

TECHNICAL SUMMARY
APPLICATION FOR CONSTRUCTION PERMIT
DIGITAL STATION K29KG-D
IDAHO FALLS, IDAHO
CHANNEL 29 15 KW (DA)

1. Purpose of Application: This minor modification application proposes to simply increase K29KG-D's ERP from 0.71 kW to 15 kW. No other changes are proposed, including no change in transmitter site, directional antenna system or antenna height. In addition, there will be no change in the overall height of the existing structure (ASRN 1239956).

2. Minor Change Compliance: The proposal complies with the FCC's minor change rules as there will be no change in transmitter site.

3. Interference Compliance: As indicated in the attached *TVStudy* analysis, K29KG-D's proposed channel 29 operation meets the FCC's interference protection requirements with respect to all protected facilities except with respect to the licensed operation of K29KY-D on channel 29 at Blackfoot, ID (FCC File No. 0000194988). However, K29KY-D has agreed to accept interference and an interference acceptance agreement is attached elsewhere to this application. Thus, it is believed that the proposed K29KG-D operation complies with the FCC's interference protection requirements. A cell size of 1.0 km and a profile resolution of 1.0 km points/km were utilized for the *TVStudy* analyses.

4. RFR Compliance: The proposed facilities were evaluated in terms of potential radiofrequency radiation (RFR) exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna will be located 46 meters above ground level. The total DTV ERP is 15 kW (horizontal polarization). A greater than expected vertical plane relative field value of 0.25 is presumed for the antenna's downward radiation (see Figure 1, attached). The calculated power density at a point 2 meters above ground level is 16.17 uW/cm^2 which is 4.3% of the FCC's recommended limit of 375.3 uW/cm^2 for channel 29 for an uncontrolled environment. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with RFR warning signs. Also, as this is a multi-user site, a formal RFR protection protocol will be in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measure will be taken to assure worker safety with respect to RFR exposure. Such measures include limiting the exposure time, wearing protective clothing, reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.

TVSTUDY ANALYSIS

tvstudy v2.2.5 (4uoc83)
 Database: localhost, Study: K29KG-D 15 kW, Model: Longley-Rice
 Start: 2023.01.17 12:47:50

Study created: 2023.01.17 12:47:50

Study build station data: LMS TV 2023-01-07 #148

Proposal: K29KG-D D29 LD LIC IDAHO FALLS, ID
 File number: K29KG-D 15 kW
 Facility ID: 128365
 Station data: User record
 Record ID: 270
 Country: U.S.

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	K28LE-D	D28	LD	LIC	IDAHO FALLS, ID	BLDTL20140225ABP	91.3 km
No	KSAW-LD	D28	LD	LIC	TWIN FALLS, ID	BLANK0000176722	155.3
No	K28JK-D	D28	LD	LIC	HUNTSVILLE, LIBERTY, UT	BLDTT20081215AAE	179.2
No	K28OS-D	D28	LD	LIC	LOGAN, UT	BLANK0000072928	153.6
No	K28PU-D	D28	LD	LIC	RANDOLPH, UT	BLANK0000098115	179.3
No	KSTU	D28	DT	LIC	SALT LAKE CITY, UT	BLCDT20120305ABX	246.5
Yes	K29KY-D	D29	LD	LIC	BLACKFOOT, ID	BLANK0000194988	39.1**
No	K1WB-LD	D29	LD	LIC	BOISE, ID	BLANK0000126124	308.3
No	K29NB-D	D29	LD	LIC	CASCADE, ID	BLANK0000156694	338.3
No	K29GV-D	D29	LD	LIC	HAGERMAN, ID	BLDTL20100113ADE	195.0
No	K29BM-D	D29	LD	LIC	MONTPELIER, ID	BLDTT20111116AYI	106.8
No	K29EY-D	D29	LD	LIC	PRESTON, ID	BLDTT20111116AIA	102.3
No	K29LY-D	D29	LD	LIC	SALMON, ID	BLANK0000177419	280.0
Yes	K29LG-D	D29	LD	LIC	SODA SPRINGS, ID	BLANK0000059259	72.3
No	KDBZ-CD	D29	DC	LIC	BOZEMAN, MT	BLANK0000116068	324.2
No	K29JT-D	D29	LD	LIC	BUTTE, MT	BLANK0000170478	339.7
No	K29JT-D	D29	LD	CP	BUTTE, MT	BLANK0000183287	340.0
No	K29JT-D	D29	LD	LIC	BUTTE, MT	BLANK0000198095	340.0
No	KUHM-TV	D29	DT	LIC	HELENA, MT	BLANK0000004580	444.9
No	K29IW-D	D29	LD	LIC	CLEAR CREEK, UT	BLDTT20121019AAO	375.4
No	K29IN-D	D29	LD	LIC	COALVILLE AND ADJ.AR, UT	BLDTT20090624AAY	234.8
No	K29MW-D	D29	LD	LIC	DUCHESNE, UT	BLANK0000095174	349.3
No	K29LZ-D	D29	LD	LIC	FOUNTAIN GREEN, UT	BLANK0000072229	378.2
No	K29MC-D	D29	LD	LIC	HEBER CITY, UT	BLANK0000115848	270.1
No	K29FY-D	D29	LD	LIC	HENEFER/ECHO, UT	BLDTT20110314ACH	228.0
No	K29MX-D	D29	LD	LIC	MANILA, ETC, UT	BLANK0000095217	332.7
No	K29II-D	D29	LD	LIC	PARK CITY, UT	BLDTT20090414AFT	256.1
No	K29MF-D	D29	LD	LIC	PEOA AND OAKLEY, UT	BLANK0000093229	256.6
No	KUPX-TV	D29	DT	LIC	PROVO, UT	BLCDT20020510AAP	247.1
No	K29MY-D	D29	LD	LIC	RANDOLPH, UT	BLANK0000093592	179.3
No	K29IM-D	D29	LD	LIC	SAMAK, UT	BLDTT20090624ABL	269.2
No	K29MT-D	D29	LD	LIC	SCOFIELD, UT	BLANK0000093930	360.0
No	K29HX-D	D29	LD	LIC	WANSHIP, UT	BLDTT20090624ADL	246.7
Yes	K29HG-D	D29	LD	LIC	JACKSON, WY	BLDTL20090224AAW	156.5
No	K29HV-D	D29	LD	LIC	LA BARGE, ETC., WY	BLDTT20070523ACE	196.0
No	K29IH-D	D29	LD	LIC	MEETEETSE, ETC., WY	BLANK0000120349	330.9
No	K29IG-D	D29	LD	LIC	SUNLIGHT BASIN, WY	BLANK0000137989	328.3
No	K30QH-D	D30	LD	LIC	BURLEY, ETC., ID	BLANK0000068251	102.2
No	K30OX-D	D30	LD	LIC	MONTPELIER, ID	BLANK0000063416	106.8
No	K30OY-D	D30	LD	LIC	LOGAN, UT	BLANK0000072929	153.6
No	K30JG-D	D30	LD	LIC	RANDOLPH & WOODRUFF, UT	BLDTT20100108ACY	179.3
No	KTVX	D30	DT	LIC	SALT LAKE CITY, UT	BLANK0000114065	246.5
No	DK30MY-D	D30	LD	LIC	JACKSON, WY	BLANK0000175297	157.9

****K29KY-D has agreed to accept excessive interference resulting from the proposed K29KG-D operation and an interference acceptance agreement is attached elsewhere to this application.**

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D29
 Mask: Full Service
 Latitude: 42 51 50.10 N (NAD83)
 Longitude: 112 31 13.30 W

Height AMSL: 1816.6 m
HAAT: 0.0 m
Peak ERP: 15.0 kW
Antenna: SCA-4DR-4S (ID 20748) 27.0 deg
Elev Pattn: Generic
Elec Tilt: 0.25

50.2 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	10.6 kW	453.6 m	61.9 km
45.0	13.0	377.0	59.5
90.0	1.24	231.3	39.5
135.0	0.007	158.7	11.7
180.0	0.036	-122.4	7.7
225.0	0.078	324.3	28.6
270.0	0.016	442.5	23.5
315.0	0.547	460.5	44.0

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 291 m

Distance to Canadian border: 681.9 km

Distance to Mexican border: 1143.9 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 236.9 degrees Distance: 968.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 114.0 degrees Distance: 675.4 km

Study cell size: 1.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLANK0000194988 LIC scenario 1

****IX: 52.76% interference caused/K29KY-D has agreed to accept excessive interference resulting from the proposed K29KG-D operation and an interference acceptance agreement is attached elsewhere to this application.**

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	K29KY-D	D29	LD	LIC	BLACKFOOT, ID	BLANK0000194988	
Undesireds:	K29KG-D	D29	LD	LIC	IDAHO FALLS, ID	K29KG-D 15 kW	39.1 km
	K28LE-D	D28	LD	LIC	IDAHO FALLS, ID	BLDTL20140225ABP	53.9
	K29JT-D	D29	LD	LIC	BUTTE, MT	BLANK0000170478	303.3
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
69.1	13,315	69.1	13,315	64.1	13,154	27.0 6,214	57.81 52.76
Undesired		Total IX		Unique IX, before		Unique IX, after	
K29KG-D	D29 LD LIC	42.0	7,101			37.0 6,940	
K28LE-D	D28 LD LIC	5.0	161	5.0	161	0.0 0	

Interference to BLANK0000059259 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	K29LG-D	D29	LD	LIC	SODA SPRINGS, ID	BLANK0000059259	
Undesireds:	K29KG-D	D29	LD	LIC	IDAHO FALLS, ID	K29KG-D 15 kW	72.3 km
	K29BM-D	D29	LD	LIC	MONTPELIER, ID	BLDTT20111116AYI	37.0
	K29EY-D	D29	LD	LIC	PRESTON, ID	BLDTT20111116AIA	56.9
	KUPX-TV	D29	DT	LIC	PROVO, UT	BLCDT20020510AAP	224.1
	K29HG-D	D29	LD	LIC	JACKSON, WY	BLDTL20090224AAW	126.2
	K300X-D	D30	LD	LIC	MONTPELIER, ID	BLANK0000063416	37.0
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
5903.8	13,710	4163.7	8,079	4003.6	8,007	3999.6 8,007	0.10 0.00

Undesired			Total IX	Unique IX, before	Unique IX, after
K29KG-D D29 LD LIC	4.0		0		4.0 0
K29BM-D D29 LD LIC	75.7		54	65.6 23	65.6 23
K29EY-D D29 LD LIC	65.3		14	64.3 14	64.3 14
KUPX-TV D29 DT LIC	25.1		4	18.1 4	18.1 4
K29HG-D D29 LD LIC	1.0		0	1.0 0	1.0 0
K300X-D D30 LD LIC	4.1		31	0.0 0	0.0 0

Interference to BLDTL20090224AAW LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	K29HG-D	D29	LD	LIC	JACKSON, WY	BLDTL20090224AAW	
Undesireds:	K29KG-D	D29	LD	LIC	IDAHO FALLS, ID	K29KG-D 15 kW	156.5 km
	K29LG-D	D29	LD	LIC	SODA SPRINGS, ID	BLANK0000059259	126.2
	K29JT-D	D29	LD	LIC	BUTTE, MT	BLANK0000170478	285.5
	Service area	Terrain-limited		IX-free, before	IX-free, after	Percent New IX	
	1979.2 19,929	1747.7 19,388		1745.7 19,388	1742.7 19,388	0.17 0.00	

Undesired			Total IX	Unique IX, before	Unique IX, after
K29KG-D D29 LD LIC	3.0		0		3.0 0
K29LG-D D29 LD LIC	2.0		0	2.0 0	2.0 0

Interference to proposal scenario 1

11.85% interference received

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	K29KG-D	D29	LD	LIC	IDAHO FALLS, ID	K29KG-D 15 kW	
Undesireds:	K28LE-D	D28	LD	LIC	IDAHO FALLS, ID	BLDTL20140225ABP	91.3 km
	K29KY-D	D29	LD	LIC	BLACKFOOT, ID	BLANK0000194988	39.1
	K29LG-D	D29	LD	LIC	SODA SPRINGS, ID	BLANK0000059259	72.3
	K29JT-D	D29	LD	LIC	BUTTE, MT	BLANK0000170478	339.7
	KUPX-TV	D29	DT	LIC	PROVO, UT	BLCDT20020510AAP	247.1
	Service area	Terrain-limited		IX-free	Percent IX		
	4884.6 114,984	4059.4 110,281		3830.1 97,211	5.65 11.85		

Undesired			Total IX	Unique IX	Prcnt Unique IX
K28LE-D D28 LD LIC	145.9		3,722	95.9 2,885	2.36 2.62
K29KY-D D29 LD LIC	126.3		10,185	76.3 9,348	1.88 8.48
K29LG-D D29 LD LIC	4.0		0	3.0 0	0.07 0.00
KUPX-TV D29 DT LIC	4.0		0	3.0 0	0.07 0.00

Figure 1

