

**Amendment to Application for
Construction Permit**

prepared for

**Eternal Family Network
K62EG St. Louis, Missouri
Facility 9375
Ch. 28 50 kW**

June 20, 2003



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Manassas, Virginia 20109
703-392-9090

**ENGINEERING EXHIBIT
AMENDMENT TO
APPLICATION FOR CONSTRUCTION PERMIT**

prepared for

Eternal Family Network
K62EG St. Louis, Missouri
Facility ID 9375
Ch. 28 50 kW

Table of Contents

FCC Form 346, Section III

Statement A	Allocation Considerations - Interference Analysis
Table 1	Interference Analysis Results Summary
Statement B	Environmental Considerations

Section III - Engineering

TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1. Channel: 28

2. Frequency Offset:

☐ No offset ☒ Zero offset ☐ Plus offset ☐ Minus offset

3. Translator Input Channel No. _____

4. Primary station proposed to be rebroadcast:

Call Sign	City	State	Channel
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5. Antenna Location Coordinates: (NAD 27)

38 ° 25 ' 01 " ☒ N ☐ S Latitude
90 ° 25 ' 59 " ☐ E ☒ W Longitude

6. Antenna Structure Registration Number: 1007157

☐ Not applicable ☐ FAA Notification Filed with FAA

7. Antenna Location Site Elevation Above Mean Sea Level: 236 meters

8. Overall Tower Height Above Ground Level: 174 meters

9. Height of Radiation Center Above Ground Level: 141 meters

10. Maximum Effective Radiated Power (ERP) Towards Radio Horizon: 50 kW

11. Maximum ERP in any Horizontal and Vertical Angle: 50 kW

12. Transmitting Antenna: ☐ Nondirectional ☒ Directional "Off-the-shelf" ☐ Directional composite

Manufacturer AND	Model ALP16L2-HSN
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Directional Antenna Relative Field Values:

Rotation: _____° ☒ No rotation ☐ N/A (Nondirectional)

Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value
0		60		120		180		240		300	
10		70		130		190		250		310	
20		80		140		200		260		320	
30		90		150		210		270		330	
40		100		160		220		280		340	
50		110		170		230		290		350	
Additional Azimuths											

NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.

CERTIFICATION

13. **Interference.** The proposed facility complies with all of the following applicable rule sections. Check all those that apply.

☐ Yes ☒ No

See Explanation
in Exhibit No.
Statement A

TV broadcast analog system protection.

- a. ☒ 47 C.F.R. Section 74.705.

Digital TV station protection.

- b. ☒ 47 C.F.R. Section 74.706.

Low Power TV and TV translator station protection.

- c. ☒ 47 C.F.R. Section 74.707.

14. **Environmental Protection Act.** The proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1306 (*i.e.*, the facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine RF compliance. An **Exhibit is required.**

☒ Yes ☐ No

See Explanation
in Exhibit No.


Exhibit No.
Statement B

By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

PREPARER'S CERTIFICATION ON PAGE 6 MUST BE COMPLETED AND SIGNED.

SECTION III PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name Robert J. Clinton		Relationship to Applicant (e.g., Consulting Engineer) Consultant	
Signature 		Date June 20, 2003	
Mailing Address Cavell, Mertz & Davis, Inc., 7839 Ashton Avenue			
City Manassas		State or Country (if foreign address) VA	ZIP Code 20109-2883
Telephone Number (include area code) 703-392-9090		E-Mail Address (if available) bclinton@cmdconsulting.com	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001),
AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)),
AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

Statement A
NATURE OF THE PROPOSAL
ALLOCATION CONSIDERATIONS
INTERFERENCE ANALYSIS

prepared for
Eternal Family Network
K62EG St. Louis, Missouri
Facility ID 9375
Ch. 28 50 kW

Eternal Family Network (“*Eternal Family*”) is the licensee of LPTV station K62EG Channel 62, St. Louis, Missouri (file number BLTTL-19921221IB). An application is pending (file number BPTTL-19980601YF) which proposes a change in channel and a new directional antenna system, as a minor modification under the LPTV displacement Rules. The instant application herein amends the pending application, replacing all engineering exhibits and text, to include a channel change with a specified offset and an increase in the effective radiated power (“ERP”).

Pursuant to §73.3572(a)(4)(ii), *Eternal Family* seeks a Construction Permit (“CP”) for a minor modification to change to Channel 28 with a zero offset, an increase in ERP to 50 kW. Since K62EG is on the Commission’s list of LPTV stations eligible for Class A status, FCC Form 302-CA will also be filed to request a Class A Construction Permit.

The proposed antenna system for K62EG is a directional antenna which will be side mounted on the same antenna structure (ASR number 1007157) as employed by the licensed K62EG. The proposed antenna (Andrew ALP16L2-HSN) is a standard pattern which can be found in the CDBS database. No rotation is proposed (main lobe at 0° T) No change in overall tower structure height is contemplated as a result of this proposal.

NTSC and DTV Considerations

The instant proposal complies with contour overlap protection and pertinent minimum distance separation requirements toward all NTSC, DTV, television translator, LPTV, and Class A stations except KDEB-DT (Ch. 28, Springfield, MO), WYZZ-DT (CP) (Ch. 28, Bloomington, IL), WTVW-DT (CP) (Ch. 28, Evansville, IN), and K67GR (LPTV App Ch.29, St. Louis, MO).

Statement A
ALLOCATION CONSIDERATIONS
(Page 2 of 4)

Consistent with Commission policy regarding potential interference from LPTV and television translator facilities, a detailed interference study was conducted in accordance with the terrain dependent Longley-Rice point-to-point propagation model, per the Commission's Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, July 2, 1997 ("OET-69")¹. The interference study examined the change in interference as experienced by the subject DTV and LPTV stations that would result from the proposed facility. All stations considered in this study are listed in **Exhibit 6 - Table I**. The results show that there will be no increase in interference to any of the stations considered.

Except in the instances discussed above (KDEB-DT, WYZZ-DT, WTVW-DT, and K67GR), the proposed use of Channel 28 fully complies with the standard requirements of 74.705, 74.706, and 74.707 of the FCC Rules. An OET Bulletin 69 analysis indicates that no new interference will be caused to KDEB-DT, WYZZ-DT, WTVW-DT, and K67GR.

Accordingly, it is believed that there will be no impact to NTSC facilities, DTV facilities, LPTV facilities, TV translator, or Class A television facilities as a result of the instant proposal. Nevertheless, if a waiver of 74.707 and/or 74.706 is required with respect to KDEB-DT, WYZZ-DT, WTVW-DT, or K67GR, then such a waiver is respectfully requested on behalf of *Eternal Family* for the reasons stated above.

Other Allocation Considerations

The nearest FCC monitoring station is at Allegan, Michigan, at a distance of 600.3 km from the proposed site. This exceeds by a great margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The proposed site is also

¹The implementation of OET-69 for this study followed the guidelines of OET-69 as specified therein. A standard cell size of 2 km was employed. Comparisons of various results of this computer program (run on a Sun processor) to the Commission's implementation of OET-69 show excellent correlation.

Statement A
ALLOCATION CONSIDERATIONS
(Page 3 of 4)

located outside the area specified in §73.1030(a)(1). Thus, notification of the instant proposal to the National Radio Astronomy Observatory at Green Bank, West Virginia, is not required.

There are no AM broadcast stations located within 3.2 km (2 miles) of the K62EG site, according to information extracted from the Commission's engineering database. No new tower erection or modification which affects the overall height to the tower is envisioned by the instant proposal.

FCC Letter of Deficiency

On April 24, 2003 a letter was issued by the FCC to the applicant, identifying three television broadcast facilities which required study in relation to the pending K62EG application (file number BPTTL-19980601YF). W29CI (Ch. 29, Salem, IL), W28BE (Ch. 28, Springfield, IL), and KDEB-DT (Ch. 28, Springfield, MO) were identified as potentially receiving interference as a result of the proposed LPTV application.

W29CI is currently operating on first adjacent Channel 29. This broadcast station had previously operated on Channel 28, but was granted a CP for operation on Channel 29 in September, 1998. A subsequent License to Cover was granted in June of 2002 (file number BLTTA-20011130AAJ). The proposed K62EG Channel 28 predicted 89 dBu F(50,50) interfering contour does not overlap with the authorized 74 dBu F(50,50) protected contour of W29CI.

W28BE (file number BLTTL-19910805IB) is licensed to operate on Channel 28 with a negative offset. The instant application now specifies Channel 28 with a *zero* offset, thus reducing the required interfering contour from the previous proposal for no offset. The proposed K62EG Channel 28 zero offset 46 dBu F(50,10) interfering contour does not overlap the 74 dBu F(50,50) protected contour of W28BE.

Statement A
ALLOCATION CONSIDERATIONS
(Page 4 of 4)

KDEB-DT is authorized to operate on Channel 28. The 20 dBu F(50,10) interfering contour is predicted to overlap the 41 dBu F(50,90) protected contour of KDEB-DT. As demonstrated in **Exhibit 6 - Table I**, the OET-69 analysis predicts no interference to KDEB-DT as a result of the instant proposal.

Thus, this proposal is believed to be in compliance with the current Commission's Rules and policy with respect to allocation matters.

Table I
OET-69 INTERFERENCE ANALYSIS RESULTS SUMMARY

prepared for
Eternal Family Network
 K62EG St. Louis, Missouri
 Facility ID 9375
 Ch. 28 50 kW 205 m

<u>Stations Considered</u>	<u>City, State Channel</u>	<u>Distance (km)</u>	<u>Baseline Population (1)</u>	<u>Service Population (2)</u>	<i>---- Unique Interference ---- from proposal</i>	
					<u>Population (3)</u>	<u>Percentage (4)</u>
KDEB-DT (Lic)	Springfield, MO 28	258.4	-----Proposal Causes No Interference-----			
WYZZ-DT (CP)	Bloomington, IL 28	269.9	-----Proposal Causes No Interference-----			
WTVW-DT (CP)	Evansville, IN 28	272.4	-----Proposal Causes No Interference-----			
K67GR (App)	St. Louis, MO 29	0.0	944,657	376,626	0	0.00

Notes:

- (1) Greater of NTSC or DTV Service Population, from FCC Table
- (2) Interference-free service population per OET-69 before consideration of proposal
- (3) Net change in population receiving interference resulting from proposal
(Numbers in parentheses indicate a decrease in interference.)
- (4) Proposal's impact in terms of percentage, equals (3)/(1) times 100 percent: not to exceed zero when rounded to the nearest whole percent

The determination of stations for consideration and the determination of baseline population and interference percentages were made as described in the Commission's August 10, 1998 Public Notice "Additional Application Processing Guidelines for Digital Television"

Statement B
ENVIRONMENTAL CONSIDERATIONS
prepared for
Eternal Family Network
K62EG St. Louis, Missouri
Facility ID 9375
Ch. 28 50 kW

The instant proposal is not believed to have a significant environmental impact as defined under Section 1.1306 of the Commission's Rules. Consequently, preparation of an Environmental Assessment is not required.

Nature of The Proposal

Eternal Family Network ("*Eternal Family*") is the licensee of K62EG, analog Low Power TV ("LPTV") Channel 62, St. Louis, Missouri (file number BLTTL-19921221IB). *Eternal Family* herein seeks to change K62EG to Channel 28. The proposed K62EG antenna will be side-mounted on an existing structure (Antenna Structure Registration number 1007157).

The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to Note 1 of §1.1306 of the FCC Rules. Since no change in overall structure height is proposed, no change in current structure marking and lighting requirements is anticipated. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

Human Exposure to Radiofrequency Radiation

The proposed operation was evaluated for human exposure to radiofrequency energy using the procedures outlined in the Commission's OET Bulletin No. 65 ("OET 65"). OET 65 describes a means of determining whether a proposed facility exceeds the radiofrequency exposure guidelines adopted in §1.1310. Under present Commission policy, a facility may be presumed to comply with the limits specified in §1.1310 if it satisfies the exposure criteria set forth in OET 65. Based upon that methodology, and as demonstrated in the following, the proposed transmitting system will comply with the cited adopted guidelines.

Statement B
ENVIRONMENTAL CONSIDERATIONS
(Page 2 of 3)

The proposed K62EG antenna will have a center of radiation 141 meters above ground level. An ERP of 50 kilowatts, horizontally polarized, will be employed. According to elevation pattern data provided by the antenna manufacturer, the proposed K62EG antenna has a relative field of 30 percent or less from 5 to 90 degrees below the horizontal plane (i.e.: below the antenna). Thus, a value of 30 percent relative field is used for this calculation. The "uncontrolled/general population" limit specified in §1.1310 for Channel 28 (center frequency 557 MHz) is $371.3 \mu\text{W}/\text{cm}^2$.

The formula used for calculating signal density in this analysis is equation (2) from OET-65 Supplement A. Using this formula, the proposed facility would contribute a power density of $3.89 \mu\text{W}/\text{cm}^2$ at two meters above ground level near the antenna support structure, or 1.05 percent of the general population/uncontrolled limit. At ground level locations away from the base of the tower, the calculated RF power density is even lower, due to the increasing distance from the transmitting antenna.

§1.1307(b)(3) states that facilities contributing less than five percent of the exposure limit at locations with multiple transmitters (such as the case at hand) are categorically excluded from responsibility for taking any corrective action in the areas where their contribution is less than five percent. Since the instant situation meets the five percent exclusion test at all ground level areas, the impact of any other facilities using this site or at a nearby site may be considered independently from this proposal. Accordingly, it is believed that the impact of the proposed operation should not be considered to be a factor at or near ground level as defined under §1.1307(b).

Safety of Tower Workers and the General Public

As demonstrated herein, excessive levels of RF energy will not be caused at publicly accessible areas at ground level near the antenna supporting structure. Consequently, members of the general public will not be exposed to RF levels in excess of the Commission's guidelines. Nevertheless, tower access will be restricted and controlled through the use of a locked fence. Additionally, appropriate RF exposure warning signs will be posted.

Statement B
ENVIRONMENTAL CONSIDERATIONS
(Page 3 of 3)

With respect to worker safety, it is believed that based on the preceding analysis, excessive exposure would not occur in areas at ground level. A site exposure policy will be employed protecting maintenance workers from excessive exposure when work must be performed on the tower (or on nearby towers) in areas where high RF levels may be present. Such protective measures may include, but will not be limited to, restriction of access to areas where levels in excess of the guidelines may be expected, power reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the exposure guidelines will be exceeded. On-site RF exposure measurements may also be undertaken to establish the bounds of safe working areas. The applicant will coordinate exposure procedures with all pertinent stations.

Conclusion

Based on the preceding, it is believed that the instant proposal may be categorically excluded from environmental processing under Section 1.1306 of the Rules, hence preparation of an Environmental Assessment is not required.