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DEC - 3 2009

Federal Communications Commission  
Office of the Secretary

Marlene H. Dortch  
Secretary  
Federal Communications Commission

445 12th St, SW  
Washington, DC 20554  
Dec 3, 2009

**Attn: Media Bureau  
Request for Experimental Permit  
KJAQ FAC ID 1091**

Dear Ms. Dortch:

Pursuant to 73.1510, CBS Radio Holding Inc (CBS), a subsidiary of CBS Corporation, requests a 6 months extension of it's existing experimental permit that enables FM station KJAQ FAC ID 1091, Seattle, WA to operate with IBOC digital power levels not to exceed -10 dBc relative to the analog carrier. This level exceeds the interim -20 dBc limit now authorized.

Such operation at other than authorized digital power levels will be immediately discontinued in the event of the receipt of any interference complaints from adjacent channel stations that are not able to be satisfactorily resolved.

Relative coverage and interference issues will continue to be investigated during the proposed test program. CBS is working with Harris Broadcast to allow KJAQ to further increase its digital power beyond the -15 dBc used for the initial testing. CBS is coordinating with iBiquity Digital Corporation to provide test equipment to quantitatively characterize the performance differential at elevated power levels. In addition CBS will conduct further first adjacent channel interference observations on a new Class A station, KBDB, Forks, Washington, 96.7 MHz that has commenced operation within the past two months.

It is believed that the information collected will be valuable to the future of the U.S. IBOC digital radio service.

As required by the condition on the initial permit, attached is an interim report of the initial tests and a revised test program.

The applicant certifies that, in the case of an individual applicant, he or she is not subject to a denial of federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862, or, in the case of a non-individual applicant (e.g., corporation, partnership or other unincorporated association), no party to the application is subject to a denial of federal benefits that includes FCC benefits pursuant to that section.

If there are any questions regarding this application, please contact the undersigned or CBS Radio's technical manager, Raymond Benedict (202) 457-4518.

I certify that the statements made in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Sincerely,

A handwritten signature in black ink, appearing to read "SH Hildebrandt", written in a cursive style.

Stephen Hildebrandt  
Assistant Secretary  
CC: Ann Gallagher, FCC Media Bureau



**BROADCAST HD STREAMING ON-DEMAND**

**ESTABLISHED 1928**

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**FM IBOC High Power Operation**

**KJAQ Seattle, Washington**

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**Interim Report**

*10/30/2009*

**CBS Radio**

1000 Dexter Avenue North  
Suite 100  
Seattle, WA 98109

## **KJAQ, Seattle Washington, Interim Elevated HD Power Test Report**

***November 30, 2009***

KJAQ has conducted a variety of tests of the HD Radio™ system at approved -20 dBc and alternate power levels up to -15 dBc. It should be noted that CBS had hoped to increase the power level further but has been waiting for Harris to provide software modifications to allow the Flexstar exciter and Exporter to accommodate split level combining power levels above a 5 dB increase.

The purpose of the testing program is intended (1) to assess the coverage of the HD Radio system at different power levels, (2) to examine the potential for increased interference to adjacent channel stations from higher power digital operation and (3) to examine building penetration and robustness issues at higher power levels.

Prior to commencement of KJAQ's operation at elevated HD power levels a listening test was conducted to assess the current impact of KJAQ's HD digital carriers on its closest first adjacent channel neighbors, KWWW, Quincy, Washington and KRCW, Royal City, Washington. The test demonstrated that there is an area lying between both stations where neither signal could be received; therefore, it is unlikely that any power levels up to -10 dBc would result in interference. Appendix A shows the results of this test.

The KJAQ transmitter site on Tiger Mountain is 18 miles from downtown Seattle while four Seattle FM HD stations are located on Cougar Mountain which is 12 miles closer to downtown Seattle. CBS Radio and other Seattle radio engineers have observed anecdotal evidence of performance improvements achieved by the 5 dB increase in KJAQ's digital carrier power. Local radio engineers have reported the KJAQ HD, HD2 and HD3 signals are by far the most reliable to pick up and hold lock in the market, except in areas with closer proximity to the HD stations on Cougar Mountain. It was reported at a recent Seattle SBE meeting that KJAQ holds HD lock all the way through the Mt. Baker and Lake Washington connector tunnels. Stations operating at the authorized -20 dBc digital power level fail in the tunnels. CBS station engineers have observed that KJAQ is easier to tune on desktop radios in their offices and inside other various businesses using HD radio.

CBS is working with Harris Broadcast to allow KJAQ to further increase its digital power and iBiquity Digital Corporation to provide test equipment to quantitatively characterize the performance differential at elevated power levels. In addition CBS will conduct further first adjacent channel interference observations on a new Class A station, KBDB, Forks, Washington, 96.7 MHz that has commenced operation within the past two months.

Upon completion of the tests, CBS will present the Commission with a detailed report on its overall test program.

E. Glynn Walden  
Senior Vice President for Engineering  
CBS Radio Inc.



## Appendix A

### KJAQ First Adjacent Channel Interference Survey

Date: 7-8-09

Two primary areas were evaluated:

The area extending out along the 97 degree radial from Tiger Mtn to first adjacent 96.7 KWWW, transmitter located 102.3 miles away from 96.5 KJAQ. KWWW is located at 47.19.12.5 N 119.48.4.2 W, Quincy, Washington.

The area extending out along the 111 degree radial to first adjacent 96.3 KRCW, transmitter located 136.4 miles from 96.5 KJAQ. KRCW is located at 46.45.54.5 N 119.16.55.1 W Royal City, Washington.

The area between KJAQ and both KWWW and KRCW crosses the very mountainous Cascade range and contains one main highway, Interstate 90 which runs easterly from Seattle to Ellensburg on a 112 degree bearing from the KJAQ transmitter on Tiger Mountain. The elevations on this portion of Interstate 90 vary from 500 to 3000 feet.

The chart below shows the elevation profile recorded by a GPS receiver during the 370 mile roundtrip where the starting location was the same as the finish location. The top of Tiger Mtn (2900 feet) at the KJAQ transmitter is not depicted. The first spike at 1300 feet is the top of Tiger Mtn Pass near the KJAQ transmitter. The following dip is in the North Bend area where some dropouts were noted due to terrain shielding from Rattle Snake Ridge. The next spike at 3022 feet is the top of Snoqualmie Pass. The next Spike near 4000 feet is on highway 97 at the top of Blewett Pass. The tallest spike is the Mission Ridge Ski Area at 4500 feet, where I listened for 96.5, 96.3 and 96.7 in the Wenatchee area.

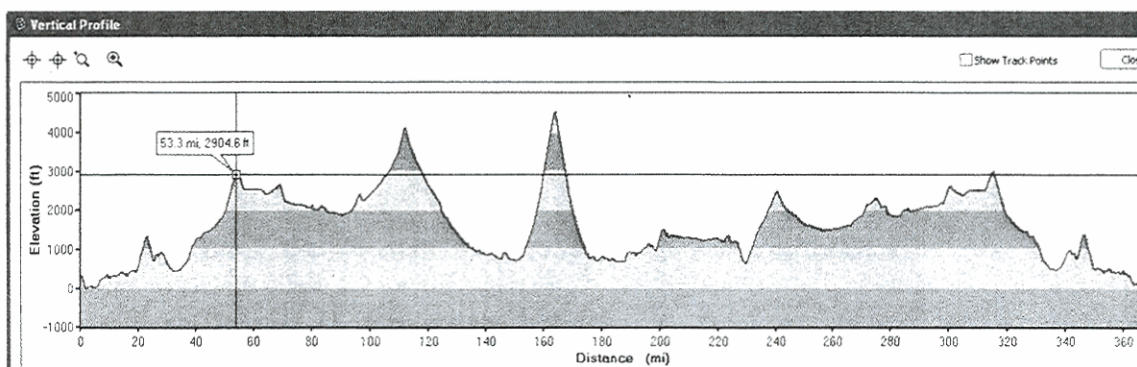


Figure 1 Elevation Profile



6. S on Highway 281 to George, WA
7. W on Interstate 90 to Highway 18

The test on 7-8-09 was conducted over the course of a single day, when the weather was warm, dry and stable. It is believed that there were no atmospheric anomalies or disturbances on the day of the test which would have affected coverage of the HD or analog FM Signals.

The survey results confirm the theoretical prediction that there is no overlap of the interfering FM signal contours of 96.5 with either 96.3 or 96.7. There are many miles of buffer zone where none of the stations on the three frequencies is heard on the FM receiver.

The HD coverage extends from the starting point Pt 1 to Pt 3, a distance of about 53 miles which is the exit at the top of Snoqualmie pass. Going southeast from that location, HD coverage is spotty at best while HD-2 and HD-3 are pretty much unlistenable. In contrast, the HD-2 signal was solid from Pt 2 to Pt 3, where I traveled a distance of 25 miles on interstate 90 to a distance of 42 Km from the 96.5 transmitter. By the time Pt 8 at 64 Km from the 96.5 transmitter is reached, there are no more HD signals that can be decoded. The usable 96.5 analog FM signal is gone by the time Pt 27 at 96 Km from the 96.5 transmitter is reached. Between points 4 through 9, no 96.3 or 96.7 signals could be detected by the receiver.

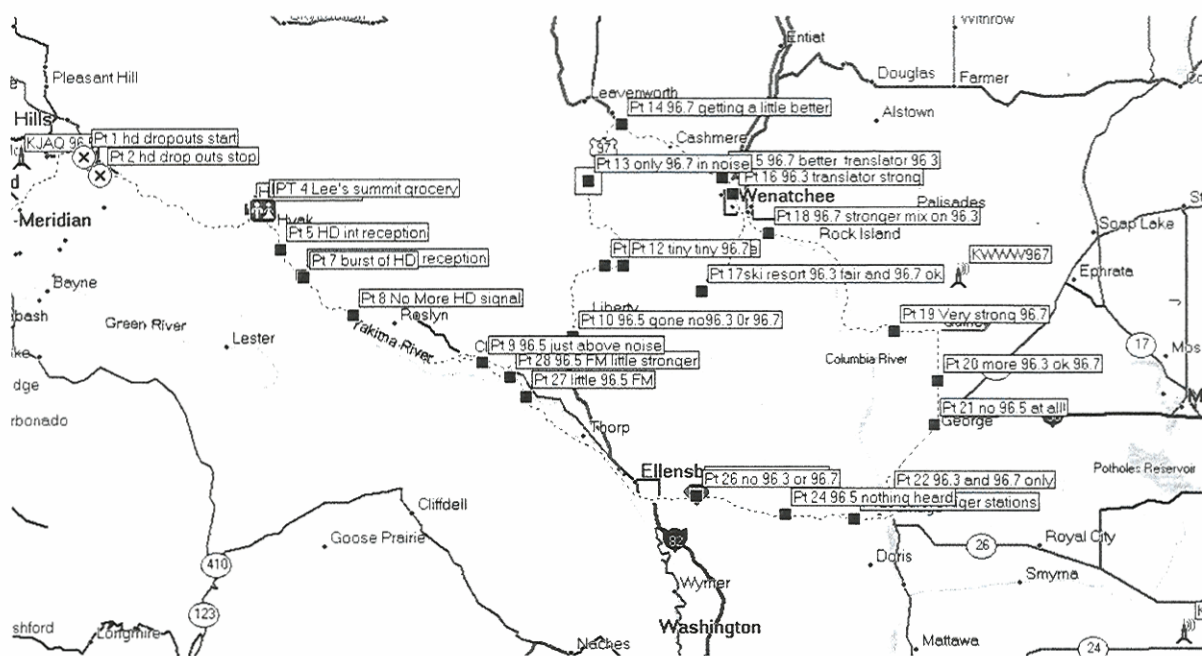


Figure 3

KJAO 96.5  
KRCW 96.3  
KWWW 96.7

Transmitter Location  
Transmitter Location  
Transmitter Location

N47 25 20.3 W121 26 22.7 2625 ft  
N47 30 16.1 W121 58 08.8 2859 ft  
N46 45 54.5 W119 16 55.1

Pt 1 hd dropouts start  
Pt 2 hd drop outs stop  
Pt 3 HD2 solid to here  
Pt 4 Lee's summit grocery  
Pt 5 HD int reception  
Pt 6 possible hd reception  
Pt 7 burst of HD  
Pt 8 No More HD signal  
Pt 9 96.5 just above noise  
Pt 10 96.5 gone no 96.3 or 96.7  
Pt 11 96.7 in the noise  
Pt 12 tiny tiny 96.7  
Pt 13 only 96.7 in noise  
Pt 14 96.7 getting a little better  
Pt 15 96.7 better translator 96.3  
Pt 16 96.3 weak  
Pt 17 96.3 translator strong  
Pt 18 96.7 stronger mix on 96.3  
Pt 19 Very strong 96.7  
Pt 20 more 96.3 ok 96.7  
Pt 21 no 96.5 at all  
Pt 22 96.3 and 96.7 only  
Pt 23 burst of tiger stations  
Pt 24 96.5 nothing heard  
Pt 25 96.5 in noise  
Pt 26 no 96.3 or 96.7  
Pt 27 little 96.5 FM  
Pt 28 96.5 FM little stronger

08-JUL-09 17:23 weak 96.3 no 96.5. Quincy Valley rest stop  
08-JUL-09 19:10 others gone for miles  
08-JUL-09 13:58 location FM only HD if you move around as little no 96.3 or 96.7  
08-JUL-09 19:58 HD Reception possible intermittently  
08-JUL-09 14:11 no 96.3 or .7  
Lake Easton State Park  
this is due to 1640 ft ridge that rattle snake ridge stands on.  
08-JUL-09 14:46 noise  
08-JUL-09 14:57 on 96.7  
08-JUL-09 15:00 no reception of 96.5 96.3  
08-JUL-09 15:25 absolutely no 96.5 or 96.3  
08-JUL-09 15:45 96.7 has very poor city grade coverage on 96.7 and a simulcast on 100. no 96.5  
08-JUL-09 15:40 96.3 god radio loud and clear in wenatchee 96.7 scratchy everywhere  
08-JUL-09 16:27 no 96.5 of any kind on drive up or at the top  
08-JUL-09 17:00 no 96.5  
drop outs due to grass mtn  
08-JUL-09 17:48 no 96.5  
08-JUL-09 17:53 others ok  
08-JUL-09 18:02 No 96.5  
08-JUL-09 18:08 no HD just above the noise, some sort of reflection as it only last for a few tenths of a mile  
08-JUL-09 18:15 96.7 and 96.3 fading rapidly  
08-JUL-09 18:25 96.5 FM only in noise  
08-JUL-09 19:08 no 96.3 or .7

7/8/2009 13:54 N47 25 30.1 W121 24 56.7 2088 ft  
N47 25 16.4 W121 24 41.5 2975 ft  
N47 21 36.8 W121 22 15.3 2508 ft  
7/8/2009 19:54 N47 19 14.3 W121 19 21.3 2456 ft  
N47 18 57.1 W121 19 03.3 2459 ft  
N47 15 25.8 W121 12 15.7  
N47 30 15.8 W121 49 22.1  
N47 13 23.7 W120 41 48.8 2348 ft  
N47 20 04.7 W120 37 22.0 3479 ft  
N47 20 02.6 W120 34 50.5 4112 ft  
7/8/2009 15:16 N47 27 58.8 W120 39 31.9 1854 ft  
N47 33 12.4 W120 34 58.9 1112 ft  
N47 26 42.0 W120 19 41.4 728 ft  
N47 28 16.5 W120 21 00.9 890 ft  
N47 17 38.8 W120 23 54.8 4490 ft  
N47 23 02.0 W120 14 41.9 727 ft  
N47 29 36.3 W121 47 06.4  
N47 09 17.1 W119 51 12.7 1268 ft  
N47 05 14.4 W119 51 48.3 1239 ft  
N46 58 26.4 W119 58 05.2 1159 ft  
N46 56 18.3 W120 02 50.4 1224 ft  
N46 56 48.0 W120 12 31.1 2454 ft  
N46 58 33.9 W120 24 46.1 1581 ft  
7/6/2009 18:25 N46 58 33.5 W120 24 47.6  
N47 07 44.2 W120 48 16.0 2306 ft

Figure 4