Before the

# Federal Communications Commission

Washington, DC 20554



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| In the Matter of | ) | |
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| **Advanced Television Systems** | ) | **MM Docket No. 87-268** |
| **and Their Impact on the** | ) | |
| **Existing Broadcasting Service** | ) | |

**COMMENTS**

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**COMMENTS OF THE CORPORATION FOR PUBLIC BROADCASTING AND THE NATIONAL ASSOCIATION OF PUBLIC TELEVISION STATIONS**

## I. Introduction

The Corporation for Public Broadcasting ("CPB") and the National Association of Public Television Stations ("NAPTS") hereby file their Comments in response to the Tentative Decision and Further Notice of Inquiry in the above-referenced proceeding, FCC MM Docket No. 87-268, FCC 88-288 September 1, 1988 (the "Notice").[1]

### A. Commenting parties

CPB is the private, nonprofit corporation authorized by

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[1] NAPTS is also filing comments today in this proceeding jointly with the Public Broadcasting Service ("PBS"). It also endorses the comments of the Association of Maximum Service Telecasters et al. ("Joint Broadcasters") filed today in this proceeding, except Section II thereof, and with the caveat to Section IV thereof that the Commission should adopt an industry consensus standard for advanced television only if it independently determines that standard to be in the public interest.

the Public Broadcasting Act of 1967 to facilitate and promote the development of public radio and television services for the American people. NAPTS is a private, non-profit membership organization whose members are licensees of virtually all of the nation's public television stations. NAPTS supports planning, research, and representational activities on behalf of its members.

CPB and NAPTS seek to ensure the continued vitality and growth of the nation's public television services in the coming world of advanced television ("ATV"). CPB and NAPTS participated in the Commission's earlier request for comments on the subject of ATV,[2] and are actively involved in the work of the Commission's Advisory Committee on Advanced Television Service ("Advisory Committee").

B. Summary of argument

The Commission, its Advisory Committee, and the video program and consumer electronics industries are now deeply involved in assessing what effects the next generation of television technology will have on the terrestrial television broadcast service, and in resolving the issues and

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2 Comments of CPB, NAPTS, and PBS, MM Docket No. 87-268, November 18, 1987; Reply Comments of NAPTS and PBS, MM Docket No. 87-268, January 19, 1988, and Reply Comments of CPB, MM Docket No. 87-268, January 19, 1988.

problems raised by this new technology.

This process should promote, and not diminish, a robust diversity in local broadcasting that offers both public television services and commercial television services to all Americans. Particular care is required at each stage of the deliberations on ATV to ensure that the Commission's decisions do not reduce the diversity of services to which viewers have access today.

The Commission correctly judges that the most promising route to affording viewers timely ATV service is to draw on the resources of the existing terrestrial television broadcasting industry, rather than await development of a wholly new and separate industry.

This practical judgment, though, does not obviate the need to make, at the appropriate time, difficult choices in the process of allotting additional spectrum, whether among only the licensees of existing assignments or among a broader field. Narrowing the field does not make the process any more neutral and objective. Without an almost inconceivable "perfect fit" of available spectrum with <u>all</u> broadcasters' needs for additional spectrum, CPB and NAPTS believe that there is no truly neutral method of making

supplemental[3] channel allotments that simply preserves and extends the status quo.

Regardless of what future course one might wish or foresee for commercial terrestrial television broadcasting in the United States, the FCC's decision cannot mean that the complement of public television services is complete or closed to future entrants. In pursuing ATV development, the Commission should not close the door to further development of public television program services. Rather, the Commission should consider how best to continue making possible future growth and diversity among the public television program services that viewers value and enjoy.

Any allotment proposal will raise anew the familiar questions about what distribution of program services and stations the Commission seeks to encourage among areas and populations, and why. When the Commission addresses those questions, it must consider carefully -- and reflect adequately -- the nation's longstanding public policy interest in affording viewers universal access to and a continuing

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[3] These Comments use the term "supplemental" spectrum to denote additional spectrum beyond the current 6 MHz television allotments, regardless whether it might be used for "augmentation" (i.e., in conjunction with the existing 6 MHz for transmission of a single signal), for "simulcasting" (i.e., transmitting a second signal independently, even if the other signal communicates the same source program), or for wholly separate purposes.

diversity among public television program services. To do otherwise would force the public to pay an unacceptably high price for the quicker advent of terrestrial broadcast ATV service.

Issues as important as those raised by the advent of ATV must be decided promptly, but with care and deliberation. The Commission's tentative decisions about spectrum availability and allocations have helped greatly to focus attention on serious constraints that spectrum scarcity places on realistic design of ATV systems for terrestrial broadcast transmission.

It would be unwise, however, to race ahead without further practical information that is nearly within grasp. The Commission, the Advisory Committee, and the affected industries have already launched full and timely studies of many issues. Further decisions should await what can be learned from both the imminent program of propagation testing by the Advanced Television Technology Center ("ATTC") and the thorough scrutiny to which actual candidate ATV transmission systems will soon be subjected. Accelerating the process unduly in anticipation of what can be learned only from careful study may, in the end, serve only to reduce the diversity and quality of program services available to the public.

Before making these decisions, the Commission should have hard information about factors that depend on practical, real-world experience with candidate ATV systems. When it does, the Commission should continue on the bold course it has followed so far -- willing use of a graceful regulatory hand to lead system designers, potential manufacturers, and prospective broadcast users to a transmission standard that will best serve the public interest in the next generation of television technology, and for the next generation of television viewers.

## II. Public policy requires that spectrum allocations serve the viewers' interest in a continuing diversity of local broadcasting services, including both public and commercial television services

CPB and NAPTS maintain that the Commission would be imprudently premature were it now to make actual allotments of ATV spectrum or even to decide finally on the methods that it will use in doing so. However, consideration of spectrum allotment issues, even at this early stage, must recognize the special place of public television services in the broadcast environment.

A compelling policy basis exists for affording public television services separate and distinctive treatment in any spectrum allotment rulemaking. Long-standing Commis-

sion and Congressional policies require that the viewers' interests be served by preserving the distinct kinds of service that public television offers the viewing public. The policies that led the Commission and Congress to support reservation and protection of channels to ensure the viability and growth of public television services equally require, in the world of ATV, that the special role of public television be recognized and protected.

## A. Commission policy has consistently promoted development of public television

The Commission's policy towards public television has its foundations in the Sixth Report and Order on Television Assignments, 41 F.C.C. 148 (1952) ("Sixth Order"), in which it adopted a table of television allotments for the entire United States. The Commission recognized in that seminal Order the importance of fostering and encouraging noncommercial educational television, and did so initially by reserving 242 channels across the nation for noncommercial use. The Commission reserved these channels, both VHF and UHF, in recognition that noncommercial stations would "require more time" to become operational than commercial stations. Sixth Order, at 159. The Commission also recognized that reserving channels for noncommercial use would make it easier for noncommercial applicants to raise funds

and obtain other support for their proposed facilities. Sixth Order, at 161.

Opponents of these special provisions for noncommercial educational television argued that the reserved allotments could be sooner (and by implication better) used by commercial broadcasters, and that the allotments would go unused for long periods before educators could mobilize the resources to activate stations. Countering these arguments, however, the Commission noted that the very purpose of the Table of Assignments was to reserve channels to forestall a haphazard distribution of spectrum, even though reservations imply non-use for some period of time. The Commission concluded that noncommercial reservations would serve the public interest, and thus established a spectrum priority for public television, despite claimed spectrum cost.

Since 1952, the Commission has consistently reinforced the principle underlying this preference by protecting the reserved channels against encroachment for commercial broadcast use.[4]

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[4] See, e.g., Television Assignments in New Smyrna Beach, et al., Florida, 50 R.R.2d 1714 (1982); Television Assignments in Houston, Texas, 50 R.R.2d 1420 (1982); T.V. Table of Assignments in Ogden, Utah, 26 F.C.C.2d 142 (1970); recon. denied, 28 F.C.C.2d 705 (1971);
(Footnote continued)

Since the passage of the Educational Television Facilities Act of 1962, P.L. 87-447, 76 Stat. 64, and the All Channel Receiver Act, P.L. 87-529, 76 Stat. 150, the Commission has generally resisted continuing requests for the dereservation of channels and has made it clear that the proponents of a dereservation bear a "heavy burden of persuasion" to justify such an action. TV Channel Assignment at Ogden, Utah, 45 R.R.2d 768 (1979). Moreover, the Commission has not only protected its original reservations, but has also made additional reservations and assignments so as to further extend public television services.[5] Furthermore, the Commission has made

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[4] (continued)
Channel Assignments to Des Moines, Iowa, 14 R.R. 1524d (1956), recon. denied, 14 R.R. 1528 (1956); Channel Assignments in Longview-Denton, Texas, 17 R.R. 1549 (1958); recon. denied, 17 R.R. 1552a (1959); Channel Assignments in Hamilton, Alabama, 21 R.R. 1577 (1961).

[5] See Television Channel Assignment (Victoria, TX), 52 R.R.2d 1508 (1983); Television Channel Assignment at Seaford, Del., 43 R.R.2d 1551 (1978); Television Channel Assignment at Mount View, Ark., 38 R.R.2d 1298 (1976); Television Channel Assignment at Eufaula, Okla., 35 R.R.2d 1039 (1975); Television Channel Assignment at Booneville, Miss., 27 R.R.2d 246 (1973) (other channels required to change their frequencies as a result of assignment and reservation of noncommercial channel); Television Channel Assignment at Parsons, Kansas, 23 R.R.2d 1707 (1972); Television Channel Assignments in the Virgin Islands, 20 R.R.2d 1659 (1970) (mileage separation requirements with co-channels in Puerto Rico waived; the most important factor for waiver is that the channels were for educational use); Television Channel Assignments at Las Cruces, New Mexico, 14 R.R.2d 1593 (1968); Television Channel Assignments in Hawaii, 11 R.R.2d 1518 (1967) (18 UHF channels
(Footnote continued)

assignments and reservations so as to provide specifically for better picture quality and to permit the formation of networks to provide public television services.[6]

In short, the Commission has consistently reiterated and supported the principle of preferential spectrum allocations as a means of effecting its "policy of providing all possible encouragement and assistance for the development of educational television." Channel Assignment in Medford, Oregon, 7 R.R.2d 1656 (1966).

B. Congress has endorsed and supported preferential treatment for public television

Congress consistently has endorsed the Commission's

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[5](continued)
assigned to Hawaii, with 8 reserved for noncommercial educational use); Television Channel Assignment at Eagle Butte, S.D., 10 R.R.2d 1768 (1967); Television Channel Assignments in Staunton, VA, 5 F.C.C.2d 537 (1966).

[6] See, e.g., Television Channel Assignments at McGill, Nevada and Richfield, Utah, 24 R.R.2d 1855 (1972) (exchange of channels and reservation of one for noncommercial use will make it possible to provide for area-wide educational service without disrupting existing translator service); Television Channel Assignments at Nashville, Tenn., 26 R.R.2d 1667 (1973) (educational reservation is changed from Channel 2 to Channel 8 so as to provide the educational operation with a considerable improvement in picture quality); Television Channel Assignments at Dickinson and Williston, North Dakota and Glendive, Montana, 42 R.R.2d 1619 (1978) (assignments and reservations so as to provide noncommercial educational television to portions of North Dakota).

preferential allocations policy to assist in the development of public television services, since the Commission first reserved television channels for noncommercial use. Congressional committees charged with FCC oversight not only have supported the Commission's reservation policy, but also have insisted that the Commission protect the reservations from encroachment for commercial uses.[7]

In 1967, Congress reiterated its policy of fostering the growth of public television services and preserving the channel reservations which made it possible, by providing additional funding in the Public Broadcasting Act of 1967, P.L. 90-129, 81 Stat. 365 (1967), with the intent to "improve the facilities and program quality of the nation's educational broadcasting stations so that [the air waves] may be used to [their] fullest for the betterment of individual and community life." Senate Commerce Committee, Senate Report No. 222 (May 11, 1967), reprinted in, 1967 U.S. Code & Admin. News at 1772. Expressing concern speci-

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7 E.g., Educational Television, Senate Report No. 67 (March 14, 1961) reprinted in 1962 U.S. Code & Admin. News at 1614; Hearings Before the Committee on Interstate and Foreign Commerce, U.S. Senate, 86th Cong., 1st Sess. concerning Senate Bill No. 12 (January 27-28, 1959), pp 61,21; Hearings Before the Committee on Interstate and Foreign Commerce, U.S. Senate, 85th Cong., 2d Sess. concerning Senate Bill No. 2119 (April 24-25, 1958) p 13 at 18; Hearings Before the Committee on Interstate and Foreign Commerce, U.S. Senate, 83rd Cong., 1st Sess. (April 16 and 21, 1953) pp 12-14, 26, 45-46, 56-67.

fically with respect to program technical quality, and seemingly anticipating technical developments, such as ATV, the Senate report noted:

> [T]he [noncommercial educational] programs which are offered must approach the highest possible production standards consistent with funds and talent available. It must be remembered that a whole generation of viewers has grown accustomed to the professionalism of commercial television and if educational television is to attract and hold audiences it must keep this in mind.

Id., at 1778.

More recently, Congress expressed its views on picture quality and programming in the House Report accompanying the Public Telecommunications Financing Act of 1988. See Public Telecommunications Act of 1988, U.S. House of Representatives, House Rep. No. 100-825, 100th Cong., 2d Sess. (July 5, 1988). There, the House Committee on Energy and Commerce discussed the superior technical quality promised by advanced television:

> Advanced and/or high definition television (ADTV and HDTV) promise to offer many new uses for the television medium in addition to enhanced home entertainment services. This advanced technology will have critical applications in the fields such as medicine, microbiology, education and engineering. The Committee believes that it is critical that the public broadcasting system be able to take advantage of technologies such as advanced television technologies, including HDTV...

Id., at 14 (emphasis added).

Thus, Commission and Congressional policy clearly mandate continued preferential spectrum allocation practices for public television in the world of ATV.

## III. The Commission should assess the sufficiency of available spectrum for ATV use against complete and realistic requirements

CPB and NAPTS agree with the Commission's assumption that the ability of a candidate ATV transmission system to accommodate as many broadcast services as possible within a limited amount of available spectrum must be an important factor in choosing an ATV broadcast transmission standard for the nation.

But CPB and NAPTS strongly urge the Commission to weigh heavily the great risk to terrestrial broadcast generally, and public television in particular, posed by premature assessments of spectrum sufficiency, especially when they are based on incomplete or unrealistic views of the spectrum required.

A. Current and future assessments of spectrum sufficiency must be revised to encompass continued growth of public television services

Studies of spectrum availability (or sufficiency for meeting the needs of as many broadcasters as possible) have been undertaken by both the Advisory Committee's Planning Subcommittee Working Party 3 ("PS-WP3") and by the FCC's Office of Engineering and Technology ("OET"). Although studies by the two groups have proceeded in close consultation and with many shared assumptions, methods and computer software, they differ in some respects.

Alarmingly, the OET study completely ignores existing unused noncommercial channel reservations in determining which existing allotments may be eligible for the allocation of additional spectrum.[8] These reservations were designed to ensure that communities throughout the United States would have available frequencies when new noncommercial licensees are able to activate service.

The fact that a specific reserved allotment is unused does not justify a determination that no capable applicant will ever propose further public television service for

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[8] Interim Report: Estimate of Availability of Spectrum for Advanced Television (ATV) in the Existing Terrestrial Broadcast Bands, FCC/OET TM 88-1, at 8.

that community and therefore that the reserved allotment should now be available for ATV use by licensees or permittees of existing assignments.

The Commission should instruct OET to treat vacant reserved noncommercial educational allotments, which allow for further development of public television services, in the same manner as existing assignments; i.e., vacant reserved allotments must be considered as candidates to which supplemental spectrum might be allotted, in the same way existing licensees and permittees are authorized to use allotments.

B. Current and future assessments of spectrum sufficiency must be refined to take into account all factors that could materially affect quality of service to viewers

In the initial studies of both PS-WP3 and OET, all "UHF taboos" were excluded from consideration; neither group provided for any transmitter separation constraints other than those designed to limit cochannel and first-adjacent channel interference. As the OET study noted, however:

> While this assumption may be reasonable for new ATV receivers, some additional restrictions, such as the image taboo, may continue to be necessary to protect existing NTSC receivers. This would result in some reduction in the number of stations that could be accommodated.

Id., at 1.

Obviously, these temporary simplifications of the analysis cause the spectrum to which the Commission has now tentatively limited further consideration to appear much more adequate for ATV needs than may be the case if all restrictions relevant to the actual universe of receivers in the early years of ATV service were modelled fully and accurately.

If these "UHF taboos" were to be dropped in anticipation of ATV receiver improvements, viewers of public television program services would suffer a disproportionate adverse impact because of the high proportion of public television transmitters operating for NTSC service on UHF frequencies. CPB and NAPTS urge the Commission to weigh carefully the implications this presents for the viewers who would remain dependent on NTSC services in the UHF band until they buy ATV receivers. The Commission needs to know whether any further restrictions on channel assignments would reduce the adequacy of available spectrum to an unworkable level or, alternatively, what the price of ignoring further restrictions would be for viewers bearing the brunt of interference.

C. Assessments of spectrum sufficiency must consider the requirements for all relay services on which terrestrial broadcasting depends

The Commission requested comments, Notice, par. 100, on whether the bands available for relay services such as studio-to-transmitter links ("STL"), TV pickup and cable relay services ("CARS") are sufficient to accommodate ATV. Guidance on the needs and options for relay services can be expected from the next report of the Advisory Committee, in its account of the continuing work of PS-WP3, including the prospects for simulcast scenarios in which a single ATV signal, requiring a bandwidth of no more than 6 MHz, is used in relay links and down-converted to NTSC at a point beyond any relay-service spectrum bottlenecks.

CPB and NAPTS believe, however, that congestion is already great in some of these bands for some of these uses, and that candidate ATV systems may vary widely in their flexibility with regard to auxiliary and relay spectrum requirements. Thus, if the Commission wishes again to use tentative conclusions about spectrum sufficiency as a means of focusing ATV system development, it should proceed cautiously. The considerable success which the Commission has already met with its tentative decision about spectrum for main broadcast channels may not be so easily extended to other bands and other uses.

## IV. The Commission should ensure that spectrum allotments and post-allotment procedures adequately reflect the policy interests in public television services

The Commission proposes to "conclude [its] technical analyses quickly, to develop a variety of channel assignment plans, and to present these plans for public comment as expeditiously as possible." Notice, par. 94. CPB and NAPTS believe that it is premature to choose among the options for the bandwidth of additional spectrum assignments. However, if the Commission is determined to proceed at the proposed pace, it must begin immediately to give much more thorough attention to the implications of long-standing public policy interests in ensuring viewer access to high-quality public television services.

### A. Any supplemental allotments of spectrum must provide for special treatment of public television services

CPB and NAPTS consider it premature for the Commission either to choose a specific form or type of allotment or to begin creating a proposed set of specific channel allotments. Whatever approach the Commission chooses, though, as a method of making allotments, and whatever procedural format it chooses in which to make supplemental allotments, the Commission must act to ensure that the viewers of public television services are not disadvantaged by the method or format employed. As more fully discussed in Section II,

pp. 6-12, above, the "high allocations priority which the Commission has assigned to educational television", UHF Channel Assignments, 7 R.R.2d 1704, 1708 (1966), and which is reflected in a "comprehensive framework of educational reservations", id., must be applied in development of allotments for ATV service.

The Commission is generally silent on its options for "allotment principles" to be used in a general nationwide allotment optimization, particularly with respect to the not-unlikely case where "all stations cannot be accommodated with additional spectrum." Notice, par. 141.

The Commission refers to spectrum optimization principles in its discussion of the three options that the Commission proposes for types of allotment, or procedural formats in which specific channels might be associated with particular geographic locations. Notice, pars. 139-143. The first option is a "demand" system similar to that used in the AM radio service and in the noncommercial educational FM service. In the second type of scheme, the Commission would determine all supplemental channel allotments nationwide at once (in a process similar to the nationwide optimization techniques[9] being used to study

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[9] These are computerized methods for finding the patterns
(Footnote continued)

spectrum availability), associating each supplemental channel allotment with a specific existing channel allotment, and thus creating a table of paired allotments. The third option is a two-step process, requiring either private agreements, random lotteries, or (unspecified) objective criteria to be applied in a hearing, to decide which station should receive which spectrum supplement in the event of an insufficient number of potential allotments, or mutually exclusive preferences among the potential allotments.

No consideration is given to the algorithm, or specific principles and procedures, by which the initial attempt at a nationally optimized set of allotments would be made. The Commission expressly notes with regard to the second option,

> if all stations cannot be accommodated with additional spectrum, this approach would not provide a method to determine which stations would receive the limited amount available and which would not receive any.

Notice, par. 141.

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[9] (continued)
of channel and location combinations nationwide that are simultaneously assignable to nearly as many candidate transmitter locations (in this case, existing television assignments or allotments) as the maximum that are mathematically possible.

Based on current information, however, CPB and NAPTS believe that the second type of allotment scheme, whereby the Commission creates a table of paired allotments, would be the most orderly and likely to reflect the public interest.

The first option would probably provide more satisfactory outcomes for early applicants than would a general nationwide optimization. However, this "demand-based" option also carries heavy costs, including both the risk of a procedural morass in which the Commission is swamped by conflicting, mutually exclusive applications, and the likelihood that, once the geographic pattern of early economic demand is played out in the first applications, all further spectrum assignments will fall far short of "what could have been" if the allotments were optimized simultaneously. It would particularly disadvantage public television if noncommercial licensees were forced to compete with commercial licensees in a single "race to apply". This competition, which would undermine decades of policy toward public television,[10] could be avoided if, as in the FM radio services, some channels were reserved exclusively for noncommercial applicants. The process of determining which spectrum to so reserve, however, would

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[10] See discussion in Section II, pp. 6-12, above.