

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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Federal Communications Commission
Office of Secretary

In the Matter of)
)
Advanced Television Systems)
and Their Impact Upon the)
Existing Television Broadcast)
Service)

MM Docket No. 87-268

To: The Commission

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PETITION FOR RECONSIDERATION OF CITADEL COMMUNICATIONS CO., LTD.
OF THE SIXTH REPORT AND ORDER

INTRODUCTION

Citadel Communications Co., Ltd. ("Citadel") hereby submits this Petition for Reconsideration of the Commission's Sixth Report and Order, MM Docket No. 87-268, FCC 97-115 (rel. Apr. 21, 1997) (the "Sixth Report and Order"). Citadel and entities affiliated with Citadel own and operate WHBF-TV, Rock Island, Illinois, Channel 4, and WOI-TV, Ames, Iowa, Channel 5, two smaller market television stations.¹ Citadel previously has filed comments in this proceeding.²

¹ Citadel's affiliate stations operate in Nielson DMA market numbers 72 (WOI-TV, Des Moines), and 88 (WHBF-TV, Davenport-Rock Island-Moline). See 1 Broadcasting & Cable Yearbook (1997 ed.). The licensees of WHBF-TV and WOI-TV are Coronet Communications Company and Capital Communications Co., respectively. Citadel and its affiliates also own and operate KCAU-TV, Sioux City, KLKN(TV), Lincoln, Nebraska, and KLKE(TV), Albion, Nebraska.

² See Comments of Citadel Communications Co., Ltd., MM Docket No. 87-269 (filed Dec. 4, 1996).

The Commission's decision in the Sixth Report and Order to defer consideration of Citadel's (and others') proposals to allocate channels 2-6 for use in the provision of DTV is contrary to the public interest and is unjustified in view of technical evidence submitted in this proceeding. Moreover, the uncertainty raised by the Commission's deferral of this issue is particularly harmful to those stations that may be hit with a "double whammy," and be required to locate temporarily to a non-core transitional channel in the upper UHF band, and then transition *again* to a *still unidentified* DTV channel in the core region when one becomes available after other stations complete their DTV transition. Citadel requests that, on reconsideration, the Commission specify that channels 2-6 will be used in the provision of DTV and that existing stations licensed on these channels be permitted to retain these channels as permanent DTV assignments at the end of the DTV transition period.³ Irrespective of whether the Commission adopts a DTV spectrum plan that includes channels 2-6, Citadel requests that WHBF-TV and WOI-TV be assigned DTV channel 29 in lieu of the channels assigned to them in the Sixth Report and Order. Citadel also asks that the Commission make clear now that those obtaining recaptured spectrum will be required to pay the relocation expenses of television licensees required to vacate those channels.

³ Citadel notes that certain channel 2-6 licensees already have filed a petition for reconsideration on this very issue. See Petition for Reconsideration of Certain Channel 2-6 Licensees, MM Docket No. 87-268 (filed May 29, 1997). Citadel fully supports the arguments raised in that Petition.

ARGUMENT

I. THE COMMISSION SHOULD SPECIFY THAT CHANNELS 2-6 WILL BE USED IN THE PROVISION OF DTV AND THAT STATIONS WILL BE PERMITTED TO RETURN TO THESE CHANNELS AT THE END OF THE TRANSITION PERIOD

In the Sixth Report and Order, The Commission summarily dismisses proposals by Citadel and others to allocate channels 2-6 to provide permanent DTV services in favor of a tentative, “wait and see” approach that defers consideration of the use of these channels until implementation of DTV is underway.⁴ In doing so, the Commission fails adequately to consider the substantial public interest benefits in retaining this spectrum for DTV, ignores the weight of technical evidence, and raises substantial competitive uncertainty for stations currently operating on those channels. Accordingly, the Commission should specify on reconsideration that channels 2-6 will be used in the provision of DTV and that existing stations will be permitted to return to these channels at the end of the transition period.

It is fundamentally inappropriate for the Commission to implement a plan that radically and permanently increases costs for some entities, but not others. Citadel has acquired its stations at market prices -- prices that reflect cost structures and visibility dependent upon a VHF operating frequency. Requiring that Citadel relocate its VHF stations to the UHF band will strip that value without any compensation. For example, as Citadel has previously shown, moving from a VHF to a UHF channel for DTV will increase annual operating costs for power by *twelve* times -- from \$36,000 a year to \$433,000.⁵ This alone represents a loss of more than

⁴ Sixth Report and Order, FCC 97-115 at ¶ 83 (stating that it will “monitor closely the experiments and early implementation of DTV operations before determining the core spectrum for DTV”).

⁵ Comments of Citadel at 2-5.

\$4,000,000 in value using the low end of current cash flow multiples for television stations. Stations that are able to return to their current allotments (be they VHF or UHF) for permanent DTV operations face no such issue.

The substantial increase in costs will be particularly debilitating for stations providing service in small markets that already are operating on low margins with limited revenue opportunities.⁶ As these stations struggle to make ends meet, the real cost likely will be borne by the viewing public, if stations are forced to curtail local and community programming in order to meet the substantial increased expenses of operating in the high UHF channels. As Citadel previously has noted, it anticipates that “such expenses will impair the ability of broadcasters such as Citadel to provide even the basic levels of local programming currently being aired, much less fully develop the potential programming possibilities that the DTV technology will create.”⁷ Such a result would frustrate the Commission’s goal of facilitating the growth of innovative DTV services to all segments of the viewing public.⁸

The record established in this proceeding demonstrates that there are no significant technical barriers restricting the use of channels 2-6 in the provision of DTV service. To the contrary, as numerous commenters pointed out, the testing and analysis that has been completed to date indicates that the propagation characteristics of these channels provide

⁶ Id. at 4.

⁷ Id. at 2.

⁸ See Sixth Report and Order, FCC 97-115 at ¶ 1.

superior coverage capabilities and that potential interference concerns are minimal.⁹ As the Commission itself has acknowledged, channels 2-6 possess unique propagation characteristics that afford a wider coverage area than other channels and allows stations to provide more efficient service to rural areas and to smaller towns in fringe areas.¹⁰ Field tests conducted in Charlotte, North Carolina indicate a substantially improved coverage area on DTV channel 6 as compared with its analog counterpart.¹¹ As the attached technical statement indicates, “[t]he DTV system [in the lower VHF channel] performed significantly better than the NTSC system.”¹²

Moreover, the Commission’s fear that ambient noise levels (caused by leaky power lines, vehicle ignition systems and other impulse noise sources) may render channels 2-6 useless for DTV is not confirmed by the evidence collected during the DTV field trials and engineering studies that have been submitted into the record in this proceeding. While field testing did indicate some unanticipated interference from impulse noise, the Charlotte Report noted that its results were impacted by the use of extremely limited power and that any

⁹ See Petition for Reconsideration of Certain Channel 2-6 Licensees, MM Docket No. 87-268 (May 29, 1997); see also Comments of Fireweed Communications, MM Docket No. 87-268, at 9; Comments of Media General Inc. & Park Acquisitions Inc., MM Docket No. 87-268 at 5; Comments of Meredith, MM Docket No. 87-268, at 3-12; and Comments of Scripps Howard, MM Docket No. 87-268, at 3-4.

¹⁰ See Sixth Report and Order, FCC 97-115 at ¶ 82.

¹¹ See Terrestrial Broadcast Field Tests, in Record of Test Results for Digital HDTV Alliance System submitted to Advisory Committee on Advanced Television, Federal Communications Commission (October 1995) (“Charlotte Report”) at 11; see also Technical Statement of John Lundin, included as Attachment A at 6 (“Lundin Technical Statement”).

¹² Lundin Technical Statement at 6.

interference would be substantially diminished when full power levels were employed.¹³ In view of the unusually low power levels and the limited sample size, the Charlotte Report declined to draw any conclusion regarding the suitability of low-band VHF channels for digital television.¹⁴ Moreover, any extra power requirements necessary to ameliorate ambient noise problems clearly would be less than the excessive power required to replicate VHF coverage using UHF DTV broadcasting. At bottom, the record presents no reason to believe that channels 2-6 will fail to perform well for DTV.

The impact of excluding channels 2-6 from a core spectrum plan (or deferring consideration until the implementation of DTV is well underway) is particularly acute in situations -- such as Citadel's -- where a lower VHF station is assigned a DTV channel outside the core¹⁵ and therefore will be hit with the "double whammy" of relocating twice -- once to a transitional DTV channel outside of the core, and again to a yet to be identified permanent DTV channel.¹⁶ As the Commission has recognized, since stations rely on channel identification as a critical component in retaining and expanding viewership, it is important to minimize the confusion and expenses associated with several channel transitions.¹⁷ "Brand identification" is

¹³ Charlotte Report at 2, 13.

¹⁴ Id.

¹⁵ Citadel's WOI-TV currently provides service on channel 5 and WHBF-TV provides service on channel 4. In the DTV Table of Allotments adopted in the Sixth Report and Order, WOI-TV and WHBF-TV have been assigned DTV channels 59 and 58, respectively. See Sixth Report and Order, FCC 97-115, Appendix B.

¹⁶ Other commenters to this proceeding have expressed similar concerns. See, e.g., Comments of Freedom at 8.

¹⁷ Sixth Further Notice of Proposed Rulemaking, MM Docket No. 87-268, 11 FCC Rcd 10968 (1996) at ¶ 24 (noting the importance of establishing a plan to allow the greatest

already crucial to broadcasters seeking to establish good will and viewer loyalty; in a digital age, it will be absolutely vital to competitive survival.¹⁸ Moreover, the substantial operational and technical costs in changing frequencies twice would place Citadel and other similarly situated stations at a competitive disadvantage no other stations would have. Indeed, all of WOI-TV's competitors have been assigned channels inside the core spectrum. Of WHBF-TV's competitors, only one faces a similar problem.¹⁹ The transition to DTV will be expensive and burdensome enough for stations that need to move only once -- requiring some stations to incur such costs twice could impair the ability of such stations (especially the smaller ones) to compete effectively in the provision of DTV.

II. THE COMMISSION SHOULD ASSIGN WOI-TV AND WHBF-TV DTV CHANNEL 29 FOR THE TRANSITION PERIOD

Citadel further requests that the Commission assign DTV channel 29 for use by WOI-TV and WHBF-TV in their respective markets. As set forth above, Citadel seeks to retain its current VHF channels for its permanent DTV channel assignments. During the transition period, however, Citadel expects to employ transmitting facilities for the UHF DTV channel allotment based on replication of the stations' current NTSC Grade A contour. Once there is sufficient DTV penetration in its markets, Citadel would then convert the current VHF NTSC

number of broadcasters to establish early and permanent channel identification with viewers).

¹⁸ Every television and cable network and every local station now routinely superimposes their logos and channel identifications on their programs. When dynamic programming capabilities are added to provide an exponential increase in program choices, it will become even more essential to facilitate a consumer's ability to identify and associate good programming with its source.

¹⁹ KWQC currently provides service on channel 6. Under the Commission's DTV Table of Allotments, KWQC has been assigned channel 56.

channels for DTV use. As the attached technical study indicates, the use of channel 29 during the transition period would enable WOI-TV and WHBF-TV to provide DTV service within its Grade A contour without causing or receiving objectionable interference to other stations.²⁰ Because Citadel does not intend to construct maximum power interim DTV facilities (that would, at full power, cause and receive interference on Channel 29), there is no advantage to be derived by assigning non-core channels to the stations. Indeed, assigning core channels will serve the public interest by making the non-core spectrum available for recapture *now* and eliminating the need for reimbursement of relocation costs.

III. THE COMMISSION SHOULD MAKE CLEAR NOW THAT LICENSEES REQUIRED TO RELOCATE FROM RECAPTURED SPECTRUM WILL BE COMPENSATED FOR THE COST OF RELOCATION

Citadel joins the Association for Maximum Service Television, Inc. ("MSTV") in urging the Commission to require users of the recaptured broadcast spectrum to compensate broadcasters for the cost of forced relocation to the core spectrum.²¹ Although the Commission initially appeared to support such proposal -- as did commenters -- the Commission declined to establish a reimbursement policy in the Sixth Report and Order. Just as it chose to defer consideration on the use of channels 2-6 for DTV, the Commission shelved its proposal for possible consideration in a future proceeding. Citadel agrees with MSTV that the Commission must act now to require new users of broadcast spectrum to compensate stations for the costs of

²⁰ See Technical Statement at 8-13 (analyzing technical consequences of assigning channel 29 to WOI-TV) and 13-18 (analyzing technical consequences of assigning of channel 29 to WHBF-TV).

²¹ See Joint Broadcaster Comments, MM Docket No. 87-268 (Nov. 22, 1996) at 17.

relocation in order to provide much-needed certainty to broadcasters -- particularly those that will be required to move twice in the transition to DTV.

CONCLUSION

For DTV to become a reality, the Commission must provide broadcasters with sufficient regulatory certainty to plan for and successfully implement the standard. The DTV groundwork established by the Commission in the Sixth Report and Order leaves two fundamental questions unanswered: (1) the ultimate use of channels 2-6 to provide DTV service; and (2) reimbursement policies for stations that are required to vacate spectrum that is later recaptured by the Commission for other uses. Despite compelling public policy reasons and supporting technical data established in the record, the Commission provides no reasonable basis to defer allocation of channels 2-6 for DTV use. Nor does the Commission provide any basis for postponing its review of appropriate reimbursement policies for recaptured spectrum.

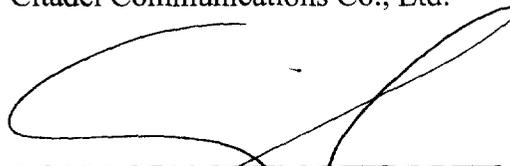
Broadcasters, like Citadel, cannot reasonably be expected to expend the millions of dollars needed to construct and operate DTV stations without certainty that the Commission will adopt fair and reasonable policies governing spectrum allocation and recovery. Citadel therefore requests that the Commission clarify that it will permit existing licensees to utilize channels 2-6 to provide DTV and implement reimbursement procedures to allow licensees to recover relocation expenses if they are forced to vacate spectrum that is recaptured for other uses. Citadel also asks that WOI-TV and WHBF-TV be assigned channel 29 for use during the

transition period. Citadel's proposed use of the spectrum will not cause impermissible interference to other users and serves the public interest by avoiding interim use of spectrum that the Commission seeks to recapture. All of this will serve the public interest.

Respectfully submitted,

Citadel Communications Co., Ltd.

By:



Eric L. Bernthal
Kevin C. Boyle
Susan E. McNeil*
LATHAM & WATKINS
1001 Pennsylvania Avenue, N.W., Suite 1300
Washington, D.C. 20554
(202) 637-2200

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*Admitted in Maryland only.

TECHNICAL STATEMENT
SUPPORTING A PETITION FOR RECONSIDERATION FROM
CITADEL COMMUNICATIONS CO., LTD.

This Technical Statement has been prepared on behalf of Citadel Communications Co., Ltd. (Citadel) in support of a petition for reconsideration of the Federal Communications Commission's (FCC) Sixth Report and Order (6th R&O) in Mass Media (MM) Docket No. 87-268. This proceeding concerns advanced television systems and their impact upon the existing television broadcast service. In the 6th R&O the FCC allotted digital television (DTV) channels to eligible stations throughout the country. In addition, the FCC failed to include the low VHF TV channels (2-6) in its "core spectrum", indicating that it will make a decision some time in the future. Citadel's petition for reconsideration of the FCC's 6th R&O requests an alternative DTV allotment for two of its stations and implores the FCC to designate the low VHF channels as being included in its core spectrum.

The following television stations are controlled by Citadel. The analog channel is identified (also referred to as NTSC channel for the National Television Systems Committee).

WHBF-TV, Channel 4, Rock Island, Illinois
WOI-TV, Channel 5, Ames, Iowa

The FCC has proposed UHF channels for the DTV operations of these stations.

<u>Station</u>	NTSC <u>Chan.</u>	NTSC <u>ERP</u>	Antenna <u>HAAT</u>	DTV <u>Chan.</u>	DTV <u>ERP</u>
WHBF-TV	4	100 kW	408 m	58	1000 kW
WOI-TV	5	100	564	59	1000

The FCC has authorized the maximum power permitted in the UHF band for a DTV assignment even though the predicted noise limited contour of the DTV allotment will not extend to the predicted Grade B contour for the analog (NTSC) operation.

As Citadel has stated in its previous comments, if replication of existing analog service is the real goal for DTV service, then all stations should return to their present NTSC channel locations for the final DTV operations. Obviously stations on analog channels 60 through 69 would not return to their analog channels (because of recapture of that spectrum), but would remain on the DTV channels allotted. Returning to the current channel location is the best means of insuring present coverage. It will involve less power, be more spectrum efficient, cause less interference, have less impact on LPTV service, and still permit the possible recapture of spectrum for other uses in the future. Furthermore, returning to the NTSC channel for the final DTV operation will virtually enable all assignments to improve facilities to the maximum permitted by the FCC rules (maximization).

As is evident with the FCC's DTV allotment table, inband DTV allotments require significantly lower power than the NTSC counterpart. However, out-of-band allotments, involving NTSC VHF channel relocations to DTV UHF, require significant power increases in an attempt to replicate current VHF coverage.

If the 2 Citadel stations remain at the current VHF channel locations for the final DTV operations after the transition, the power levels required for replication of coverage are much less. The following approximate DTV power levels are based on replication of the present Grade B contour with the 28 dBu noise limited contour identified in the FCC's 6th R&O.

<u>Station</u>	<u>Chan.</u>	<u>DTV ERP</u>
WHBF-TV	4	9.7 kW
WOI-TV	5	11.0

Under this approach, the present transmission line and antenna systems would be able to be employed for the DTV operation. The only modification required would be to the transmitter system to reflect DTV instead of NTSC operation. In many cases it will be possible to modify the present transmitter.

It is not practical to attempt replication of superior VHF propagation characteristics with brute force UHF power. The best way to replicate existing service is to use the existing channel location. The final DTV operation on the current NTSC channel

will be at significantly less power than the current NTSC operation, resulting in lower operating costs. With less power, there will be less interference on the channels, providing opportunities for improvement in service, or the addition of new or relocated stations. Overall, it makes the most sense for each station to remain on the present channel location for the DTV operation.

Citadel wishes to return to its current VHF channel for the final DTV operation and ultimate DTV replication of its present NTSC coverage. At this time Citadel intends to employ transmitting facilities for the UHF DTV channel allotment based on replication of the station's current NTSC Grade A contour. The service within this NTSC contour is considered to represent the "heart" of each station's analog coverage. Once sufficient DTV sets are in the public's hands, then the stations will convert the current VHF NTSC channels for DTV use. The UHF DTV loaner channel will then be returned.

Under the above plan, it is obvious much lower power is possible for the commencement and orderly transition from NTSC to DTV. There will be less interference among stations, and less impact on low power television (LPTV) use. The cost of the equipment to be used during the interim DTV transition period will be much more reasonable. The following is a summary of the UHF DTV operations for the 2 Citadel stations as proposed by the FCC and as suggested by Citadel for the transition period.

du Treil, Lundin & Rackley, Inc.

A Subsidiary of A.D. Ring, P.A.

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<u>Station</u>	<u>NTSC Chan.</u>	<u>FCC DTV Chan.</u>	<u>FCC DTV ERP</u>	<u>Proposed Interim DTV ERP</u>
WHBF-TV	4	58	1000 kW	6.6 kW
WOI-TV	5	59	1000	12.9

The above suggestion for the transition to DTV service requires retention of the low VHF band (channels 2 through 6). In the 6th Further Notice of Proposed Rule Making (FNPRM) in MM Docket No. 87-268, the FCC proposed to recapture the low VHF spectrum for other uses since it felt the low VHF channels were less suitable for DTV use. Citadel, among others, disagreed with the FCC's assessment for DTV use of low VHF channels. Instead of making a decision to retain the low VHF channels in the DTV core spectrum, the FCC decided to postpone its decision to some later date. At this point, the core spectrum is either channels 2-46, or channels 7-51. This FCC position is not supported by the preponderance of documents filed in response to the 6th FNPRM.

The September 1994 and October 1995 reports on the Charlotte, North Carolina DTV field tests do not conclude that low VHF channels are unsuitable for DTV use. The VHF observations at Charlotte were made on channel 6. The VHF test was run at one-tenth NTSC power, or an NTSC peak ERP of 10 kW. The DTV power was conducted at one-sixteenth NTSC power, or an average ERP of 0.63 kW.

The reports indicate the channel 6 tests at Charlotte experienced unanticipated interference from impulse noise, co-channel interference, cable system interference, and non-commercial educational (NCE) FM interference. The prevalence of the impulse noise was due to 60 Hz sources (AC power). The report stated: "It is believed the impulse noise problem in Charlotte is atypical (emphasis added) and may not be representative of other areas."

The field test reports indicate that satisfactory NTSC VHF reception occurred at 39.6% of the locations. Satisfactory DTV VHF reception occurred at 81.7% of the locations, more than twice the satisfactory NTSC locations. In other words, DTV service was substantially better than NTSC, even at the low power level used. The DTV system performed significantly better than the NTSC system in the presence of impulse noise. Adding 6 dB of power (i.e., DTV ERP of 2.5 kW) improved the satisfactory reception from 82% to 94% of the locations. The reports indicate that if the DTV power for low VHF is increased 10 dB (i.e., DTV ERP of 6.3 kW), as was expected for low VHF DTV operations, then the interfering sources would be substantially less effective in producing impairments. In the 6th R&O the FCC specified even higher DTV power levels; maximum low VHF DTV power levels of 10 kW in Zone I and 45 kW in Zones II and III.

The Charlotte report summarizes that because of the limited sample size and interference experienced, the low VHF results are inconclusive. The report suggests, and Citadel agrees, that more field testing is desirable. However, the report states that DTV performs significantly better than NTSC at low VHF. The report does not conclude that low VHF is not suitable for DTV.

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At this point, both the analog (4 & 5) and DTV (58 & 59) allotments for Citadel's 2 stations may be outside the FCC's core spectrum for TV use. Citadel urges the FCC to reconsider its action in the 6th R&O and retain the low VHF channels in the FCC's TV core spectrum. Because of the superior propagation characteristics of the low VHF channels, and the potential ability to not only replicate, but improve current analog service in the low VHF band, it is believed the low VHF band must be retained in the core spectrum for DTV use.

As a result of the FCC's R&Os in the DTV proceeding, stations WOI-TV and WHBF-TV have analog and DTV allotments potentially outside the TV core spectrum. Although Citadel is requesting reconsideration of the FCC's action with regard to retaining the low VHF channels in the core spectrum, it is compelled simultaneously seek an alternative DTV allotment in the core spectrum in case the FCC does not comply. Citadel is seeking the allotment of DTV channel 29 at WOI-TV instead of channel 59, and DTV channel 29 at WHBF-TV instead of channel 58.

A DTV interference analysis computer program available through TA Services of the National Telecommunications Information Agency (NTIA) in Boulder, Colorado has been employed. The computer program has been used to determine the calculated areas of service and interference for analog (NTSC) and DTV operations. The NTIA program uses the Longley-Rice propagation model, and general methodology employed by the FCC during the DTV allocation process.

WOI-TV, Ames Iowa

Figure 1 is a map developed by the NTIA computer program. It shows the calculated Grade B service area for the WOI-TV analog operation on channel 5. The map shows regions of calculated interference from other analog (NTSC) and DTV operations. Areas where the WOI-TV signal is below Grade B due to terrain effects are indicated. The clear or unshaded area indicates when WOI-TV provides interference free Grade B service. The following stations are calculated to cause interference within the WOI-TV Grade B service area.

<u>Station</u>	<u>Channel</u>	<u>Interference Received Area</u>
KAAL, Austin, MN	NTSC-6	104 sq km
KSTP-TV, St. Paul, MN	NTSC-5	3,183
KCTV, Kansas City, MO	NTSC-5	5,605
WOWT, Omaha, NE	NTSC-6	100
KDLT, Mitchell, SD	NTSC-5	2,992

Interference free analog Grade B service is predicted to an estimated population of 912,000 people. No DTV allotments are predicted to cause interference to the WOI-TV analog operation.

Figure 2 is a map developed by the NTIA DTV program for the FCC's proposed WOI-TV DTV operation on channel 59. No analog (NTSC) or DTV assignments are calculated to cause interference within WOI-TV channel 59 DTV noise limited service area.

Interference free DTV coverage is predicted to an estimated population of 955,000 people

The NTIA computer program indicates WOI-TV's FCC DTV allotment (channel 59) will not cause interference within the Grade B service area or an authorized analog (NTSC) station or within the 41 dBu noise limited service area of another DTV allotment.

Figure 3 is a map from the NTIA computer program for an assumed WOI-TV DTV operation on channel 29. It is based on a DTV ERP of 1000 kW and antenna HAAT of 564 meters. The following stations are calculated to cause interference within the 41 dBu noise limited service area for the assumed WOI-TV DTV operation on channel 29.

<u>Station</u>	<u>Channel</u>	<u>Interference Received Area</u>
KFXA, Cedar Rapids, IA	NTSC-28	214 sq km
KHQA-TV, Hannibal, MO	DTV-29	321
KSFY-TV, Sioux Falls, SD	DTV-29	203
Assumed WHBF-TV	DTV-29	824

Interference free DTV coverage for the assumed WOI-TV operation on channel 29 is predicted to an estimated population of 946,000 people. Although the assumed channel 29 DTV operation covers about 1% less population than the FCC's channel 59 DTV allotment, DTV channel 29 encompasses about 4% more population than WOI-TV's current analog (NTSC) operation.

The assumed WOI-TV channel 29 DTV operation is calculated to cause interference to the following analog (NTSC) and DTV operations.

<u>Station</u>	<u>Channel</u>	<u>Interference Caused Area</u>
KFXA, Cedar Rapids, IA	NTSC-28	531 sq km
WFTC, Minneapolis, MN	NTSC-29	6
KHQA-TV, Hannibal, MO	DTV-29	98
KSFY-TV, Sioux Falls, SD	DTV-29	103
Assumed WHBF-TV	DTV-29	904

Studies were conducted on stations KFXA, KHQA-TV and KSFY-TV using the NTIA program to determine if the interference caused by the assumed WOI-TV DTV operation was new interference, or if it was masked by interference from other analog (NTSC) and DTV assignments. The calculated interference caused to WFTC is considered insignificant and can be ignored. The calculated interference from the assumed DTV channel 29 operation of commonly owned station WHBF-TV is considered acceptable to Citadel.

The following stations are predicted to cause interference within the Grade B service area for the analog operation of station KFXA on channel 28 at Cedar Rapids, Iowa.

<u>Station</u>	<u>Channel</u>	<u>Interference Received Area</u>
KWKB, Iowa City, IA	NTSC-20	115 sq km
KRIN, Waterloo, IA	NTSC-32	1,120
Assumed WOI-TV	DTV-29	531
Assumed WHBF-TV	DTV-29	158

Interference free Grade B coverage for the current KFXA operation on channel 28 is predicted to an estimated population of 612,000 people. The assumed WOI-TV and WHBF-TV DTV operations on channel 29 would cause new interference to approximately 3,000 people within the KFXA Grade B service area. This combined WOI-TV and WHBF-TV interference population only represents about 0.5% of the population within KFXA's current Grade B service area.

The following stations are predicted to cause interference within the 41 dBu noise limited service area for the DTV operation of station KHQA-TV on channel 29 at Hannibal, Missouri.

<u>Station</u>	<u>Channel</u>	<u>Interference Received Area</u>
Assumed WOI-TV	DTV-29	98 sq km
Assumed WHBF-TV	DTV-29	1,241

No interference is currently predicted within the 41 dBu noise limited service area for the DTV operation of station KHQA-TV on channel 29. The estimated population within the service area is 347,000 people. The assumed WOI-TV and WHBF-TV DTV operations on channel 29 would cause new interference to approximately 20,000 people within the KHQA-TV noise limited service area. This represents about 5.8% of the population within the KHQA-TV service area. Of the new interference population, approximately 1,000 people are attributed to the assumed WOI-TV DTV operation on channel 29. This is only 0.3% of the population within the KHQA-TV noise limited DTV service area.

The following stations are predicted to cause interference within the 41 dBu noise limited contour of station KSFY-TV on DTV channel 29 at Sioux Falls, South Dakota.

<u>Station</u>	<u>Channel</u>	<u>Interference Received Area</u>
KCAU-TV, Sioux City, IA	DTV-30	517 sq km
KSIN-TV, Sioux City, IA	NTSC-27	89
KSIN-TV, Sioux City, IA	DTV-28	6
WFTC, Minneapolis, MN	NTSC-29	514
Assumed WOI-TV	DTV-29	103

Interference free DTV coverage for KSFY-TV on channel 29 is predicted to an estimated population of 488,000 people. The assumed WOI-TV DTV operation on channel 29 will cause new interference to approximately 1,000 people within the KSFY-TV DTV service area. This is only 0.2% of the population within the KSFY-TV DTV 41 dBu noise limited service area.

In summary, the assumed WOI-TV DTV operation on channel 29 will serve more population than the current analog operation (946,000 versus 912,000). Although the assumed WOI-TV channel 29 DTV operation causes more interference than DTV channel 59, the amount is considered insignificant. Furthermore, DTV channel 29 is within the FCC's core spectrum, where as, DTV channel 59 is not.

WHBF-TV, Rock Island, Illinois

Figure 4 is a map from the NTIA computer program showing the calculated Grade B service area for the analog (NTSC) operation of WHBF-TV on channel 4. The following stations are calculated to cause interference within the WHBF-TV Grade B service area.

<u>Station</u>	<u>Channel</u>	<u>Interference Received Area</u>
KIMT, Mason City, IA	NTSC-3	97 sq km
WCIA, Champaign, IL	NTSC-3	90
KTVO, Kirksville, MO	NTSC-3	924
KMOV, St. Louis, MO	NTSC-4	3,256
WISC-TV, Madison, WI	NTSC-3	1,523
WTMJ-TV, Milwaukee, WI	NTSC-4	8,311

Interference free analog Grade B service is predicted to an estimated population of 865,000 people. No DTV allotments are predicted to cause interference to the WHBF-TV analog operation.

Figure 5 is a map from the NTIA program showing the noise limited service area for the FCC's proposed WHBF-TV DTV operation on channel 58. The following analog (NTSC) and DTV assignments are predicted to cause interference within the WHBF-TV noise limited service area for operation on DTV channel 58.

<u>Station</u>	<u>Channel</u>	<u>Interference Received Area</u>
KGAN, Cedar Rapids, IA	DTV-51	6 sq km
KWQC-TV, Davenport, IA	DTV-56	36
KWWL, Waterloo, IA	DTV-55	3
WEEK-TV, Peoria, IL	DTV-57	31
WAOE, Peoria, IL	NTSC-59	9
WREX-TV, Rockford, IL	DTV-54	256
WSJV, Elkhart, IN	DTV-58	31
WJNW, Janesville, WI	NTSC-57	213
WDJT-TV, Milwaukee, WI	NTSC-58	2,181

Interference free DTV coverage is predicted to an estimated population of 930,000 people.

The NTIA computer program indicates WHBF-TV's FCC DTV allotment (channel 58) will cause approximately 394 square kilometers of interference within the Grade B service area of station WDJT-TV on analog channel 58 at Milwaukee, Wisconsin.

Figure 6 is a map from the NTIA program for an assumed WHBF-TV DTV operation on channel 29. It is based on a DTV ERP of 1000 kW and antenna HAAT of 408 meters. The following stations are calculated to cause interference within the 41 dBu noise limited service area for the assumed WHBF-TV DTV operation on channel 29.

<u>Station</u>	<u>Channel</u>	<u>Interference Received Area</u>
KJMH, Burlington, IA	NTSC-26	29 sq km
KFXA, Cedar Rapids, IA	NTSC-28	58
KWKB, Iowa City, IA	DTV-25	9
WMAQ-TV, Chicago, IL	DTV-29	478
WEEK-TV, Peoria, IL	NTSC-25	3
KHQA-TV, Hannibal, MO	DTV-29	3,748

Interference free DTV coverage for the assumed WHBF-TV channel 29 operation is predicted to an estimated population of 898,000 people. Although the assumed channel 29 DTV operation covers about 3.4% less population than the FCC's channel 58 DTV allotment, DTV channel 29 encompasses about 3.7% more population than WHBF-TV's current analog (NTSC) operation.

The assumed WHBF-TV channel 29 DTV operation is calculated to cause interference to the following analog (NTSC) and DTV operations.