

REQUEST FOR SPECIAL TEMPORARY AUTHORITY

Clark County School District (“CCSD”), the licensee of fixed transmit-receive earth station E920225, hereby respectfully requests special temporary authority, pursuant to Section 25.120 of the Commission’s Rules, effective May 26, 2010, for a period of thirty (30) days to operate earth station E920225 at the parameters of its pending modification application to change the site location of the facility.

An application for modification of the E920225 license (File No. SES-MOD-20100520-00630) (see Attachment A) was filed with the Commission on May 20, 2010. CCSD is a governmental entity and is therefore exempt from the payment of filing fees. During the pendency of this application, CCSD requests temporary authority to operate the E920225 facility from the new location specified in its modification. CCSD recently moved its main studio for KLVX(TV), Las Vegas, Nevada and E920225 is an essential element of the station’s operation.

Accordingly, grant of this request will serve the public interest by ensuring that vital programming can continue to be delivered without interruption.

ATTACHMENT A

E920225
Modification
Application

FCC IBFS - Electronic Filing

Submission_id :IB2010001601

Successfully filed on :May 20 2010 11:10:31:630AM

The current authorization of Call Sign E920225 expires on May 1 2012 12:00:00:000AM. The filing of a modification application does not automatically extend the expiration date of an authorization. In addition, grant of a modification will not extend the expiration date unless that is the modification sought. In general, an application for renewal of the authorization must be filed separately in order to extend the expiration date.

[Return to Main Menu](#)

Approved by OMB
3060-0678

Date & Time Filed: May 20 2010 11:10:31:630AM

File Number: SES-MOD-INTR2010-01601

FCC APPLICATION FOR SPACE AND EARTH STATION:MOD OR AMD - MAIN FORM	FCC Use Only
FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	

APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:

E920225 Modification to relocate to new KLVX studios

1-8. Legal Name of Applicant	
Name: Clark County School District	Phone Number: 702-799-1010
DBA Name:	Fax Number: 702-799-2806
Street: 3050 East Flamingo Road	E-Mail: taxtell@vegaspbs.org
City: Las Vegas	State: NV
Country: USA	Zipcode: 89121 -4427
Attention: Mr. Thomas A. Axtell	
9-16. Name of Contact Representative	
Name: Todd M. Stansbury, Esq.	Phone Number: 202-719-4948
Company: Wiley Rein LLP	Fax Number: 202-719-7049
Street: 1776 K Street, N.W.	E-Mail: tstansbu@wileyrein.com
City: Washington	State: DC
Country: USA	Zipcode: 20006-
Attention:	Relationship: Legal Counsel

CLASSIFICATION OF FILING

<p>17. Choose the button next to the classification that applies to this filing for both questions a. and b. Choose only one for 17a and only one for 17b.</p> <p><input checked="" type="radio"/> a1. Earth Station</p> <p><input type="radio"/> a2. Space Station</p>	<p>(N/A) b1. Application for License of New Station</p> <p>(N/A) b2. Application for Registration of New Domestic Receive-Only Station</p> <p><input type="radio"/> b3. Amendment to a Pending Application</p> <p><input checked="" type="radio"/> b4. Modification of License or Registration</p> <p>b5. Assignment of License or Registration</p> <p>b6. Transfer of Control of License or Registration</p> <p><input type="radio"/> b7. Notification of Minor Modification</p> <p>(N/A) b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite</p> <p>(N/A) b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States</p> <p>(N/A) b10. Other (Please specify)</p> <p>(N/A) b11. Application for Earth Station to Access a Non-U.S. satellite Not Currently Authorized to Provide the Proposed Service in the Proposed Frequencies in the United States.</p>
<p>17c. Is a fee submitted with this application?</p> <p><input type="radio"/> If Yes, complete and attach FCC Form 159.</p> <p>If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).</p>	

- Governmental Entity Noncommercial educational licensee
 Other(please explain):

17d.
 Fee Classification

18. If this filing is in reference to an existing station, enter: (a) Call sign of station: E920225	19. If this filing is an amendment to a pending application enter both fields, if this filing is a modification please enter only the file number: (a) Date pending application was filed: _____ (b) File number: SESRWL2002032700432
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TYPE OF SERVICE

20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Select all that apply:

- a. Fixed Satellite
 b. Mobile Satellite
 c. Radiodetermination Satellite
 d. Earth Exploration Satellite
 e. Direct to Home Fixed Satellite
 f. Digital Audio Radio Service
 g. Other (please specify)

21. STATUS: Choose the button next to the applicable status.
 Choose only one.
 Common Carrier Non-Common Carrier

22. If earth station applicant, check all that apply.
 Using U.S. licensed satellites
 Using Non-U.S. licensed satellites

23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:
 Connected to a Public Switched Network Not connected to a Public Switched Network N/A

24. FREQUENCY BAND(S): Place an 'X' in the box(es) next to all applicable frequency band(s).
 a. C-Band (4/6 GHz) b. Ku-Band (12/14 GHz)
 c. Other (Please specify upper and lower frequencies in MHz.)
 Frequency Lower: Frequency Upper: (Please specify additional frequencies in an attachment)

TYPE OF STATION

25. CLASS OF STATION: Choose the button next to the class of station that applies. Choose only one.

- a. Fixed Earth Station
 b. Temporary-Fixed Earth Station
 c. 12/14 GHz VSAT Network
 d. Mobile Earth Station
 e. Geostationary Space Station
 f. Non-Geostationary Space Station
 g. Other (please specify)

26. TYPE OF EARTH STATION FACILITY:
 Transmit/Receive Transmit-Only Receive-Only N/A
 "For Space Station applications, select N/A."

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an 'X' in the box(es) next to all that apply.)

- a -- authorization to add new emission designator and related service
 b -- authorization to change emission designator and related service
 c -- authorization to increase EIRP and EIRP density

- d -- authorization to replace antenna
- e -- authorization to add antenna
- f -- authorization to relocate fixed station
- g -- authorization to change frequency(ies)
- h -- authorization to add frequency
- i -- authorization to add Points of Communication (satellites & countries)
- j -- authorization to change Points of Communication (satellites & countries)
- k -- authorization for facilities for which environmental assessment and radiation hazard reporting is required
- l -- authorization to change orbit location
- m -- authorization to perform fleet management
- n -- authorization to extend milestones
- o -- Other (Please specify)

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. 1.1308 and 1.1311, as an exhibit to this application. A Radiation Hazard Study must accompany all applications for new transmitting facilities, major modifications, or major amendments. Yes No **RF exposure study**

ALIEN OWNERSHIP Earth station applicants not proposing to provide broadcast, common carrier, aeronautical en route or aeronautical fixed radio station services are not required to respond to Items 30-34.

29. Is the applicant a foreign government or the representative of any foreign government? Yes No
30. Is the applicant an alien or the representative of an alien? Yes No N/A
31. Is the applicant a corporation organized under the laws of any foreign government? Yes No N/A
32. Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country? Yes No N/A
33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country? Yes No N/A
34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit an identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote.

BASIC QUALIFICATIONS

35. Does the Applicant request any waivers or exemptions from any of the Commission's Rules? Yes No
If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.
36. Has the applicant or any party to this application or amendment had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explanation of circumstances. Yes No
37. Has the applicant, or any party to this application or amendment, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explanation of circumstances. Yes No
38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition? If Yes, attach as an Yes No

exhibit, an explanation of circumstances

39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceding two items? If yes, attach as an exhibit, an explanation of the circumstances. Yes No

40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, address, and citizenship of those stockholders owning a record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.

41. By checking Yes, the undersigned certifies, that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. *See 47 CFR 1.2002(b) for the meaning of "party to the application" for these purposes.* Yes No

42a. Does the applicant intend to use a non-U.S. licensed satellite to provide service in the United States? If Yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. 25.137, as appropriate. If No, proceed to question 43. Yes No

42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station?

43. Description. (Summarize the nature of the application and the services to be provided). Relocate uplink to new KLVX studio location

43a. Geographic Service Rule Certification
By selecting A, the undersigned certifies that the applicant is not subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25. A

By selecting B, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will comply with such requirements. B

By selecting C, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will not comply with such requirements because it is not feasible as a technical matter to do so, or that, while technically feasible, such services would require so many compromises in satellite design and operation as to make it economically unreasonable. A narrative description and technical analysis demonstrating this claim are attached. C

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CERTIFICATION

The Applicant 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 of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Choose the button next to applicable response.)

- Individual
- Unincorporated Association
- Partnership
- Corporation
- Governmental Entity
- Other (please specify)

45. Name of Person Signing

46. Title of Person Signing

Thomas A. Axtell

General Manager

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:	KLVX studios	E5. Call Sign:	E920225
E2. Contact Name	George Molnar	E6. Phone Number:	702-799-1010
E3. Street:	3050 East Flamingo Road	E7. City:	Las Vegas
E4. State	NV	E8. County:	Clark
E10. Area of Operation:		E9. Zip Code	89121
E11. Latitude:	36 ° 6 ' 56.3 "		Las Vegas, NV
E12. Longitude:	115 ° 6 ' 29.8 "		
E13. Lat/Lon Coordinates are:		<input type="radio"/> NAD-27	<input checked="" type="radio"/> NAD-83 <input type="radio"/> N/A
E14. Site Elevation (AMSL):		584.9 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 as a 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? Yes No

FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION.

POINTS OF COMMUNICATION

Satellite Name: ALSAT | ALL AUTHORIZED U.S. | ALSAT 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: KLVX studios	
E26. Common Name:	E27. Country: USA

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size	E41/42. Antenna Gain Transmitt and/or Recieve (dBi at GHz)	
KLVX studios	1	1	Vertex	6.1KPK	6.1	55.6 dBi at 11.95	
KLVX studios	1	1	Vertex	6.1KPK	6.1	57.0 dBi at 14.25	
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	0.0/6.1	7.1	592.0	0.0	70.8	0.0	75.5

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	Horizontal and Vertical	1M54G7D	0.0	0.0
E50. Modulation and Services Data						
1	14000 14500	T	Horizontal and Vertical	1M54G7D	62.5	36.6
E50. Modulation and Services Data						
1	11700 12200	R	Horizontal and Vertical	15M0F8W	0.0	0.0
E50. Modulation and Services Half-transponder analog video						
1	11700 12200	R	Horizontal and Vertical	30M0F8W	0.0	0.0
E50. Modulation and Services Full-transponder analog video						
1	11700 12200	R	Horizontal and Vertical	15M0G7W	0.0	0.0
E50. Modulation and Services Half-transponder QPSK video + data						
1	11700 12200	R	Horizontal and Vertical	30M0G7W	0.0	0.0
E50. Modulation and Services Full-transponder QPSK video + data						
1	14000 14500	T	Horizontal and Vertical	15M0F8W	75.5	45.3
E50. Modulation and Services Half-transponder analog video						
1	14000 14500	T	Horizontal and Vertical	30M0F8W	75.5	42.2
E50. Modulation and Services Full-transponder analog video						
1	14000 14500	T	Horizontal and	15M0G7W	75.5	39.8

			Vertical			
E50. Modulation and Services Half-transponder QPSK video + data						
1	14000 14500	T	Horizontal and Vertical	30M0G7W	75.5	36.7
E50. Modulation and Services Full-transponder QPSK video + data						

FREQUENCY COORDINATION

E28. Antenna Id	E51. Satellite Orbit Type	E52/53. Frequency Limits (MHz)	E54/55. Range of Satellite Arc Eastern/Western 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	14000 14500	122.0/135.0	122.2	28.5	211.5	43.1	-17.7

REMOTE CONTROL POINT LOCATION

E61. Call Sign		E66. Phone Number	
NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.			
E62. Street Address			
E63. City	E68. County	E67/68. State/Country /	E64. Zip Code

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 2 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.

Remember - You are not required to respond to a collection of information sponsored by the Federal government, and the government may not conduct or sponsor this collection, unless it displays a currently valid OMB control number or if we fail to provide you with this notice. This collection has been assigned an OMB control number of 3060-0678.

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.

Ku-Band Satellite Uplink Station E920225 • Las Vegas, Nevada

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained by the Clark County School District, licensee of Station KLVX, Channel 11, Las Vegas, Nevada, to prepare the technical portions of an application to relocate its E920225 Ku-band satellite uplink station from the old KLVX studios at 4210 Channel 10 Drive, Las Vegas, to the new KLVX studios at 3050 East Flamingo Road, Las Vegas, a move of 1.2 km.

Justification for Requested EIRP Levels

Because of heavy rain conditions that can sometimes exist in the Las Vegas, Nevada, area, a 300-watt high-power amplifier will be used, resulting in a maximum main beam equivalent isotropic radiated power (EIRP) of 75.5 dBW. Only the power necessary to establish reliable communications with the satellite transponder will be used; during good-weather conditions, it is anticipated that the operating power will typically be at least 10 dB below the maximum power.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. In Docket 93-62, effective October 15, 1997, the FCC adopted the human exposure limits for field strength and power density recommended in Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements ("NCRP"). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," includes similar exposure limits. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

For 14.0–14.5 GHz Ku-Band satellite transmitting antennas, the prevailing standard for occupational exposures of unlimited duration is 5 mW/cm², and 1 mW/cm² for public exposures of unlimited duration.

Proposed Uplink Facilities

It is proposed to use a General Dynamics/VertexRSI Model 6.1KPK 6.1-meter diameter satellite earth station Ku-Band transmitting antenna. Although a Varian Model VZU-6993F3 traveling wave tube

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power amplifier with a maximum transmitter power output (TPO) of 300 watts will be used, the transmission line will be 40 meters of Andrew Type EW132 elliptical waveguide, with a loss of 6.3 dB. Thus, the maximum antenna input power for any combination of signals would be 70.8 watts (18.5 dBW). The antenna would be mounted on the ground, in a walled area of the south side of the new KLVX studios at 3050 East Flamingo Road, Las Vegas, Clark County, Nevada.

The eastern-most geostationary communication satellite that the proposed antenna would communicate with would be at 72°W longitude, and the western-most satellite would be at 135°W longitude. The antenna orientation to the eastern-most satellite would be 122.2°T with an elevation angle of 28.5°, the antenna orientation to a satellite at the approximate middle of the domestic satellite arc would be 163.2°T with an elevation angle of 46.7°, and the antenna orientation to the western-most satellite would be 211.5°T with an elevation angle of 43.1°. The greatest elevation angle would occur when communicating with a satellite at 115°W, where an elevation angle of 48.1° would be achieved. Thus, communication with the eastern-most satellite represents the antenna orientation with the lowest elevation angle.

NIST Nomograph

The worst-case power density was determined using a method developed by the staff of the National Bureau of Standards (NBS, now the National Institute for Standards and Technology, "NIST"), "An Efficient and Accurate Method for Calculating and Representing Power Density in the Near-Field Zone of Microwave Antennas."* Figure 2 from Page 6 of that report is applicable to the proposed installation, and it is reproduced here in Figure 1. According to the NIST paper, this nomograph is applicable to all aperture antennas with diameter-to-wavelength ratios of 30 or greater. Since a 6.1-meter diameter antenna at 14.25 GHz has a diameter-to-wavelength ratio of approximately 290 to 1, the nomograph is clearly applicable.

Figure 1 characterizes the power density variation in the near-field. The extent of the near-field covered by this nomograph extends to a D^2/λ ratio of unity, where D is the antenna diameter and λ is the wavelength, expressed in compatible units (*i.e.*, either both in meters or both in centimeters). For Ku-Band uplinks the mid-band wavelength is 0.021 m (2.1 cm), so for the proposed 6.1-m antenna, D^2/λ equals approximately 1.77 km (1.10 miles). Thus, the distance over which this nomograph is applicable includes the entire KLVX studio site.

At Page 3 of the NIST paper, the formula $S = 38.6 - 20\log_{10}D$ is given for calculating the maximum power density for 1 watt of antenna input power, where S is the power density in dBm/cm² and

* Publication number NBSIR-85/8036, December 1985. This paper was written by Richard L. Lewis and Allen C. Newell, and was sponsored by the U.S. Environmental Protection Agency (EPA).

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D is the antenna diameter in centimeters. For higher input powers a $10\log_{10}(P)$ factor must be applied, where P is the antenna input power in watts. Thus for the maximum antenna input power of 70.8 watts the main beam the power density would be $38.6 - 20\log_{10}(610) + 10\log_{10}(70.8)$, or +1.4 dBm/cm². This is 1.4 dB higher than the 1.0 mW/cm² (0 dBm/cm²) NCRP guideline for uncontrolled (public) exposures. Thus, the closest applicable and conservative contour line in Figure 1 defining the NCRP public limit is the -2.5 dB contour, and the closest and conservation applicable contour line defining the five-times higher occupational limit is the 0 dB contour; that is, due to the limited antenna input power of 70.8 watts and the large antenna diameter, there is no area where the power density would exceed the occupational limit.

For the NCRP public limit of 0 dBm/cm², Figure 1 shows that the maximum distance in the main beam to the -2.5 dB contour is a Z-axis distance of $0.28D^2/\lambda$, or 496 m. Given the worst case antenna elevation angle of 28.5° when communicating with the eastern-most geostationary satellite, this point would occur at a height well above ground level. Since, as shown by the attached Figure 2, the KLVX studio site and surrounding area is relatively flat, and since on the south side of East Flamingo Road there are only one and two-story structures, the above-the-public limit main beam would occur hundreds of feet above ground, where of course public access would not exist. As also shown by Figure 2, the distance to the nearest structure at the 122°T lowest elevation angle direction is approximately 540 feet. At this horizontal distance from the satellite uplink antenna the main beam would be more than 300 feet above ground, and more than 250 feet above the rooftop of the two-story apartments/condominiums.

The closest structure in the satellite arc look angle is a single-story building due South of the satellite antenna area, approximately 250 feet distant. However, in this direction of approximately 187°T, the elevation angle of the uplink antenna would be a much steeper 47°. For this elevation angle the center of the main beam at a horizontal distance of 250 feet would be about 280 feet AGL, or again more than 250 feet above the roof of the across-the-street structure. Thus, the power density caused by the uplink operation at any publicly accessible area would be at least three orders of magnitude below the public limit.

The nomograph shows that perpendicular to the main beam the distance to the -2.5 dB contour does not exceed about $0.18D$, or 1.1 meters. Thus, a 2.2-meter diameter virtual cylinder extending upwards at 28° or greater above the horizontal and from the pedestal height of approximately 10 feet AGL would define the worst-case distance to the public exposure limit. Since, as demonstrated above, no public exposures would occur in this space, the uplink antenna is inherently compliant with respect to public exposures. The already planned mitigation measures of enclosing the uplink antenna in a walled-off area with a locked access gate, plus an RF exposure warning sign on gate or the pedestal



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supporting the uplink antenna (or both), will be sufficient to achieve compliance with FCC guidelines regarding human exposure to radio frequency energy.

Occupational Exposures

As previously noted, due to the relatively low maximum antenna input power, there is no portion of the uplink antenna where the 5 mW/cm^2 occupational limit is predicted to occur. Thus, no special occupational safety precautions are required, even when the uplink antenna is transmitting.

Summary

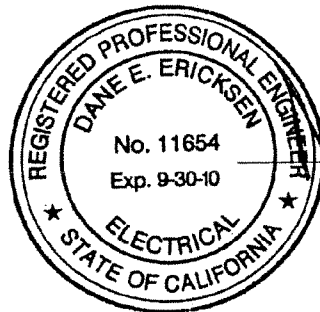
Operation of the proposed uplink will comply with the public exposure guidelines, even at the maximum possible power, since the uplink antenna will be inside a walled area with a locked gate, and no portion of the 2.2-meter virtual cylinder defining the worst-case radial distance to the public exposure limit will illuminate the KLVX studio building nor any other nearby structures.

List of Figures

In carrying out these engineering studies, the following attached figures were prepared under my direct supervision:

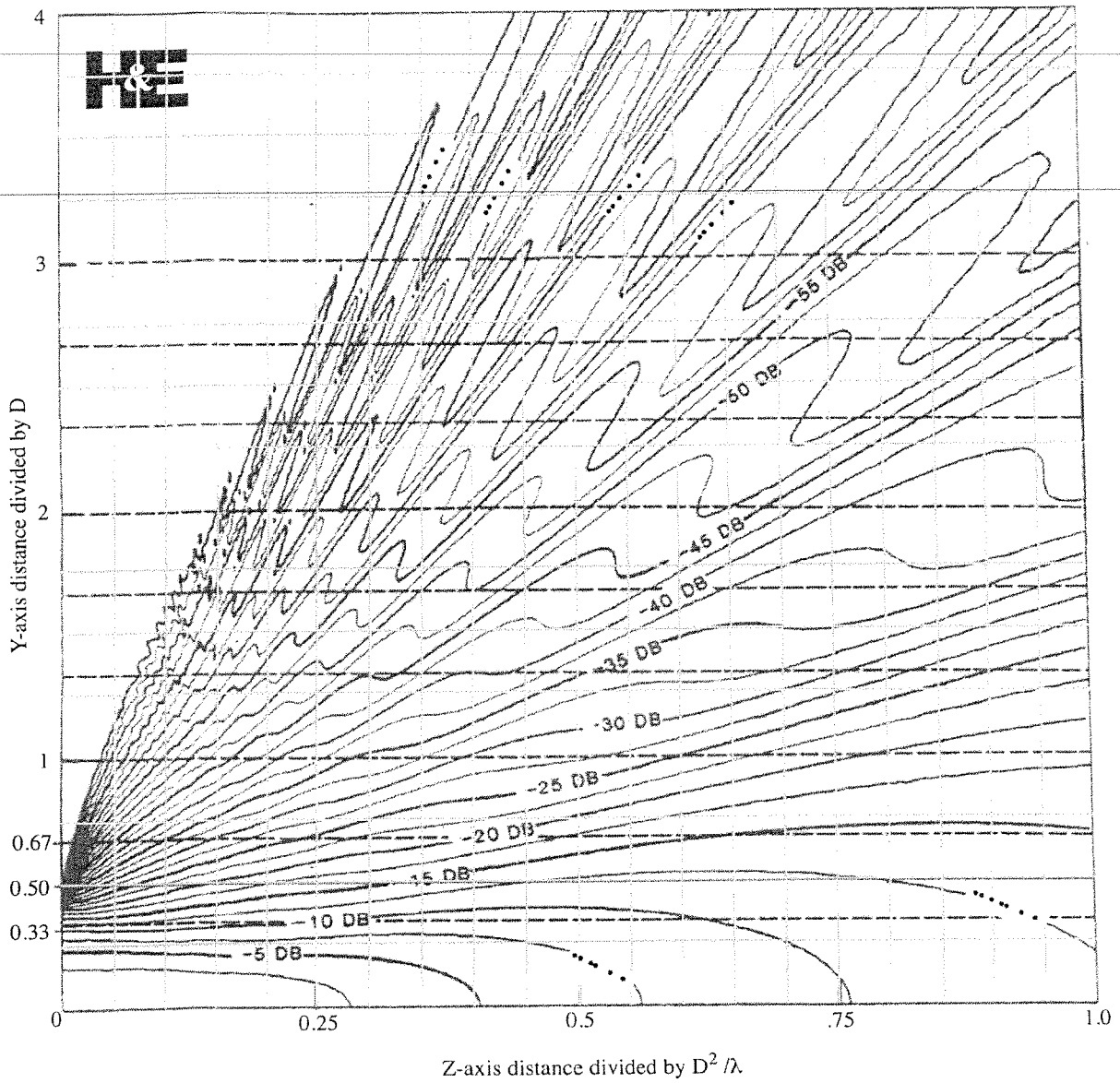
1. NIST nomograph
2. Satellite views of the KLVX studio site.

May 14, 2010



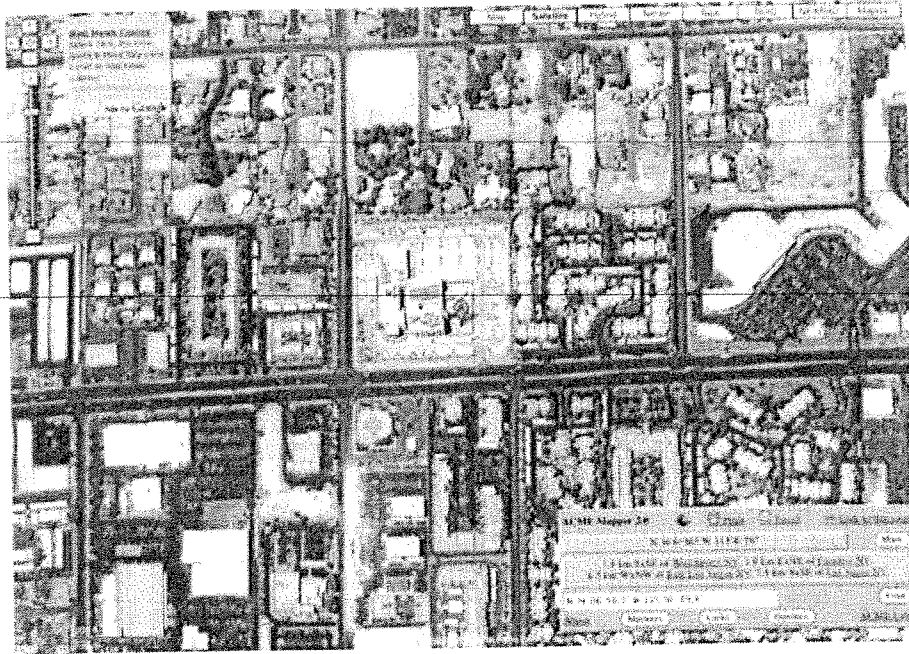
Dane E. Ericksen, P.E.

..... • Las Vegas, Nevada •
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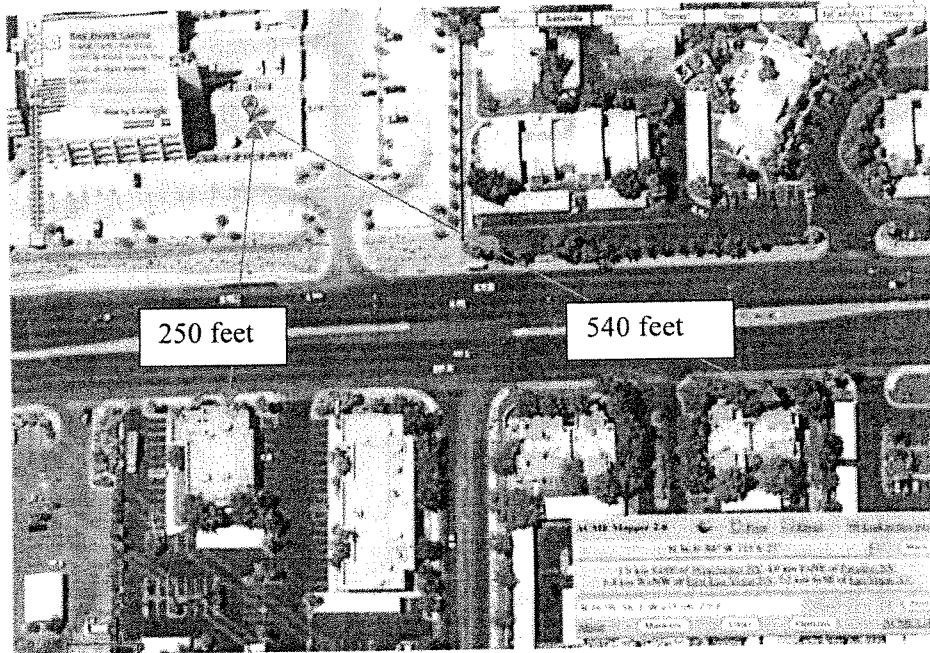


Nomograph from NTIS #NBSIR85-3036, page 6.
 Additional notations by Hammett & Edison, Inc., Consulting Engineers, San Francisco

Ku-Band Satellite Uplink Station E920225 • Las Vegas, Nevada
Site Satellite Photographs (New KLVX Studios)



Satellite view of the new KLVX studios. Source: ACME Mapper.



There is a wall and an entryway fence with a locked gate around the satellite antennas. Source: ACME Mapper.