

***Before the
Federal Communications Commission
Washington, DC 20554***

In the Matter of)	
)	
Third Periodic Review of the)	
Commission’s Rules and Policies)	MB Docket No. 07-91
Affecting the Conversion)	
to Digital Television)	

The firm of du Treil, Lundin & Rackley, Inc. (dLR) respectively submits these Comments in the above captioned proceeding relating to the Third Periodic Review of the Commission’s Rules and Policies Affecting the Conversion to Digital Television (herein “Periodic Review”). dLR, and its predecessors, have provided consulting engineering services to the broadcasting industry for over 60 years including assisting broadcasters in preparing hundreds of applications for television and digital television operation.

Below is a summary of the comments and requests for clarification that dLR is proposing in MB Docket Number 07-91:

- dLR supports in principal the need for an interference standard to apply with applications to construct or modify DTV facilities. However, since 50% of all VHF digital allotments already cause more than 0.5% interference to other allotments and 40% of all VHF digital allotments already cause more than 1.0% interference to other allotments, we believe an interference limit above the Commission’s proposed “bright-line” interference limit of 0.5% is necessary.
- dLR suggests additional allocation flexibility for those stations converting back to their analog channel and analog antenna, so the loss of digital service can be minimized.
- dLR requests clarification if negotiated interference agreements would still be permitted between stations in a post-transition environment, and if so, is there a limit on the amount of interference permitted between the stations.
- dLR requests clarification on the process that stations may seek changes to their assigned channel after the transition.
- dLR requests clarification on the maximum permissible antenna height above average terrain and effective radiated powers (“largest station provision”) for post transition operation.
- dLR supports permitting the use of a range of OET-69 cell size and terrain increment parameters.

Applications to Construct or Modify DTV Facilities

The Commission in paragraph 108 within the MB Docket 07-91 Notice of Proposed Rule Making states:

“We seek comment on our proposals to limit permissible interference to 0.5 percent and to not allow any increase in situations where the amount of interference currently caused exceeds 0.5 percent, as well as on any other methods to limit total interference. Does 0.5 percent reflect the right balance between protecting established DTV service and affording adequate flexibility to stations seeking to establish post-transition operations? Would another amount be more appropriate?”

dLR agrees in principal with the OET-69 calculated interference standard as the mechanism that would permit many stations flexibility to make station modifications. However, we believe an interference limit greater than the Commission’s proposed “bright-line” interference limit of 0.5 percent is necessary to balance the need for stations to have flexibility in making service area modifications versus limiting interference so over-the-air viewers can expect service.

Based on a random sampling of VHF station allotments returning to their analog channel, it was determined that 50% of all those post-transition allotments already cause more than 0.5% interference to other allotments. Furthermore, 40% of those allotments already cause more than 1.0% interference to other allotments. As one-in-two VHF stations already cause interference above 0.5% to other allotments, it will be difficult for those stations to even implement their allocated service areas, much less even attempt to expand their service areas. Furthermore, it is generally more challenging to implement a VHF directional antenna pattern than a UHF directional antenna pattern. Hence, these stations, in the absence of an interference agreement, these will be limited in the facility modifications that could be made, such as when a loss of transmitter site or a request to increase its service area, with the proposed “bright-line” limit of 0.5 percent interference.

Therefore, the allocation rules should either permit:

- Additional interference above what its associated allotment creates
or
- Increasing the “bright line” interference threshold above 0.5 percent

Below is a tabulation of the sample¹ of VHF digital allotments and the amount of other VHF allotments receiving more than 0.5% and 1.0% interference:

Station	Proposed Allotment Facility Population	Number of other allotments receiving 0.5% interference	Number of other allotments receiving 1.0% interference
WBIQ-DT Channel 10 Birmingham, AL	ERP: 3 kW HAAT: 426 m 1,363,000	2	2
KNAZ-DT Channel 2 Flagstaff, AZ	ERP: 7.254 kW HAAT: 465 m 270,000	0	0
KCAL-DT Channel 9 Los Angeles, CA	ERP: 11.98 kW HAAT: 951 m 15,439,000	0	0
KUSA-DT Channel 9 Denver, CO	ERP: 39.616 kW HAAT: 318 m 2,925,000	2	2
WJLA-DT Channel 7 Washington, DC	ERP: 14.979 kW HAAT: 254 m 7,053,000	0	0
WPLG-DT Channel 10 Miami, FL	ERP: 30.001 kW HAAT: 294 m 4,931,000	0	0
WALB-DT Channel 10 Albany, Georgia	ERP: 18.189 kW HAAT: 272 m 626,000	1	0
KGMD-DT Channel 9 Hilo, HI	ERP: 3.2 kW HAAT: 33 m 79,000	0	0
WOI-DT Channel 5 Ames, IA	ERP: 3.909 kW HAAT: 613 m 987,000	0	0
WSIU-DT Channel 8 Carbondale, IL	ERP: 14.074 kW HAAT: 271 m 740,000	0	0
WNIN-DT Channel 9 Evansville, IN	ERP: 30.001 kW HAAT: 285 m 793,000	1	0
KUPK-DT Channel 13 Garden City, KS	ERP: 21.197 kW HAAT: 250 m 139,000	0	0
WBKO-DT Channel 13 Bowling Green, KY	ERP: 7.648 kW HAAT: 226 m 542,000	0	0
WAFB-DT Channel 9 Baton Rouge, LA	ERP: 0.36 kW HAAT: 509 m 847,000	1	1
WHDH-DT Channel 7 Boston, MA	ERP: 16.798 kW HAAT: 288 m 6,966,000	1	0
WJZ-DT Channel 13 Baltimore, MD	ERP: 21.35 kW HAAT: 312 m 7,452,000	1	1
WCBB-DT Channel 10 Augusta, ME	ERP: 15.269 kW HAAT: 305 m 818,000	2	1
WWTW-DT Channel 9 Cadillac, MI	ERP: 20.058 kW HAAT: 497 m 826,000	0	0

¹ The random sampling is based upon the Commission's proposed Final Table of Allotments, Appendix B, in MB Docket 87-268. The VHF stations returning to their analog channel were determined, and of those stations, an allotment from each state, including the District of Columbia was sampled. If more than one such allotment was in a state, the allotments were sorted alphabetically, and then by facility ID for that state. The first such allotment meeting those criteria was sampled.

Station	Proposed Allotment Facility Population	Number of other allotments receiving 0.5% interference	Number of other allotments receiving 1.0% interference
KCCO-DT Channel 7 Alexandria, MN	ERP: 15.581 kW HAAT: 341 m 438,000	1	1
KOMU-DT Channel 8 Columbia, MO	ERP: 8.105 kW HAAT: 242 m 473,000	1	1
WLOX-DT Channel 13 Biloxi, MS	ERP: 14.087 kW HAAT: 366 m 951,000	1	1
KTVM-DT Channel 6 Butte, MT	ERP: 6.814 kW HAAT: 576 m 174,000	0	0
WLOS-DT Channel 13 Asheville, NC	ERP: 29.8 kW HAAT: 853 m 2,349,000	2	1
KBBJ-DT Channel 9 Havre, MT	ERP: 3.2 kW HAAT: 389 m 25,000	0	0
KTVB-DT Channel 7 Boise, ID	ERP: 39.795 kW HAAT: 785 m 556,000	0	0
KDSE-DT Channel 9 Dickinson, ND	ERP: 8.347 kW HAAT: m 37,000	0	0
KMNE-DT Channel 7 Bassett, NE	ERP: 18.651 kW HAAT: m 42,000	1	1
WENH-DT Channel 11 Durham, NH	ERP: 8.274 kW HAAT: m 3,393,000	1	1
WNET-DT Channel 13 Newark, NJ	ERP: 3.2 kW HAAT: m 19,255,000	1	1
KRQE-DT Channel 13 Albuquerque, NM	ERP: 7.035 kW HAAT: m 926,000	0	0
KENV-DT Channel 10 Elko, NV	ERP: 3.2 kW HAAT: m 37,000	0	0
WWNY-DT Channel 7 Carthage, NY	ERP: 15.579 kW HAAT: m 192,000	1	0
WKRC-DT Channel 12 Cincinnati, OH	ERP: 15.551 kW HAAT: m 3,004,000	1	1
KWTV-DT Channel 9 Oklahoma City, OK	ERP: 19.436 kW HAAT: m 1,437,000	0	0
KCBY-DT Channel 11 Coos Bay, OR	ERP: 3.2 kW HAAT: m 83,000	1	1
WICU-DT Channel 12 Erie, PA	ERP: 8.633 kW HAAT: m 676,000	1	1
WIS-DT Channel 10 Columbia, SC	ERP: 18.114 kW HAAT: m 1,450,000	0	0
KABY-DT Channel 9 Aberdeen, SD	ERP: 19.356 kW HAAT: m 127,000	2	2
WTVC-DT Channel 9 Chattanooga, TN	ERP: 10.749 kW HAAT: m 1,023,000	2	1
KVII-DT Channel 7 Amarillo, TX	ERP: 21.891 kW HAAT: m 351,000	0	0

Station	Proposed Allotment Facility Population	Number of other allotments receiving 0.5% interference	Number of other allotments receiving 1.0% interference
KUTF-DT Channel 12 Logan, UT	ERP: 22.274 kW HAAT: m 792,000	0	0
WCYB-DT Channel 5 Bristol, VA	ERP: 6.784 kW HAAT: m 1,841,000	0	0
KWSU-DT Channel 10 Pullman, WA	ERP: 6.204 kW HAAT: m 260,000	0	0
WEAU-DT Channel 13 Eau Claire, WI	ERP: 22.86 kW HAAT: m 861,000	2	1
WBOY-DT Channel 12 Clarksburg, WV	ERP: 6.552 kW HAAT: m 170,000	0	0
KJWY-DT Channel 2 Jackson, WY	ERP: 1 kW HAAT: m 32,000	0	0

Stations Operating from the NTSC Channel & Antennas Post Transition

dLR believes that those stations who are returning to their analog channels for post transition operation and intend to use their analog antennas be provided additional allocation flexibility. This scenario is discussed in Paragraph 93 of the aforementioned NPRM:

“Specifically, we seek input from any stations that may be unable to build precisely the facilities specified in the new DTV Table Appendix B (for example, if an antenna producing the exact antenna pattern described in Appendix B is not available). If such stations are prohibited from expanding beyond their DTV Table Appendix B facilities (as proposed infra in section V.E.), will they instead be required to reduce their facilities so significantly that they will be unable to provide adequate service? If so, should we allow stations that fall into this situation to expand beyond their DTV Table Appendix B facilities to the extent necessary to address the difference between the theoretical facilities specified in the new DTV Table Appendix B and the actual facilities which they are able to build?”

An existing analog antenna already has a defined horizontal plane radiation pattern (either classified as non-directional or directional), which in most cases cannot be reconfigured for a different radiation pattern. For many of the stations returning to their analog channel, the proposed digital allotment radiation pattern does not comport with the associated analog antenna pattern. Therefore, as the radiation pattern is “fixed,” the

only way a digital operation can be authorized with the proposed rules and whose current analog antenna radiation pattern exceeds in some azimuthal directions its proposed digital allotment pattern is to simply decrease the effective radiated power, which results in a service area lower than that allocated.

Furthermore, the VHF digital allotments are more challenging to implement as most existing VHF stations operate with non-directional antenna patterns. Based upon an analysis of the FCC engineering database, 85 percent of all present analog VHF stations use non-directional antennas. Also, 285 stations will be converting back to their present analog VHF channel in the post-transition and many would like to employ their existing non-directional analog antenna for post-transition digital operation.

In summary:

- 50% of all VHF digital allotments already cause 0.5% interference
- 40% of all VHF digital allotments already cause 1.0% interference
- Most VHF stations employ non-directional antennas
- 285 stations will be returning to their VHF analog channel

Therefore, based upon the above, it is apparent that VHF allotments in particular are in need of additional allocation relief. The allocation relief may simply be permitting these proposed facilities reusing its analog antenna to exceed their proposed allotment noise-limited contour up to the level of achieving the same level of digital service as its allotment.

Negotiated Agreements on Interference

Section 73.623(g) presently permits stations to voluntarily enter negotiated interference agreements with stations. dLR is requesting that these type of agreements continue to be permitted. Also, will the Commission limit the amount of increased interference that the stations may create? Would a *Public Interest* showing need to be filed with each negotiated interference agreement?

Channel Changes

dLR believes there will be a number of stations desiring another channel in the post transition environment. Examples of these stations include a low-band VHF station seeking to escape to a higher channel or a station causing or receiving substantial interference from a first-adjacent channel station whose only opportunity to either change transmitter site due to a loss of site issue or increase its service area is to select another channel.² Therefore, dLR requests the Commission consider processing after the transition a single “fast-track” group of stations seeking to change their channel. Or perhaps the Commission may extend the current DTV Allotment Table Rule Making proceeding, MB Docket 87-268, with a *Further Notice of Proposed Rule Making*, for the purpose of making those changes.

Maximum Service Area

dLR requests clarification if the DTV station modifications occurring after the transition may expand its geographic coverage area to be comparable to that of the largest station within their market as permitted in Section 73.622(f)(5) of the Commission’s Rules, if the proposed facilities would exceed the maximum permissible limits on DTV power and antenna height set forth in paragraph (f)(6), (f)(7), or (f)(8) of Section 73.622. Furthermore, would the largest station be defined as the allotment defined in Post-Transition Table of Allotment in MB Docket 87-268?

OET-69 Cell-Size & Parameters

dLR believes the applicant should have the OET-69 flexibility in requesting non-standard grid cell sizes and terrain increments. This scenario is discussed in Paragraph 109 of the aforementioned NPRM:

“We propose to evaluate compliance with the 0.5 percent standard using the Office of Engineering and Technology’s OET Bulletin No. 69 (“OET 69”) methodology, but using 2000 census data as was done during the channel election process. We seek comment on whether other changes to

² First-adjacent stations with transmitter sites that are not closely located with each other, but with transmitter sites located within other’s noise-limited contours, are particularly onerous to modify – as slight changes in the transmitter site may result in significant interference increases to the other first-adjacent station.

the OET 69 methodology are necessary here. For example, the standard OET 69 analysis evaluates “cells” within a station’s coverage area which are squares 2 kilometers on a side. We have generally allowed applicants to specify analysis based on cells that are smaller because such analysis is arguably more accurate. As a result, we understand that some applications have been based on evaluating many possible smaller cell sizes until the desired result is obtained. Such “shopping” for advantageous cell sizes does not improve the accuracy of the evaluation. Should standards for allowable smaller cell sizes be established (for example only allowing 1.0 km or 0.5 km cell sizes to be requested)?”

Allotments and/or stations, especially those with smaller service areas, located in more sparsely populated areas of the county and/or in terrain challenged areas may be more accurately modeled with a smaller cell size and/or terrain increment. dLR recognizes there is a practical limit to how small the cell size and terrain increment should be.

dLR suggests that this also would be the appropriate time to make implementation adjustments to the OET-69 software program including:

- Depression angle calculations should employ the above mean sea level (AMSL) parameter instead of the above ground level (AGL) parameter
- The cell(s) located within 1 kilometer of the station’s transmitter site should use the calculated vertical field antenna pattern instead of the assumed value of 1.0
- Stations with non-standard vertical elevations antenna patterns (either electrical and/or mechanical beamtilts), should be so recognized by the OET-69 software so those stations will not be penalized in its service area protection.

Louis Robert du Treil, Jr, P.E.

John A. Lundin, P.E.

Ronald D. Rackley, P.E.

W. Jeffrey Reynolds

Charles A. Cooper, P.E.

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237
941.329.6000

August 14, 2007