

Exhibit 43 - Statement C  
**ENVIRONMENTAL CONSIDERATIONS**  
prepared for  
**Multimedia Holdings Corporation**  
KUSA-DT Denver, Colorado  
Facility ID 23074  
Ch. 16 1000 kW 318 m

**Nature of The Proposal**

*Multimedia Holdings Corporation* (“*Multimedia*”) is the licensee of the analog television station KUSA-TV Channel 9, Denver, Colorado (BLCT-19900801KF). *Multimedia* has a construction permit for the paired digital television facility, KUSA-DT, Channel 16, Denver, Colorado (file number BPCDT-19980731LH). It has an application to modify the construction permit (file number BMPCDT-20000501ADN) which was returned to pending status on February 12, 2001 upon rescission of grant of a modified permit. The instant amendment revises the pending application to specify a new, nearby location which is the proposed “Lake Cedar Group” (“LCG”) shared antenna and antenna support structure facility.

The instant proposal, as amended, is not believed to have a significant environmental impact as defined under Section 1.1306 of the Commission’s Rules. However, KUSA-DT’s previous CP was rescinded due to the informal objections of a local citizen’s group, Canyon Area Residents for the Environment (“CARE”). The instant amendment is therefore a piece of a comprehensive, multi-station proposal being submitted to mitigate a variety of concerns.

Detailed information that has been prepared by various separate entities regarding environmental considerations is attached separately to **Exhibit 43**. This material includes a study prepared by Michael C. Abrahm, REA, of Dynamic Environmental associates, Inc., entitled “NEPA-FCC Special Resources Assessment - Lookout Mountain Site - Jefferson County, CO,” which specifically addresses each element of a NEPA evaluation. Appendices I, II, and III to the NEPA study have been omitted due to their bulk but will be supplied upon request. Appendix VI of the NEPA study is cited as “RF Emissions Test Results,” and consists of a comprehensive study of the predicted overall levels of radio-frequency electromagnetic field at ground level prepared by Randall

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L. Musselman, Ph.D., P.E., entitled "Lookout Mountain RF Emissions Study." This study is omitted here but is being submitted in a separate, related filing of the "LCG."

**Human Exposure to Radiofrequency Radiation**

The proposed operation was evaluated for human exposure to radiofrequency energy using the procedures outlined in the Commission's OET Bulletin No. 65 ("OET 65"). OET 65 describes a means of determining whether a proposed facility exceeds the radiofrequency exposure guidelines adopted in §1.1310. Under present Commission policy, a facility may be presumed to comply with the limits specified in §1.1310 if it satisfies the exposure criteria set forth in OET 65. The "controlled /occupational" limit specified in §1.1310 for Channel 16 (center frequency 485 MHz) is 1616.67  $\mu\text{W}/\text{cm}^2$ ; the corresponding "uncontrolled / general population" limit is 323.3  $\mu\text{W}/\text{cm}^2$ .

OET-65's formula for television transmitting antennas is based on the NTSC transmission standards, where the average power is normally much less than the peak power. For the DTV facility in the instant proposal, the peak-to-average ratio is different than the NTSC ratio. The DTV ERP figure herein refers to the *average* power level. The formula used for calculating DTV signal density in this analysis is essentially the same as equation (9) in OET-65.

$$S = (33.4098) (F^2) (ERP) / D^2$$

Where:	$S$	=	power density in microwatts/cm <sup>2</sup>
	$ERP$	=	total (average) ERP in Watts
	$F$	=	relative field factor
	$D$	=	distance in meters

The KUSA-DT antenna will be installed such that its center of radiation is 156.7 meters above ground level. An effective radiated power ("ERP") of 1000 kilowatts, horizontally polarized, will be employed. Considering the vertical plane pattern (see **Exhibit 40, Figure 2**) of the proposed antenna system, the proposed antenna system will have a relative field of 7.2 percent or less from 15 to 90 degrees below the horizontal plane (i.e. below the antenna). Thus, a value of 7.2 percent is used for this calculation.

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Employing the formula and assumption for downward emissions referenced above, calculated RF density levels attributable to the proposed KUSA-DT facility are predicted to reach a maximum of 2.2 percent of the “uncontrolled / general public” Maximum Permissible Exposure (“MPE”) limit and 0.45 percent of the “controlled / occupational” MPE limit at points 2 meters above ground level near the base of the tower. This calculation is without consideration for variations in terrain that may occur within a short distance of the site. In addition, contributions to total levels of RF energy that may be attributable to KUSA-DT and other facilities are addressed in detail by a separate study “Lookout Mountain RF Emissions Study,” prepared by Randall L. Musselman, Ph.D., P.E. which is submitted in a separate, related filing submitted by the “LCG.”

*Multimedia* will participate in an RF exposure safety program, along with other broadcasters and FCC licensees that utilize the Lookout Mountain antenna farm. Following construction of the KUSA-DT facility, *Multimedia* will participate in the commissioning of RF exposure measurements (and/or additional, detailed calculations) to evaluate the anticipated, reduced level of RF exposure resulting from the proposed facility versus the existing circumstances. As necessary, based on these results and considering all emitters, appropriate exposure abatement procedures will be established and followed. Such abatement procedures may involve the restriction of access to certain areas and/or facility modifications to reduce RF levels.

Considering the post-construction measurement and an appropriate abatement program, members of the general public should not be exposed to RF levels in excess of the Commission’s guidelines. Site access will be restricted and controlled through the use of locked gates, and RF exposure warning signs will continue to be posted.

With respect to worker safety, authorized personnel will be trained and/or supervised as necessary for access to any “controlled” areas. A site exposure policy will be employed protecting maintenance workers from excessive exposure when work must be performed on the tower in areas where high RF levels may be present. Such protective measures may include, but will not be limited to, restriction of access to areas where levels in excess of the guidelines may be expected, power

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reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the exposure guidelines will be exceeded. On-tower RF exposure measurements may also be undertaken to establish the bounds of safe working areas. *Multimedia* will coordinate exposure procedures with all pertinent stations.

**Conclusion**

Based on the preceding, it is believed that the instant proposal will comply with the Commission's requirements regarding human exposure to RF electromagnetic field. It is believed that the instant proposal, collectively with the changes implemented by the broadcasters to consolidate facilities and reduce environmental effects of the transmitter facilities should result in an overall improvement of conditions at Lookout Mountain.

# ENGINEERING EXHIBIT

## Amendment to Application for Digital Television Station Construction Permit

prepared for

**Multimedia Holdings Corporation**  
KUSA-DT Denver, Colorado

Facility ID 23074  
Ch. 16 1000 kW 318 m

### Table of Contents

FCC Form 301, Section III-D

#### Exhibit 40

Statement A	Proposed Antenna System
Figure 1	Antenna Horizontal Plane Radiation Pattern
Table I	Tabulation of Antenna Horizontal Plane Pattern
Figure 2, 2A	Antenna Vertical (Elevation) Plane Pattern

#### Exhibit 41

Statement B	Allocation Considerations & Interference Analysis
Table II	OET-69 Interference Analysis Results Summary

#### Exhibit 43

Statement C	Environmental Considerations
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*This material supplies a "hard copy" of the engineering portions of this application as entered August 13, 2002 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's name and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.*

SECTION III-D - DTV ENGINEERING DATA		
<b>Complete Questions 1-5 of the Certification Checklist and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.</b>		
<b>Certification Checklist:</b> A correct answer of "Yes" to all of the questions below will ensure an expeditious grant of a construction permit. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.		
<b>1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:</b>		
(a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622.	<input checked="" type="radio"/> Yes <input type="radio"/> No	
(b) It will operate from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this location as established in 47 C.F.R. Section 73.622.	<input checked="" type="radio"/> Yes <input type="radio"/> No	
(c) It will operate with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622.	<input type="radio"/> Yes <input checked="" type="radio"/> No	
<b>2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307.</b> Applicant must <b>submit the Exhibit</b> called for in Item 13.	<input checked="" type="radio"/> Yes <input type="radio"/> No	
<b>3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community.</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No	
<b>4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable.</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No	
<b>5. The antenna structure to be used by this facility has been registered by the Commission and will not require registration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7.</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No	

SECTION III-D - DTV Engineering	
<b>TECHNICAL SPECIFICATIONS</b> Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.	
<b>TECH BOX</b>	
1.	Channel Number: DTV 16    Analog TV, if any 9
2.	Zone: I <input type="radio"/> II <input checked="" type="radio"/> III <input type="radio"/>
3.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 39 Minutes 43 Seconds 50.6 <input checked="" type="radio"/> North <input type="radio"/> South Longitude: Degrees 105 Minutes 13 Seconds 53.6 <input checked="" type="radio"/> West <input type="radio"/> East
4.	Antenna Structure Registration Number: 1058328 <input type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA
5.	Antenna Location Site Elevation Above Mean Sea Level: 2170 meters
6.	Overall Tower Height Above Ground Level: 222.5 meters
7.	Height of Radiation Center Above Ground Level: 156.7 meters
8.	Height of Radiation Center Above Average Terrain : 317.9 meters
9.	Maximum Effective Radiated Power : 1000 kW
10.	Antenna Specifications: a. Manufacturer DIE    Model TUA-C3-16/48U-1-S

b. Electrical Beam Tilt:

1 degrees ☐ Not Applicable

c. Mechanical Beam Tilt:

degrees toward azimuth

degrees True ☒ Not Applicable

Attach as an Exhibit all data specified in 47 C.F.R. Section 73.685.

[Exhibit 39]

d. Polarization:

☒ Horizontal ☐ Circular ☐ Elliptical

e. Directional Antenna Relative Field Values: ☐ Not applicable (Nondirectional)

[For a composite directional (not off-the-shelf) antenna, press the following button to fill in the relative field values subform.]

[Relative Field Values]

### 10e. Directional Antenna Relative Field Values

[Fill in this subform for a composite directional (not off-the-shelf) antenna, only.]

e. Directional Antenna Relative Field Values:

Rotation (Degrees): ☒ No Rotation

Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0	1	10	0.948	20	0.807	30	0.791	40	0.882	50	0.852
60	0.741	70	0.775	80	0.933	90	0.975	100	0.946	110	0.82
120	0.807	130	0.9	140	0.872	150	0.758	160	0.791	170	0.95
180	0.991	190	0.971	200	0.874	210	0.723	220	0.545	230	0.376
240	0.236	250	0.131	260	0.051	270	0.041	280	0.048	290	0.085
300	0.205	310	0.371	320	0.542	330	0.707	340	0.853	350	0.959
Additional Azimuths		43	0.892	134	0.91						

If a directional antenna is proposed, the requirements of 47 C.F.R. Sections 73.625(c) must be satisfied.

[Exhibit 40]

**Exhibit required.**

11. Does the proposed facility satisfy the interference protection provisions of 47 C.F.R. Section 73.623(a)?  
(Applicable only if **Certification Checklist** items 1(a), (b), or (c) are answered "No".)

☒ Yes ☐ No

If No, attach as an Exhibit justification therefore, including a summary of any previously granted waivers.

[Exhibit 41]

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefore. (Applicable only if **Certification Checklist** item 3 is answered "No".)

[Exhibit 42]

13. **Environmental Protection Act.** Submit in an Exhibit the following:

[Exhibit 43]

If **Certification Checklist** Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

By checking "Yes" to **Certification Checklist** Item 2, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R. Section 1.1311.

**PREPARERS CERTIFICATION ON SECTION III MUST BE COMPLETED AND SIGNED.**

### SECTION III - PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name MARK PEABODY	Relationship to Applicant (e.g., Consulting Engineer) CONSULTANT	
Signature	Date 8/13/2002	
Mailing Address CAVELL MERTZ & DAVIS, INC. 7839 ASHTON AVENUE		
City MANASSAS	State or Country (if foreign address) VA	Zip Code 20109 -
Telephone Number (include area code) 7033929090	E-Mail Address (if available) MPEABODY@CMDCONSULTING.COM	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

#### Exhibits

##### Exhibit 1

**Description:** NATURE OF AMENDMENT

THIS AMENDMENT IS FILED TO SPECIFY A DIFFERENT TOWER AND TOWER LOCATION ON LOOKOUT MOUNTAIN. THE TECH BOX AND ENGINEERING SECTIONS OF THE APPLICATION HAVE BEEN REVISED TO REFLECT THE NEW TOWER AND LOCATION.

##### Attachment 1

##### Exhibit 40

**Description:** EXHIBIT 40 - NATURE OF PROPOSAL AND PROPOSED ANTENNA SYSTEM

ATTACHED AS EXHIBIT 40

##### Attachment 40

Description	Type	Conversion	
		Status	File
<a href="#">Exhibit 40 - Nature of Proposal and Proposed Antenna System</a>	Adobe Acrobat File	not needed	PDF

##### Exhibit 41

**Description:** EXHIBIT 41 - ALLOCATIONS CONSIDERATIONS AND INTERFERENCE ANALYSIS

ATTACHED AS EXHIBIT 41

##### Attachment 41

Description	Type	Conversion	
		Status	File
<a href="#">Exhibit 41 - Allocations Considerations and Interference Analysis</a>	Adobe Acrobat File	not needed	PDF



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**Attachment 42**

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**Exhibit 43****Description:** EXHIBIT 43 - ENVIRONMENTAL CONSIDERATIONS

ATTACHED AS EXHIBIT 43 - ENGINEERING STATEMENT C AND EXHIBIT 43 - NEPA RESOURCES ASSESSMENT - LOOKOUT MTN - PORTIONS OF NEPA-FCC SPECIAL RESOURCES ASSESSMENT - LOOKOUT MOUNTAIN SITE, JEFFERSON COUNTY, CO - DETAILED INFORMATION THAT HAS BEEN PREPARED BY VARIOUS SEPARATE ENTITIES REGARDING ENVIRONMENTAL CONSIDERATIONS.

APPENDICES I, II AND III TO THE NEPA STUDY HAVE BEEN OMITTED DUE TO THEIR BULK BUT WILL BE SUPPLIED UPON REQUEST. APPENDIX VI OF THE NEPA STUDY IS CITED AS 'RF EMISSIONS TEST RESULTS,' AND CONSISTS OF A COMPREHENSIVE STUDY OF THE PREDICTED OVERALL LEVELS OF RADIO FREQUENCY ELECTROMAGNETIC FIELD AT GROUND LEVEL PREPARED BY RANDALL L. MUSSELMAN, PH.D., P.E., ENTITLED 'LOOKOUT MOUNTAIN RF EMISSIONS STUDY.' THIS STUDY IS OMITTED HERE BUT IS BEING SUBMITTED IN A SEPARATE RELATED FILING OF THE 'LCG.'

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**Attachment 43**

Description	Type	Conversion	
		Status	File
<a href="#">Exhibit 43 - Environmental Considerations (Engineering Statement C)</a>	Adobe Acrobat File	not needed	PDF
<a href="#">Exhibit 43 - Addendum - NEPA FCC Resources Assessment - Lookout Mtn</a>	Adobe Acrobat File	not needed	PDF