

TECHNICAL REPORT

This technical report has been developed in support of an application for an auxiliary transmission facility for FM station KZWY 235C at Sheridan, WY.

I. Site:

The proposed facility is to be located on the existing KZWY tower at coordinates:

(NAD 27) 44-37-20 N 107-06-57 W

II. Allocation Analysis:

No allocation study is required for the auxiliary antenna. Exhibit E-1 demonstrates that the proposed 4.5 kW/348 M HAAT auxiliary facility's 60 dBu contour is contained within the licensed KZWY 60 dBu, in compliance with Section 73.1675(a).

III. Blanketing:

The 115 dBu blanketing contour is calculated to be 0.84 km. The calculation was made in accordance with the Commission's formula:

$$115 \text{ dBu (km)} = 1.609 [0.245 (P \text{ kw})^{1/2}].$$

The applicant accepts the responsibility for correction of any objectionable interference or blanketing problems in accordance with Commission rules.

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IV. Antenna System and Environmental Considerations:

A three bay Shively model 6810 full-wavelength antenna will be mounted on the existing tower at a COR AGL of 18 meters. To the applicant's knowledge, no adverse impact will result to any applicable 1.1307 category. Consequently, no environmental statement is provided.

The RF contribution for the auxiliary facility was evaluated utilizing the Commission's FMMODEL program, including the 2 meters above ground level. The existing tower site is not accessible to the general public. Access is restricted and RF exposure warnings are posted. Consequently, the combined maximum RF exposure permitted is 1,000 microWatts/cm².

Facility	ERP/kW	Antenna	RCAGL	RF uW/cm²	%
KZKY (FM)	75.0 H&V	7 bay 1?	38	175.6	17.6
KYTI	75.0 H&V	7 bay 1?	38	175.6	17.6
KZKY-AUX	4.5 H&V	3 bay 1?	18	110.7	11.1
KYTI-AUX	4.5	3 bay 1?	18	110.7	11.1
NEW 284C3	2.1 H&V	3 bay 1/2?	12	58.0	5.8

Total = 630.6, 63.2% of maximum

Note: KYTI and KZKY are diplexed in a 7 bay full wavelength spaced Shively antenna. KYTI AUX and KZKY AUX are to be diplexed in a three bay Shively full wavelength spaced antenna.

The combined maximum radiation was found to be 630.6 microWatts/cm² representing 63.2% of the maximum permissible 1000 microwatts/cm² exposure for occupational/controlled environments.

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V. Conclusion:

It is concluded that the proposed auxiliary facility for KZWY is in full compliance with Commission rules and policies.



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E-1 KZWW 60 dBu Plot

Billings

KZWW AUX

Latitude: 44-37-20 N
Longitude: 107-06-57 W
ERP: 4.50 kW
Channel: 229
Frequency: 93.7 MHz
RCAMSL Height: 2360.0 m
Site Elevation: 2342.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

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Hardin

Crow Agency

Lame Deer

60 dBu F(50-50) Contours

Brookings

Lodge Grass

Ranchester

Sheridan

KZWW
KZWW AUX

Lovell

Greybull

Basin

Buffalo

Glenn

Scale 1:1,000,000

