WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

SATELLITE EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B:(Technical and Operational Description)

FOR OFFICIAL USE ONLY

Location of Earth Station Site

E1: Site Identifier:	KWES-TV	E5. Call Sign:	
E2: Contact Name	Kevin Southern	E6. Phone Number:	432-701-6418
E3. Street:	11320 WCR 127	E7. City:	Odessa
		E8. County:	Ector
E4. State	TX	E9. Zip Code	79765
E10. Area of Operation:		Texas	
E11. Latitude:	0 ° 0 ' 0.0 "		
E12. Longitude:	0 ° 0 ' 0.0 "		

E13. Lat/Lon Coordinates are:	○ NAD-27	○ NAD-83	◉ N/A
E14. Site Elevation (AMSL):	875.0 meters		

E15. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as demonstrated by the manufacturer's qualification measurement? If NO, provide asa technical analysis showing compliance with two-degree spacing policy.	◉ Yes ○ No ○ N/A
E16. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with non-geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and (b) as demonstrated by the manufacturer's qualification measurements?	○ Yes ○ No ◉ N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	○ Yes ◉ No
E18. Is frequency coordination required? If YES, attach a frequency coordination report as	○ Yes ◉ No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	○ Yes ◉ No
E20. FAA Notification - (See 47 CFR Part 17 and 47 CFR part 25.113(c)) Where FAA notification is required, have you attached a copy of a completed FCC Form 854 and or the FAA's study regarding the potential hazard of the structure to aviation? FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION.	◉ Yes ○ No

POINTS OF COMMUNICATION

Satellite Name:PERMITTED LIST | | If you selected OTHER, please enter the following:	
E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:

POINTS OF COMMUNICATION (Destination Points)

E25. Site Identifier:	
E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size	E41/42. Antenna GainTransmint and/or Recieve(____dBi at _____GHz)
KWES-TV	1	1	Andrew	ESA24VSMKU	2.4	48.3 dBi at 11.95
						50.1 dBi at 14.275

E28. Antenna Id	E33/34. Diameter Minor/Major(meters)	E35. Above Ground Level (meters)	E36. Above Sea Level (meters)	E37. Building Height Above Ground Level (meters)	E38. Total Input Power at antenna flange (Watts)	E39. Maximum Antenna Height Above Rooftop (meters)	E40. Total EIRP for al carriers (dBW)
1	0.0/0.0	6.1	0.0	0.0	0.0	500.0	76.4

FREQUENCY

E28. Antenna Id	E43/44. Frequency Bands(MHz)	E45. T/R Mode	E46. Antenna Polarization(H,V,L,R)	E47. Emission Designator	E48. Maximum EIRP per Carrier(dBW)	E49. Maximum ERIP Density per Carrier(dBW/4kHz)

1	11700 12200	R	Linear and Circular	36M0G7W	76.4	0.0
E50. Modulation and Services DIGITAL CARRIER FOR VIDEO/VOICE/DATA						
1	14000 14500	T	Linear and Circular	36M0G7W	76.4	36.9
E50. Modulation and Services DIGITAL CARRIER FOR VIDEO/VOICE/DATA						

FREQUENCY COORDINATION

E28. Antenna Id	E51. Satellite Orbit Type	E52/53. Frequency Limits(MHz)	E54/55. Range of Satellite Arc E/W Limit	E56. Earth Station Azimuth Angle Eastern Limit	E57. Antenna Elevation Angle Eastern Limit	E58. Earth Station Azimuth Angle Western Limit	E59. Antenna Elevation Angle Western Limit	E60. Maximum EIRP Density toward the Horizon(dBW/4kHz)
1	Geostationary	11700 12200	60.0/ 140.0	120.1	31.5	235.7	35.2	-21.0
	Geostationary	14000 14500	60.0/ 140.0	120.1	31.5	235.7	35.2	-21.0

REMOTE CONTROL POINT LOCATION

REMOTE CONTROL POINT LOCATION

E61. Call Sign NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.			E65. Phone Number
E62. Street Address			
E63. City	E67. County	E64/68. State/Country /	E66. Zip Code

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 0.25 - 24 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD-PERM, Paperwork Reduction Project (3060-0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to PRA@fcc.gov. PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

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THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104-13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.

RADIATION HAZARD STUDY

SITE: KWES-TV

KWES has evaluated the radio frequency environment in and around the proposed earth station and found it to be safe for continuous exposure of operating personnel and the general public.

Only the internal antenna structure, specifically the area between the feedhorn and the dish, shows a radio frequency environment that is considered excessive for continuous exposure of personnel. This area is sufficiently high above ground level that it cannot accidentally be entered without the aid of mechanical equipment.

The supporting calculations that are submitted as part of this study show that the proposed earth station is environmentally safe, not only based on the criteria published in the Occupational Safety and Health Act (OSHA), but also in the light of recent recommendations for stricter control of radio frequency radiation.

1.0 Station Parameters

Antenna Diameter (D) = 2.4 M

Operating Wavelength (λ) = .021 M

Antenna Gain (G) = 50.1 dBi

Transmitter RF Power (P) = 500.0 W

2.0 Summary of Results

RF Power Density - Centerline of Near Field = 26.5 mw/cm^2

RF Power Density - Far Field = 15.1 mw/cm^2

*RF Power Density - Edge of Near Field = 0.265 mw/cm^2

*RF Power Density - Behind Antenna = 0.099 mw/cm^2

* The density levels denoted by an asterisk are representative of the maximum radiation environment in or around the proposed earth station to which the general public may be exposed.

3.0 Near Field Evaluation

The earth station antenna that will be employed for this service is designed to focus nearly all of the radiated radio frequency energy into a cylindrical beam with a diameter only slightly larger than that of the antenna dish. Any intrusion into this beam would impair the performance of this earth station. This broadcaster has, therefore, selected a site location for the antenna that will insure that the beam of principle radio frequency radiation is clear of any obstructions, buildings, etc. and cannot accidentally be entered by the general public.

3.1 The near field cylindrical projection extends to a distance d(nf) and d(ff) that is defined by the following:

$$d(nf) = D^2/4\lambda$$

$$d(ff) = .6D^2/\lambda$$

For the proposed antenna, the near field extends, therefore, to a distance of:

68.2 meters

And the far field extends, therefore, to a distance of:

164.2 meters

3.2 The maximum radio frequency power density within this near field cylinder is a function of the antenna diameter and transmitter power as follows:

$$W(NF) = 9.6P/\pi D^2$$

For the proposed earth station, the maximum power density in the near field was computed not to exceed:

$26.53\ mw/cm^2$

3.3 At the edge of the near field cylindrical beam, 0.7 antenna diameter removed from its center, the power density is attenuated at least 20 dB to 1/100th of the maximum near field power. The power along the outside edge of the beam will, therefore, not exceed:

$0.265\ mw/cm^2$

4.0 Far Field Evaluation

Beyond the near field region, the cylindrical beam begins to spread gradually into a slightly tapered cone in accordance with the published radiation pattern for the proposed antenna. The specified antenna gain is realized and the radiated power density decreases proportionally to the inverse square of distance from the antenna.

4.1 For the purpose of determining the maximum power density within the far field, this broadcaster has conservatively assumed that the full antenna gain is already realized at the limit of the near field cylindrical region. The radio frequency power density in the far field region is given by:

$$W(FF) = PG/4\pi d^2$$

For the proposed earth station, the maximum radiated power at the point of transition between the near field and far field regions was computed not to exceed:

$$15.1 \text{ mw/cm}^2$$

5.0 Off-Axis Evaluation

The proposed antenna meets or exceeds the performance specifications under part #25 of the FCC rules. The off-axis gain of this antenna is, therefore, - 10dBi or less in any direction more than 48° removed from the centerline of the main beam.

5.1 The off-axis power density may be conservatively evaluated using the far field method of computation:

$$W(OA) = 0.1P/4\pi d^2$$

Assuming a distance of 2 meters from the antenna, the density was calculated to be:

$$0.099 \text{ mw/cm}^2$$

6.0 Summary

6.1 The computed values for near field projection distance, RF power density at the center line, RF power density in the far field, RF power density at the edge of the near field, and RF power density behind the antenna are furnished by the Engineering Department.

6.2 Radiation calculations verify that the actual levels do not exceed the OSHA maximum of 5 mw/cm^2.

TECHNICAL CERTIFICATION

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in this Application; that I am familiar with the applicable Rules of the Commission; that I have either prepared or reviewed the engineering information submitted in this application; and that it is complete and accurate to the best of my knowledge.

By:_____

Name:_____

Title:_____

Company:_____

TECHNICAL CERTIFICATION

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in this Application; that I am familiar with the applicable Rules of the Commission; that I have either prepared or reviewed the engineering information submitted in this application; and that it is complete and accurate to the best of my knowledge.

By: _____

Name: Kevin W. Smith

Title: Director of Technology

Company: Kaves LLC