data: LMS TV 2020-07-08

Proposal: W29EY-D D29 LD CP COLUMBIA, MS
File number: Proposed
Facility ID: 43205
Station data: User record
Record ID: 5632
Country: U.S.

Build options:
Protect pre-transition records not on baseline channel

Search options:
Non-U.S. records included
Baseline record excluded if station has CP

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KATC	D28	DT	LIC	LAFAYETTE, LA	BLCDT20071109AAV	257.0 km
No	KNLD-LD	D28	LD	LIC	NEW ORLEANS, LA	BLDTL20100312ABM	150.8
No	KNLD-LD	D28	LD	CP	NEW ORLEANS, LA	BDFCDTL20100201ADQ	150.8
Yes	WMAW-TV	D28	DT	LIC	MERIDIAN, MS	BLANK0000106235	119.5
No	WBRC	D29	DT	LIC	BIRMINGHAM, AL	BLANK0000081282	376.8
No	W29FJ-D	D29	LD	CP	DOTHAN, AL	BLANK0000071839	409.2
No	W29FP-D	D29	LD	CP	MONTGOMERY, AL	BNPDTL20090825BZR	359.8
No	W29DT-D	D29	LD	LIC	TUSCALOOSA, AL	BLDTL20140304ADJ	271.4
No	WFBD	D29	DT	CP	DESTIN, FL	BLANK0000027353	297.6
No	W29FN-D	D29	LD	CP	PANAMA CITY, FL	BLANK0000116672	388.2
No	K29NX-D	D29	LD	CP	ALEXANDRIA, LA	BLANK0000072038	268.8
No	K29LR-D	D29	LD	LIC	BATON ROUGE, LA	BLANK0000103483	173.0
No	K45IM-D	D29	LD	CP	MONROE, LA	BLANK0000054924	263.0
Yes	WVUE-DT	D29	DT	LIC	NEW ORLEANS, LA	BLCDT20110502AEC	146.4
No	W29EB-D	D29	LD	CP	SULPHUR, LA	BNPDTL20100407ABJ	365.5
No	W29FH-D	D29	LD	CP	GREENVILLE, MS	BLANK0000071970	264.7
No	WKNO	D29	DT	LIC	MEMPHIS, TN	BLEDT20060627ABE	432.1
No	KITU-TV	D29	DT	LIC	BEAUMONT, TX	BLANK0000063643	407.7
No	WEIQ	D30	DT	LIC	MOBILE, AL	BLANK0000111746	196.9
No	WLFT-CD	D30	DC	LIC	BATON ROUGE, LA	BLDTA20110912ACB	152.7
No	KFOL-CD	D30	DC	LIC	HOUMA, LA	BLDTA20100111AGW	202.2
No	KXKW-LD	D30	LD	CP	LAFAYETTE, LA	BLANK0000053054	227.9
Yes	WLBT	D30	DT	LIC	JACKSON, MS	BLCDT20100119AEE	117.4
No	W06DD	N30z	TX	LIC	NATCHEZ, MS	BLTTL20060103ABY	151.7
No	W36AC	N36z	TX	LIC	MCCOMB, MS	BLTTL19890613II	59.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D29
Mask: Full Service
Latitude: 31 16 1.20 N (NAD83)
Longitude: 89 49 57.30 W
Height AMSL: 123.8 m
HAAT: 50.3 m
Peak ERP: 15.0 kW
Antenna: Omnidirectional
Elev Pattn: Generic
Elec Tilt: 1.00

50.2 dBu contour:
Azimuth ERP HAAT Distance
0.0 deg 15.0 kW 45.2 m 34.4 km

W29EY-D Minor Modification Application

Columbia, MS

45.0	15.0	21.1	30.1
90.0	15.0	43.1	33.8
135.0	15.0	64.3	38.5
180.0	15.0	84.8	41.6
225.0	15.0	38.1	32.4
270.0	15.0	28.3	30.1
315.0	15.0	77.6	40.6

Distance to Canadian border: 1320.7 km

Distance to Mexican border: 907.7 km

Conditions at FCC monitoring station: Powder Springs GA
Bearing: 57.6 degrees Distance: 558.7 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 309.6 degrees Distance: 1698.5 km

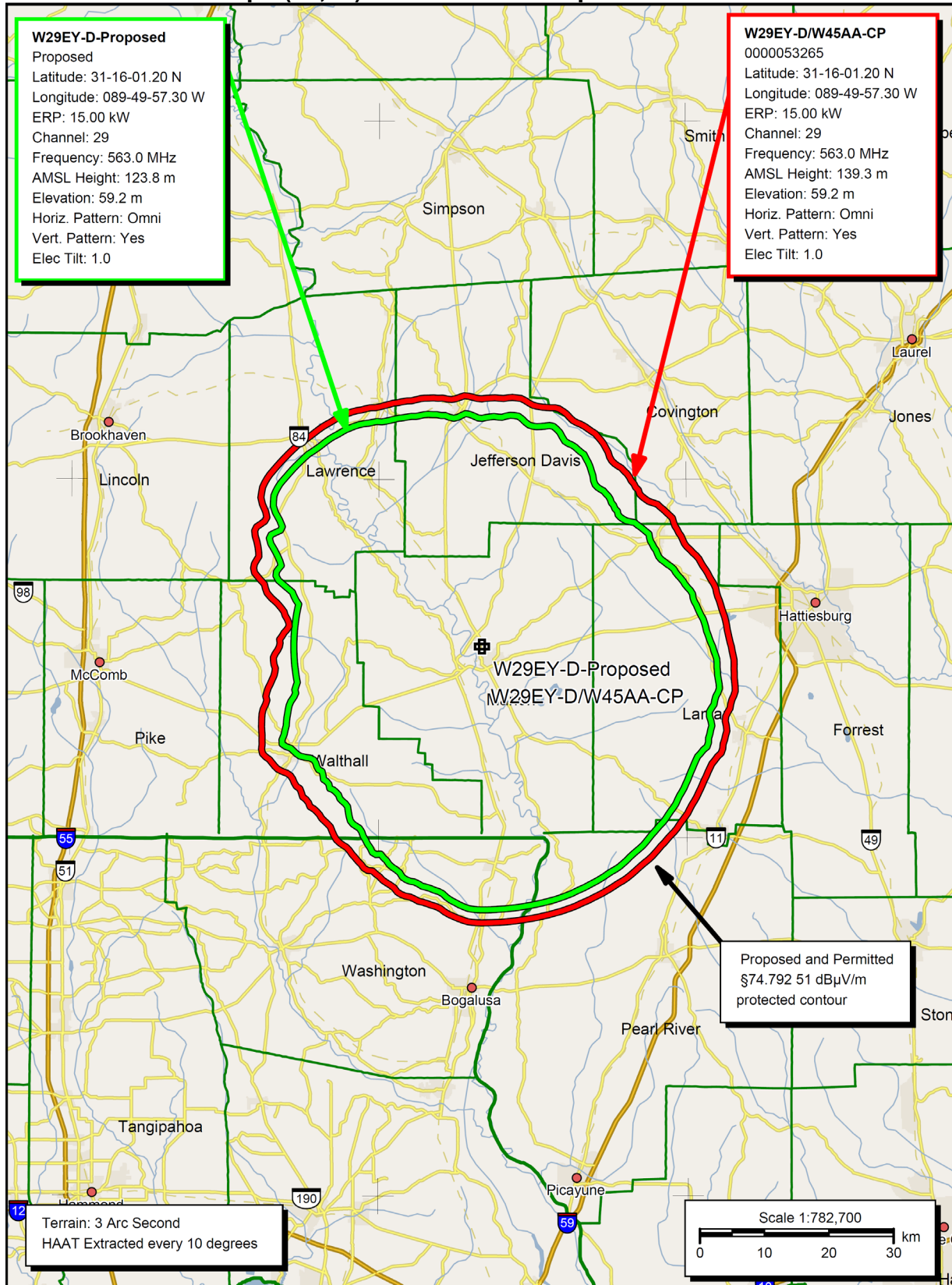
Study cell size: 1.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

---- Below is IX received by proposal Proposed ----

Proposal receives 7.90% interference from scenario 1
No IX check failures found.

APPENDIX C – 51dBμ F(50,90) Licensed and Proposed Contour



APPENDIX D – Far Field Exposure to RF Emissions

