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September 19, 2014

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

ACCEPTED/FILED

SEP 19 2014

**Federal Communications Commission
Office of the Secretary**

Attention: Mr. Edward Lubetzky
Audio Division, Media Bureau


**RE: Covenant Network
KHOJ(AM), St. Charles, Missouri
Facility ID # 7114
File No. BMML-20140827AOG
Amendment**

Dear Madame Secretary:

On behalf of Covenant Network, licensee of AM Broadcast Station KHOJ, St. Charles, Missouri, there is transmitted herewith in triplicate an amendment to the above-referenced application for license to cover the modified facilities of station KHOJ. This amendment is in response to the September 8, 2014 letter of the Audio Division, Media Bureau.

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

Very truly yours,



Dennis J. Kelly

AMENDMENT

September 19, 2014

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-20140827AOG

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 to respond to the Commission's letter of September 8, 2014 relative to said application.

Very truly yours,

COVENANT NETWORK

By



John Anthony Holman
President

**Engineering Exhibit For
Covenant Network
K H O J (A M)
St. Charles, Missouri
September 2014**

This engineering exhibit was prepared in response to a September 8, 2014 FCC staff letter granting Program Test Authority to KHOJ (AM), St. Charles, Missouri (FCC facility ID 7114) under BMML-20140827AOG. The letter raises four concerns which are addressed here.

1. The measured self-impedances of the towers are not within ± 2 ohms and $\pm 4\%$ for the reactances on account of the measured lead inductance, in violation of Section 73.151(c)(2)(ii). For example, the minimum calculated reactance for tower #1 at the measurement point is $73.08j$ (calculated) $+25.68j$ (measured) of $98.76j$ but the measured reactance at the measurement point is $72.55j$ (a deviation of $26.21j$ when only a $4.9j$ deviation is allowed).

The towers were measured at both the tower base and the sample element location. In order to be consistent with the 2010 filing which resulted in the grant of BMML-20100604AGC, the impedance data was reported at the tower for both the calculated and measured case since no changes were made in the towers or connection arrangement. When the measured lead reactance is added to the calculated and measured data they remain within ± 2 ohms and $\pm 4\%$:

MATRIX INFORMATION – AT TOWER			MATRIX INFORMATION - TCT LOCATION		
	Calculated Impedance (other towers open)	Measured Impedance (other towers open)		Calculated Impedance (other towers open)	Measured Impedance (other towers open)
Tower 1	$57.87 + j73.08$	$57.94 + j72.55$	Tower 1	$57.87 + j100.38$	$57.94 + j99.85$
Tower 2	$56.06 + j69.15$	$57.58 + j68.28$	Tower 2	$56.06 + j97.25$	$57.58 + j96.38$
Tower 3	$56.22 + j76.78$	$56.64 + j78.53$	Tower 3	$56.22 + j103.18$	$56.64 + j104.93$

Measured lead reactance is $+j27.3$ at tower 1, $+j28.1$ at tower 2 and $+j26.4$ at tower 3.

2. The vertical and horizontal physical dimensions of the towers were not provided.

The towers are identical uniform cross section triangular 14" face and 51.37 meters (90°) tall.

3. The time the reference measurements were made was not provided.

The daytime reference point measurements were taken on August 21, 2014 from 10 to 11 AM.

4. Page 15 of the application did not show:

- The way you determined the sample line lengths for tower #1, #2 and #3.
- The frequencies and impedances used to derive the 2014 open circuited sample line mean impedances.
- Information as to which sample line impedance measurements were made with the sample line open and which were made with the sample line connected.

The line lengths were determined by finding the closest odd quarter-wave open circuit resonance to the operating frequency, as noted in that section. Since this is an operating station previously licensed under 47 CFR 73.151(c) and no changes to the sampling system were made it was believed that the requirements of 47 CFR 73.155(a)(2) applied to the characteristic impedance measurements, specifically "[t]he frequencies measured must be the same as were measured in the most recent proof of performance and must demonstrate that the sampling lines continue to meet the requirements of §73.151(c) with regard to their length and characteristic impedance." This was noted on page 15 where it says "[s]ample Line Impedance Test, using same frequencies as 2010". These are the "open circuit" tests. The 2010 frequencies and data are listed below.

Tower 1:	<u>Marker</u>	<u>Freq</u>	<u>Rs</u>	<u>Xs</u>	<u>Zmag</u>
	1	1.286182	5.942	-50.942	51.288
	2	1.543418	2.668	-0	
	3	1.800654	5.488	+49.179	49.485
Tower 2:	<u>Marker</u>	<u>Freq</u>	<u>Rs</u>	<u>Xs</u>	<u>Zmag</u>
	1	1.282448	5.749	-51.560	51.880
	2	1.538938	2.619	-0	
	3	1.795428	5.406	+48.827	48.827
Tower 3:	<u>Marker</u>	<u>Freq</u>	<u>Rs</u>	<u>Xs</u>	<u>Zmag</u>
	1	1.282304	5.937	-51.474	51.815
	2	1.538765	2.970	-0	
	3	1.795226	5.555	+48.624	48.940

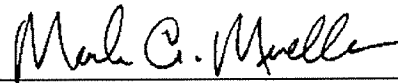
Mueller Broadcast Design

613 S. La Grange Road
La Grange, Illinois 60525
(708) 352-2166

These same frequencies were repeated and the results shown in the 2014 report. The 2014 measurements done with the TCTs connected to the sample lines are shown as "from Monitor End at 1460 KHz".

This engineering exhibit was prepared by me and is true and correct to the best of my knowledge and belief.

September 19, 2014



Mark A. Mueller