ENGINEERING EXHIBIT
IN SUPPORT OF AN
APPLICATION FOR LICENSE
KEZY(AM) – SAN BERNARDINO, CALIFORNIA
1240 kHz – 0.7 kW, ND1, U
FACILITY ID: 28663

LICENSEE: HI-FAVOR BROADCASTING, LLC

Consulting Engineers
CTJC
CARL T. JONES CORPORATION

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SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant

Hi-Favor Broadcasting, LLC

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

☑ Station License ☐ Direct Measurement of Power

1. Facilities authorized in construction permit

Call Sign	File No. of Construction Permit (if applicable)	Frequency (kHz)	Hours of Operation	Power in kilowatts	
				Night	Day
KEZY	BP-20210430AAC	1240	Unlimited	0.70	0.70

2. Station location

State	City or Town
California	San Bernardino

3. Transmitter location

State	County	City or Town	Street address (or other identification)
CA	San Bernardino	San Bernardino	757 Showcase Drive, S.

4. Main studio location

State	County	City or Town	Street address (or other identification)
CA	Los Angeles	Pasadena	136 S. Oak Knoll Avenue

5. Remote control point location (specify only if authorized directional antenna)

State	County	City or Town	Street address (or other identification)
CA	Los Angeles	Pasadena	136 S. Oak Knoll Avenue

6. Has type-approved stereo generating equipment been installed? ☐ Yes ☑ No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68? N/A ☐ Yes ☐ No ☐ Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed. N/A Exhibit No.

8. Operating constants:

RF common point or antenna current (in amperes) without modulation for night system	RF common point or antenna current (in amperes) without modulation for day system
1.58	1.58

Measured antenna or common point resistance (in ohms) at operating frequency		Measured antenna or common point reactance (in ohms) at operating frequency	
Night	Day	Night	Day
281	281	-j93	-j93

Antenna indications for directional operation

Towers	Antenna monitor Phase reading(s) in degrees		Antenna monitor sample current ratio(s)		Antenna base currents	
	Night	Day	Night	Day	Night	Day
N/A						

Manufacturer and type of antenna monitor: N/A

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9. Description of antenna system ((f directional antenna is used, the information requested below should be given for each element of the array. Use separate sheets if necessary.)

Type Radiator	Overall height in meters of radiator above base insulator, or above base, if grounded.	Overall height in meters above ground (without obstruction lighting)	Overall height in meters above ground (include obstruction lighting)	If antenna is either top loaded or sectionalized, describe fully in an Exhibit.
Tapered, steel, self-supporting	92.0	93.6	94.5	Exhibit No. N/A

Excitation ☑ Series ☐ Shunt

Geographic coordinates to nearest second. For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

North Latitude				West Longitude			
34 °	04 '	20 "		117 °	17 '	52 "	

If not fully described above, attach as an Exhibit further details and dimensions including any other antenna mounted on tower and associated isolation circuits. Exhibit No. N/A

Also, if necessary for a complete description, attach as an Exhibit a sketch of the details and dimensions of ground system. Exhibit No. On File

10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

None

11. Give reasons for the change in antenna or common point resistance.

N/A

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Name (Please Print or Type)	Signature (Sign below)
Carl T. Jones, Jr.	
Address (include ZIP Code)	Date
Carl T. Jones Corporation 7901 Yarnwood Court Springfield, VA 22153	August 19, 2022
	Telephone No. (Include Area Code)
	(703) 569-7704

☐ Technical Director ☑ Registered Professional Engineer

☐ Chief Operator ☐ Technical Consultant

☐ Other (specify)

Consulting Engineers
CTJC
CARL T. JONES CORPORATION

ENGINEERING STATEMENT OF CARL T. JONES, JR., P.E.
IN SUPPORT OF AN
APPLICATION FOR LICENSE
KEZY(AM) – SAN BERNARDINO, CALIFORNIA
1240 kHz – 0.7 kW, ND1, U
FACILITY ID: 28663

LICENSEE: HI-FAVOR BROADCASTING, LLC

I am a Consulting Engineer and president of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a Registered Professional Engineer in the Commonwealth of Virginia, Registration No. 013391.

This office has been authorized by Hi-Favor Broadcasting, LLC ("Hi-Favor"), licensee of AM Station KEZY, San Bernardino, California, to prepare this engineering statement, FCC Form 302-AM, Section III, and the associated figures in support of an Application for License to cover outstanding Construction Permit, BP-20210430AAC ("the KEZY construction permit"). The KEZY construction permit authorizes the relocation of the KEZY transmission facilities to the transmitter site of AM Station KTIE, San Bernardino, California.

Station KEZY proposes to operate non-directionally on a frequency of 1240 kHz with a daytime and nighttime power of 0.70 kW using tower #2 (center) of the KTIE

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three-tower inline array. Station KTIE is licensed to operate directionally on a frequency of 590 kHz with a daytime power of 2.5 kW and a nighttime power of 0.96 kW.

Implementation of the KEZY construction permit included: 1) the installation of series filters at the base of each of the three KTIE towers; 2) the installation of shunt filters at the output of the KTIE and KEZY transmitters; 3) the installation of the KEZY impedance matching circuit at the base of KTIE tower #2; and 4) the installation of an impedance rotation network at the output of the KEZY transmitter. The various filter networks were required to isolate the KEZY and KTIE transmission paths in order to minimize interaction between the stations and to attenuate the signal of a nearby station operating on 1350 kHz. A schematic diagram of the complete KEZY impedance matching and filtering system for the diplexed operation is contained in Figure 1.

BASE IMPEDANCE AND CURRENT MEASUREMENTS

The KEZY operating power was established at the output to the Antenna Tuning Unit ("ATU") in the following manner. After completion of: the installation of the new diplexing and impedance matching equipment;, the detuning of towers #1 and #3 at the KEZY operating frequency; and the adjustment of the system for optimal performance; the KEZY ATU output impedance was measured by the undersigned using a Delta Electronics, Model OIB-3, operating impedance bridge. The measured ATU output impedance at the KEZY operating frequency of 1240 kHz was found to be Z = 281 -j 93 Ohms. The location of the impedance measurement is immediately adjacent to the Delta Electronics, Model TCA-5-EXR ammeter. Based on the measured ATU output

resistance, the transmitter was adjusted for a base current reading 1.58 Amperes, corresponding to the authorized power of 0.70 kW.

COMPLIANCE WITH RADIOFREQUENCY ENERGY GUIDELINES

All three tower bases at the shared transmitter site are enclosed by a chain link fence topped with three strands of barbed wire. The gate to each tower fence is locked at all times except during times when maintenance is being performed by station personnel. Appropriate warning signs are posted on each tower fence.

The three towers at the site are wide based self-supporting towers and the distance between the fence and each leg of the tower is relatively close at all three tower bases. For this reason, RF energy measurements were previously performed at the KTIE site by Fred W. Volken, a consultant to the licensee, to verify compliance with the FCC's radiofrequency energy guidelines. The report containing the results of the measurement effort concludes that the maximum E and H field equivalent power density levels at locations just outside the restrictive access fence were no greater than 25% of the FCC's General Population/Uncontrolled Maximum Permissible Exposure (MPE) limit of 100 mW/cm^2.

The KEZY construction permit specifies operation on tower #2 (center) of the KTIE three-tower array with a power of 0.70 kW. The closest measured distance between the tower legs and the fence at tower #2 is 1.0 meter. The height of the tower is 0.3806 wavelengths at the KEZY frequency of 1240 kHz. The graphs of Figures 2 and 3 of Supplement A (Edition 97-01) to OET Bulletin 65 (Edition 97-01) provide

conservative electric and magnetic field magnitudes as a function of distance from the tower for tower heights of 0.25 wavelengths and 0.5 wavelengths, respectively. The electric and magnetic field magnitudes on these figures are based on an input power of 1 kilowatt. Using these figures, it is possible to predict the electric and magnetic equivalent power density that is present at the tower perimeter fence from the KEZY 0.70 kW operation. Because the tower height at the KEZY frequency is not identical to the tower heights used in the either Figure 2 or Figure 3, it is necessary to interpolate the electric and magnetic field magnitudes from the graphs in the two figures for the actual tower height under study. Once the field magnitudes are determined through interpolation they must be multiplied by the square root of the power in kilowatts.

Using the procedures described above, the predicted KEZY electric field equivalent power density, at the closest fence location, is 10.2 mW/cm^2, corresponding to 10.2% of the General Population/Uncontrolled MPE limit. The predicted KEZY magnetic field equivalent power density, at the closest fence location, is 4.8 mW/cm^2, corresponding to 4.8% of the General Population/Uncontrolled MPE limit. Summing the highest predicted KEZY equivalent power density (10.2 mW/cm^2) with the previously measured maximum KTIE equivalent power density (25 mW/cm^2) results in a total predicted power density just outside of the tower #2 restrictive access fence of 35.2 mW/cm^2. This total predicted power density corresponds to 35.2% of the FCC's General Population/Uncontrolled MPE limit

Because the predicted total electric and magnetic field equivalent power densities from the two stations are less than the FCC's General Population/Uncontrolled

MPE limit at the closest fence distance to the shared tower #2, the facility is fully compliant with the RF energy exposure guidelines with respect to the general public and contractors working outside of the fenced restricted access area surrounding the tower. With regard to employee or contractor access to the tower or to the equipment located within the restricted access area, the licensees will developer a joint plan to ensure the safety of those personnel entering the restricted access area. The plan shall, at a minimum, include training to ensure awareness of the potential for RF exposure and how to limit that exposure as well as a procedure to reduce power or cease operation to ensure the safety of those who must enter the restrictive access area.

In light of the above, the proposed facility should be categorically excluded from RF environmental processing under Section 1.1307(b) of the Commission's Rules.

KEZY CONSTRUCTION PERMIT SPECIAL CONDITIONS

The KEZY construction permit contains several special requirements with respect to collocation at the KTIE transmitter site, which must be satisfied before program tests are authorized. These special requirements are described in Special Condition 5 of the KEZY construction permit and are paraphrased here as follows: 5(a) sufficient data shall be submitted to show that adequate filters, traps, and other equipment has been installed and adjusted to prevent interaction, intermodulation, and/or generation of spurious radiation products which may be caused by common usage of the same antenna system; 5(b) there shall be filed with the license application copies of a firm agreement entered into by the two stations involved, clearly fixing the responsibility of

each with regard to the installation and maintenance of such equipment; 5(c) field observations shall be made to determine whether spurious emissions exist and any objectionable problems resulting therefrom shall be eliminated; and 5(d) KEZY and KTIE shall each measure antenna or common point resistance and submit FCC Form 302 as application notifying the return to direct measurement of power.

To satisfy the requirements identified in Special Condition 5, filters have been installed in each of the two transmission paths at the base of shared tower #2 (center) and in the KTIE transmission paths at the base of towers #1 and #3. In addition, shunt filters have been installed at the output of each station's transmitter to further attenuate the undesired signal from each station prior to the signal entering the desired station's transmitter. The filter networks are shown in the schematic diagram of Figure 1.

A firm agreement fixing the responsibility for the installation and maintenance of the diplexing filters has been developed and agreed to by each licensee and a copy of that agreement is contained elsewhere in this application.

Relative field strength observations and measurements were performed by Mr. Burt Weiner, a contract engineer working for the KEZY licensee and Mr. Kevin Campbell, the chief engineer of KTIE. The measurements were performed with KEZY operating with its authorized power level and KTIE operating with its authorized daytime directional pattern at the authorized power level. The measurements verified that all harmonic, intermodulation product, and spurious emissions from the common use of the same tower by the two stations are attenuated to a level that fully complies with the requirements of Section 73.44(b) of the FCC's Rules and Regulations. A tabulation of

the measured harmonic, intermodulation product, and spurious emissions is contained in Figure 2. In no case does the measured emission level exceed the corresponding FCC emission limit. In those cases where the reference transmitter generating the emission was indeterminate, attenuation levels were calculated for both reference signals and the highest level relative to the appropriate FCC limit was included in the table of Figure 2.

Finally, after all installations, modifications, and adjustments were completed, the KTIE directional patterns were verified using computer modeling and sample system verification techniques as described in Section 47 CFR 73.151(c) of the FCC's Rules and Regulations. It is planned to file an Application for License with the FCC for KTIE near concurrent with the filing of the KEZY Application for License.

Based on the above discussion, the figures contained herein, and the agreement between parties contained elsewhere in this application, it is believed that with the filing of the instant License Application and the Application for License for KTIE, all of the requirements in special condition 5 will have been fully satisfied.

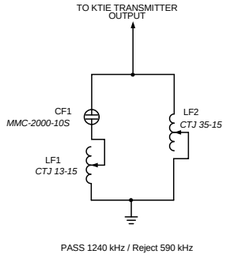
SUMMARY

It is submitted that the KEZY antenna system has been constructed in full compliance with the technical terms of Construction Permit BP-20210430AAC. Further, all of the Construction Permit Special Conditions will be fully satisfied with the filing of the instant License Application and the near concurrent filing of the KTIE License Application.

This engineering statement, FCC Form 302-AM, Section III, and the associated figures were prepared by the undersigned or under the undersigned's direct supervision and the information therein is believed to be true and correct.

Dated: August 19, 2022

FIGURE 1



PASS 1240 kHz / Reject 590 kHz

IMPEDANCE MATCHING AND DIPLEXING
FILTER SCHEMATIC DIAGRAM
KEZY, 1240 kHz, 0.7 kW, ND-1, U
KTIE, 590 kHz, 2.5 kW DAY, 0.96 kW NIGHT, DA-2, U

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Revision 08192022PWR

MEASURED SPURIOUS AND HARMONIC EMISSIONS

KEZY - SAN BERNARDINO, CALIFORNIA
1240 kHZ - 0.7 kW DAY, 0.7 kW NIGHT, ND-1, U
AUGUST, 2022

Measured Attenuation

Emission	Frequency (kHz)	Field Strength (mV/m)	Reference Carrier	Below Carrier (dBc)	FCC Limit (dBc)
F1 (KTIE)	590	572	F1		
F2 (KEZY)	1240	242	F2		
F2 (KPWK)	1350	235	F3		
F2-F1	650	0.017	F1 or F2	-82.92	-71.45
2*F2-F3	1130	0.032	F2	-77.57	-71.45
F1+F2	1830	0.010	F1 or F2	-87.94	-71.45
2*F2-F1	1890	0.011	F2	-86.61	-71.45
2*F1+F2	2420	0.020	F1	-89.13	-76.98
2*F2	2480	0.010	F2	-87.85	-71.45
F2+F3	2590	0.010	F2	-87.94	-71.45
2*F2+F1	3070	0.011	F2	-86.85	-71.45
3*F2	3720	0.010	F2	-88.12	-71.45
2*F2+F3	3830	0.010	F2	-88.12	-71.45
4*F2	4960	0.009	F2	-88.99	-71.45