

WES Broadcast Consultants, Inc.
Engineering Statement
for KRET-CD Ch 31 PAT

I. General: The purpose of this engineering statement is to demonstrate that, because of new station-to-station interference, the Post Auction Transition repack has harmed KRET-CD Channel 31 Palm Desert, CA, resulting in a significant loss of service population and coverage area greater than one percent. FCC Public Notice DA-17-106 (released 1/27/17) Procedures for the Post-Auction Broadcast Transition (the “Post Auction Public Notice”) provides as follows: “Stations not reassigned to new post-auction channels but that were entitled to protection in the repacking process and are predicted to experience a loss in population served in excess of one percent because of new station-to-station interference may submit a construction permit application proposing expanded facilities or an alternate channel and demonstrating the predicted population loss.” (Post Auction Public Notice Para. 33) . As demonstrated below in this Engineering Statement, KRET-CD is receiving new station-to-station interference in excess of one percent, and, this facility, therefore meets the requirements to apply for a substitute channel under the repack protocols (See Declaration of Peter Moncure, dated September 14, 2017, attached hereto as Attachment 1 (hereinafter “Moncure Declaration”)).

A. Population Loss: The interference calculations shown in Exhibit A are station to station.

(1) The Post Auction Transition repack (hereafter referred to as “PAT”) of KCBS-TV Channel 31 from Channel 43, accompanied by an increase of Effective Radiated Power, has resulted in 5.5% station-to-station interference to KRET-CD. The service population of KRET-CD on Channel 31 was 439,351 persons before the addition of KCBS-TV, but is now reduced to 415,031 persons after the proposed repack, resulting in a loss of 24,320 persons.

(2) The PAT repack of KXLA-TV Channel 30 from Channel 51 has resulted in 3.1% station-to-station interference to KRET-CD. The service population of KRET-CD on Channel 31 was 439,351 persons before the addition of KXLA-TV, but is now reduced to 425,515 persons after the proposed repack, resulting in a loss of 13,386 persons.

(3) The PAT repack of KNLA-CD Channel 32 from Channel 50 has resulted in 3.1% station-to-station interference to KRET-CD. The service population of KRET-CD on Channel 31 was 439,351 persons before the addition of KNLA-CD, but is now reduced to 425,515 persons after the proposed repack, resulting in a loss of 13,386 persons.

B. Contour Overlap & Service Area Loss: Service area loss is demonstrated in Exhibit B regarding Noise Limited Contour Overlap. Exhibit B demonstrates the 41dB μ Noise Limited Contour overlap of KCBS Channel 31 with KRET-CD Channel 31’s 51dB μ Noise Limited Contour at 15kW ERP. Exhibit B also demonstrates the 41dB μ Noise Limited Contour overlap of KXLA Channel 30 with KRET-CD Channel 31’s 51dB μ Noise Limited Contour at 15kW ERP. The overlap of KCBS & KXLA to KRET results in a loss of nearly one quarter of KRET’s service area.

C. Mt Wilson Line of Sight to KRET-CD Tower Site: The Attached Exhibit C is a Shadow Map demonstrating line of sight to KRET’s Transmission facility at Edom Hill, CA from the Mt. Wilson tower farm. The Exhibit also shows the co-channel and first adjacent channels above and below KRET

Channel 31, located in the direct line of sight to Edom Hill (location of KRET Ch 31) from the Mt. Wilson tower farm (location of KCBS Ch 31, KNLA Ch 32, & KXLA Ch 30).

D. Unique Situation: The terrain irregularity between Los Angeles, California and the Coachella Valley, California presents a unique situation. Not only does the shadow map (Exhibit C) show line-of-sight to much of KRET's service area, but the terrain between Mt. Wilson and KRET's service area is well outside the norm, as it crosses the mountainous regions of Los Angeles. Note that the terrain roughness from KRET toward Mt. Wilson is 800 meters, while the return path is over 500 meters (the Commission defines normal terrain roughness between 20 and 100 meters). That direct line-of-sight (including earth's radio curvature) is present into KRET's service at distances exceeding 170 kilometers, which is unusual even for California. Our initial run of TVStudy (ver.2.2.3) gave no indication of the clear signal path between the Mt. Wilson Tower Farm and the Edom Hill tower site and the resulting interference noted above.

We utilized ComStudy to supplement the interference prediction data and contour calculations of TV Study to ensure that there would be no actual interference to KRET after the Post-Auction repack is complete. ComStudy is substantially technically similar to TV Study. Commission staff, in its February 6, 2017, Public Notice, announced that TV Study 2.1 would be used in processing repack applications (DA 17-43, at footnote 5 and associated Appendix). It is not believed that processing of the instant showing, which supplements TV Study 2.1 data with previously employed ComStudy data, requires a waiver of any FCC Rule or policy. If, however, such a waiver is deemed necessary, it is hereby respectfully requested.

All of the Interference predictions and contour calculations are made using ComStudy version 2.2. Station-to-station Interference is calculated using the Longley Rice OET 69 routine within ComStudy. As noted above, we determined that there was more than one percent new interference caused by the repacked channels KCBS, KNLA and KXLA to KRET.

As stated in the Moncure Declaration, ComStudy identified the above noted interference to KRET in this case because it took into account the highly varied and mountainous terrain within the coverage area at issue.

After examining the studies, Mr. Moncure states: "I found many populated tiles which are

- 1) Within the KRET noise-limited 51 dB μ protected service contour; and
- 2) Receive, at the tile center as calculated by Longley-Rice version 1.2.2, a field strength of 51 dB μ or greater, and therefore qualify for protection under OET-69; and
- 3) Which fail the 15 dB required D/U ratio, after adjustment for TV receiving antenna directivity.

Since the subject areas cover **very** mountainous terrain, the intersection of fields from 2. and 3. above in most cases results in very small areas (see appended plot). These areas might be missed with the two kilometer tile size typically used in TVSTUDY, so for accuracy, three arc second (approximately 90 meter) tile sizes were employed, and interference far in excess of 1% was found. Many populated tiles, even those with KRET fields over 80 dB μ , had substantially higher undesired than desired results." Moncure Declaration, page 1.

By utilizing ComStudy to supplement the analysis of TVStudy in this case, we have determined that KRET is subject to more than one percent interference in the post-auction repack. As a result, KRET is seeking to modify its facility as set out below to eliminate this interference.

E. Co-Location Solution: Exhibit D is a Contour Map demonstrating the location of the proposed KRET Channel 22 and its overlap with KRET Ch 31 PAT.

The solution involves displacement from our current Channel 31 to Channel 22 and co-location with 1st adjacent KVMD Channel 23 on Snow Peak. The Snow Peak facility is 27.08 mi from the current KRET tower site and maintains the required contour overlap. By co-locating with KVMD TV Channel 23, we will have eliminated the potential for interference to both facilities and service areas. The Site parameters for Channel 22 are shown in Section II Engineering below.

II Engineering:

A. Proposed Site: KRET-CD Channel 22 will operate with 15kW ERP at the horizon with a directional antenna array with the main lobe oriented at 295 degrees, as shown in Exhibit D at the following NAD83 coordinates:

N Latitude 34-02-17.1
W Longitude 116-48-50.0

This proposed site for the KRET-CD Channel 22 final facility will be ASR #1256620.
The facility will operate with the following elevation parameters:

AGL 20m
GAMSL 2407.9m
RCAMSL 2427.9m
HAAT 764.52m

Attachment 1

Declaration of Peter Moncure

I, Peter Moncure, do hereby declare under penalty of perjury that;

I am the CEO of RadioSoft, Inc., and as such,

I personally supervised the development of ComStudy 2.2, and specifically its use in predicting TV interference under OET-69;

I have reviewed the work of James McPhetridge and found it a correct and accurate use of my software;

My credentials are a matter of record before the Federal Communications Commission.

Using the 15 dB Desired to Undesired ratio for co-channel DTV-into-LPDTV specified by the Rules, I made plots of KCBS-PAT and KRET-CD-PAT to substantiate the claimed interference. I found many populated tiles which are

1. Within the KRET noise-limited 51 dB μ protected service contour; and
2. Receive, at the tile center as calculated by Longley-Rice version 1.2.2, a field strength of 51 dB μ or greater, and therefore qualify for protection under OET-69; and
3. Which fail the 15 dB required D/U ratio, after adjustment for TV receiving antenna directivity.

Since the subject areas cover **very** mountainous terrain, the intersection of fields from 2. And 3. above in most cases results in very small areas (see appended plot attached to this Declaration as Appendix 1). These areas might be missed with the two kilometer tile size typically used in TVSTUDY, so for accuracy, three arc second (approximately 90 meter) tile sizes were employed, and interference far in excess of 1% was found. Many populated tiles, even those with KRET fields over 80 dB μ , had substantially higher undesired than desired results. .In my professional opinion, this facility meets the requirements to apply for a substitute channel under the repack protocols.

/s

Peter Moncure, CEO, RadioSoft. Inc.

194 Professional Park Drive

Clarkesville, GA 30523

888.723.4695

Peter.Moncure@RadioSoft.com

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