ENGINEERING REPORT

LPFM (Low Power FM)
Original Construction Permit Application

NEW249L1 – Topeka, KS
(97.7 MHz)

Form 318 – "New Station"
Filing Pursuant to
FCC Public Notice, DA 13-1385
(Released June 17, 2013)

October, 2013

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(Exhibit numbering is in response to FCC Online Form 349, Section III-A)

Discussion

This firm has been retained to prepare the required engineering report in support of an Original Construction Permit Application for a Form 318 "New Station" LPFM facility. This Filing is in response to *FCC Public Notice DA 13-1385* (Released June 17, 2013) announcing the upcoming October 15 – October 29, 2013 Low Power Filing Window. Original operating parameters will be requested in this "New Station" Form 318 Filing. Operation on Channel CH249L1 (97.7 MHz) is requested with a power of 0.100 kW ERP at -9 meters HAAT. A circularly polarized non-directional antenna will be utilized at the antenna COR height of 282 meters AMSL. The new LPFM facility will serve the community of Topeka, KS.

The facility will be located 5.5 meters (18 ft) above roof grade on an existing 8.5 meter (28 ft) building for an overall AGL antenna height of 14.0 meters (46 feet) AGL. A USGS Topographic Map of the proposed tower site has been included in ***Exhibit 11.1***. The vertical antenna system has been plotted in ***Exhibit 11.2***. As this proposal requests an antenna mounting of less than 6.1 meters (20 feet) above roof grade, no FAA notification is believed required.

It has been determined the proposed LPFM facility meets all §73.807(a) spacing requirements toward all other existing or proposed concerns. General allocation details are found in ***Exhibit 11.4***. It is believed sufficient clearance exists precluding the need for additional allocation showings.

The proposed LFPM facility will be located more than 320 km from the common border between the United States and Canada and/or Mexico. Therefore, full protection is believed afforded all international concerns. Additional International compliance showings will be supplied upon request.

The proposed LPFM facility will remain in compliance with §73.827(a). There is one (1) existing or proposed FM Translator or FM Booster facility located within the worst case 10 km radius of the proposed LPFM site. However, there will be no co- or adjacent channel relationship between the proposed LPFM transmit frequency (CH240L1) and the input signal of the Translator/Booster facility. Therefore full compliance will be maintained with §73.827(a). A listing of the affected concerns and Primary Broadcast Stations is as follows:

ID Stations Study at 60 12 12 N, 154 18 49 W, Search Distance = 10 km

Call	City	ST	Chan.	Power	Coordinates	Dist-km	Azimuth	File Number
K232ES	Port Alsworth	AK	232D	0.250kW	601148N 1541911W	000.8	204.5	BNPFT20080620AMK

Primary Station is KIAM-FM – North Nenana, AK (FAC ID: 174373) on CH220A via "Satellite"

The applicant would like to note the use of the NGDC 30 second terrain database for all allocation, contour and HAAT calculations contained here-in.

The proposed 60 dBµ F(50:50) Service Contour has been noted in ***Exhibit 11.3***.

Discussion (continued)

RADIATION PROTECTION: The Commission requires an engineering study regarding compliance with the guidelines for human protection from radiofrequency radiation. This report section is in response to that provision of the Rules. The current Federal Communications Commission guidelines for RF radiation protection are set forth in OET Bulletin No. 65 (Edition 97-01), and the accompanying Supplement A, (Edition 97-01).

The FM Broadcast facility proposed in this application will not produce human exposure to radiofrequency radiation in excess of the applicable safety standards specified in §1.1310 of the Commission's rules. ***Exhibit 14.1*** provides the details of the study that was made to demonstrate compliance. The facility is properly marked with signs, and entry is restricted by means of fencing with locked doors and/or gates. Any other means as may be required to protect employees and the general public will be employed.

In the event work would be required in proximity to the antenna such that the person or persons working in the area would be potentially exposed to fields in excess of the guidelines set forth in OET Bulletin No. 65 (Edition 97-01), the transmitter power will be reduced or the station will cease operation during the critical period.

DISTANCES TO CONTOURS: The following tabulation of the distances to the proposed service contours results from calculations performed in accordance with §73.813 & §73.313(d) and §73.333 Figure 1 utilizing the NGDC 30 second terrain database.

N. Lat. = 390424 W. Lng. = 954019
HAAT and Distance to Contour,
FCC, FM 2-10 Mi, 51 pts Method - NGDC 30 SEC

Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	304.6	-22.7	0.1000	-10.00	1.000	5.64
045	292.4	-10.5	0.1000	-10.00	1.000	5.64
090	260.0	21.9	0.1000	-10.00	1.000	5.64
135	306.1	-24.2	0.1000	-10.00	1.000	5.64
180	305.1	-23.2	0.1000	-10.00	1.000	5.64
225	305.4	-23.5	0.1000	-10.00	1.000	5.64
270	267.7	14.2	0.1000	-10.00	1.000	5.64
315	289.3	-7.4	0.1000	-10.00	1.000	5.64

Ave El= 291.33 M HAAT= -9.43 M AMSL= 281.9 M