

# ENGINEERING REPORT

Minor Change in Licensed facility  
Construction Permit Application for  
Non-Commercial FM Station

KQLF – Ottumwa, IA  
License Number BLED20111201MNT  
(Facility ID Number: 85844)

Site and Channel Change

June, 2017

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Broadcast Engineering Consultants  
Coldwater, MI 49036

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Discussion of Report

**Main Studio Location** – See discussion

## **Community Coverage**

- Exhibit 16.1 - Copy of Existing Antenna Structure Registration
- Exhibit 16.2 - Vertical Plan of Antenna System and Support Tower
- Exhibit 16.3 - Tabulation of Operating Conditions
- Exhibit 16.4 - Present and Proposed Contour Study

## **Interference Requirements**

### **Contour Overlap Requirements**

- Exhibit 18.1 - Non-Commercial Allocation Contour Study
- Exhibit 18.2 - Contour Protection Studies Toward Select Station(s)

**Spacing Requirements** (none)

**Grandfathered Short-Spaced Requirements** (none)

**Contour Protection Requirements** (none)

**TV Channel 6 Protection Requirements** (none)

## **RF Radiation Study Requirement**

- Exhibit 24.1 - RF Compliance Study

(Exhibit Numbering is in response to FCC Online Form 340, Section VII)

# **Discussion of Engineering Report**

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This firm was retained to prepare the required engineering report in support of this Minor Construction Permit Application for Non-Commercial FM station KQLF(FM), Ottumwa, IA, License Number BLED20111201MNT (Facility ID: 85844). KQLF(FM) presently operates on Channel 202A (88.3 MHz) with 1.4 kW at 277 meters AMSL utilizing a non-directional antenna. Proposed operation at 4.5 kW at a COR of 363.9 meters AMSL from a new site location is requested. The facility proposed to operate on CH201A (88.1 MHz). The facility will continue to serve the community of Ottumwa, IA.

The proposed site for the Class A operation will continue to meet all contour protection requirements towards other stations in the allocation. An FMCommander™ allocation study as supplied by V-Soft® Communications has been included in **Exhibit 18.1**. There is one facility close enough to merit further study. Therefore supplemental contour protection studies have been included as noted in **Exhibit 18.2**. It is believed there is sufficient clearance to preclude the need for further study with respect to the other protected stations shown in the allocation study.

The transmitter site is not located within 320 km of the common border between the United States and Canada. Full protection is afforded all international facilities as noted in **Exhibit(s) 18.1**.

The transmitter site proposed in this application is not located within the affected radius of any domestic TV-6 facility as of the time of this filing. Therefore no further TV-6 showings are believed required.

The proposed service contours have been calculated in accordance with the Rules, and the data obtained has been tabulated and plotted in this report. The plotted contours are found as **Exhibit 16.4** of this report. This exhibit shows the overall service that is provided by the 1.0 mV/m contour of the facility. The tabulation of the distances to the respective contours shown in this discussion is based on the use of the standard eight cardinal bearings, which were also used for the computation of the HAAT. However, the plotted contours shown in **Exhibit 16.4** are based on the use of a full 360 terrain radials and the NED 03 Second Terrain Database.

The antenna will be mounted on the tower bearing Antenna Structure Registration Number 1023677. A copy of the existing ASR has been included in **Exhibit 16.1**. A vertical antenna plan depicting the placement of the antenna on the tower has been included in **Exhibit 16.2**. As this proposal will not increase the overall tower height, the FAA need not be notified.

The remainder of the information in this report and exhibit numbering is responsive to the Rules of the Commission, and provides the data for FCC Form 340.

## Discussion of Engineering Report (continued)

**RADIATION PROTECTION:** The FM Broadcast facility proposed in this application is within the uncontrolled limits as noted in the supplied ***Exhibit 24.1*** study. The RF radiation will not result in human exposure to radiofrequency radiation in excess of the applicable safety standards specified in §1.1310 of the Commission's rules. The facility will be properly marked with signs, and entry will be 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 table below shows the distances to the 1.0 mV/m contour from the proposed facility using an ERP of 4.5 kW at an HAAT of 112 meters. These distances have been calculated based on the FCC F(50-50) curves.

N. Lat. = 405752.4    W. Lng. = 923604.9						
HAAT and Distance to Contour,						
3-16 km, 51 pts Method - NED 03 SEC						
KQLF, Sound In Spirit Broadcasting						
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	240.0	123.9	4.5000	6.53	1.000	29.13
045	234.2	129.7	4.5000	6.53	1.000	29.70
090	242.9	121.0	4.5000	6.53	1.000	28.86
135	249.8	114.1	4.5000	6.53	1.000	28.17
180	256.9	107.0	4.5000	6.53	1.000	27.37
225	270.1	93.8	4.5000	6.53	1.000	25.74
270	268.0	95.9	4.5000	6.53	1.000	26.01
315	254.7	109.2	4.5000	6.53	1.000	27.62
Ave El= 252.08 M    HAAT= 111.82 M    AMSL= 363.9 M						

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