

Engineering Statement

In the original Digital Table of Allotments, KTTM-DT was assigned Channel 22. During the channel election process, KTTM-DT initially certified that it would operate with the maximized facilities for which it was authorized on Channel 22, using a directional antenna. Later when selecting a channel for post transition operation, KTTM-DT elected to return to Channel 12, where the present omni-directional analog operation is licensed. Because of these selections, a theoretical directional antenna pattern was assigned to KTTM-DT on Channel 12 in the Digital Table of Allotments associated with the *Seventh Report and Order and Eighth Further Notice of Proposed Rulemaking*. That pattern was generated by using relative fields which would replicate the maximized digital pattern on Channel 22. However, in the updated Table of Allotments associated with the *Memorandum Opinion and Order on Reconsideration of the Seventh Report and Order and Eighth Report and Order*, the KTTM-DT Channel 12 allotment was revised. The revised Table now authorizes operation at 13.5 kW using a very slight directional based on the omni-directional analog pattern. The slight directionality results from the Commission's methodology for replicating analog patterns for digital service. This amendment requests authorization to use the present analog antenna at a power of 12.6 kW. This power is equivalent to the minimum relative field in the pattern specified in the revised Table.

A comparison of the licensed analog, allotted digital and proposed digital contours is shown in **Exhibit 44**. This exhibit shows the three contours are virtually identical and the proposed operation will allow KTTM-DT to use its present antenna to serve virtually its entire analog service area. The slight reductions along the eastern side can be considered *de minimis*.

Exhibit 45 shows the community of license, Huron, SD, will be well within the 43 dBu F(50,90) community coverage contour. **Exhibit 46** shows that even with the increased power, the proposed digital operation will still qualify for the 5% exemption for exposure to radiofrequency radiation.

Finally, it is noted there is a small discrepancy between the proposed antenna height above average terrain (HAAT) and the present licensed analog HAAT. The antenna will not be moved. This change results from the use of the USGS 03 arc second digitized terrain database for the present application. It appears the original application was probably done with a 30 arc second terrain database, which was probably the accepted "standard" database at the time of the analog application.