Federal Communications Commission
Washington, D. C. 20554

Approved by OMB
3060-0627
Expires 01/31/98

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ACCEPTED/FILED
OCT 24 2017
Federal Communications Commission
Office of the Secretary

FCC 302-AM
APPLICATION FOR AM BROADCAST STATION LICENSE

(Please read instructions before filling out form.

FOR COMMISSION USE ONLY

FILE NO.

SECTION I - APPLICANT FEE INFORMATION

1. PAYOR NAME (Last, First, Middle Initial)

Phoenix FCC License Sub, LLC

MAILING ADDRESS (Line 1) (Maximum 35 characters)
3415 University Avenue, West

MAILING ADDRESS (Line 2) (Maximum 35 characters)

CITY	STATE OR COUNTRY (if foreign address)	ZIP CODE
St. Paul	MN	55114

TELEPHONE NUMBER (include area code)	CALL LETTERS	OTHER FCC IDENTIFIER (If applicable)
651/642-4334	KDUS	65165

2. A. Is a fee submitted with this application? ☐ Yes ☑ No

B. If No, indicate reason for fee exemption (see 47 C.F.R. Section

☐ Governmental Entity ☐ Noncommercial educational licensee ☑ Other (Please explain): Direct Measurement of Power

C. If Yes, provide the following information:

Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in the "Mass Media Services Fee Filing Guide." Column (B) lists the Fee Multiple applicable for this application. Enter fee amount due in Column (C).

(A) FEE TYPE CODE	(B) FEE MULTIPLE	(C) FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY
	0001	$	

To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.

(A)	(B)	(C)	FOR FCC USE ONLY
	0001	$	

ADD ALL AMOUNTS SHOWN IN COLUMN C, AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE.

TOTAL AMOUNT REMITTED WITH THIS APPLICATION	FOR FCC USE ONLY
$	

SECTION II - APPLICANT INFORMATION		
1. NAME OF APPLICANT Phoenix FCC License Sub, LLC		
MAILING ADDRESS 3415 University Avenue, West		
CITY St. Paul	STATE MN	ZIP CODE 55114

2. This application is for:

☑ Commercial ☐ Noncommercial

☑ AM Directional ☐ AM Non-Directional

Call letters	Community of License	Construction Permit File No.	Modification of Construction Permit File No(s).	Expiration Date of Last Construction Permit
KDUS	Tempe, AZ			

3. Is the station now operating pursuant to automatic program test authority in accordance with 47 C.F.R. Section 73.1620?

☐ Yes ☐ No

If No, explain in an Exhibit.

Exhibit No. N/A

4. Have all the terms, conditions, and obligations set forth in the above described construction permit been fully met?

☐ Yes ☐ No

If No, state exceptions in an Exhibit.

Exhibit No. N/A

5. Apart from the changes already reported, has any cause or circumstance arisen since the grant of the underlying construction permit which would result in any statement or representation contained in the construction permit application to be now incorrect?

☐ Yes ☐ No

If Yes, explain in an Exhibit.

Exhibit No. N/A

6. Has the permittee filed its Ownership Report (FCC Form 323) or ownership certification in accordance with 47 C.F.R. Section 73.3615(b)?

☐ Yes ☐ No

☑ Does not apply

If No, explain in an Exhibit.

Exhibit No.

7. Has an adverse finding been made or an adverse final action been taken by any court or administrative body with respect to the applicant or parties to the application in a civil or criminal proceeding, brought under the provisions of any law relating to the following: any felony; mass media related antitrust or unfair competition; fraudulent statements to another governmental unit; or discrimination?

☐ Yes ☑ No

If the answer is Yes, attach as an Exhibit a full disclosure of the persons and matters involved, including an identification of the court or administrative body and the proceeding (by dates and file numbers), and the disposition of the litigation. Where the requisite information has been earlier disclosed in connection with another application or as required by 47 U.S.C. Section 1.65(c), the applicant need only provide: (i) an identification of that previous submission by reference to the file number in the case of an application, the call letters of the station regarding which the application or Section 1.65 information was filed, and the date of filing; and (ii) the disposition of the previously reported matter.

Exhibit No.

CLEAR ALL PAGES

8. Does the applicant, or any party to the application, have a petition on file to migrate to the expanded band (1605-1705 kHz) or a permit or license either in the existing band or expanded band that is held in combination (pursuant to the 5 year holding period allowed) with the AM facility proposed to be modified herein?

☐ Yes ☑ No

If Yes, provide particulars as an Exhibit.

Exhibit No.

The APPLICANT hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because use of the same, whether by license or otherwise, and requests and authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended).

The APPLICANT acknowledges that all the statements made in this application and attached exhibits are considered material representations and that all the exhibits are a material part hereof and are incorporated herein as set out in full in

CERTIFICATION

1. By checking Yes, the applicant certifies, that, in the case of an individual applicant, he or she is not subject to a denial of federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862, or, in the case of a non-individual applicant (e.g., corporation, partnership or other unincorporated association), no party to the application is subject to a denial of federal benefits that includes FCC benefits pursuant to that section. For the definition of a "party" for these purposes, see 47 C.F.R. Section 1.2002(b).

☑ Yes ☐ No

2. I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Name	Signature	
David A. Jones		
Title	Date	Telephone Number
Vice President		651/642-4334

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

FCC NOTICE TO INDIVIDUALS REQUIRED BY THE PRIVACY ACT AND THE PAPERWORK REDUCTION ACT

The solicitation of personal information requested in this application is authorized by the Communications Act of 1934, as amended. The Commission will use the information provided in this form to determine whether grant of the application is in the public interest. In reaching that determination, or for law enforcement purposes, it may become necessary to refer personal information contained in this form to another government agency. In addition, all information provided in this form will be available for public inspection. If information requested on the form is not provided, the application may be returned without action having been taken upon it or its processing may be delayed while a request is made to provide the missing information. Your response is required to obtain the requested authorization.

Public reporting burden for this collection of information is estimated to average 639 hours and 53 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, can be sent to the Federal Communications Commission, Records Management Branch, Paperwork Reduction Project (3060-0627), Washington, D. C. 20554. Do NOT send completed forms to this address.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), AND THE PAPERWORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.

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SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant
Phoenix FCC License Sub, LLC

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

[ ] Station License [X] 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
KDUS	N/A	1060	Unlimited	0.50	5.0

2. Station location	
State	City or Town
Arizona	Tempe

3. Transmitter location			
State	County	City or Town	Street address (or other identification)
Arizona	Maricopa	Guadalupe	1900 West Carmen Street

4. Main studio location			
State	County	City or Town	Street address (or other identification)
Arizona	Maricopa	Phoenix	1100 North 52nd Street

5. Remote control point location (specify only if authorized directional antenna)			
State	County	City or Town	Street address (or other identification)
Arizona	Maricopa	Phoenix	1100 North 52nd Street

6. Has type-approved stereo generating equipment been installed? [ ] Yes [X] No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68? [X] Yes [ ] No [ ] Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed. Exhibit No. Exhibit 1

8. Operating constants:	
RF common point or antenna current (in amperes) without modulation for night system 3.28 Amperes	RF common point or antenna current (in amperes) without modulation for day system 10.1 Amperes
Measured antenna or common point resistance (in ohms) at operating frequency Night 50.0 Ohms Day 49.0 Ohms	Measured antenna or common point reactance (in ohms) at operating frequency Night +j0.0 Ohms Day +j74.6 Ohms

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
#1 (north)	-114.0	--	1.00	--	3.1	--
#2 (center)	0.0	--	1.00	--	3.0	10.1
#3 (south)	+118.0	--	.450	--	1.42	--

Manufacturer and type of antenna monitor: Potomac Instruments Model 1901-4

SECTION III - Page 2

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.
Uniform cross section guyed steel towers	#1 & #3 54.9 m #2 70.1 m	#1 & #3 57.3 m #2 71.5 m	#1 & #3 57.3 m #2 72.5 m	Exhibit No. N/A

Excitation [X] 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	33 ° 21 ' 43 "	West Longitude	111 ° 58 ' 03 "

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. N/A

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

The apparatus constructed does not differ from that described in the permit.

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

Daytime change due to installation of diplexing filter cabinet, additional circuitry and distributed capacitance to ground.

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 (check appropriate box below)
James S. Stanley	James S. Stanley
Address (include ZIP Code) 14537 W Grand Ave STE 140 Surprise, Arizona 85374-8651	Date October 10, 2017 Telephone No. (Include Area Code) 602-350-3410

[ ] Technical Director

[ ] Registered Professional Engineer

[ ] Chief Operator

[ ] Technical Consultant

[X] Other (specify) Certified Professional Broadcast Engineer No. 50725

Radio Station KDUS

Tempe, Arizona

1060 KHz

5 KW-D 0.5 KW-N

Exhibit 1

Application for
Direct Measurement of Power

Directional Antenna
Partial Proof of Performance

October 10, 2017

Stanley Broadcast Engineering
Surprise, Arizona 85374

AFFIDAVIT

State of Arizona

) ss

County of Maricopa

James S. Stanley being first duly sworn upon oath hereby deposes and states:

1. That he is a consulting engineer who practices in the field of Broadcast Engineering.

2. That he is a Certified Professional Broadcast Engineer, certification No.50725

3. That he has been actively involved in technical developments pertaining to AM broadcast engineering since 1969.

4. That he has been retained by Phoenix FCC License Sub, LLC, licensee of Station KDUS for the purpose of taking measurements and preparing this report.

5. That he made the required antenna impedance, spurious emission and field intensity measurements for station KDUS.

6. That he has personally prepared the attached report and associated exhibits and, he believes the information contained herein to be true and accurate.

Subscribed and sworn to before me on this 19th day of October, 2017.

Affiant

Notary

Affix seal here

NICOLE KOUBEK
Notary Public - Arizona
Maricopa County
My Comm. Expires Sep 25, 2020

Radio Station KDUS
Tempe, Arizona

List of Figures

Radio Station KDUS
Tempe, Arizona

Figure 1

Engineering statement of James S. Stanley

OVERVIEW

In August of 2016 KDUS was granted an STA for nighttime operation non-directionally at reduced power. The STA was necessary due to the KDUS transmitting equipment being relocated to another building on the property. The new transmitter room is approximately 50 meters closer to the array.

Simultaneous to the relocation of the transmitter room, station KIHP relocated to the KDUS site to commence operation by diplexing with KDUS at tower number two.

A new sample system was installed for the KDUS directional array along with a new Potomac Instruments model 1901-4 antenna monitor. A description of the sample system and techniques used to determine accuracy thereof is provided in this report.

Prior to adjustment and testing of the nighttime array, all sample transformers and antenna current meters were returned to the manufacturer for testing and calibration. Calibration dates and serial numbers are shown in Figure 4 of this report.

Once proper operation of the directional array was established a Partial Proof of Performance was completed on all radials associated with the KDUS system. The Proof of Performance radial data accompanies this report.

Diplexing filters were installed to isolate the 1060 KHz and 1310 KHz transmitters. The pass/ reject filters provide the necessary isolation between the transmitters thus minimizing spurious emissions. The diplexing filters are shown in the System Diagram which is Figure 2 of this report.

Spurious emission measurements were made pursuant to Section 73.44 of the Rules and Regulations. Measurements were made at a wide range of frequencies which were identified as potential intermodulation frequencies. Measurements were also made at two and three times the fundamental frequency which is 1060 KHz. The results of the measurements are shown in Figure 3 of this report.

Engineering Statement (continued)

OVERVIEW (Continued)

The licensee is filing FCC form 302-AM along with this report and partial proof of performance requesting authority to determine power by the direct method.

DESCRIPTION OF SAMPLE SYSTEM

The KDUS sample system is designed and constructed to be compliant with Section 73.68 of the Rules and Regulations. The sample lines are Commscope LDF 2-50 low loss Heliax®, 3/8 inch in diameter. Each line is a continuous length of cable with no splices. A type N connector is attached to each end of the sample lines. Each sample line is 218.3 meters in length. The sample lines are routed from the transmitter building to each of the three towers through underground PVC conduits. This was done to protect the sample lines.

Because the lines are the same length, a substantial amount of coaxial cable is left over from tower 2 and tower 3 which are closer to the transmitter building then tower 1. This excess cable is buried in a underground pit. The pit is located approximately 18 meters north of the transmitter building on the east side and directly adjacent to a large concrete pull box.

At the towers, each sample line is connected to the current transformer through a short flexible jumper made of RG-213 coaxial cable. The jumpers are matched for electrical length. At the antenna monitor, the sample lines connect to the monitor through flexible jumpers made of RG-213. These three jumpers are electrically matched also.

After the lines were installed and in place, they were tested to verify matching of the electrical lengths. Testing was performed first using a Network Analyzer to take measurements. The tests were then repeated using a Cold Bridge with signal generator and null detector.

DESCRIPTION OF SAMPLE SYSTEM (continued)

The results of the measurements show that the sample lines comply with Section 73.68 where the electrical length of the sample lines are matched, and phase differences between the sample lines are less than 0.5 degrees.

The matched sample lines along with matched current transformers and the Potomac Instruments Model 1901-4 antenna monitor provide station KDUS with an accurate means to measure and maintain operating parameters in the directional array.

The licensee requests that your Commission annotate the updated station license to show that the Antenna Sampling System is Approved under Section 73.68 of the Rules.

DIRECTIONAL OPERATING PARAMETERS

KDUS operates pursuant to FCC license File Number BL-19920922AD. During nighttime directional operation, the license specifies a phase indication at Tower #1 of -119°. After studying the original documents accompanying the 1986 Proof of Performance, the following information was found:

"Tower 1 sample required an additional 2.8 metre length of extension cable of RG8-U to reach the phase monitor location. The result is that the tower 1 phase monitor indication is 5.3 degrees offset from the indicated -119 degrees for an actual operating phase of -113.7 degrees at tower 1".

The document containing this information can be found in the original station Proof of Performance dated May 1986. It is Exhibit E-1B page 3 of 9.

Since the new sample lines were installed and have sufficient length to reach the equipment on both ends without an additional jumper in only the tower 1 line, -114° is the indicated phase at tower 1 during directional operation.

Field intensity measurements demonstrate that this is the correct Tower 1 phase for directional operation.

DIRECTIONAL OPERATING PARAMETERS (continued)

License BL-19920922AD specifies a tower 3 antenna monitor sample ratio of 0.475 during directional operation. The ratio of tower 3 was reduced 5.3% to a indicated value of 0.450 on the antenna monitor. This change was made based upon repetitively making field intensity measurements across the three (3) protection radials which also have monitoring points specified. Those radials are 137° true, 170° true and 203° true.

Field intensity measurements demonstrate that this adjusted value of 0.450 produces the correct monitor point values and radial averages on the protection radials; as well as the six (6) radials which define the main lobe of the array.

The licensee requests that the KDUS station license be updated to reflect these minor changes in antenna parameters during nighttime directional operation.

MONITOR POINTS

KDUS license BL-19920922AD specifies monitoring points on the three (3) protection radials. These monitoring points are the original locations specified in the full Proof of Performance dated May 1986. All three locations have easy access on public streets and are free of overhead power wires or other devices such as light standards, which can affect the accuracy of measurements.

The licensee requests that these monitoring points and field intensity limitations currently in place, be specified in the updated station license for KDUS.

Due to the relocation of the KDUS transmitting equipment it is now necessary to exit the transmitter site on a different driveway than previously outlined in the descriptions.

The licensee is providing updated directions to the three monitoring points and requests that these corrected directions be included in the updated station license for KDUS.

MONITOR POINTS (continued)

137 Degrees True

Direction of 137 degree true North. From KDUS transmitter building, follow the gravel driveway east to Calle Bella Vista. Turn right and drive .07 Km (.04 miles) to the stop sign. Turn left, go east 0.40 km (.25 miles) to S. Priest Dr. Turn right (south) on S. Priest Dr. and proceed 2.82 km (1.75 miles) to Warner Road. Turn left (east) and drive 2.33 km (1.45 miles) to corner of Warner Road and Maple Street. Monitor Point #1 is located on the north side of Warner Road opposite Street sign. The field intensity measured at this point should not exceed 3.1 mV/m.

170 Degrees True

Direction of 170 degree true North. From KDUS transmitter building, follow the gravel driveway east to Calle Bella Vista. Turn right and drive .07 Km (.04 miles) to the stop sign. Turn left, go east 0.4 Km (.25 miles) to S. Priest Dr. Turn right (south) on S. Priest Dr. and proceed 3.62 km (2.25 miles) past Warner Road to W Knox Rd. Turn left (east) and proceed .19 km (.12 miles) to monitor point. Monitor point #2 is located on the northwest corner of W Knox Rd. And S. Margo Drive, on the sidewalk. The field intensity measured at this point should not exceed 1.61 mV/m.

203 Degrees True

Direction of 203 degrees true. From KDUS transmitter building, follow the gravel driveway east to Calle Bella Vista. Turn right and drive .07 Km (.04 miles) to the stop sign. Turn left, go east 0.4 Km (.25 miles) to S. Priest Dr. Turn right (south) on S. Priest Dr. and proceed 1.21 km (.75 miles) to Elliot Road. Turn right (west) and proceed 1.16 km (1 mile) to 48th street. Turn left (south) and proceed 1.69 km (1.05 miles0 to Hoh Way. Turn left (east) and proceed .03 km (.02) miles to the intersection of Hoh Way and Paiute Street. Monitor point #3 is located 7 feet west of the curb at 12225 Paiute Way. The field intensity measured at this point should not exceed 7.9 mV/m.

SUMMARY

Restoration of the KDUS Nighttime and Daytime transmitting systems is complete following the relocation of all equipment to the new transmitter building.

All work was performed in accordance with good technical standards and practices.

The addition of the 1310 KHz facility to the KDUS site is completed. All diplexing filters and traps are adjusted to permit operation of both the 1060 KHz transmitter and the 1310 KHz transmitter without interaction or inter modulation between the two transmitters. Spurious emission measurements confirm that unwanted products are suppressed well below the limits set forth in Section 73.44, of the Rules and Regulations.

KDUS installed a new sample system for the Nighttime directional antenna system. The system complies with Section 73.68 of the Rules and Regulations; and as such qualifies to receive Type Approval.

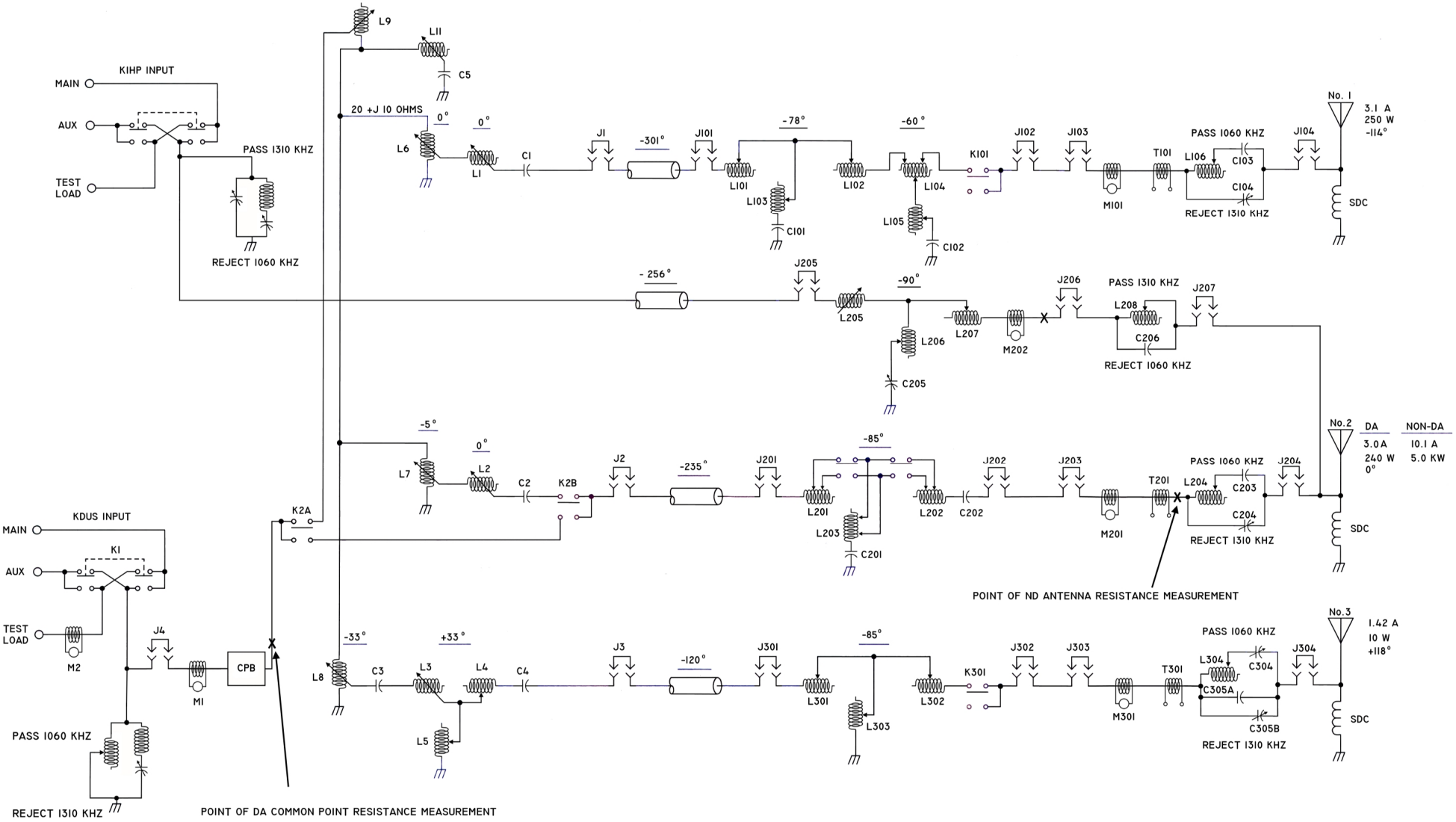
The three (3) directional monitoring points associated with the KDUS nighttime operation are well within the limits set forth in the KDUS license BL-19920922AD.

Partial Proof of Performance measurements are completed for the 9 radials associated with the KDUS directional array. Analysis of the measurements shows the KDUS directional antenna system is operating in compliance with the terms of authorization.

The licensee requests that your Commission grant Direct Measurement of Power for Station KDUS. It is requested that a new station license reflecting the minor changes in directional operating parameters and updated directions to the monitor points be issued.

Sincerely,

James S. Stanley October 10, 2017
Stanley Broadcast Engineering



NOTE - CONTACTORS SHOWN IN NIGHT POSITION AND AUX TRANSMITTER

STANLEY BROADCAST ENGINEERING
SURPRISE, ARIZONA 85374

SYSTEM DIAGRAM
RADIO STATION KDUS
TEMPE, ARIZONA
FIGURE 2 100417

Figure 3

Spurious Emissions 73.44

In accordance with Section 73.44 of the Rules and regulations, the required supression of spurious emissions is -80.0 decibels below the carrier level of 1060 KHZ facility. The transmitter was operating at the authorized daytime power of 5.0 Kilowatts. The 1310 KHz transmitter was operating at the authorized daytime power of 3.4 Kilowatts.

Frequency	Measured Field	Attenuation
1060 KHz	790 mV/m	0 dB
2120 (2Fc)	35 uV/m	-87
3180 (3Fc)	25 uV/m	-89.9
810	55 uV/m	-83
750	42 uV/m	-85
2370	31 uV/m	-88
3680	27 uV/m	-89
1560	22 uV/m	-91
1810	18 uV/m	-92.8

All measurements were made using a Potomac Instruments FIM41 field intensity meter, serial number 1303. The meter was calibrated by the manufacturer on July 18, 2017

Figure 4

Indicating Instruments

Component Symbol	Model	S/N	Calibration
M101	Delta TCA-5EX	4220	Jan 2017
M201	Delta TCA-5/20 EXR	12945	Jan 2017
M301	Delta TCA-5EX	4214	Jan 2017
M1	Delta TCA 10/20 EXR	4439	Jan 2017
M2	Delta TCA-20 EX	4287	Jan 2017
T101 (Sample)	Delta TCT-3	1512	Jan 2017
T201 (Sample)	Delta TCT-3	1507	Jan 2017
T301 (Sample)	Delta TCT-3	1569	Jan 2017
Antenna Monitor	Potomac model 1901-4	935	Aug 2016

All Delta transformer coupled ammeters and toroidal current transformers which are used in the KDUS sample system, were returned to the manufacturer for testing, repairs and calibration prior to the adjustment of the directional antenna system. The Potomac Instruments model 1901 antenna monitor was purchased new in August of 2016. It is within the 2 year calibration schedule.

Radio Station KDUS
Tempe, Arizona

Field Intensity Measurements
0.5 KW DA/N

Figure 5-A

15 Degrees True

Distance	Time	Date	August 2017	May 1986	Ratio
3.08 km	1011 MST	080717	101 mV/m	99.0 mV/m	1.020
3.98	1022	080717	90.4	89.2	1.013
4.79	1028	080717	77.5	78.6	.986
6.19	1041	080717	52.0	51.4	1.011
7.02	1049	080717	47.0	48.5	.969
7.91	1053	080717	44.3	45.6	.971
10.57	1113	080717	26.5	27.2	.974
12.82	1132	080717	24.5	24.2	1.012
14.24	1144	080717	19.0	18.2	1.043

Total Number of Points 9

Sum of Ratios 8.999

Radial Average .999

Measurements were made using a Potomac Instruments FIM 41 field intensity meter, serial number 1303. The instrument was Calibrated by the manufacturer July 18, 2017

Radio Station KDUS
Tempe, Arizona

Field Intensity Measurements
0.5 KW DA/N

Figure 5-B

55 Degrees True

Distance	Time	Date	August 2017	May 1986	Ratio
3.31 km	1137 MST	080517	75.2	75.7	.993
4.38	1148	080517	52.0	51.4	1.011
5.31	1211	080517	37.5	37.8	.992
6.74	1226	080517	33.0	32.5	1.015
7.66	1235	080517	27.5	28.1	.978
8.61	1252	080517	22.5	21.2	1.061
9.92	1301	080517	20.5	21.8	.940
10.58	1310	080517	19.7	20.2	.975
12.46	1326	080517	14.8	15.5	.954
14.76	1345	080517	13.7	13.6	1.007

Total Number of Points 10

Sum of Ratios 9.926

Radial Average .992

Measurements were made using a Potomac Instruments FIM 41 field intensity meter, serial number 1303. The instrument was Calibrated by the manufacturer July 18, 2017

Radio Station KDUS
Tempe, Arizona

Field Intensity Measurements
0.5 KW DA/N

Figure 5-C

110 Degrees True

Distance	Time	Date	August 2017	May 1986	Ratio
3.66 km	1158 MST	080417	10.4 mV/m	10.9 mV/m	.954
5.52	1210	080417	7.05	6.79	1.038
6.46	1217	080417	7.45	6.98	1.067
7.35	1227	080417	6.90	6.60	1.045
8.30	1238	080417	5.25	5.43	.966
10.96	1255	080417	3.75	3.64	1.030
11.57	1305	080417	3.72	3.59	1.035
12.42	1312	080417	2.75	2.81	.978
14.18	1322	080417	2.85	2.91	.979

Total Number of Points 9

Sum of Ratios 9.09

Radial Average 1.010

Measurements were made using a Potomac Instruments FIM 41 field intensity meter, serial number 1303. The instrument was Calibrated by the manufacturer July 18, 2017

Radio Station KDUS
Tempe, Arizona

Field Intensity Measurements
0.5 KW DA/N

Figure 5-D

137 Degrees True

Distance	Time	Date	August 2017	May 1986	Ratio
3.0 km	1332 MST	080317	2.55 mV/m	2.43 mV/m	1.049
3.60	1330	080317	3.10	3.10	1.00
4.10 **(MP)**	1338	080317	2.05	2.09	.980
7.70	1355	080317	1.40	1.32	1.060
8.90	1422	080317	1.35	1.46	.924
10.10	1435	080317	.700	.679	1.030
11.90	1453	080317	.900	.892	1.008
13.00	1510	080317	.255	.262	.973

Total Number of Points 8

Sum of Ratios 8.02

Radial Average 1.003

Measurements were made using a Potomac Instruments FIM 41 field intensity meter, serial number 1303. The instrument was Calibrated by the manufacturer July 18, 2017

Radio Station KDUS
Tempe, Arizona

Field Intensity Measurements
0.5 KW DA/N

Figure 5-E

170 Degrees True

Distance	Time	Date	August 2017	May 1986	Ratio
3.10 km	1022 MST	080317	4.05 mV/m	4.07 mV/m	1.00
3.90 **(MP)**	1032	080317	1.50	1.50	1.00
6.35	1048	080317	2.90	3.15	.920
7.10	1056	080317	3.25	3.10	1.048
7.55	1104	080317	2.55	2.72	.937
8.15	1112	080317	2.35	2.52	.932
9.50	1130	080317	2.72	2.91	.934
12.40	1155	080317	2.05	2.13	.962

Total Number of Points 8

Sum of Ratios 7.73

Radial Average .966

Measurements were made using a Potomac Instruments FIM 41 field intensity meter, serial number 1303. The instrument was Calibrated by the manufacturer July 18, 2017

Radio Station KDUS
Tempe, Arizona

Field Intensity Measurements
0.5 KW DA/N

Figure 5-F

203 Degrees True

Distance	Time	Date	August 2017	May 1986	Ratio
3.25 km **(MP)**	1450 MST	080917	6.50 mV/m	6.31 mV/m	1.030
3.75	1445	080917	5.1	5.04	1.011
5.00	1432	080917	5.5	5.82	.945
6.80	1418	080917	2.5	2.43	1.028
8.65	1410	080917	1.7	1.65	1.030
10.00	1356	080917	1.95	2.04	.955
11.95	1332	080917	1.25	1.36	.919
14.60	1255	080917	.89	.873	1.019

Total Number of Points 8

Sum of Ratios 7.937

Radial Average .992

Measurements were made using a Potomac Instruments FIM 41 field intensity meter, serial number 1303. The instrument was Calibrated by the manufacturer July 18, 2017

Radio Station KDUS
Tempe, Arizona

Field Intensity Measurements
0.5 KW DA/N

Figure 5-G

270 Degrees True

Distance	Time	Date	August 2017	May 1986	Ratio
7.35 km	1350 MST	080817	7.20 mV/m	7.37 mV/m	.976
7.90	1339	080817	7.12	7.18	.991
9.08	1334	080817	7.30	7.37	.990
9.74	1330	080817	5.20	5.24	.992
10.30	1327	080817	5.40	5.53	.976
10.80	1322	080817	4.55	4.46	1.020
11.49	1318	080817	4.30	4.46	.964
12.30	1311	080817	4.40	4.37	1.006
14.88	1305	080817	4.53	4.46	1.015

Total Number of Points 9

Sum of Ratios 8.93

Radial Average .992

Measurements were made using a Potomac Instruments FIM 41 field intensity meter, serial number 1303. The instrument was Calibrated by the manufacturer July 18, 2017

Radio Station KDUS
Tempe, Arizona

Field Intensity Measurements
0.5 KW DA/N

Figure 5-H

320 Degrees True

Distance	Time	Date	Field mV/m	May 1986	Ratio
3.42 km	1055 MST	080817	77.0 mV/m	76.6 mV/m	1.005
5.23	1109	080817	44.8	45.6	.982
6.47	1118	080817	39.5	42.6	.927
7.52	1124	080817	30.4	29.0	1.048
8.97	1131	080817	22.8	23.6	.966
9.82	1142	080817	23.4	22.3	1.049
10.92	1148	080817	18.3	19.6	.933
12.18	1156	080817	15.5	14.7	1.054
13.62	1204	080817	14.5	14.7	.986

Total Number of Points 9

Sum of Ratios 8.950

Radial Average .994

Measurements were made using a Potomac Instruments FIM 41 field intensity meter, serial number 1303. The instrument was Calibrated by the manufacturer July 18, 2017

Radio Station KDUS
Tempe, Arizona

Field Intensity Measurements
0.5 KW DA/N

Figure 5-I

350 Degrees True

Distance	Time	Date	August 2017	May 1986	Ratio
3.98 km	1230 MST	080717	80.5 mV/m	79.5 mV/m	1.012
5.00	1235	080717	46.2	45.6	1.013
6.75	1245	080717	40.5	38.3	1.057
8.05	1256	080717	31.4	32.0	.981
10.15	1320	080717	25.0	26.2	.954
12.05	1336	080717	21.3	20.9	1.019
13.02	1342	080717	22.6	22.3	1.013
13.98	1351	080717	21.7	21.3	1.018
15.00	1358	080717	17.5	18.2	.961

Total Number of Points 9

Sum of Ratios 9.028

Radial Average 1.003

Measurements were made using a Potomac Instruments FIM 41 field intensity meter, serial number 1303. The instrument was Calibrated by the manufacturer July 18, 2017