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November 24, 2010

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Federal Communications Commission
Office of the Secretary

Honorable Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
Washington, DC 20554

Attention: Mr. Edward Lubetzky
Audio Division, Media Bureau

**RE: Covenant Network**
**FRN # 0004-7603-77**
**KHOJ(AM), St. Charles, Missouri**
**Facility ID # 7114**
**Amendment to File No. BMML-20100604AGC**

Dear Madame Secretary:

On behalf of Covenant Network, there is transmitted herewith in triplicate an amendment to its pending application on FCC Form 302-AM for AM Broadcast Station KHOJ, St. Charles, Missouri.

Should additional information be desired in connection with the above matter, kindly communicate with this office.

Very truly yours,

Dennis J. Kelly

# AMENDMENT

November 24, 2010

Honorable Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
Washington, DC 20554

**RE: KHOJ(AM), St. Charles, MO**
**FCC Facility ID # 7114**
**File No. BMML-20100604AGC**

Dear Madame Secretary:

The above-referenced application of Covenant Network for a covering license for AM Broadcast Station KHOJ, St. Charles, Missouri is hereby amended in accordance with the attached material.

**Very truly yours,**

**COVENANT NETWORK**

By _____
**John Anthony Holman**
**President**

**Mueller Broadcast Design**
613 S. La Grange Road
La Grange, Illinois 60525
(708) 352-2166

**ENGINEERING EXHIBIT FOR**
**Covenant Network**
**K H O J ( A M )**
**Saint Charles, Missouri**
**November 2010**

This engineering exhibit was prepared in response to an FCC staff letter dated October 22, 2010 regarding the application for covering license filed by Covenant Network for KHOJ, St. Charles, Missouri (BMML-20100604AGC, facility ID 7114). Specifically, two deficiencies are cited:

0007691609

*1) The moment method proof did not include a certificate or statement of calibration verifying that the antenna monitor is properly calibrated according to the manufacturer's specifications, as Section 73.69(e) requires.*

The following statement has been inserted in the attached replacement page under "measurements":

Prior to tuning the array, the Potomac Instruments AM-19 (204) antenna monitor was calibrated by the writer according to the manufacturer's instructions, with both zero degree and 180 degree phase indications verified as showing 0° and 180° as appropriate using the built-in calibration circuit. Feeding two channels at once from the same source verified that each channel indicated properly (equal ratio and phase) and a 90° delay inserted in each sample line in turn with the same source connected to the reference was used to verify proper mid-scale readings at both +90° and -90°. Finally, the ratio indications were verified using a field intensity meter to read the RF voltage on the sample lines while connected to the monitor, and manual calculations of the ratio confirmed proper operation of the monitor.

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*2) Reference field strength measurements on the daytime 114° null radial were not provided.*

The 114° day radial was mislabeled as "141°" on the report. The coordinates and description of the three points reported verify they are indeed on the 114° radial. A corrected page is attached. We apologize for this error.

The two replacement pages follow. This engineering exhibit was prepared by me and is true and correct to the best of my knowledge and belief.

November 12, 2010

Mark A. Mueller

**Mueller Broadcast Design**
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## Measurements

The KHOJ antenna system was modeled using Westberg Consulting's Phasor Professional 2.1.1 which calculates the tower matrix values as well as the proper operating parameters. The towers and sample lines were measured and documented using an Array Solutions PowerAIM-120 network analyzer serial number 1019 operated in accordance with the manufacturer's instructions. This analyzer has been used in several recent projects and exhibits excellent stability and field performance and since it operates "floating" via battery power and a Bluetooth radio connection to the associated computer no RF ground loop issues arise.

The three KHOJ towers are identical in height and are base sampled using torodial current transformers. Each tower was disconnected from its ATU at the sample transformer and was measured at that point. The other towers were individually shorted and left floating for each measurement as required, plus additional measurements with the subject tower base insulator shorted to measure the feedline impedance and electrical length from the ATU to the tower as well as at the tower itself with the ATU disconnected. These measurements are documented below and show good agreement with the Westberg theoretical numbers.

Prior to tuning the array, the Potomac Instruments AM-19 (204) antenna monitor was calibrated by the writer according to the manufacturer's instructions, with both zero degree and 180 degree phase indications verified as showing 0° and 180° as appropriate using the built-in calibration circuit. Feeding two channels at once from the same source verified that each channel indicated properly (equal ratio and phase) and a 90° delay inserted in each sample line in turn with the same source connected to the reference was used to verify proper mid-scale readings at both +90° and -90°. Finally, the ratio indications were verified using a field intensity meter to read the RF voltage on the sample lines while connected to the monitor, and manual calculations of the ratio confirmed proper operation of the monitor.

Covenant Network
KHOJ (AM), St. Charles, Missouri
Directional Antenna Model Proof of Performance
May 2010 (Amended November 2010)

**Mueller Broadcast Design**
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## KHOJ Daytime Reference Field Strength Measurements

[47 CFR 73.151(c)(3)]

| Point | Distance | mv/m | Coordinates (NAD 84) | Description |
|---|---|---|---|---|
| **14° True (Minima)** | | | | |
| 1: | 1.24 km | 74 | 38.845468,-90.465360 | on Blase Station Road |
| 2: | 3.85 | 45 | 38.868341,-90.457974 | on Church Rd. |
| 3: | 7.28 | 17 | 38.898096,-90.448236 | CR V at school entrance |
| **30° True (Maxima)** | | | | |
| 1: | 1.11 km | 94 | 38.843379,-90.462454 | on Blase Station Road |
| 2: | 3.12 | 22 | 38.858986,-90.450825 | on SR 94 |
| 3: | 4.30 | 17.5 | 38.868170,-90.444015 | 4804 Church Road |
| **54° True (Minima)** | | | | |
| 1: | 1.13 | 22 | 38.840704,-90.458279 | on Wiedey Road |
| 2: | 4.58 | 15 | 38.858929,-90.426120 | on Towerline Road |
| 3: | 6.05 | 8.0 | 38.866653,-90.412357 | 5068 Highway H |
| **93° True (Maxima)** | | | | |
| 1: | 2.91 | 27 | 38.833523,-90.435334 | at curve on Weidey Road |
| 2: | 5.03 | 20 | 38.832407,-90.410915 | 5016 Weidey Road driveway |
| 3: | 6.34 | 20 | 38.831749,-90.395878 | Farm access road near pwr line tower |
| **114° True (Minima)** | | | | |
| 1: | 8.92 | 4.7 | 38.802134,-90.374811 | 2212 Riverwoods Trail |
| 2: | 9.29 | 3.0 | 38.800800,-90.371158 | 1002 McBride Place |
| 3: | 9.49 | 2.2 | 38.800038,-90.368895 | 1004 Pratt Place |
| **213.5° True (Maxima, main lobe)** | | | | |
| 1: | 1.84 | 620 | 38.820949,-90.480691 | Apricot Dr.at Catalpa Dr. |
| 2: | 1.97 | 600 | 38.819933,-90.481314 | 802 Clarence Dr. |
| 3: | 2.57 | 440 | 38.815427,-90.485204 | 3210 Country Bluff Dr. |
| **311° True (Minima)** | | | | |
| 1: | 2.62 | 52 | 38.850231,-90.491691 | on Highway B at curve sign |
| 2: | 3.14 | 44 | 38.853264,-90.496269 | on Highway B |
| 3: | 4.77 | 31.5 | 38.862863,-90.510504 | Seeburger Rd at pipeline markers |
| **333° True (Minima)** | | | | |
| 1: | 4.22 | 60 | 38.868599,-90.491074 | Church Rd. East of Washeon Rd. |
| 2: | 4.35 | 50 | 38.869543,-90.491648 | Washeon Rd. at railroad tracks |
| 3: | 6.51 | 26.5 | 38.886909,-90.503124 | Yacht Club of St. Louis by meters |

# FEDERAL COMMUNICATIONS COMMISSION
## 445 12th STREET SW
## WASHINGTON DC 20554

MEDIA BUREAU
AUDIO DIVISION
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INTERNET ADDRESS: Edward.Lubetzky@fcc.gov

October 22, 2010

Dennis J. Kelly, Esq.
Post Office Box 41177
Washington, DC 20018

Re: Covenant Network
KHOJ(AM), St. Charles, MO
Facility ID Number: 7114
Construction Permit: BP-20050706ACB
As modified by BMP-20090903AAW
License Application: BMML-20100604AGC

Dear Mr. Kelly:

After initial review of the license application, the staff found the following deficiencies:

1. The moment method proof did not include a certificate or statement of calibration verifying that the antenna monitor is properly calibrated according to the manufacturer's specifications, as Section 73.69(e) requires.[1]

2. Reference field strength measurements on the daytime 114° null radial were not provided.

Further action on the subject license application will be withheld until Covenant submits an amendment addressing the deficiencies described above. Failure to respond within 60 days from the date of this letter may result in the dismissal of the application pursuant to 47 C.F.R. § 73.3568(a)(1) of the Commission's rules.

Sincerely,

Ann Gallagher
Audio Division
Media Bureau

cc: Mark A. Mueller
Covenant Network

[1] Covenant only states : "The Potomac Instruments AM-19 antenna monitor is operating properly and continues to be used."