

State	City/town/county	Source of flooding	Location	#Depth in feet above ground. *Elevation in feet (NGVD)	
				Existing	Modified
		Cross Swamp	Confluence with Socastee Creek Approximately 650 feet downstream of U.S. Route 501.	*21 *23	*24 24

Maps available for inspection at the Horry County Code Enforcement Office, 801 Main Street, Suite 121, Conway, South Carolina.
Send comments to Ms. Linda Angus, Horry County Administrator, P.O. Box 1236, Conway, South Carolina 29526.

Tennessee	Cheatham County (Unincorporated Areas).	Sycamore Creek	At upstream side of Nashville and Ash- land City Railroad.	None	*401
		Sams Creek	At U.S. Route 41A	None	*491
			Approximately 0.9 mile downstream of Sams Creek Road.	*403	*404
		Dry Creek	Approximately 0.8 mile upstream of Deerfoot Drive.	None	*515
			Approximately 220 feet upstream of Sams Creek Road.	*403	*404
		Pond Creek	Approximately 300 feet upstream of Dry Creek Road.	None	*425
West Fork Pond Creek	Approximately 1,700 feet upstream of River Road.	None	*404		
	At Natier Road	None	*536		
	At confluence with Pond Creek	None	*413		
		Approximately 1.17 miles upstream of Pond Creek Road.	None	*456	

Maps available for inspection at the Cheatham County Courthouse, Building Commissioner's Office, 100 Public Square, Ashland City, Tennessee.

Send comments to Ms. Linda Fizer, Cheatham County Executive, 100 Public Square, Suite 105, Ashland City, Tennessee 37015.

West Virginia	Matewan (Town, Mingo County).	Tug Fork	At downstream corporate limits	*691	*693
			Approximately 1,650 feet upstream of Norfolk and Western Railway.	*693	*699

Maps available for inspection at the Town of Matewan Development Center, Main Street, Matewan, West Virginia.

Send comments to The Honorable John Fullen, Mayor of the Town of Matewan, P.O. Box 306, Matewan, West Virginia 25678.

(Catalog of Federal Domestic Assistance No. 83.100, "Flood Insurance")

Dated: July 31, 1998.

Michael J. Armstrong,

Associate Director for Mitigation.

[FR Doc. 98-21194 Filed 8-6-98; 8:45 am]

BILLING CODE 6718-04-P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 76

[CS Docket No. 98-120; FCC 98-153]

Carriage of the Transmissions of Digital Television Broadcast Stations

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: The Notice of Proposed Rulemaking ("NPRM") addresses the carriage of digital broadcast television signals by cable operators. It seeks comment of the issues surrounding the interoperability of the digital television broadcast system, the cable system, and

the digital receiver. It seeks comment on whether to amend the cable television broadcast signal carriage rules to accommodate the carriage of digital broadcast television signals. It also seeks comment on changes in other parts of the cable television rules that may be required because of the carriage of digital television signals.

DATES: Comments on the NPRM are due on or before September 17, 1998. Reply comments on the NPRM are due on or before October 30, 1998. Written comments by the public on the proposed information collection requirements contained should be submitted on or before September 17, 1998. If you anticipate that you will be submitting comments on the proposed information collection requirements, but find it difficult to do so within the period of time allowed by this NPRM, you should advise the contact listed below as soon as possible.

ADDRESSES: A copy of any comments on the proposed information collection requirements contained herein should be submitted to Judy Boley, Federal Communications, Room 234, 1919 M

St., N.W., Washington, DC 20554 or via internet to jboley@fcc.gov and to Timothy Fain, Office of Management and Budget, Room 10236 NEOB, Washington, DC 20503, (202) 395-3561 or via internet at fain_t@al.eop.gov.

FOR FURTHER INFORMATION CONTACT: For additional information concerning the NPRM contact Ben Golant at (202) 418-7111 or via internet at bgolant@fcc.gov. For additional information concerning the proposed information collection requirements contained in this NPRM contact Judy Boley at 202-418-0214 or via internet at jboley@fcc.gov.

PAPERWORK REDUCTION ACT: The requirements proposed in this NPRM have been analyzed with respect to the Paperwork Reduction Act of 1995 (the "1995 Act") and would impose new information collection requirements on the public. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public to take this opportunity to comment on the proposed information collection requirements contained in this NPRM, as required by the 1995 Act. Public comments are due on October 6,

1998. Written comments must be submitted by the OMB on the proposed information collection requirements on or before October 6, 1998. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

OMB Approval Number: 3060-XXXX (new collection).

Title: Carriage of the Transmissions of Digital Television Broadcast Stations.

Type of Review: New collection.

Respondents: Businesses or other for-profit entities.

Number of Respondents: 12,600.

Estimated Time Per Response: 30 minutes to 40 hours, dependent upon the specific information collection requirement addressed in this collection.

Frequency of Response: On occasion.

Total Annual Burden to Respondents: 92,349 hours.

Total Annual Cost to Respondents: \$2,355,122.

Needs and Uses: The proposed information collection requirements contained in this proceeding, if adopted, will be used by a variety of respondents to serve the following purposes. The purpose of the tentative digital must-carry/retransmission consent election process, market modification process, and digital must-carry complaint process is to enable broadcast licensees to exercise their possible must-carry/retransmission consent rights in an effective manner. The purpose of the various broadcast licensee notification obligations contained in the Commission's program exclusivity rules is to protect the exclusive distribution rights afforded to such broadcast licensees. The purpose of the subscriber notification requirements placed upon cable operators is to protect subscribers' consumer rights by ensuring that cable operators notify them when new digital channels have been added to their channel line-ups and ensuring that cable operators notify them when cable systems carry channels that cannot be viewed via cable without a converter box.

Synopsis

I. Introduction

1. The statutory provision triggering this rulemaking is found in Section 614(b)(4)(B) of the Act. This section requires that: "At such time as the Commission prescribes modifications of the standards for television broadcast signals, the Commission shall initiate a proceeding to establish any changes in the signal carriage requirements of cable television systems necessary to ensure cable carriage of such broadcast signals of local commercial television stations which have been changed to conform with such modified standards." In our *Fourth Further Notice of Proposed Rule Making* in MM Docket 87-268, 60 FR 42130 (August 15, 1995), we sought and received comments addressing digital broadcast television carriage issues. The Commission, however, indicated its intention to update the record and seek further comment on these issues. We issue this NPRM to seek additional comments to reflect our recent prescription of the modification of the standards for television broadcast signals in a digital broadcast format; to recognize the Commission's adoption of additional digital broadcast television policies and rules; to address advances in digital television technology in the last two years; to take into consideration recent legislative developments regarding the digital broadcast television buildout schedule as well as Congress' pronouncement that ancillary and supplementary digital television services do not have must carry status; and to recognize the Supreme Court's decision upholding the constitutionality of the existing analog must carry provisions. In addition, we are broadening this proceeding to consider technical compatibility issues and other changes in the Commission's rules, such as those concerning retransmission consent, program exclusivity and rate regulation, that may also be required to recognize the conversion of the existing broadcasting system to the new digital format and to a new table of allotments.

II. Legal Context

2. Section 614(b)(4)(B) was adopted as part of a larger must carry/retransmission consent scheme set forth in the Cable Television Consumer Protection and Competition Act of 1992. This statute amended the Act to provide television stations with certain carriage rights on local market cable television systems. Sections 614 and 615 of the Act contain the cable television "must carry" requirements. Section 325 contains revised "retransmission consent" requirements pursuant to

which cable operators may be obligated to obtain the consent of broadcasters before retransmitting their signals. Within local market areas, presently defined as Arbitron's Area of Dominant Influence ("ADI"), commercial television stations may elect cable carriage under either the retransmission consent or mandatory carriage requirements. Noncommercial television stations may only elect must carry under the Act. In addition, pursuant to Sections 653(c)(1)(B) and (c)(2) of the Act, adopted as part of the Telecommunications Act of 1996, open video system operators are also subject to broadcast signal carriage requirements.

3. With regard to the mandatory cable carriage provisions, Congress believed that laws were required to ensure: (1) the continued availability of free over-the-air television broadcast service; (2) the benefits derived from the local origination of programming from television stations; and (3) as it relates to noncommercial television stations, the continued distribution of unique, noncommercial, educational programming services. Congress reasoned that without mandatory carriage provisions in place, the economic viability of local broadcast television and its ability to originate quality local programming would be jeopardized. Congress also believed that because cable systems and broadcast stations compete for local advertising revenue and because cable operators have an interest in favoring their affiliated programmers, cable operators have an incentive to delete, reposition, or refuse to carry local television broadcast stations. These conclusions, and the carriage provisions themselves, were premised on findings made by Congress at the beginning of this decade that most subscribers to cable television systems do not or cannot maintain antennas to receive broadcast television services, do not have input selector switches to convert from a cable to an antenna reception system, or cannot otherwise receive broadcast television services. The retransmission consent provision was predicated on the finding that cable systems obtain "great benefits from local broadcast signals," in the form of subscribership and increased audience for cable programming services, which they have previously been able to obtain without the consent of the broadcaster or any copyright liability.

4. Under the mandatory carriage provisions, cable operators, subject to certain capacity based limitations, are generally required to carry local television stations on their cable

systems. The Act states that systems with more than 12 usable activated channels must carry local commercial television stations, "up to one-third of the aggregate number of usable activated channels of such system[s]." Beyond this requirement, the carriage of additional broadcast television stations is at the discretion of the cable operator. In addition, cable systems are obliged to carry local noncommercial educational television stations according to a different formula and based upon a cable system's number of usable activated channels. Low power television stations may request carriage if they meet six statutory criteria. A cable operator, however, cannot carry a low power station in lieu of a full power station.

5. Cable operators are required to carry local television stations on a tier of service provided to every subscriber and on certain channel positions designated in the Act. Cable operators are prohibited from degrading the television station's signal but are not required to carry duplicative signals or video that is not considered primary. Television stations may file complaints with the Commission against cable operators for non-compliance with section 614 and section 615. In addition, both cable operators and television stations may file petitions with the Commission to either expand or contract a commercial television stations' market for broadcast signal carriage purposes. These statutory requirements were implemented by the Commission in 1993, and are reflected in §§ 76.56-64 of the Commission's rules.

6. Section 336 of the Act, added as part of the Telecommunications Act of 1996, provides that if the Commission determines to issue additional licenses for advanced television services, the Commission should "allow the holders of such licenses to offer such ancillary or supplementary services . . . as may be consistent with the public interest, convenience, and necessity." It then further provides that "no ancillary or supplementary service shall have any right to carriage under section 614 or 615." In the legislative history of this provision, Congress stated that it did not intend to "confer must carry status on advanced television or other video services offered on designated frequencies" adding that the "issue is to be the subject of a Commission proceeding under section 614(b)(4)(B) of the Communications Act."

7. The Commission recently adopted rules establishing a transitional process for the conversion from an analog to a digital form of transmission. In broad

outline, the rules and policies adopted make each existing analog television licensee or permittee eligible to apply to construct or operate a new digital station with a roughly comparable service area using 6 MHz of spectrum. The new digital station will transmit a signal consistent with the standards adopted in the *Fourth Report and Order* in MM Docket No. 87-268, 62 FR 14006 (March 25, 1997), giving stations the flexibility to broadcast in a high definition mode, in a multiple program standard definition mode, or a mixture of both. During a transitional period, both the analog and digital television signals will be broadcast. At the end of the transition, the licensee will cease broadcasting an analog signal and will return to the government 6 MHz of spectrum. There are no federal digital cable transition requirements. Cable operators are transitioning to digital on a voluntary basis and in some instances, cable franchising agreements may require operators to upgrade their physical plant and offer digital services. Thus, as the transition to digital occurs, a significant level of complexity will arise due to the different time schedules followed by the nearly 1,600 television licensees and the approximately 11,000 U.S. cable systems with respect to the implementation of digital transmissions.

8. The rules governing the transition from analog to digital broadcasting are found in the *Fifth Report and Order* in MM Docket No. 87-268, 62 FR 26966 (May 16, 1997). This *Order* set forth a staggered implementation schedule for the introduction of digital broadcast television. Construction requirements vary depending on the size of the television market and other factors. In the first category, all stations in the top ten television markets that are affiliated with NBC, CBS, Fox, or ABC will have until May 1, 1999, to construct their digital facilities. In the second category, all stations in the top 30 television markets not included above that are affiliated with NBC, CBS, Fox, or ABC will have until November 1, 1999, to construct their digital facilities. In the third category, all other commercial stations will have until May 1, 2002, to construct their digital broadcast television facilities. All noncommercial stations will have until May 1, 2003, to construct their digital broadcast television facilities. We note that 24 television station licensees have expressed to the Commission their intention to voluntarily expedite their schedules and complete construction and begin broadcasting by November, 1998.

9. Commencing April 1, 2003, digital broadcast television licensees and

permittees must simulcast at least 50% of the video programming transmitted on their analog channel; commencing April 1, 2004, there will be a 75% simulcasting requirement; commencing April 1, 2005, there will be a 100% simulcasting requirement until the analog channel is terminated and returned to the Commission.

10. Congress, in the Balanced Budget Act of 1997 ("BBA"), codified certain exceptions to the return of spectrum by the 2006 target date established by the Commission. That statute established conditions under which the return may be extended beyond December 31, 2006, upon the request of a television station. To retain its analog channel beyond that date, a television station will have to demonstrate that: "(i) one or more of the stations in the relevant television market that are licensed to, or affiliated with, one of the four largest national television networks, is not broadcasting a digital television service signal, and the Commission finds that such station has exercised due diligence and satisfies the conditions for an extension of the Commission's applicable construction deadlines for digital television service in that market; (ii) digital-to-analog converter technology is not generally available in such market; or (iii) in any market in which an extension is not available under clause (i) or (ii), 15 percent or more of the television households in such market—(I) do not subscribe to a multichannel video programming distributor (as defined in section 602) that carries one of the digital television service programming channels of each of the television stations broadcasting such a channel in such market; and (II) do not have either—(a) at least one television receiver capable of receiving the digital television service signals of the television stations licensed in such market; or (b) at least one television receiver of analog television service signals equipped with digital-to-analog converter technology capable of receiving the digital television service signals of the television stations licensed in such market." As the statutory language indicates, the return of the analog spectrum is in part dependent on the carriage of digital television stations by cable operators and other multichannel video programming distributors ("MVPDs"). In the BBA's legislative history, Congress stated that it was "not attempting to define the scope of any MVPD's 'must carry' obligation for digital television signals" and that the digital broadcast television must carry

decision is "for the Commission to make at some point in the future."

11. We read Section 614(b)(4)(B) of the 1992 Cable Act and Section 309(j) of the Balanced Budget Act, along with their respective legislative histories, to give us broad authority to define the scope of a cable operator's signal carriage requirements during the period of change from analog to digital broadcasting. Given this intent, and noting the significant changes that are taking place in the broadcast and cable television industries, as well as in the development of television reception devices, we tentatively conclude that the Commission should have, and does have, the ability to develop rules to facilitate the transition process and to take into account the technical changes involved. We seek comment on this tentative conclusion.

12. While we believe Congress has given the Commission discretion in exploring and deciding the complex issues involved in this proceeding, we take as our starting point the general framework governing the carriage of television stations currently found in Section 614, 615, and 325 of the Act. Section 614(b)(4)(B), and its legislative history, appears to support this approach as Congress intended that the Commission establish technical standards for the carriage of digital television signals. Based on the legislative history and the existing carriage provisions, we believe that the participation by the cable industry during the transition period is likely to be essential to the successful introduction of digital broadcast television and the rapid return of the analog spectrum to the Commission.

13. We also realize, given the history of the must carry provisions and the litigation relating to them, that any rules adopted by the Commission must be carefully crafted to permit them to be sustained in the face of a constitutional challenge. Such rules must be consistent with the judicial decisions regarding the constitutional limitations applicable in this area and in particular with the Supreme Court's holding in *Turner Broadcasting System v. FCC*, 117 S.Ct. 1174 (1997) ("Turner II"). As the Supreme Court has noted in a previous decision reviewing the must carry provisions, "[w]hen the Government defends a regulation on speech as a means to redress past harms or prevent anticipated harms, it must do more than simply 'posit the existence of the disease sought to be cured.' . . . The government must demonstrate that the recited harms are real, not merely conjectural, and that the regulation will in fact alleviate these harms in a direct

and material way." *Turner Broadcasting System v. FCC*, 512 U.S. at 664 (1995) ("Turner I"). In *Turner II*, the Supreme Court found the must carry provisions of the 1992 Cable Act to be content neutral regulations subject to intermediate First Amendment scrutiny. The Court emphasized that preserving the benefits of free, over-the-air broadcast television, promoting the widespread dissemination of information from a multiplicity of sources, and promoting fair competition in the market for television programming, were important governmental interests. The court noted that there was substantial evidence before Congress supporting the predictive judgment that local broadcasters denied carriage "would suffer financial harm and possible ruin" in the absence of carriage rules and the Government's assertion that "the economic health of local broadcasting is in genuine jeopardy and in need of the protections afforded by must-carry" was found to be reasonable and supported by the evidence. In addressing the question of whether the requirements "burden substantially more speech that is necessary" to further the governmental interest involved, the Court indicated that "the actual effects are modest" and that "[s]ignificant evidence indicates the vast majority of cable operators have not been affected in a significant manner by must-carry." The Court concluded that the requirements were not invalid based on a challenge that they are "substantially broader than necessary to achieve the government's interest. Noting that *Turner II* did not address the mandatory carriage of the broadcaster's digital television signal, we ask how the Court's reasoning and conclusions would apply in the context of this proceeding.

14. Given this background, we find it essential to build a record relating to the interests to be served by any digital broadcast signal carriage rules, the factual predicate on which they would be based, the harms to be prevented, and the burdens they would impose. Having an updated record is particularly important because of the many legal and technical developments that have taken place since the analog must carry provisions were enacted in 1992, and to take into account the differences brought about by the conversion to digital broadcasting and the parallel conversion to digital cable operations. For example, television reception via antennas has been made easier and more convenient than was the case earlier this decade. Legal barriers to

over-the-air reception of broadcast signals, caused by restrictions on antenna placement, have been reduced because of the over the air reception device preemption provisions of the Telecommunications Act of 1996. Input selector ("A/B") switches, which allow the subscriber to switch between cable and an antenna, may now be built into television receivers and can be easily controlled from a TV remote control device. Some of the reception problems that made it difficult for certain consumers to receive over-the-air broadcast signals may be eliminated by the conversion to digital. Broadcasting may not be the only source of local programming as cable operators have developed local news channels and public, educational, and governmental access channels, which provide highly localized content, have multiplied in the past six years. We seek to develop through this proceeding, the facts and data necessary for a complete record and ask for the assistance of all parties in developing that record.

III. Digital Compatibility

15. In this section, we address the compatibility issues recognizing that the introduction of DTV, and any carriage rules we may implement, will be most successful if all the components of the transmission path work together. Furthermore, an understanding how the different technical elements fit together is essential to a discussion of the core digital broadcast signal carriage issues. Here, we explain how digital transmission systems function and the means of transporting the DTV signal through the cable system to the subscriber. This discussion is particularly important in understanding the cable system channel capacity, channel position, and technical standards issues that are addressed at length throughout the document. Possible technical impediments preventing the reception of the DTV signal are raised, including matters that are integral to the discussion of material degradation in Section IV of the text.

16. Cable carriage of television broadcast signals in the existing analog environment involves the need to coordinate multiple technical systems—a television broadcast station transmission, a cable television distribution system, and a television receiver. All three are standardized by regulation or custom to transmit, distribute, and display analog NTSC television pictures. Although issues sometimes arise as to how these parts fit together from a technical perspective, the basic elements are relatively standard and well known. In the new

digital environment, however, neither law nor regulation standardizes every element. How the multiple technical systems will function in a digital environment remains to be seen. We note that the various technical elements involved in digital broadcast signal carriage are constantly in flux as technology advances. We set forth our basic current understanding of the applicable technical context and seek comment and updated information relating to this review.

17. The digital television transmission system and related standards were established by the Advanced Television Systems Committee ("ATSC"). The components, or comprising layers, are the video/audio layer, compression layer, transport layer, and the transmission layer. At the top of the ATSC hierarchy is the uncompressed digital signal in one of the various video/audio formats. Under the ATSC's highly flexible standard, it is possible to transmit high definition pictures and high quality sound, multiple standard definition pictures, and other ancillary related or unrelated communications, with the mix of services changing dynamically from second to second. The video content may be transmitted in the progressive scan or in the interlaced transmission format. Pictures may be transmitted in a standard definition format, such as 480 progressive, or in a high definition format, such as 720 progressive or 1080 interlaced. The bitstream that corresponds with the video/audio layer is known as the elementary stream.

18. At the next level down in the hierarchy is the compression layer. The purpose of this layer is to take the elementary stream from the layer above and compress it into a bitstream with a lower data rate. In the ATSC standard, MPEG-2 compression is used for the video and the Dolby AC-3 compression is used for the audio. The amount of compression depends upon the compression format chosen. Additional compression lowers the data rate, but at the possible loss of some video/audio quality.

19. The compressed bitstream, in turn, may be packetized and multiplexed with other bitstreams into a higher data rate digital bitstream. This is done in what is referred to as the transport layer. This multiplexed bitstream may include multiple programs and/or multiple data signals. The ATSC standard uses the MPEG-2 transport protocol for this purpose.

20. The lowest layer in the hierarchy is referred to as the transmission layer. Here, the multiplexed bitstream from the transport layer is modulated onto a

radio frequency ("RF") carrier. The ATSC set forth standards for two modulation modes using vestigial sideband modulation ("VSB"): a terrestrial broadcast mode (8 VSB) and a high data rate mode (16 VSB), which is said to be capable of reliably delivering approximately twice the data throughput in a 6 MHz cable television channel as the 8 VSB mode (38 Mbps as compared to 19 Mbps). The 8 VSB standard has been optimized for terrestrial broadcast television delivery where transmission errors and data loss are likely. The Commission has adopted VSB as part of the digital broadcast standard. The Commission, however, has not adopted a digital cable standard nor has the industry embraced the use of 16 VSB. Instead, cable operators plan to transmit digital communications, from the headend to the subscriber, using quadrature amplitude modulation ("QAM"), either 64 QAM or 256 QAM (which is closer to 16 VSB in terms of its data rate). Both 64 and 256 QAM likely will provide cable operators with a greater degree of operating efficiency than does 8 VSB, and permits the carriage of a higher data rate, with less bits devoted to error correction, when compared with the digital broadcast system.

21. The above description of the four layer hierarchy is based upon a sequence of events at the transmitting end of a digital television system. That is, it started with the elementary digital stream which is compressed in the compression layer, multiplexed in the transport layer and modulated onto an RF carrier in the transmission layer. The signal progresses from layer-to-layer down the protocol stack. At the receiving end, the process is reversed.

22. While the conversion of television stations to a digital transmission mode is generally associated with greatly improved sound and picture quality in the high definition mode and with better and more flexible reception in the standard definition mode, the practical definition of "digital" in the cable context may vary from system to system. The fact that a portion of a cable system capacity is digital may mean only that more channels are offered with no fundamental enhancements in sound and picture quality. For example, a cable system making use of TCI's Headend in the Sky or "HITS," would be distributing various packages of digitally compressed satellite-based programming to subscribers with an associated set top box. Current HITS technology allows for at least twelve digitally compressed channels to fit onto one analog cable channel. The programming content is compressed and

bundled into discrete groups of programming services at TCI's satellite uplink so that it can be passed through by the system operator essentially without additional processing.

However, there are cable operators that will be offering digital cable using QAM on an upgraded cable system. For example, in the case of a 750 MHz system, the 54 MHz to 550 MHz region of the cable system may be reserved for analog signals, while the 550 to 750 MHz area will carry dozens of digital signals. A critical distinction between the two is that systems subscribing to HITS may not necessarily have excess capacity to carry digital television stations while a 750 MHz QAM system may, in fact, have such capacity.

23. A critical aspect of the digital television transmission path involves the digital cable set top boxes. Significant issues arise as to how set top boxes will interact with the distribution of both digital cable and digital broadcast signals. Digital cable set top boxes perform digital signal processing, decompression, and demultiplexing functions. The receiving device demodulates the carrier, i.e., it extracts the multiplexed bitstream from the carrier, in the transmission layer. The multiplexed bitstream is passed up to the transport layer where it is demultiplexed into its component bitstreams. The individual streams are, in turn, passed up to the compression layer where they are decompressed and passed up into the video/audio layer for decoding and display. The set top box also controls access to prevent theft of the service and makes compressed digital cable services available for reception on analog NTSC television receivers. In an entirely digital environment, the set top box and the digital receiver may work in tandem by trading off the digital processing function. For example, a set top box that lacks sufficient processing power and memory to uncompress a high definition signal could nevertheless deliver the compressed data stream to the receiver where it would be uncompressed. A variety of concerns have been raised regarding the set top box's ability to "pass through" the signals of digital broadcast stations, including in particular, high definition signals. The concern stems from three separate, but related, developments: (1) the possibility of shared functions between set top boxes and receivers; (2) the possible lack of processing power and memory in some set top boxes; and (3) the possibility of broadcast signals being passed directly through to

receivers without any processing by the set top box.

24. "Pass through," in one scenario, means that the signals in the VSB format would be passed through the set top box, without being processed, and sent directly into the receiver for display. If the signal was sent through the system in the proper format and the receiver was capable of displaying that signal, the set top box would create no obstacle since it was bypassed in the distribution chain. Under another scenario, the set top box would play a partial processing function by detecting, demodulating and demultiplexing the signal, but leave it compressed. The signal would then be passed to the receiver which would uncompress it. The reasons a box might be designed to function in this fashion is that extra memory and processing power are required to uncompress certain of the high definition formats and thus a less expensive box could be designed if the circuitry in the television receiver could be shared and used to address the compression issue.

25. Another scenario is where the set top box converts the digital signal for display on NTSC television receivers. Conversion will allow cable subscribers to view digital television on their current analog television receivers. However, to process high definition video programs, the set top box would need sufficient memory and computing power, which would add to the cost of the equipment. Regardless of which techniques are used, electronic program guides and other interactive set top features may not work with signals that are not processed by the set top box. We seek comment updating and informing us on the current state of set top box technology as it relates to the carriage, pass through, and/or conversion of digital broadcast signals.

26. It has been suggested that some of the digital broadcast-set top box processing issues could be addressed through the use of a digital bus, exemplified by a standard interface known as IEEE-1394. This interface could allow a digital set-top box to share some of the resources of other devices in terms of the processing of digital signals, such as the MPEG decoder in a digital television receiver. Thus, high definition signals can be processed and displayed on the digital television receiver through the bus even though the digital set top box could not perform the processing function. This interface is also important in the context of digital broadcast signal carriage because it may be needed to ensure that on-screen graphics and program guide capabilities are enabled for the digital broadcast signals that are being carried.

We seek comment on whether a bus standard could in fact address some of the set top box interface issues raised above. We are aware that the relevant industries are developing an interface standard and we fully expect that they will move quickly to adopt this standard. Given this, we thus far have concluded that the goal of an effective interface can be met without regulatory action. Nonetheless, because of the importance of this issue and because of recent reports that the development of a standard may not be proceeding as expeditiously as previously thought, we ask if the Commission should consider rules, or other appropriate action, e.g., establishment of a deadline, to ensure that both the set top box and the digital receiver are 1394-compatible. If not, are there other devices or attachments on the market or being developed that would provide a simplified or more desirable interconnection between the set top and the digital receiver?

27. It is difficult as this point in time to determine the technical abilities of the different digital set top boxes already distributed and in production, and how different cable operators will engage set top boxes in their business plans. At least one major system operator, TCI, has indicated that the set top boxes it will employ will ultimately be capable of passing through digital broadcast transmissions to the cable subscriber. This may involve simply providing a direct connection through the digital set top box to the digital television receiver. Although we do not want to impose unnecessary requirements, we seek comment on whether a mandate that set top boxes be designed to process all types of digital broadcast television formats is needed, and if so, what additional cost (to cable operators and at retail to consumers) would be involved. What effect would such a requirement have on the commercial availability of set top boxes? Would the remote control units used with the digital set top box also work with all digital receivers?

28. Digital cable set top boxes may also perform certain other operations that may need to be considered, such as functions that are intended to assist program suppliers providing "copy protection" to their programming. The copy protection concern is that parties having access to the basic content of digital programming can make copies that are virtually as good as the original thus creating commercial incentives to withhold or delay the distribution of certain programming product. In February, 1998, five members of the ad hoc Copy Protection Technical Working Group presented a proposal aimed at

protecting digital video and audio content riding on and between personal computers, digital receivers, set-tops, digital video cassette recorders and digital video disk players. Work is continuing on this effort. In this instance, we ask whether copy protection is a matter that the Commission should explore in further detail in this proceeding, in terms of the general issue of equipment compatibility.

29. Receiver manufacturers are in the process of designing digital television sets. Their features are not standardized and the Commission has, to date, specifically declined to adopt digital television receiver standards. Moreover, the ATSC DTV standard does not specify requirements for a compliant receiver. In essence, DTV receiver designs are to be based on the specifications of the signal contained in the other portions of the standard. It appears, however, that all digital television receivers will be built to receive VSB transmissions and to process all 18 ATSC formats. Whether they will be capable of receiving QAM transmissions, and be built with a standard interface such as IEEE 1394, is less certain. Regardless of how the digital television set is configured, it appears likely that there will be a considerable market for digital converter boxes that mediate between analog television receivers and digital transmission systems to lower the cost of digital reception. In this area, we seek comment on whether television receivers will be digital cable (QAM)-ready, or 1394 ready, and when such sets would be available to the public. Should the Commission take action to encourage the production of cable-ready receivers to facilitate the introduction of digital broadcast television? We also seek comment on whether the matters at issue in this proceeding suggest the need for an industry receiver standard. Is this the right proceeding to address these matters?

IV. Carriage and Retransmission Consent Issues

30. Section 325 contains the Act's retransmission consent provisions. The law governing retransmission consent generally prohibits cable operators and other multichannel video programming distributors from retransmitting the signal of a commercial television station, radio station or low power station without the prior consent of the station whose signal is being transmitted, unless the broadcaster has chosen must carry. Every three years, commercial television stations must elect between pursuing their mandatory

carriage rights or their retransmission consent rights. Noncommercial television stations do not have retransmission consent rights.

31. It has been estimated that approximately 80 percent of commercial television broadcasters elected retransmission consent on some cable systems, rather than must carry, during the 1993-1996 election cycle. Thus, assuming this information is accurate, the question arises as to whether the general pattern will be repeated with respect to digital broadcast television stations during the transition period. There are reasons to believe it might not be because few cable subscribers will have digital receivers, at least initially. If it is repeated, however, it is possible that many of the transitional issues involved in this proceeding will be resolved through retransmission consent negotiations. Also, if the general retransmission consent pattern is repeated, the digital television stations scheduled to begin broadcasting in November 1998, May 1999, and November 1999, are most likely to exercise retransmission consent for the third election cycle currently scheduled to commence on January 1, 2000, even if there were digital must carry requirements in place. Television stations not affiliated with the four major networks and commercial television stations in smaller markets are those broadcasters most likely to exercise the must carry option, but a number of these stations will not commence digital operations until the year 2002, when they are required to do so under the Commission's rules. We seek comment on these general estimates and what effect these market factors would have on the need to implement must carry rules immediately. Moreover, what effect would not setting rules have on television stations, not affiliated with the top four networks, that want to build out earlier than 2002? We also seek comment on how retransmission consent, rather than must carry, will speed the transition to digital television. For example, a cable operator could agree to carry a broadcaster's ancillary and supplementary digital services, that are not subject to a must carry requirement, and the carriage of such services could spur consumers to purchase digital receivers.

32. The advent of digital broadcast television raises certain potential retransmission consent procedural issues that need to be addressed. The Broadcasters had previously commented that the retransmission consent process should apply separately to the analog and digital broadcast signal. They argue

that separate must carry/retransmission consent elections should be allowed for each transmission mode. In this context, we first seek comment on whether analog and digital broadcasts constitute separate "broadcasting stations" for purposes of retransmission consent and digital broadcast signal carriage. Would the Broadcaster's approach be desirable because it permits the separation of two possibly unrelated issues? Conversely, we ask whether the Broadcasters' proposal would unbalance the negotiation process by divorcing decisions made by a single licensee during the transition to digital television.

33. We further inquire as to whether a common retransmission/must carry election is required for the broadcaster's entire transmission or may the broadcaster select which of its channels or programming streams is deemed a must carry program stream and which is a retransmission consent program stream. We note that the Commission has stated in the analog context that "any broadcast station that is eligible for must-carry status, although it may be carried pursuant to a retransmission consent agreement must . . . be carried in the entirety, unless carriage of specific programming is prohibited . . . pursuant to our rules." Nonetheless, it may be desirable to allow partial carriage pursuant to the retransmission consent process if that is what the parties agree to. We seek comment on what countervailing policy would suggest a requirement for all of a station's digital broadcast output and whether changes in the policy described above are warranted.

34. As stated previously, the Act requires local commercial television stations to elect either must carry or retransmission consent on a triennial basis. The first election cycle ended on December 31, 1996, and the second election cycle ends on December 31, 1999. Assuming that there was some form of mandatory digital broadcast signal carriage rules in place during the transition period, we ask whether the current must carry/retransmission consent cycle should be shortened or otherwise changed to further accommodate the introduction of digital broadcast television? Are changes in the election cycle permitted under the Act? We note that new television stations can make their initial election anytime between 60 days prior to commencing broadcast and 30 days after commencing broadcast with the initial election taking effect 90 days after they are made. Instead of revising the election cycle, should we instead apply the current "new station" rule to digital broadcast

television signals when they sign on-the-air? Alternatively, if there were no mandatory digital broadcast signal carriage rules in place, we seek comment on the procedural mechanisms necessary for digital television stations to enforce their retransmission consent rights against cable operators.

35. Section 325(b)(2)(D) exempts cable operators from the obligation to obtain retransmission consent from superstations whose signals were available by a satellite or common carrier on May 1, 1991. The legislative history behind this provision states that an exemption from retransmission consent was necessary "to avoid sudden disruption to established relationships" between superstations and satellite carriers. United Video, in comments filed in response to the *Fourth Further Notice* in MM Docket No. 87-268, 60 FR 42130 (August 15, 1995), explains that the exemption permits it to continue to uplink superstations signals and transmit them to cable operators and other facilities-based multichannel video providers. We seek comment on whether the digital replacement stations for these analog superstations should be treated as new stations for purposes of the retransmission consent provisions or whether they should have the same status as the ones they replace.

36. In the *Must Carry Report and Order*, MM Docket No. 92-259, 58 FR 17350 (April 2, 1993), we specifically prohibited exclusive retransmission consent agreements between television broadcast stations and cable operators. This policy forbids a television station from making an agreement with one MVPD for carriage exclusive of other MVPDs. The Commission, however, indicated that while this restriction was desirable at least initially, it would reconsider the need for such a prohibition. We now seek comment on the continuing desirability of this prohibition. We ask what impact the introduction of digital television has on this policy and how the Commission's decision in this regard would hasten or slow down the transition period.

37. We recognize that the most difficult issues arise during the transition because there will exist, for a temporary period, approximately twice as many stations as are now in operation or will be in operation after the transition and the return of the analog station licenses. Toward the end of the period, there will be an increasing redundancy of basic content between the analog and digital stations as the Commission's simulcasting requirements become applicable. These two developments have broad

implications for the cable industry. To the extent that the Commission imposes a digital must carry requirement, cable operators could be required to carry double the amount of television stations, that will eventually carry identical content, while having to drop various and varied cable programming services where channel capacity is limited. The central question addressed in this section is how must carry should be initiated during the transition to digital television.

38. In previous comments, the cable industry, as well as cable equipment manufacturers, have argued that operators should not be required to carry both the analog television station and digital television station during the transition period. They assert that system and equipment requirements to meet an all channel carriage obligation would be prohibitively expensive. On the other hand, groups such as the Broadcasters and Electronics Industry Association ("EIA") argue that a cable operator's must carry obligations extend to both the digital broadcast television transmission and the analog signal during the transition period. EIA argues that simultaneous retransmission will allow consumers to experience the qualitative difference between the two formats and promote digital broadcast television deployment. Some parties argued that mandatory carriage of additional digital television broadcast stations would also be contrary to the public interest because it may harm other video programmers. Viacom asserts that digital broadcast television must carry requirements should not operate in such a way as to preempt the carriage of some broadcast station transmissions in favor of one broadcast station's multiplexed program services. It refers to those situations where a cable operator's one-third channel capacity signal carriage requirement may be met through the carriage of certain analog and digital stations, while another broadcaster in the market, with a right of carriage, does not get carried. The Alliance for Community Media argues that public, educational, and governmental access channels, as well as noncommercial television stations, be given preference over additional channels incumbent broadcasters may want carried, in order to maintain a diverse range of noncommercial voices on cable television. Below, we seek comment on several carriage options that address the needs of the broadcasters and the concerns of the cable operators as well as the timing of mandatory digital broadcast signal carriage rules. For each of these options,

we seek comment on how they comport with the existing language in the statute. We also ask whether there are any other options that would serve the public interest and also be consistent with the statute.

39. *The Immediate Carriage Proposal.* This first option would require all cable systems, regardless of channel capacity constraints, to carry, in addition to the existing analog television stations, all digital commercial television stations up to the one-third capacity limit and any additional digital noncommercial stations within the limits currently found in the statute. This approach would provide regulatory certainty to the television industry and provide assurance that investment in digital technology and programming will be fully realized. Moreover, digital broadcasters would be assured of reaching the audience they are licensed to serve. This option may also accelerate the transition period and thus, speed the recapture of the analog spectrum for auction by the Commission. At the same time, however, significant cable channel line-up disruptions may occur as cable operators, whose systems are channel-locked, would have to drop existing cable programming services to accommodate the carriage of digital television signals. This option may also result in cable rate increases, as explained more fully below, for digital broadcast services that the majority of subscribers will be unable to view, at least initially, because they did not make the significant investment in digital television sets necessary to receive such signals. We seek comment on this first proposal. Are there additional arguments for or against this option? For example, will broadcaster reliance on mandatory cable carriage discourage the development of antenna technology? Furthermore, would program diversity be adversely affected? How will this proposal, if implemented, alter retransmission consent negotiations? Would this approach discourage operators from investing in system upgrades? What effect would such a proposal have on television stations that have yet to build out their digital facilities? We also ask whether there should be exceptions to this proposal, perhaps for operators in large television markets where a high number of new digital television stations will commence operations at the same time.

40. If this option is adopted, we ask when the digital broadcast television must carry requirement should take effect. There are several possible triggering events that are based on either the digital broadcast television buildout schedule, by rule, or through the

enforcement process: (1) when the first digital television station is broadcasting in a given television market; (2) when the majority of stations in a given television market are broadcasting in a digital mode; (3) in tandem with the buildout schedule as set forth in the *5th Report and Order* in MM Docket No. 87-268, 62 FR 26966 (May 16, 1997); (4) at the inception of the third must carry/retransmission consent election cycle on January 1, 2000; or (5) upon the Commission grant of a must carry complaint filed by the digital television broadcast station. We seek comment on which of these scenarios, or any other option, best reconciles the governmental interest in the rapid availability of digital broadcast television to cable subscribers with the other interests involved in this proceeding.

41. In addition, we seek comment on whether this proposal, as well as others that include a mandatory carriage requirement, is consistent with Congressional intent. As previously noted, the continued availability of free over-the-air television broadcast service was one of the primary reasons Congress required mandatory cable carriage. Similarly, one Congressional goal cited in the discussion of the transition to digital broadcasting was the future competitiveness of free over-the-air broadcasting. If the mandatory carriage provisions and the transition to digital television share a common purpose—the continued availability of free over-the-air television broadcast service—should some form of must carry be required during the transition to digital television in order to satisfy the common purpose of the mandatory carriage and digital television provisions?

42. *The System Upgrade Proposal.* An alternative proposal would require only higher channel capacity cable systems to add new digital television stations as they commence operations and initiate their digital over-the-air service during the transition period. As systems reach 750 MHz (approximately 120 analog six MHz channels), considerable flexibility will exist to add new television stations. For cable systems that are in the process of increasing their channel capacity through transmission plant upgrades, we would propose that new digital broadcast television stations must be carried by cable operators as they come on the air. We seek comment on this option in line with the questions delineated in the immediate carriage proposal, above. We are specifically interested in the impact this proposal would have on a cable operator's incentive to upgrade facilities and on facilities already upgraded. We seek

comment on the extent to which upgraded cable systems have no additional capacity to add new services.

43. To provide a concise response to the above proposal, we seek comment on whether 750 MHz is the proper cutoff for defining an upgraded system or should a lower number, such as 450 MHz (54 channels), be used instead. We note that approximately 19 percent of the current analog cable systems in the nation have 54 or more channels while the majority of cable systems, about 64 percent, have between 30–53 channels. According to one report, some two-thirds of cable systems are currently channel-locked, meaning that they cannot add additional services without deleting another service or through technical system enhancements. However, this situation may change in the future as cable systems upgrade their physical plant and add new channel capacity. Thus, we also ask commenters to provide information on the expected growth rate for cable channel capacity between now and 2003, when all digital television stations are required to commence operation. In addition, we seek comment about cable programmer plans to convert to digital and what additional carriage needs these programmers would have in the future.

44. *The Phase-In Proposal.* For cable systems that are not adding channel capacity or have only a limited ability to add channels and have no unoccupied channel capacity, a requirement to immediately commence carriage of all digital broadcast television stations when they come on-the-air would possibly be highly disruptive to cable subscribers, especially in those markets where a substantial number of stations are mandated to complete station construction by the same date. For example, stations affiliated with the top four networks in the top 30 markets are scheduled to have construction complete by November 1, 1999. The ten largest market have an average of 17 stations each with two markets having 22 stations. There are 43 markets that have ten or more stations. Under this option, we would require that all cable systems commence some carriage of digital broadcast stations as they come on-the-air, but that some limit on the number that must be added be included in the transitional rules to avoid substantial channel line-up disruptions. If this option is adopted, we would propose that three to five channels be added each year until all digital television stations are carried. These could be either must carry or retransmission consent stations. We

seek comment on this schedule and its effects on the transition. We seek comment on whether there is another phase-in approach, such as adding three to five channels every six months, that would also further the rapid introduction of digital broadcast television while reducing, to the extent feasible, possible disruptions to the cable system's channel line-up. We also ask how we would determine which digital television stations have carriage priority on the cable system in cases where the quota has been satisfied.

45. *The Either-Or Proposal.* Another proposal would be to require broadcasters to choose mandatory carriage for either the analog signal or the digital transmission, but not both, during the early years of the transition period. In the year 2005, when the 100 percent simulcast rule goes into effect, the mandatory carriage option will default to the digital transmission. This option would avoid causing channel line-up disruptions but may have an adverse effect on the speed of the transition process. We seek comment on this approach and ask whether this proposal may be combined with any other transition option discussed. We also ask what effect this proposal would have on the economic viability of digital broadcasters, investment in digital broadcast technology, and on the sale of digital television receivers.

46. *The Equipment Penetration Proposal.* Under this option, we ask whether a carriage obligation should be triggered before any significant number of consumers have receivers or digital-to-analog converter boxes that give them the ability to access digital transmissions. For example, should carriage obligations commence when some percentage of the public, e.g., 5 percent or 10 percent, have invested in receiving equipment? Such a requirement would recognize that in the cable context, the addition of new digital broadcast television transmissions will likely result in the deletion or absence of carriage of other services. The possibility of such a substitution is inherent in the whole mandatory carriage policy, but the general assumption under the existing analog rules is that at least all subscribers will have access to the new transmission in question and not just those who have invested in additional equipment.

47. *The Deferral Proposal.* The sixth option is to defer the implementation of mandatory digital broadcast signal carriage rules for a certain period of time. One possible deferral date would be May 1, 2002. This would coincide with the date that stations not affiliated

with ABC, CBS, NBC, and Fox as well as digital commercial television stations in markets 31–212, are required to initiate service. Waiting to issue regulations until this time has certain advantages. For example, it would allow cable operators and broadcasters to find a successful business model for digital television. A deferral would also allow time for voluntary negotiations on cable carriage issues between the broadcasting and cable industries to settle some of the matters involved. It would allow time for technology to progress and for digital television receivers to come down in price. We seek comment on this proposal and its advantages and disadvantages as well as its impact on the transition period.

48. *The No Must Carry Proposal.* The last option is that must carry does not apply at all for digital television stations during the transition period. Section 614(b)(4)(B) states that "the Commission shall initiate a proceeding to establish any changes in the signal carriage requirements of cable television systems necessary to ensure cable carriage of such broadcast signals of local commercial television stations which *have been changed* to conform with such modified standards" (emphasis added). NCTA argues that the phrase "have been changed" means that the television station's analog signal has ceased broadcasting and the station's digital signal has replaced it as the over the air service. Under this reading, digital broadcasters would not have must carry rights until the transition period is over. If this were the case, we would propose the following. For commercial television stations, retransmission consent would still apply. With regard to those commercial television stations that do not enforce their retransmission consent rights, or noncommercial television stations that lack retransmission consent rights, they are free to enter into voluntary carriage negotiations with cable operators. These broadcasters would be similarly situated with competing cable programming services in that they could pay to be placed on the cable system or negotiate other mutual beneficial arrangements with cable operators. We seek comment on this approach. We ask how this proposal would affect the economic viability of digital television stations as well as the rapid transition to DTV. Moreover, should we recommend to Congress that noncommercial television stations be vested with retransmission consent and program exclusivity rights in order to provide such entities with greater bargaining power vis-a-vis cable operators?

49. With regard to those options where a must carry requirement is suggested, we note that the one-third capacity limit set forth in Section 614(b)(1)(B), is still applicable. When the one-third capacity limit has been reached, Section 614(b)(2) provides that "the cable operator shall have discretion in selecting which such stations shall be carried on its cable system." We believe that this statutory directive would continue to apply in the digital context, if we conclude that mandatory digital signal carriage is necessary. We seek comment on this interpretation. In the alternative, we ask whether it would be desirable to adopt carriage priority rules. Would it be useful to accord priority to stations based on when they commence digital television broadcasting as a way of encouraging stations to speed up the transition process? Should carriage priority be given to stations geographically closer to the operator's principal headend to support the principal of localism? Alternatively, should priority be given to television stations that are not affiliated with the top four networks as these were the stations most likely to have chosen the must carry option in the analog context and also have less bargaining power relative to cable operators?

50. We seek comment on whether digital broadcast television carriage requirements, during the transition and afterward, will impose unique burdens on small cable systems or small cable operators that warrant special consideration in the development of new digital broadcast signal carriage rules. The Broadcasters recognize that small cable systems may find it difficult to accommodate digital broadcast television signals. Therefore, they suggest that the Commission may consider adopting phase-in rules or policies for cable carriage of digital broadcast television signals but that such rules or policies should recognize cable's role in working with broadcasters to avail the public of the benefits of digital technology. Although small cable operators may be able to pass through a digital broadcast signal to subscribers, there still may be significant equipment costs and channel capacity loss involved in order for a cable operator to deliver digital broadcast television. Small cable operators may not be able to upgrade their systems, or invest in digital compression technology, due to financial constraints and thus, may delay their transition to digital. As such, these entities, that have been accorded special regulatory status by Congress

and the Commission in other areas, such as rate regulation, may be the subjects of special treatment when it comes to the carriage of digital broadcast television transmissions.

51. We seek comment on how to define small systems and small cable operators in the context of digital must carry. We see alternative definitions to choose from: those found in the must carry provisions of the Act and those found in the rate regulation context. We seek comment on which definition furthers the transition to digital broadcast television while, at the same time, recognizes the unique circumstances of the small cable operator. Are there other definitions that we have not considered? As for relief, we ask, for example, whether the Commission should decide that as long as the small system or small operator carries all of the local analog television signals, it need not carry the digital television transmissions as well. Alternatively, we ask whether the Commission should allow small cable operators to file petitions for special relief requesting a waiver of any digital broadcast television carriage rule if financial hardship is demonstrated. With regard to retransmission consent and its effect on small cable operators, we seek comment on whether the Commission should prohibit tying arrangements where an operator must carry the broadcaster's digital signal as a precondition for carriage of the analog signal. We seek comment on the scope of our statutory authority to redefine small cable operators and small systems and provide them with special relief.

52. Section 653(c)(1) of the Act provides that any provision that applies to cable operators under Sections 614, 615 and 325, shall apply to open video system operators certified by the Commission. Section 653(c)(2)(A) provides that, in applying these provisions to open video system operators, the Commission "shall, to the extent possible, impose obligations that are no greater or lesser" than the obligations imposed on cable operators. The Commission, in implementing the statutory language, held that there are no public policy reasons to justify treating an open video system operator differently from a cable operator in the same local market for purposes of broadcast signal carriage. Thus, OVS operators generally have the same requirements for the carriage of local television stations as do cable operators except that these entities are under no obligation to place television stations on a basic service tier. OVS operators are also obligated to abide by Section 325 and the Commission's rules

implementing retransmission consent. We seek comment on the impact digital must carry and retransmission consent will have on OVS operators and whether and how rules for these entities should be different than the rules for cable operators.

53. Sections 614 (a) and (h), and 615 (a) and (l) establish the qualifications for cable carriage eligibility as it pertains to full power commercial television stations (market based eligibility standards), low power commercial television stations (six statutory qualifications), and noncommercial television stations (mileage and technical based standards). At this time, we see no need to deviate from the existing eligibility requirements for these three categories of stations. We seek comment on this tentative conclusion.

54. The issue of over-the-air signal reception quality at the headend of the cable system is also involved in this discussion as it defines which digital television stations, from a technical perspective, are eligible for carriage. Section 614(h)(1)(B)(iii) states that a television station that does not deliver a good quality signal to the cable operator's headend, and does not agree to pay for the equipment necessary to improve the signal, is not qualified to assert its must carry rights. Under the current regime, television broadcast stations must deliver either a signal level of -45dBm for UHF signals or -49dBm for VHF signals at the input terminals of the signal processing equipment, to be considered eligible for carriage. We seek comment on how the Act's signal quality exception test applies to digital transmissions. We have previously stated that, in order to ease the transition, and to be considered to have complied with the construction schedule, a broadcaster only initially needs to emit a digital transmission strong enough to encompass its community of license. We ask how this policy may affect the carriage of the digital television transmission. We seek comment on whether the Commission's analog signal strength standards are relevant to digital broadcast television or new good quality signal parameters, which include normal system processing degradations and account for bit rate error, are necessary.

55. The language of Section 614(b)(4)(B) states that the Commission should initiate a proceeding to establish any changes in the signal carriage requirements of cable television systems are necessary "to ensure cable carriage of such broadcast signals of local *commercial* television stations. . . ." (emphasis added). The question here is

the nature and existence of carriage rights for noncommercial digital television stations, since they are not explicitly discussed in this section. We note that Section 615(a) of the Act states that "each cable operator shall carry on the cable system of that cable operator, any qualified local noncommercial educational television station requesting carriage." APTS argues that this provision is broad enough to require cable operators to carry both the analog and digital signals of public television stations. We seek comment on the statutory language and on APTS' interpretation.

56. Section 614(b)(1)(B) provides that a cable operator, with more than 12 usable activated channels, shall not have to devote more than "one-third of the aggregate number of usable activated channels" to local commercial broadcast signal carriage purposes. Determining a cable operator's capacity when digital content is involved and therefore how many commercial television station signals must be carried, is thus an issue in this proceeding. The cable industry has commented that operators lack capacity to accommodate both the analog signal and digital transmission. Broadcasters, on the other hand, have asserted that cable operators are technically capable of fulfilling any digital broadcast television must carry requirement and that lack of capacity is a misleading argument. They state that one 6 MHz digital cable channel could carry at least 8 digitally compressed analog NTSC signals or two HDTV channels, or a compressed NTSC channel and 4 multicast SDTV channels. Thus, while the Act provides that a cable operator should not have to devote more than "one-third of aggregate number of usable activated channels" to local broadcast signal carriage purposes, there is some dispute as to how capacity should be defined in a digital environment.

57. Accordingly, we solicit comments on the definition of "usable activated channels" in the context of digital broadcast television carriage. Many cable operators now have, or soon will have, the technical ability to fit several analog programming services onto one 6 MHz channel. Thus, in answering this question, we ask how advances in signal compression technology affect the definition of capacity. We also ask whether the one-third channel capacity requirement for digital broadcast television carriage purposes means one-third of a cable operator's digital channel capacity or one-third of all 6 MHz blocks, including both the analog and digital channels.

58. We see three possible options in determining capacity: (1) each programming service counts as one channel; (2) each 6 MHz block of spectrum counts as one channel; or (3) the digital capacity should be by data throughput, i.e. bits per second of digital data. We seek comment on the benefits and drawbacks on each of these options. We also ask whether the Act permits the Commission to redefine the meaning of capacity in this context. We note, as discussed above, that the ability of cable operators to carry more than a single digital broadcast television signal in a 6 MHz channel is dependent on whether the transmission is carried in its original format or whether changes in format may be permitted, and ask commenters to address this distinction in discussing the capacity issue.

59. We seek quantified estimates and forecasts of usable channel capacity. Are there differences in channel capacity that are based on franchise requirements, patterns of ownership, geographic location, or other factors? What is the average number of channels dedicated to various categories of programming, such as pay-per-view, leased access, local and non-local broadcast channels, and others that would assist us in understanding the degree to which capacity is, and will be, available over the next two, five, eight years, or beyond? What methods are appropriate to forecast the comparison between usable channel capacity and potential broadcast needs, nationally, during the transition (or other appropriate timeframe)?

60. Section 614(b)(4)(A) of the Act, discussing the cable system's treatment and processing of analog broadcast station signals, provides that: "The signals of local commercial television stations that a cable operator carries shall be carried without material degradation. The Commission shall adopt carriage standards to ensure that, to the extent technically feasible, the quality of the signal processing and carriage provided by a cable system for the carriage of local commercial television stations will be no less than that provided by the system for carriage of any other type of signal."

61. In the context of digital broadcast signal carriage, this raises two quite distinct questions. First, to what extent should this preclude cable operators from altering the digital format of digital broadcast television signal when the transmission is processed at the system headend or in customer premises equipment, such as the set top box, that is part of the cable system or is attached to it? And second, regardless of the transmission format, what standards

and measurement tools are available to address disputes relating to the quality of the digital broadcast television signal?

62. The first issue essentially has to do with tradeoffs between different modulation methods and transport specifications that may be optimized for different media and the savings involved in having a common receiver for signals or bitstreams received from different transmission paths. As described above, broadcasters are using 8 VSB while the cable industry has favored 64 or 256 QAM. The cable operators' selection of a transmission methodology other than 8 VSB reflect their ability to carry a higher data rate, and make more use of their capacity, than they would if they used the broadcast system.

63. In comments in the previous phase of this proceeding, the broadcasters argue that the material degradation mandate should be strictly applied so that each cable system must carry the digital broadcast television signal in its original over-the-air format so that the public can receive the full extent of the station's capabilities, including the station's full high definition capabilities.

64. The cable industry's concern in this area is that operators should be allowed to demodulate and repack the digital broadcast television signal into a higher bit-rate package because it would result in a more efficient use of cable network capacity than any broadcaster proposed engineering plan to merely pass-through the bitstream on an equivalent basis, i.e., a 6 MHz broadcast signal on a 6 MHz cable channel.

65. We recognize one important action that may constitute material degradation. It involves the cable operator's conversion of the broadcaster's digital transmission into another digital format, perhaps one with lower picture resolution. We seek comment on this possibility and whether such a conversion should be prohibited. Are there other degradation possibilities that we have not considered? Additionally, does the term "material" in the statute suggest that some "de minimis" amount of degradation is permissible?

66. Aside from the matters discussed above, questions arise as to what standards and measurement techniques the Commission should employ where specific disputes as to digital broadcast signal quality develop. Picture and sound quality issues in a digital environment implicate standards and measurement techniques that are quite different than those that arise in the analog environment. In the analog

situation, issues involving signal strength, signal to noise ratios, and ghosting are the focus of concern. In the digital situation, picture resolution is still a concern but bit error rates and data throughput are also relevant. Moreover, the technical standards that are employed to evaluate cable analog picture quality were adopted and refined over the course of many decades. We tentatively conclude that it would be premature to attempt to replicate parallel digital standards before digital broadcasting has even commenced. In this regard, we seek suggestions for any standards that may be used in addressing signal degradation issues. How, and where, should degradation be measured? For example, should it be measured before the signal is processed by the set top box, if such a device is involved, or should it be measured at the input of the digital receiver? We recognize that, under the Act, the signal quality of a local commercial television station carried by a cable system will be no less than that provided by the system for carriage of any other type of signal. Does this mean that if an operator carried a cable programming service, such as HBO, in the 1080i HDTV format, then it must carry, without material degradation, all local commercial television stations that also provide 1080i HDTV signals? Would such a channel comparison test be a viable degradation measurement technique, at least for HDTV picture quality? Alternatively, we ask whether degradation should be gauged through the use of bit error rate and signal-to-noise ratio measurements. In other words, it may be that as long as the bit error rate is minimal, then any conversion process cannot be said to materially degrade the signal.

67. Section 614(b)(5) of the Communications Act provides that "a cable operator shall not be required to carry the signal of any local commercial television station that substantially duplicates the signal of another local television station which is carried on the cable system * * *." Parallel provisions also apply to the carriage of noncommercial stations. Congress stated that these provisions were intended to preserve the cable operator's editorial discretion while ensuring that the public has access to diverse local signals. Because it is likely, and indeed mandated, that at some point in the transition process there be a duplication of program content between analog and digital broadcast transmissions, an integral part of the overall carriage question is the issue of how to treat duplicative programming.

68. We see alternative approaches to defining "duplication" in the digital age. The first option would be modeled after the current approach for analog signal duplication and focus on the stations' program content so that the nonduplication provision would apply even though the signals were transmitted in different formats. In the analog signal context, the Commission has determined that two commercial television stations will be considered to substantially duplicate each other "if they simultaneously broadcast identical programming for more than 50 percent of the broadcast week." Thus, if a broadcaster aired substantially the same material over its digital station, as it does over its analog station, the operator would not be obligated to carry both. Second, because they each use different transmission formats, the analog signal and digital bitstream could be considered not duplicative even if they contain identical program content. This would be most clearly the case where one of the broadcasts was in a high definition format and the other was not. Third, the substantial duplication requirement may not apply in the digital world because Congress may have intended that the provision be used where there were two different television stations involved, not the same licensee transmitting programming in both an analog and digital format. We seek comment on each of these possibilities. In answering this inquiry, we seek comment on the meaning of the term "duplicative" when applied to digital broadcast television signals. For example, should a multiplexed broadcast signal that includes cable programming that is already carried by the operator, be considered duplicative? Moreover, how should the term "station" be defined in this context? Does the term "another" in the statute suggest that the signals in question must come from two different stations, not the same one? We also seek comment on whether a definition that requires carriage of identical analog and digital signals would result in other commercial broadcast programming not being carried because the one-third channel capacity has been reached.

69. Section 614(b)(3)(A) of the Act requires cable operators to carry the "primary video" of each of the local commercial television stations carried on the cable system. A parallel provision exists for noncommercial educational television stations. The general question here is how to define "primary video" during the transition period when both an analog and digital signal will be broadcast. Could the

analog signal be considered primary but not the digital signal since the former can be received by all cable subscribers with analog television sets? Moreover, broadcasters, under the digital television rules, have flexibility in choosing to broadcast either high definition or multiple standard definition television transmissions, or a mixture of both, over the course of a broadcast day. Thus, how should "primary video" be defined in the context of a digital service that broadcasts multiple streams of video programming. If the primary video includes less than all of the streams of programming broadcast, we seek comment on which video programming services provided by a licensee should be considered primary and should be entitled to carriage. Should the definition be flexible, allowing the broadcaster to alternate which of its transmissions would be considered primary over time? How do the answers to these questions reflect on the development of both digital broadcasting and on the services provided and rates charged by cable operators?

70. Section 336 of the Act provides that "no ancillary or supplementary service shall have any right to carriage under section 614 or 615." Section 614(b)(3) of the Act requires cable operators to carry "to the extent technically feasible, program-related material carried in the vertical blanking interval or on subcarriers" but states that "[r]etransmission of other material in the vertical blanking interval or other nonprogram-related material (including teletext and other subscription and advertiser-supported information services) shall be at the discretion of the cable operator." Our task here is to define what "ancillary or supplementary" mean in the context of digital broadcast television carriage. We seek comment on possible definitions that are consistent with the language of Section 614(b)(3).

71. We note that Section 336 of the 1996 Act also states that "no ancillary or supplementary service shall * * * be deemed a multichannel video programming distributor for purposes of section 628." Section 628 contains the program access requirements pursuant to which multichannel video programming distributors have rights to demand access to certain satellite delivered cable programming in which a cable operator has an attributable interest. We seek comment on whether the Act's language provides any insight as to the ancillary or supplementary service definition.

72. Section 615(d) and 614(c)(2) of the Act provides that a cable operator required to add the signals of qualified local noncommercial educational stations and qualified low power television stations, respectively, may do so by placing such additional stations on unused public, educational or governmental ("PEG") channels not in use for their designated purposes, subject to the approval of franchising authorities. Pursuant to Section 611 of the Act, the franchising authority determines how much of a cable operator's channel capacity, if any, will be set aside for PEG use. The Commission, when implementing the analog must carry rules, declined to adopt stringent requirements regarding the use of PEG channels for must carry purposes because we believed that these matters are more appropriately resolved by individual franchising authorities. We seek comment on whether the DTV signals of NCE stations and LPTV stations should be allowed on PEG channels under the same framework accorded analog television signals.

73. Section 614(b)(7) provides that all commercial must-carry signals shall be provided to every subscriber of a cable system and shall be viewable on all television receivers of subscribers that are connected by the cable operator or for which the cable operator provides a connection. Section 615(h) provides that noncommercial educational stations, that are entitled to carriage, shall be "available to every subscriber as part of the cable system's lowest price service tier that includes the retransmission of local commercial television broadcast signals." We seek comment on whether the operator must place the broadcaster's digital transmissions on the same basic tier where the analog channels are found or whether a separate digital basic service tier could be established that would be available only to subscribers with the capacity to view the contents of the digital broadcast signals.

74. During the transition period, there may be situations where the carriage of digital broadcast signals could properly be associated with the carriage of digital cable channels because of their similar digital picture or interactive characteristics, or may otherwise be provided only to subscribers capable of using digital video. By associating the digital broadcast and cable channels in terms of tier placement, subscribers that are equipped to receive digital signals will be assured of receiving digital broadcast signals and subscribers not so equipped would not be obliged to subscribe to services that they are not equipped to receive. We seek comment

on this general concept or on other means whereby subscribers' reception capabilities could be matched with the tier package they are required by regulation to receive. Do we have the authority to implement such a proposal? Moreover, should there be parallel tier placement rules, one for analog cable systems that do not offer digital services, and one for cable systems that do offer digital services? We also seek comment on the legal issues that might be associated with having more than a single basic tier in order to accommodate the carriage of digital broadcast signals. Once the transition period ends, our tentative view is that the basic service tier would be required to include, at a minimum, digital broadcast signals and public, educational, and governmental access channels. This will satisfy the statute's directive of assuring that all cable subscribers are able to view broadcast material on the lowest priced tier available.

75. Also pursuant to Section 614(b)(7), if a cable operator authorizes subscribers to install additional receiver connections, but does not provide the subscriber with such connections, the operator shall notify such subscribers of all broadcast stations carried on the cable system which cannot be viewed via cable without a converter box. In such cases, the cable operator shall offer to sell or lease a converter box to such subscribers at rates in accordance with the standards established by the Commission pursuant to Section 623(b)(3). We seek comment on the application of this provision to the carriage of digital broadcast television stations. We specifically ask whether this provision would require cable operators to offer converter boxes to every subscriber if digital broadcast television stations cannot be received without some set-top device facilitating reception of the stations' transmissions.

76. In addition to tier position requirements, we also need to determine the specific channel rights digital broadcast television stations should have. Section 614(b)(6) provides for four channel positioning options for commercial television stations: (1) The channel number on which the station broadcasts over-the-air; (2) the channel on which the station was carried on July 19, 1985; (3) the channel on which it was carried on January 1, 1992; and (4) any other channel number as is mutually agreed upon by the station and the cable operator. Noncommercial television stations have three channel positioning options under Section 615(g)(5): (1) the channel number on which the station is broadcast over-the-

air; (2) the channel on which the station was carried on July 19, 1985; and (3) any other channel number as is mutually agreed upon by the station and the cable operator. We seek comment on which of the statutory options remain applicable in a digital environment. Commenters should also focus their attention on the carriage of multiple SDTV programming streams and describe how channel positioning should vest in this situation.

77. In earlier comments, the Broadcasters maintain that television stations should have the option of electing the channel on which the digital broadcast television signal is carried, so that each station would be able to retain its channel identity from cable system to cable system, and so that the analog and digital channels be found together on the cable system. They also maintain that the Congressional intent behind the Act's channel positioning mandate, i.e., to prevent the anticompetitive conduct of the cable operator placing the television station on an undesirable, higher cable channel, remains valid. We seek comment on this proposal.

78. The new digital broadcast television table of allotments typically does not correspond to a television station's analog channel number but the advent of advanced programming retrieval systems and other channel selection devices may alleviate the need for specific channel positioning requirements as subscribers will be able to locate a television station with little degree of difficulty. Additionally, channel mapping protocols ("PSIP") have been developed that will technically link the digital channel number with that assigned to the analog channel. Given these developments, we ask whether the Commission should refrain from promulgating new channel positioning requirements and allow technology, as discussed above, to resolve the matter. We seek comment on the extent to which PSIP is the subject of voluntary standards setting processes in the cable, broadcast, and consumer electronics industries and what the timing and outcome of such voluntary processes are likely to be. Moreover, recognizing that channel positioning is important to ensure the successful introduction of an individual digital television station on a cable system with dozens of other channels, we ask whether deference to technology to resolve the positioning issues here will be the appropriate solution. We also seek comment on whether this option would be consistent with the statutory channel positioning requirements.

79. Another alternative would be to allow the operator to place the digital television transmission on any cable channel of its choice, subject to certain conditions, such as: (1) That the digital channel identification or PSIP information be clearly available for use by the subscriber's receiver; (2) that all analog and digital channel placement decisions must comply with tier placement requirements; and (3) once a station has been assigned a channel position, the cable operator may not move it from that position for at least three years except where a move is authorized by the broadcaster. These general requirements would give the operator greater leeway in configuring its channel line-up. We seek comment on this particular proposal and ask commenters to focus on the legal, technical, and economic issues involved.

80. We also seek comment on whether advanced programming retrieval systems and other channel selection devices provided by cable operators which, in effect, filter and prioritize programming, present another series of challenges similar to those that gave rise to Congress' channel positioning requirements. If so, we ask whether any rules are necessary to ensure fair competition between electronic programming guides controlled by cable operators and those that are controlled by broadcasters.

81. Television stations have carriage rights throughout the market to which they are assigned. Pursuant to Section 614(h)(1)(C), at the request of either a broadcaster or a cable operator, the Commission may, with respect to a particular television broadcast station, include additional communities within its television market or exclude communities from such station's television market to better effectuate the purposes of the Act's must carry provisions. The Commission's inclusion of additional communities within a station's ADI imposes new must carry requirements on cable operators subject to the modification request while the grant to exclude communities from a station's ADI removes a cable operator's obligation to carry a certain station's signal. In considering market modification requests, the Act provides that the Commission shall afford particular attention "to the value of localism" by taking into account such factors as—(1) Whether the station, or other stations located in the same area, have been historically carried on the cable system or systems within such community; (2) whether the television station provides coverage or other local service to such community; (3) whether

any other television station that is eligible to be carried by a cable system in such community in fulfillment of the requirements of this section provides news coverage of issues of concern to such community or provides carriage or coverage of sporting and other events of interest to the community; and (4) evidence of viewing patterns in cable and noncable households within the areas served by the cable system or systems in such community. We seek comment on whether any change to the market modification process is warranted to accommodate the difference between analog and digital broadcasting and the fact that the signals in question have neither a history of carriage nor measured audience. We also seek comment on whether there are alternative means to resolve market structure issues for new digital broadcast television stations.

82. We also inquire as to whether changes in signal strength and Grade B contour coverage, because of new digital television station channel assignments and power limits, will result in different carriage obligations for cable operators. We focus on those instances where the Commission has redefined an analog station's television market based, in part, on Grade B contour coverage and has either granted or denied a must carry complaint based on an analog station's signal strength measurements. Should the digital television station's technical characteristics have any bearing on the analog television station's market area, or vice versa?

83. We previously held that television markets for must carry eligibility purposes are to be determined by Arbitron's ADIs through December 31, 1999, the end of the second must carry/retransmission consent election cycle, and by Nielsen's DMAs for all election cycles thereafter. Television markets for digital allocation purposes, however, are currently defined by DMAs rather than ADIs. Noting that digital broadcast television service in certain markets is to be introduced months earlier than the switch to DMAs, the situation now exists where carriage obligations commence under one set of standards (ADIs) and shortly thereafter shift to a new set of market definitions (DMAs). This two-step carriage process is likely to cause channel line-up disruptions and subscriber confusion. We seek comment on this situation and the steps the Commission should take to lessen the possibility of channel line-up disruptions.

84. Under current Commission rules, whenever a television station believes that a cable operator has failed to meet its must carry obligations, the station

may file a complaint with the Commission. Section 614(d)(3) requires the Commission to adjudicate a must carry complaint within 120 days from the date it is filed. The Commission may grant the complaint and order the cable operator to carry the station or it may dismiss the complaint if it is determined that the cable operator has fully met its must carry obligations with regard to that station. We seek comment on whether the complaint process now set forth in part 76 is appropriate in the context of digital broadcasting stations. We specifically ask whether the Commission's rules need to be modified to recognize the broadcaster's transmission of programming streams rather than entire channels. We welcome any suggestions for streamlining the complaint process that would expedite the Commission's adjudication of the requested action.

85. Various means of providing cable subscribers access to over-the-air broadcast signals have been explored in years past. One recognized option was to require cable operators to provide subscribers with an input selector switch (commonly referred to as an A/B switch) that switches television receiver inputs from cable to an over-the-air antenna and to require cable system operators to educate subscribers as to the use of this device. Congress, however, subsequently abolished the Commission's A/B switch requirements when it passed the Cable Act of 1992, stating affirmatively that no cable operator should be required to provide or make available such a switch. It stated that an A/B switch is not an enduring or feasible method for the reception of television signals. In light of Section 614(b)(4)(B), and Congressional statements about the Commission's broad role in examining the digital broadcast television carriage issue, we ask whether we have the authority to address A/B switch issues, notwithstanding the existing prohibition.

86. The availability of an input selector switch, in conjunction with television antennas, could be a means of increasing cable subscriber access to DTV signals, including ancillary and supplementary services that are not entitled to cable carriage. That does not necessarily mean that a regulatory requirement mandating the inclusion of such a device is needed. The basic hardware involved is readily available from retail outlets. Moreover, a switch mechanism is now incorporated into many television receivers (as well as into videotape recorders and DBS receivers) and new digital television receivers may have multiple input

possibilities fully selectable from remote control devices. We seek comment on these views and specifically ask whether A/B switches have evolved, from a technical perspective, in the last six years. Are they easier to use than they were when Congress made its findings for the 1992 Cable Act? For example, has widespread use of remote control technology rather than manual operation made the use of A/B switches more effective? Are there widely accepted industry practices with regard to the manufacturing and inclusion of A/B switches? What plans, if any, do manufacturers have to incorporate electronic or diode-based A/B switches into television receivers and other devices? We also ask whether there are any actions that the Commission needs to take to make sure that subscribers have access to digital television signals that are not carried. Are there situations where regulatory intervention would be useful either to facilitate access as a technical matter or to overcome any residual "gatekeeper" control that cable system operators may retain with respect to such devices? Is the restriction in Section 614(b)(4)(B) on requirements applicable to cable operators equally applicable to requirements imposed on receiver manufacturers? Could the Commission, for example, require that all digital television equipment, not supplied by the cable operator, be manufactured with an A/B switch? We also seek comment on whether improvements in A/B switch technology and its availability undercut the need for mandatory digital broadcast signal carriage, if the justification for such a rule is to preserve free over the air broadcast television.

87. As the above discussion indicates, the use and usefulness of antennas, both roof-top and indoor, is central to this proceeding. It appears likely that antennas will play a significant role in the reception of DTV. In this context, many questions arise about the efficacy of antennas for over-the-air reception of DTV and their use by cable and non-cable homes, alike. For example, do indoor antennas work better with digital television receivers than with analog receivers? How do weather conditions affect DTV television reception when an antenna is used? Are roof top antennas an economically efficient alternative to cable for the reception of DTV signals? Should the Commission encourage antenna technology in order to enhance the use of the valuable spectrum broadcasters use? How does the availability of better antennas affect the

necessity of mandatory digital broadcast signal carriage rules?

V. Impact on Other Rules

88. Digital broadcast signal carriage also has potential consequences for the cable television rate regulation process. Both jurisdictional and substantive rate level issues are involved. One of the issues addressed in this proceeding has to do with where, in terms of tier location, digital broadcast television signals would be placed on the cable systems involved. The answer to this question has jurisdictional consequences for the rate regulation process and substantive consequences in terms of the rate levels permitted by the Commission's rules. With respect to the jurisdictional question, rates for the basic service tier ("BST") are subject to local franchise authority regulation and upper tier or cable programming service tiers ("CPST") are subject to Commission regulation on a complaint basis.

89. With respect to the substance of rate regulation, under the benchmark rate rules, once initial rates are established, cable operators are permitted to adjust their rates for changes in the number of regulated channels. Cable operators seeking to adjust regulated rates to reflect these changes had to be prepared to justify rate increases using the applicable forms. In justifying rate adjustments, operators use a channel adjustment methodology provided for under the rules. The rules also provide an adjustment process when channels are dropped and when channels are moved between tiers. An alternative "cost of service" rate regulation process also is available to cable system operators that believe the benchmark process fails to adequately account for their costs. There are also cost pass-through mechanisms for defined categories of "external" costs, including franchise fees; certain local franchise costs; programming; retransmission consent; and copyright fees. Costs associated with compliance with mandatory broadcast signal carriage rules are not now included as external costs. Customer equipment that is used to receive the basic service tier, and any other service received with the same equipment, is subject to franchise authority jurisdiction under a separate set of rules. Additionally, subject to a number of conditions, cable operators may establish a category of cable programming service tiers, referred to as a "new product tiers," that may be offered at prices they elect. New product tiers consist of programming not previously carried by the operator that is optional to subscribers and that is

available without subscribing to any other cable programming service tier. It appears that most cable system operators that are adding separate tiers of digital cable programming may be doing so under the "new product tier" provisions of the rules.

90. In our effort to establish a complete record in this area, and make an informed policy decision with regard to rate regulation, we seek comment on what, if any, changes in these rules may be necessary or desirable. We specifically seek comment on the processes and costs of delivering digital broadcast television to cable subscribers. This part of the inquiry is important because some operators, such as Intermedia, have said that mandating carriage of all digital broadcast television transmissions "will financially devastate many cable operators." Broadcasters acknowledge that the transition to digital will be expensive for all parties involved. We note that the broadcaster is currently required to pay for the costs of delivering its analog signal to the cable operator's headend. Cable subscribers also have an interest given that rates may change if digital broadcast television stations must be carried by cable systems, and the Commission has a statutory responsibility to ensure reasonable rates to these subscribers. We also seek comment on whether existing rate levels already allow operators to recover the costs involved in any upgrading of their systems necessary for digital broadcast signal carriage.

91. The "costs of carriage" issue has been generally addressed in prior comments. The broadcasters, for example, assert that they should not have to pay for cable upgrades in return for mandatory carriage. They state that cable operators will know what technical compatibility issues lie ahead and thus, any expenses incurred to ensure compatibility should be borne by those systems. The cable operators, on the other hand, argue that if they are required to carry any digital broadcast services before a cable system has become digital-capable, the cost to transmit such services should be borne by the broadcast station. We ask that commenters refresh the record on the specific technical modifications needed to enable cable systems to deliver digital broadcast television to subscribers. We ask what the costs will be for such modifications, particularly for new headend equipment and the delivery and installation of new digital set top boxes, if they are needed to comply with any carriage requirement. We also ask about the costs related to cable tower modifications as it may be necessary to

add additional digital broadcast television receiving antennas at the headend. To what extent should these additional costs be the responsibility of the broadcaster seeking carriage? We also seek comment on whether digital cable programming services are paying, or plan to pay, cable operator digital equipment costs as one way of obtaining carriage on the cable system. We ask if the advent of digital compression technology has, or will, lessen the cable operator's costs in bringing digital broadcast television signals into the home.

92. Cable operators are required to notify subscribers of any changes in rates, programming services or channel positions. When the change involves the addition or deletion of channels, each channel added or deleted must be separately identified. We seek comment on how any new digital broadcast television carriage requirements will affect the notification provisions described above. For example, if an existing broadcaster switches to an HDTV format, would the cable operator be required to notify subscribers of the change? Moreover, if a television broadcasts multiple streams of programming, must the cable operator explain the broadcaster's offerings on each of these streams? We tentatively conclude that a cable operator would be required to notify subscribers whenever a new digital television transmission is added to the operator's channel line-up because these digital broadcast television substitutions could be considered new services affecting subscribers equipment and subscription choices. We also tentatively conclude that while the operator should state that multiple programming streams are available, it would be under no obligation to explain to subscribers the material found in each and every SDTV programming stream, if such material is carried, as such detail is not required by either the Act or our rules.

93. The Commission's program exclusivity rules, as implemented in §§ 76.92 and 76.151, protect exclusive distribution rights afforded to network programming and syndicated programming. Television broadcast station licensees are entitled to protect those kinds of programs for which they have contracted in a particular market by exercising blackout rights against distant television broadcast stations carried on cable systems that serve more than 1000 subscribers. Stations may assert their rights regardless of whether their signals are carried on the cable system in question.

94. We seek comment on how the transition to digital television may affect

these rules. We specifically ask how SDTV multiplexing impacts these rules and whether the cable operator will be able to accommodate such black-out requests on various programming streams. Finally, we ask whether these rules are applicable in the digital age, with or without must carry, and whether it would be possible to repeal these rules and instead rely on the retransmission consent provisions of Section 325 of the Act to protect the rights in question. Section 325 generally provides that distant stations may not be carried without the permission of the station involved. To the extent digital broadcast television stations will need to make new arrangements for programming, it may be possible for the rights now protected by the rules to be protected through private contractual relationships. A broadcaster, for example, could require a cable operator to blackout certain programming and monetary penalties could arise if the operator does not comply with the terms of the contract. This may be a more effective method of enforcing blackout rights than relying on the Commission's current complaint process. The rules in question, we note, were adopted prior to the changes in Section 325 that include the retransmission consent requirement.

95. The Commission's cable television broadcast signals carriage rules and the copyright laws, through reference to the Commission's rules, contain a number of distinctions in their application based on whether a broadcast signal is "local" to the cable community. One measure of whether a station's signal is "local" involves using actual over-the-air viewership in the community as the standard. This "significantly viewed" concept is defined in § 76.5(i) of the rules and is applied in the contexts of syndicated exclusivity, sports broadcast, network nonduplication, and, through incorporation by reference, to the compulsory copyright licensing process. The significant viewing standard supplements the other "local" station definitions by permitting stations to be considered local both within their Grade B contours and outside of their ADI or DMA-defined economic market areas based on viewing surveys that directly demonstrate that over-the-air viewers have access to the signals in question.

96. Because digital broadcast television stations will not, in the early stages of their deployment, have significant over-the-air audience, we seek comment on methods to address the kinds of issues that the significant viewing standard addresses in the analog environment. Should, for example, a new measure be developed

that measures viewing in places that are equipped with digital receivers? Or should the "significant viewing" status of analog stations be transferred to their digital replacements. It is our initial view that such transfer of rights may be the most efficient and equitable way to proceed based on the costs and problems associated with taking new measurements.

97. We recognize that cable operators are frequently dependent on cable television relay service ("CARS") stations to relay broadcast television signals. CARS stations distribute signals to microwave hubs where it may be physically impossible or too expensive to run actual cable wire. CARS stations are not used to distribute programming directly to subscribers. We seek comment on whether the introduction of digital broadcast television impacts CARS, and, if so, how.

VI. Procedural Matters

98. *Ex Parte Rules.* This proceeding will be treated as a "permit-but-disclose" proceeding subject to the "permit-but-disclose" requirements under 47 CFR 1.1206(b), as revised. Ex parte presentations are permissible if disclosed in accordance with Commission rules, except during the Sunshine Agenda period when presentations, ex parte or otherwise, are generally prohibited. Persons making oral ex parte presentations are reminded that a memorandum summarizing a presentation must contain a summary of the substance of the presentation and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented is generally required. See 47 CFR 1.1206(b)(2), as revised. Additional rules pertaining to oral and written presentations are set forth in 1.1206(b).

99. *Filing of Comments and Reply Comments.* Pursuant to applicable procedures set forth in 47 CFR 1.415 and 1.419, interested parties may file comments on or before September 17, 1998 and reply comments on or before October 30, 1998. To file formally in this proceeding, you must file an original plus four copies of all comments and reply comments. If you want each Commissioner to receive a personal copy of your comments and reply comments, you must file an original plus nine copies. You should send comments and reply comments to Office of the Secretary, Federal Communications Commission, 1919 M Street, N.W., Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the FCC

Reference Center, Room 239, Federal Communications Commission, 1919 M Street N.W., Washington D.C. 20554. The Cable Services Bureau contact for this proceeding is Ben Golant at 202-418-7111 or bgolant@fcc.gov.

100. Written comments must be submitted by the Office of Management and Budget ("OMB") on the proposed information collections on or before September 17, 1998. In addition to filing comments with the Secretary, a copy of any comments on the information collections contained herein should be submitted to Judy Boley, Federal Communications Commission, Room 234, 1919 M Street, N.W., Washington, DC 20554, or via the Internet to jboley@fcc.gov and to Timothy Fain, OMB Desk Officer, 10236 NEOB, 725-17th Street, N.W., Washington, DC 20503 or via the Internet to fain_t@al.eop.gov.

101. Parties are also asked to submit comments and reply comments on diskette, where possible. Such diskette submissions would be in addition to, and not a substitute for, the formal filing requirements addressed above. Parties submitting diskettes should submit them to Ben Golant of the Cable Services Bureau, 2033 M Street N.W., Room 703B, Washington, D.C. 20554. Such a submission should be on a 3.5 inch diskette formatted in an IBM compatible form using MS DOS 5.0 and WordPerfect 5.1 software. The diskette should be submitted in "read only" mode. The diskette should be clearly labelled with the party's name, proceeding, type of pleading (comments or reply comments), and date of submission. The diskette should be accompanied by a cover letter.

102. *Initial Regulatory Flexibility Act Analysis.* As required by the Regulatory Flexibility Act ("RFA"), the Commission has prepared this present Initial Regulatory Flexibility Analysis ("IRFA") of the possible significant economic impact on small entities by the policies and rules proposed in this NPRM. Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the NPRM provided above. The Commission will send a copy of the NPRM, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.

103. Need for, and Objectives of, the Proposed Rule Changes. This NPRM seeks comment on several issues relating to the carriage of digital television broadcast stations. The objective of the NPRM is to propose broadcast signal carriage policy alternatives during the transition period,

examine the changes in the Commission's current broadcast signal carriage rules that may be necessary in the digital age, and to ensure compatibility between digital broadcast television, cable systems, and related equipment.

104. Legal Basis. The authority for the action proposed in this rulemaking is contained in Sections 1, 4(i) and (j), 325, 336, 614, and 615 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154(i) and (j), 325, 336, 534, and 535.

105. Description and Estimate of the Number of Small Entities Impacted. The IRFA directs the Commission to provide a description of and, where feasible, an estimate of the number of small entities that will be affected by the proposed rules. The IRFA defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small business concern" under Section 3 of the Small Business Act. Under the Small Business Act, a small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration ("SBA"). The rules we propose in this NPRM will affect cable operators, OVS operators, cable programmers, and television station licensees.

106. Small MVPDs. SBA has developed a definition of small entities for cable and other pay television services, which includes all such companies generating \$11 million or less in annual receipts. This definition includes cable system operators, closed circuit television services, direct broadcast satellite services, multipoint distribution systems, satellite master antenna systems and subscription television services. According to the Census Bureau data from 1992, there were 1,758 total cable and other pay television services and 1,423 had less than \$11 million in revenue. We address below each service individually to provide a more precise estimate of small entities.

107. Cable Systems. The Commission has developed, with SBA's approval, our own definition of a small cable system operator for the purposes of rate regulation. Under the Commission's rules, a "small cable company" is one serving fewer than 400,000 subscribers nationwide. Based on our most recent information, we estimate that there were 1439 cable operators that qualified as small cable companies at the end of 1995. Since then, some of those companies may have grown to serve over 400,000 subscribers, and others

may have been involved in transactions that caused them to be combined with other cable operators. Consequently, we estimate that there are fewer than 1439 small entity cable system operators that may be affected by the decisions and rules proposed in this NPRM.

108. The Communications Act also contains a definition of a small cable system operator, which is "a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1% of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed \$250,000,000." The Commission has determined that there are 61,700,000 subscribers in the United States. Therefore, an operator serving fewer than 617,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all of its affiliates, do not exceed \$250 million in the aggregate. Based on available data, we find that the number of cable operators serving 617,000 subscribers or less totals approximately 1450. Although it seems certain that some of these cable system operators are affiliated with entities whose gross annual revenues exceed \$250,000,000, we are unable at this time to estimate with greater precision the number of cable system operators that would qualify as small cable operators under the definition in the Communications Act.

109. Open Video System ("OVS"). The Commission has certified eleven OVS operators. Of these eleven, only two are providing service. Bell Atlantic received approval for its certification to convert its Dover, New Jersey Video Dialtone ("VDT") system to OVS. Affiliates of Residential Communications Network, Inc. ("RCN") received approval to operate OVS systems in New York City and the Boston area. Bell Atlantic and RCN have sufficient revenues to assure us that they do not qualify as small business entities. Little financial information is available for the other entities authorized to provide OVS that are not yet operational. We believe that one OVS licensee may qualify as a small business concern. Given that other entities have been authorized to provide OVS service but have not yet begun to generate revenues, we conclude that at least some of the OVS operators qualify as small entities.

110. Program Producers and Distributors. The Commission has not developed a definition of small entities applicable to producers or distributors of cable television programs. Therefore, we will use the SBA classifications of

Motion Picture and Video Tape Production (SIC 7812), Motion Picture and Video Tape Distribution (SIC 7822), and Theatrical Producers (Except Motion Pictures) and Miscellaneous Theatrical Services (SIC 7922). These SBA definitions provide that a small entity in the cable television programming industry is an entity with \$21.5 million or less in annual receipts for SIC 7812 and SIC 7822, and \$5 million or less in annual receipts for SIC 7922. Census Bureau data indicate the following: (a) there were 7,265 firms in the United States classified as Motion Picture and Video Production (SIC 7812), and that 6,987 of these firms had \$16.999 million or less in annual receipts and 7,002 of these firms had \$24.999 million or less in annual receipts; (b) there were 1,139 firms classified as Motion Picture and Video Tape Distribution (SIC 7822), and 1007 of these firms had \$16.999 million or less in annual receipts and 1013 of these firms had \$24.999 million or less in annual receipts; and (c) there were 5,671 firms in the United States classified as Theatrical Producers and Services (SIC 7922), and 5627 of these firms had \$4.999 million or less in annual receipts.

111. Each of these SIC categories is very broad and includes firms that may be engaged in various industries, including cable programming. Specific figures are not available regarding how many of these firms exclusively produce and/or distribute programming for cable television or how many are independently owned and operated. Thus, we estimate that our rules may affect approximately 6,987 small entities primarily engaged in the production and distribution of taped cable television programs and 5,627 small producers of live programs that may be affected by the rules adopted in this proceeding.

112. Television Stations. The proposed rules and policies will apply to television broadcasting licensees, and potential licensees of television service. The Small Business Administration defines a television broadcasting station that has no more than \$10.5 million in annual receipts as a small business. Television broadcasting stations consist of establishments primarily engaged in broadcasting visual programs by television to the public, except cable and other pay television services. Included in this industry are commercial, religious, educational, and other television stations. Also included are establishments primarily engaged in television broadcasting and which produce taped television program materials. Separate establishments primarily engaged in producing taped

television program materials are classified under another SIC number. There were 1,509 television stations operating in the nation in 1992. That number has remained fairly constant as indicated by the approximately 1,579 operating full power television broadcasting stations in the nation as of May 31, 1998. In addition, as of October 31, 1997, there were 1,880 LPTV stations that may also be affected by our rules. For 1992 the number of television stations that produced less than \$10.0 million in revenue was 1,155 establishments.

113. Thus, the proposed rules will affect many of the approximately 1,579 television stations; approximately 1,200 of those stations are considered small businesses. These estimates may overstate the number of small entities since the revenue figures on which they are based do not include or aggregate revenues from non-television affiliated companies.

114. In addition to owners of operating television stations, any entity who seeks or desires to obtain a television broadcast license may be affected by the proposals contained in this item. The number of entities that may seek to obtain a television broadcast license is unknown. We invite comment as to such number.

115. Small Manufacturers. The SBA has developed definitions of small entity for manufacturers of household audio and video equipment (SIC 3651) and for radio and television broadcasting and communications equipment (SIC 3663). In each case, the definition includes all such companies employing 750 or fewer employees. Census Bureau data indicates that there are 858 U.S. firms that manufacture radio and television broadcasting and communications equipment, and that 778 of these firms have fewer than 750 employees and would be classified as small entities.

116. Electronic Equipment Manufacturers. The Commission has not developed a definition of small entities applicable to manufacturers of electronic equipment. Therefore, we will use the SBA definition of manufacturers of Radio and Television Broadcasting and Communications Equipment. According to the SBA's regulations, a TV equipment manufacturer must have 750 or fewer employees in order to qualify as a small business concern. The Census Bureau category is very broad, and specific figures are not available as to how many of these firms are exclusive manufacturers of television equipment or how many are independently owned and operated. We conclude that there

are approximately 778 small manufacturers of radio and television equipment.

117. Electronic Household/Consumer Equipment. The Commission has not developed a definition of small entities applicable to manufacturers of electronic equipment used by consumers, as compared to industrial use by television licensees and related businesses. Therefore, we will use the SBA definition applicable to manufacturers of Household Audio and Visual Equipment. According to the SBA's regulations, a household audio and visual equipment manufacturer must have 750 or fewer employees in order to qualify as a small business concern. Census Bureau data indicates that there are 410 U.S. firms that manufacture radio and television broadcasting and communications equipment, and that 386 of these firms have fewer than 500 employees and would be classified as small entities. The remaining 24 firms have 500 or more employees; however, we are unable to determine how many of those have fewer than 750 employees and therefore, also qualify as small entities under the SBA definition. Furthermore, the Census Bureau category is very broad, and specific figures are not available as to how many of these firms are exclusive manufacturers of television equipment for consumers or how many are independently owned and operated. We conclude that there are approximately 386 small manufacturers of television equipment for consumer/household use.

118. Computer Manufacturers. The Commission has not developed a definition of small entities applicable to computer manufacturers. Therefore, we will utilize the SBA definition of Electronic Computers. According to SBA regulations, a computer manufacturer must have 1,000 or fewer employees in order to qualify as a small entity. Census Bureau data indicates that there are 716 firms that manufacture electronic computers and of those, 659 have fewer than 500 employees and qualify as small entities. The remaining 57 firms have 500 or more employees; however, we are unable to determine how many of those have fewer than 1,000 employees and therefore also qualify as small entities under the SBA definition. We conclude that there are approximately 659 small computer manufacturers.

119. Compliance Requirements. There may be compliance requirements for cable operators and OVS operators, in the form of mandatory digital broadcast television carriage requirements, if any of the options set forth in this NPRM are

ultimately adopted by the Commission. An attempt has been made to streamline compliance requirements. For example, we have sought comment on streamlining the must carry complaint process for digital television station carriage.

120. Federal Rules Which Duplicate, Overlap, or Conflict with the Commission's Proposals. None.

121. Report to Congress. The Commission will send a copy of the NPRM, including this IRFA, in a report to be sent to Congress pursuant to the Small Business Regulatory Enforcement Fairness Act of 1996. In addition, the Commission will send a copy of the NPRM, including IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.

122. It is ordered that, pursuant to Sections 1, 4 (i) and (j), 325, 336, 614, and 615 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154 (i) and (j), 325, 336, 534, and 535, notice is hereby given of proposed amendments to part 76, in accordance with the proposals, discussions and statements of issues in this NPRM, and that comment is sought regarding such proposals, discussions and statements of issues.

123. It is further ordered that the Commission's Office of Public Affairs, Reference Operations Division, shall send a copy of this NPRM, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

List of Subjects in 47 CFR Part 76

Cable television.

Federal Communications Commission.

Magalie Roman Salas,
Secretary.

[FR Doc. 98-21085 Filed 8-6-98; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 571

[Docket No. NHTSA 98-4124; Notice 1]

RIN 2127-AG86

Federal Motor Vehicle Safety Standards Lamps, Reflective Devices, and Associated Equipment

AGENCY: National Highway Traffic Safety Administration (NHTSA), DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This document proposes to amend the Federal motor vehicle safety

standard on lighting to reduce glare from daytime running lamps (DRLs). It would do this in three stages. One year after publication of the final rule, DRLs utilizing the upper headlamp beam would not be permitted to exceed 3,000 candela at any point, thus becoming subject to the maximum candela (cd) permitted for DRLs other than headlamps. This same limit would be applied to the upper half of lower beam DRLs two years after publication of the final rule. Finally, four years after publication of the final rule, all DRLs, except lower beam DRLs, would be subject to a flat 1,500 cd limit. Lower beam DRLs would be limited to 1500 cd at horizontal or above. This action is intended to provide the public with all the conspicuity benefits of DRLs while reducing glare and is based on research that has become available since the final rule establishing DRLs was published in 1993.

DATES: Comments are due on the proposal September 21, 1998. The proposed effective date of the final rule is one year after its publication.

ADDRESSES: Comments should refer to the docket number and notice number, and be submitted to: Docket Management, Room PL-401, 400 Seventh Street, S.W., Washington, D.C. 20590 (Docket hours are from 10:00 a.m. to 5:00 p.m.)

FOR FURTHER INFORMATION CONTACT: Jere Medlin, Office of Safety Performance Standards (202-366-5276).

SUPPLEMENTARY INFORMATION: In 1987, NHTSA opened a docket to receive comments on a proposed amendment to Federal Motor Vehicle Safety Standard No. 108 *Lamps, Reflective Devices and Associated Equipment* to allow daytime running lamps (DRLs) as optional lighting equipment. This rulemaking was terminated the following year. In a petition dated November 19, 1990, General Motors Corporation (GM) petitioned the Agency for rulemaking to permit, but not require, DRLs. GM indicated that it had three concerns that it felt would best be addressed by a permissive Federal standard as requested in the petition. These concerns were as follows:

1. A need to preempt certain state laws that inadvertently prohibited certain forms of daytime running lamps;

2. A desire for a single national law regarding DRLs, instead of a patchwork of different state laws on this subject. California had already enacted its own DRL requirements; and

3. A desire to harmonize any new U.S. requirements for DRLs with the existing Canadian mandate for new vehicle DRLs.

The petition for rulemaking was granted and a proposed rule was published on August 12, 1991. The agency agreed that a permissive Federal standard should be proposed to deal with the first two concerns expressed in the GM petition (inadvertent prohibition of DRLs and a patchwork of differing state requirements). However, the agency decided that its proposal should regulate DRLs only to assure that these new, optional lamps not detract from existing levels of safety. NHTSA explained that: "The two chief considerations in this regard are that the lamps not create excessive glare, and that their use does not mask the ability of the front turn signal to send its message." Based on the available agency research, NHTSA proposed to limit DRL intensity to 2600 cd. This proposed limit was well below the 7000 cd maximum intensity Canada had established, but more than double the 1200 cd limit then in effect or proposed in some European countries for DRLs.

The intensity limits in the NPRM were very controversial, many commenters objected to the proposal's failure to harmonize the permissive U.S. standard for DRLs with other countries' DRL standards. Domestic manufacturers were particularly concerned that the proposal was not harmonized with Canada's DRL requirements. In its comment to the NPRM, GM asserted that 7000 cd DRL are dimmer than 35,000 cd full intensity lower beams. While 35,000 cd. is certainly a greater intensity than 7000 cd, NHTSA observed in the preamble to the final rule that GM had failed to also explain the effects of the different aim used for the upper beam and lower beam. The bright spot of lower beam lamps is directed down and to the right one to two degrees. Viewed straight-on, earlier data indicated that lower beams conforming to Standard No. 108 are not brighter than 3000 cd with 2200 cd as a typical intensity at the H-V axis. The bright spot of upper beam lamps is directed straight out and as far down the road as possible. Viewed straight-on, the full intensity of the upper beams would be directed at the H-V axis—up to 7000 cd in the case of DRLs.

GM also commented that the range between the Canadian minimum of 2000 cd for DRLs and NHTSA's proposed maximum of 2600 cd for DRLs was too narrow for practicability. GM urged NHTSA to set the proposed maximum brightness for DRLs slightly higher to recognize the practicability issues.

The comments to the proposal from the Insurance Institute for Highway Safety and vehicle and equipment manufacturers, with two exceptions,