ORIGINAL

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
1998 Biennial Regulatory Review --	)	
Streamlining of Radio Technical Rules in	)	MM Docket No. 98-93
Parts 73 and 74 of the Commission's Rules	)	
	)	

COMMENTS OF THE NATIONAL ASSOCIATION OF BROADCASTERS

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October 20, 1998

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EXECUTIVE SUMMARY

In this "technical streamlining" *Notice of Proposed Rule Making*, the Commission seeks comment on a wide range of concepts that could significantly alter the way radio stations are licensed and modified. NAB submits the following comments regarding the FCC's main proposals. In developing our position, we have relied on the work of an *ad hoc* group of industry and consulting engineers, as well as upon other various materials and documents.

NAB reviewed each of the concepts in the *Notice* according to four principles:

- Preserving the Technical Integrity of the FM Band
- Providing Reasonable Applicant Flexibility
- Cost/Benefit Analysis (in terms of costs/benefits to broadcasters and also cost/benefits to FCC policy and administrative goals)
- Minimizing Negative Effects on IBOC Development

On the basis of our evaluations, the NAB Radio Board of Directors voted on each of the proposals in the *Notice*.

NAB opposes the concept of negotiated interference agreements because the core concept goes to the heart of the interference protection concerns that are critical to maintaining the integrity of the FM band. Any negotiated interference agreements would negatively impact all stations. The Commission should look to the lessons learned from the AM experience and prevent similar events in the FM band by rejecting negotiated interference agreements.

NAB supports the proposal to allow FM stations to file contingent applications, as long as the acceptance of the application is consistent with current interference protection standards and does not involve "interference negotiation." Processing contingent applications would provide greater certainty and flexibility for applicants. NAB also supports the redefinition of many "major" change applications to "minor" changes for AM, noncommercial FM and FM

translator stations. This proposal would lift burdens and delays imposed on both broadcasaters and Commission staff.

NAB opposes the proposal to reduce the mileage separations for second- and third-adjacent channel stations. The reduction of the mileage separations poses a threat to the development of IBOC digital radio. Current IBOC system designs would be threatened by the increased interference in the second- and third-adjacent bands if the Commission would decrease the mileage separations as proposed. Additionally, the proposal would have a negative impact on certain home and portable receivers.

The Commission should not adopt the point-to-point (PTP) contour prediction method to determine the distance to FM radio protected service contours. The PTP method has not been developed to the degree that it may be considered as an accurate predictor of interference.

NAB opposes the downgrading of certain Class C FM stations to a new Class C0 status. The limited benefits of the proposal that would be provided to some licensees or that might facilitate entry of new stations are outweighed by the impact on the affected Class C stations. These stations should not be punished for not having constructed a maximum facility, because their choice of tower height may have been for legitimate local service reasons.

The Commission has proposed to alter the technical and service rules for the remaining Class D FM stations. NAB opposes any rule revisions that redefine Class D technical and interference characteristics. These proposals should not be used to provide a model for the future licensing of additional "inefficient" uses of the radio spectrum – like a low power FM service.

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COMMENTS OF THE
NATIONAL ASSOCIATION OF BROADCASTERS

I. INTRODUCTION

The National Association of Broadcasters ("NAB")[1] submits these comments on the above-captioned *Notice of Proposed Rule Making.*[2] The Commission's *Notice* asks for public comment on a range of concepts that radically could alter the way stations - particularly FM stations - are licensed and modified. This "technical streamlining" *Notice* is a companion proceeding to the earlier (and still pending) application processing and electronic filing *Notice of Proposed Rule Making.*[3] Although the two proceedings are separate, they should be examined and considered together to get the full view regarding the impact of all the proposals.

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[1] NAB is a nonprofit, incorporated association of television and radio stations and networks which serves and represents the American broadcast industry.

[2] *Notice of Proposed Rule Making* in MM Docket 98-93, 63 Fed. Reg. 33892, ___ FCC Rcd ____ (1998) [hereinafter "*Notice*"].

[3] *Notice of Proposed Rule Making* in MM Docket 98-43, 63 Fed. Reg. 19226, ___ FCC Rcd ___ (1998) [hereinafter *"Non-technical Notice"*]. On October 5, 1998, the FCC issued a Public Notice stating that it would be considering a decision in this proceeding at its open meeting scheduled for October 22, 1998.

In this "technical streamlining" proceeding, the FCC proposes the use of "negotiated interference," where FM stations seek to change their facilities. The creation of a new "intermediate class" of Class C FM stations, FCC acceptance of "contingent applications," a review of "Class D" noncommercial educational station licensing procedures and power output limits, reduced mileage separation requirements for second and third adjacent channel protection, plus greater use of "terrain shielding" in contour prediction and assessment of station interference are among the FCC's other more significant proposals. Also addressed is the proposed redefining of most "major" changes as "minor" changes in the AM, noncommercial FM and FM translator services.

NAB established an *ad hoc* group of industry and consulting engineers to assist us in undertaking a thorough assessment of the Commission's proposals. In addition to relying upon this *ad hoc* committee, NAB has also based our analysis on documents produced by the National Radio Systems Committee ("NRSC"), the FCC and independent engineering professionals. Some of these materials are attached as appendices to these comments. On the basis of these evaluations of the Commission's proposals, and in accordance with the principles we explain below, NAB has developed a position on each of the central proposals in the *Notice*. The NAB Radio Board of Directors endorsed these positions during a special Board meeting that was held October 2, 1998. There, the Board voted to:

- Oppose the concept of negotiated interference agreements;
- Support the proposal to accept and process contingent applications;
- Support the proposal to redefine major changes as minor changes;
- Oppose the reduction of 2nd and 3rd adjacent channel separations;
- Oppose the adoption of the point-to-point contour prediction method;
- Oppose the creation of a new Class C0 FM station class;

- Oppose any changes to Class D FM technical and interference characteristics.

II. DETERMINING THE COURSE FOR THIS AND RELATED FCC PROCEEDINGS

A. The Commission Has a Statutory Obligation to Ensure the Technical Integrity of the Electromagnetic Spectrum - Including the Broadcast Bands.

At the Commission's June 11, 1998, open meeting, where it adopted the *Notice*, Commissioner Tristani made the following observation:

> "...I do want to stress that I have an open mind on the issue of negotiated interference. In my mind however, this issue is not just about private arrangements among broadcasters but implicates broader policies about how we view interference on the public airwaves. Right now we have an almost zero-tolerance policy on interference within a station's protected zone. The Commission's view has been that less service with no interference is better than more service with interference. This items asks whether we should depart from this principle and adopt more of a balancing test. Is the harm of increased interference outweighed by other public interest benefits like increased service? I'd ask interested parties to keep that big picture in mind when they comment."

The comment of Commissioner Tristani goes right to the core of the position NAB is taking in the comments we are submitting today in this "technical streamlining" rule making. The Commissioner notes that we are approaching a fundamental "fork in the road" on the matter of interference protection policy, where the agency proposes a change to the existing paradigm. Here NAB sees the Commission – in the name of regulatory efficiency – proposing to make a sharp reversal of decades of spectrum management and interference protection policies.

This reversal would set the FCC on the wrong course. Unfortunately, this is not the first proceeding that reflects such a change in agency policy. Before NAB addresses the specific issues advanced in the instant *Notice*, we offer the following examination and critique of this trend.

As NAB has argued in past and more recent filings,[4] the FCC has been taking a less aggressive and more permissive stance when the issue has been spectrum sharing and spectrum interference to broadcast operations. This developing FCC policy has been evident in situations involving intra-industry interference and inter-service spectrum sharing and interference acceptance. Such a trend suggests that the Commission is making a conscious decision to abandon its primary regulatory role – of responsible spectrum manager. Indeed, with the Commission's proposals in this proceeding and those set forth in the companion non-technical streamlining proceeding, it is more than evident that the Commission is moving from the role of "spectrum manager" to simply that of a "database manager." But, that shift is in fundamental conflict with the FCC's statutory mandate and indeed the very reason for the agency's creation.

In the 1920s the pioneering mass media service – AM broadcasting – was caught up in a regime where stations increased their power, changed their frequencies and altered hours of operation simply at will, in an effort to increase coverage areas, reach larger audiences and achieve a competitive advantage.[5] Some stations, in a fashion remarkably similar to the "negotiated interference" concept the Commission today is resurrecting, entered into agreements with respect to power, use of frequencies and hours of operation. But other stations refused to do so, and deliberately attempted to interfere with and drown out the

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[4] *See, e.g.*, Comments and reply comments of NAB in MM Docket No. 96-120 (Grandfathered, short-spaced FM stations), filed July 22, 1996, and October 4, 1996, respectively; Comments of NAB in MM Docket No. 88-375 (Class A FM power increases), filed November 22, 1998; Comments of NAB in ET Docket No. 98-42 (RF lighting devices), filed July 8, 1998; and Comments of NAB in ET Docket No. 98-80 (conducted emission limits), filed September 8, 1998.

[5] Walter B. Emery, *Broadcasting and Government: Responsibilities and Regulations*, Michigan State University Press (1971) at 23.

signals of lower-powered stations.[6] It was a time when "chaos rode the air waves, pandemonium filled every loud-speaker and the twentieth century Tower of Babel was made in the image of the antenna towers of some thousand broadcasters who, like the Kilkenny cats, were about to eat each other up."[7]

Reliance on such "marketplace forces" was insufficient to eliminate the interference chaos on the AM band. For that reason primarily the Congress enacted the Radio Act of 1927[8] and then the Communications Act of 1934.[9] These acts of Congress conferred on the Commission the profound responsibility to ensure that interference never again becomes rampant on the broadcast bands.

At a time when the free, over-the-air broadcast services are facing increasing competition from wired and satellite digital distribution sources, it is almost unfathomable that the Commission would attempt to violate its essential mandate and choose to lessen technical interference standards for broadcasting and allow greater numbers of services to impinge upon or even capture broadcast spectrum. But that is precisely what is happening in this proceeding and others.

We urge the Commission to take Commissioner Tristani's advice and keep that "big picture" in mind when addressing the issues involved in the instant proceeding and in other proceedings involving interference to the broadcast bands. Below NAB offers its views on the big picture and on the smaller components of this picture – views that are based on a responsible regulatory history of interference protection.

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[6] *Id.*

[7] Francis Chase, Jr., *Sound and Fury*, (1942) at 21.

[8] 44 Stat. 1162-1174 (1927).

B. Principles That Should Govern the FCC's Decisionmaking.

NAB believes the issues raised in the *Notice* should be reviewed and judged by the Commission according to four principles. Three of these principles have been relevant to FCC decisionmaking in the broadcast arena for decades. They were factors that were at issue in the early 1980s when the Commission revised its interference and allocations standards for FM broadcasting.[10] They also helped govern Commission decisions concerning increased hours/power for AM daytimers,[11] former "Class IV" AM power increases,[12] Class A FM power increases[13] and modifications to "grandfathered, short-spaced" FM stations.[14] The final principle that the FCC must now also consider is the development of in-band/on-channel ("IBOC") digital radio. Tailored for the current "technical streamlining" proceeding, these four principles are as follows:

- Preserving the Technical Integrity of the FM Band
- Providing Reasonable Applicant Flexibility
- Cost/Benefit Analysis (in terms of costs/benefits to broadcasters and also costs/benefits to FCC policy and administrative goals)
- Minimizing Negative Effects on IBOC Development

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[9] 48 Stat. 1064 (1934); 47 U.S.C. § 151 et seq.

[10] *See, e.g., Report and Order* in BC Docket No. 80-90, 94 FCC 2d 152 (1983); and *First Report and Order* in BC Docket No. 80-130, 99 FCC 2d 631 (1981).

[11] *See, e.g., Memorandum Opinion and Order* in BC Docket No. 82-538, 55 RR 2d (P&F) 1315 (1984).

[12] *See Report and Order* in BC Docket No. 79-265, 55 RR 2d (P&F) 1015 (1984).

[13] *See First Report and Order* in MM Docket No. 88-375, 4 FCC Rcd 2792 (1989).

[14] *See Report and Order* in MM Docket No. 96-120, FCC 97-276, released August 8, 1997.

C. Applying the Principles to the Instant Proceeding.

There is a common theme that runs throughout our comments on the Commission's *Notice*. Our primary concern is how the proposals in the *Notice* will impact the technical integrity of the FM band. "Technical integrity" refers to the ability of radio listeners to receive interference-free, undistorted audio from their radios.

In order for the AM broadcasting service and the FM broadcasting service to remain viable and competitive in a world that may soon include 200 new channels of digital audio delivered nationwide via satellite, the quality of the audio that listeners hear from their AM and FM radios must be competitive, not diminished by increased interference. The Commission's *Notice* focuses on the FM band. With the prospect of digital satellite radio permittees beginning broadcasting in about one year, FM broadcasters may be faced with strong competition for the ears of radio listeners who want to hear music. In order for the FM broadcasting service to remain competitive in this new environment, the technical quality of the product that listeners hear will be more important than ever before. The same must be said for AM broadcasting, which has suffered the most from interference but recently has shown increased audience popularity.

The quality of the audio that an FM listener hears is dependent on a number of factors. Some of these factors are under the control of the FM broadcaster. Other factors are under the control of the listener. However, some of the most critical factors are under the control of neither the broadcaster nor the listener – the receiver manufacturer controls them. Of critical importance in this proceeding is the fact that receiver manufacturers often compromise the ability of their products to produce high fidelity audio from their speakers in order to better

receive desired FM signals in the presence of strong interfering signals.[15] But these receiver manufacturer choices can be influenced – directly – by the nature of the FCC's interference protection standards.

In many cases, policy changes that may be good for individual broadcasters can have a very detrimental impact on the service as a whole. An individual broadcaster might be able to improve coverage in an important geographic area if some new interference were accepted in a less important portion of that station's service area. However, this new interference, coupled with the similar new interference that would appear all over the country if a policy change permitting it were adopted, would cumulatively result in a very different environment for receiving FM radio signals than exists today. This change would force receiver manufacturers to modify their designs to minimize the impact that the new interference would have on the ability to receive signals. Receiver modifications that would permit reception in tougher interference environments would, necessarily, compromise the quality of the audio emanating from the speakers. This is a fact based on consistent past history.

The design of most products requires compromising one thing for another. In automobile design, gas mileage is often compromised for horsepower, and vice versa. In clothing design, durability is sometimes compromised for comfort, and vice versa. And, in radio receiver design the ability to receive a particular signal when interfering signals are present is often compromised for higher fidelity, and vice versa.

In this proceeding, and in the face of impending competition from satellite digital radio, we ask the Commission to refrain from making any decisions that would lead to lower fidelity audio from FM radio receivers.

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[15] We will discuss this issue in more detail later.

III. THE COMMISSION MUST NOT ADOPT ANY RULE CHANGES THAT WOULD PERMIT NEGOTIATED INTERFERENCE AGREEMENTS.

The FCC has proposed to allow FM stations to enter into negotiated interference agreements under which stations would cause more interference to one another than is currently permitted under existing FCC rules.[16] This concept would allow stations to move closer together. Two stations could be motivated to do this, for example, if it would enable them both to increase their power. While the amount of interference they cause to one another would increase, so too might their respective coverage areas.

Several limits on the use of negotiated interference are proposed. They include: (1) putting separate 5% geographic area and 5% population limits on the amount of interference to be experienced within a station's "protected service contour"; (2) requiring service area gains to be five times as great as service losses, in terms of area and population; (3) preventing new interference within the boundaries of the station's community of license; and (4) ensuring that areas experiencing new interference must have at least five remaining aural services.[17]

In its *Notice,* the FCC points out that such a change would constitute a marked departure from traditional FCC regulation.[18] The Commission consistently has held in past decisions that interference negotiation among licensees would amount to an abdication of FCC responsibility and that selection of interference standards "...is properly a function of the

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[16] *Notice* at ¶¶ 3-27.

[17] *Id.* at ¶ 20.

[18] *Id.* at ¶ 2.

Commission."[19] It also has expressed concern that negotiation among licensees could preclude future changes by affected stations.[20]

On this basis and others, NAB opposes FM negotiated interference. Though the concept might well give some stations greater flexibility in filing applications and revising service areas, such a tool, even if restricted by the initially-proposed "safeguards" suggested by the FCC, inevitably would result in a serious diminution of the technical integrity of the FM band.

The core concept of negotiated interference goes to the heart of the interference protection concerns that are critical to maintaining the integrity of the band and ensuring as much of an "interference–free" environment as possible for the development and implementation of IBOC digital audio broadcasting. Allowing negotiated interference agreements would result in the FCC largely abandoning the function – interference protection – for which the agency was created. NAB believes these concerns far outweigh the "applicant flexibility" that might result, were this proposal adopted. Although the FCC has suggested that it would limit its initial foray into negotiated interference by the imposition of some "safeguards" (noted above), these "safeguards" would leave all but a station's city of license potentially vulnerable to interference.

Also, a series of interference negotiations occurring over time - perhaps compounded by the Commission revisiting and lessening its safeguards - could result in vast, cumulative new interference. Smaller communities likely would lose service - in clear contravention of

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[19] *Id.* at ¶ 7 (*citing Amendment of Part 73 of the Commission's Rules to Permit Short-Spaced FM Station Assignments by Using Directional Antennas*, 6 FCC Rcd 5356, 5362 (1991)).

[20] *Id.* at ¶ 7.

Section 307(b) of the Communications Act.[21] Thus, NAB has concluded that the costs to the integrity of the FM band far outweigh the benefits that might be enjoyed by some applicants seeking what essentially would be short-term gains.

A. Negotiated Interference Would Work Against the Interests of Broadcasters and Radio Listeners.

The Commission notes that recent changes to the Communications Act have eliminated many restrictions on radio station ownership, and that mutually exclusive applications for broadcast frequencies will soon be auctioned to the highest bidder.[22] It also suggests that the obligation of each broadcaster to serve its community of license will continue to limit transmitter relocations and service area modifications, and thus that the proposals it is making concerning negotiated interference agreements may not raise as many concerns regarding the "fair, efficient and equitable distribution of radio service"[23] as might have been the case some years ago.

While the Commission may feel comfortable in its speculative view that negotiated interference agreements would not impede the fair, efficient and equitable distribution of radio service, it cannot conclude that such agreements would not severely damage the technical integrity of the FM service. The Commission has a responsibility to protect the technical integrity of the broadcast medium, and for this reason alone it must reject the concept of negotiated interference agreements.

In the instant proceeding, the Commission is faced with two important policy questions concerning the issue of negotiated interference agreements. First, is the technical

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[21] *See* Communications Act of 1934 § 307(b), 47 U.S.C. § 307(b).

[22] *Notice* at ¶ 19.

[23] *Id.* at ¶ 18.

integrity of an FM station's coverage area a public concern that should be managed by the public's agent (the Commission), or is it a private concern that should be managed by individual licensees? And, second, can negotiated interference agreements entered into by consenting licensees in any way have a negative impact on other, non-consenting licensees?

The short answers to these two questions are that the technical integrity of an FM station's coverage area is a public concern that *must* be managed by the Commission, and that negotiated interference agreements among consenting stations *can* have a negative impact on other stations that are not parties to these agreements. Negotiated interference agreements among stations would negatively impact *all* stations. This negative impact would occur in the following manner:

- Negotiated interference agreements will present new challenges for radio receivers as more and more situations will appear where tuned-to stations are not at least 20 dB stronger than interfering co-channel stations, 6 dB stronger than interfering first adjacent channel stations, and/or stronger than 40 dB below the signal level of interfering second and third adjacent channel stations within their protected contours.

- In order to address these challenges (*i.e.* in order to produce receivers that will better receive FM signals in negotiated interference situations) receiver manufacturers will reduce the intermediate frequency (IF) bandwidth of their receivers to better filter out adjacent channel signals.

- Narrower FM receiver IF bandwidths will increase distortion and reduce stereo separation of all FM broadcasts, thereby negatively impacting even those FM broadcasters who choose not to enter into negotiated interference agreements.

Both broadcasters and the Commission can predict this outcome with some certainty because it is essentially what happened in the AM band, ultimately leading to the need for the FCC to conduct several AM technical improvement proceedings.[24] While great strides have been made toward remediation of the technical quality of the analog AM service, it can be

[24] *See, e.g., First Report and Order* in MM Docket No. 88-376, 4 FCC Rcd 3835 (1989); *Report and Order* in MM Docket No. 87-267, 6 FCC Rcd 6273 (1991).

argued that the service as a whole has never fully recovered - and perhaps never will recover - from the damage done by all of the station-to-station interference that was permitted in the past.

It may well be that individual broadcasters, in what has become an incredibly competitive market, generally would take steps favoring what they believe are improvements in their own signals - perhaps without immediate concern for the general technical integrity of the band (whether it be AM or FM). As an industry trade association, NAB considers protecting the technical integrity of the AM and FM bands to be one of our most important roles – and in our view this should be one of the Commission's most important roles as well.

Before going into detail about why we believe it is imperative that the Commission reject the idea of negotiated interference in the FM band, it is important to consider, in a bit more detail, the lessons learned from our AM band experience.

B. Protecting the Technical Integrity of Radio - Learning Lessons from the Past.

In very broad terms, looking at radio broadcast signals strictly from the spectral occupancy perspective, there are two ways to improve a signal. The first is to increase its amplitude, and the second is to increase its bandwidth. Increasing the amplitude of an AM broadcast signal can have two positive effects. It will increase the station's coverage area and, depending on whether the increased amplitude comes from the carrier or the modulating signal, it can increase the volume of the received audio. Increasing the amplitude of an FM station's signal will simply increase its coverage area.

Increasing the bandwidth of an AM signal will increase its frequency response – that is it will enable audio containing a wider range of frequencies to be broadcast. Increasing the bandwidth of an FM signal will increase its volume.

AM broadcasters are highly motivated to make the bandwidth of their signals as wide as possible. This permits them to broadcast audio containing more of the frequencies toward the upper end of the audible range and thus to make available a higher fidelity sound at the receiver. In the past, however, as the bandwidths of AM signals were maximized, and as the number of AM stations increased (*i.e.* they were packed closer together geographically), they interfered with one another more and more. Adjacent channel signals crept closer and closer to one another and it became more and more difficult for receivers to distinguish one from the other. In order to continue providing the same interference-free reception to which their customers had become accustomed, receiver manufacturers resorted to narrower intermediate frequency (IF) filters in their equipment. These narrower filters chopped off the highest audio frequencies transmitted by AM broadcasters, resulting in lower fidelity (though generally more interference-free) audio for the listener.

To address this problem, broadcasters and receiver manufacturers together developed a standard that specifies a somewhat narrower maximum bandwidth for AM transmissions.[25] Having a well-defined, narrower bandwidth emanating from all AM transmitters now enables receiver manufacturers to widen their IF filters somewhat (because they know the bandwidth limit of interfering adjacent channel stations) and thus improve the fidelity of AM audio at the receiver. Matching standards for both transmitters and receivers were adopted by the National Radio Systems Committee ("NRSC") in the late eighties and early nineties, and the NRSC AM transmission bandwidth standard was eventually incorporated into the FCC rules as part of the AM improvement proceeding in MM Docket 88-376.[26] While these were very

[25] *See* Table 1, *infra* page 18.

[26] *First Report and Order* in MM Docket No. 88-376, 4 FCC Rcd 3835 (1989).

positive steps taken by the industry and the Commission, a lot of damage had already been done to the AM service and many listeners had tuned out. We will never know how much better off the AM service would be today if closer attention had been consistently paid to its technical integrity from the beginning.

To refresh the Commission's recollection about what happened in the AM band, and to provide documentation showing how the NRSC attempted to address the problem, we have attached the NRSC AM transmission and receiver standards as Appendices A, B and C, respectively.

C. FM Negotiated Interference Would Repeat the AM Errors.

The negotiated interference proposals in the instant proceeding, if adopted, would lead the FM service down the same treacherous path taken by AM not so many years ago. In the past, lower fidelity audio from AM receivers, due to increased interference and narrower IF filters, exacerbated any problems that AM broadcasters had in retaining those listeners who might be inclined to switch to FM to receive generally higher fidelity music. If the FM service now heads down a similar path of more interference and therefore narrower receiver IF filters and lower fidelity audio, it will be in a weaker competitive position with respect to other, high fidelity radio options available to the listener. Most notable among these options is the recently-authorized Satellite Digital Audio Radio Service ("SDARS")[27] which may provide a total of 200 new channels of digital information and entertainment radio programming to communities all over the country. The Commission must exercise the foresight to prevent this from happening. It must fulfill its fundamental obligation to protect the technical integrity of the radio broadcasting services.

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[27] *See Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band*, 12 FCC Rcd 5754 (1997).

The ability of an FM receiver to receive a desired station clearly in the presence of adjacent channel interference is referred to as its "selectivity." The selectivity of a receiver is determined by its filtering circuits, which suppress adjacent channel interfering signals. It would be ideal if these circuits could be modified simply to reject more adjacent channel interference without negatively impacting the reception of the desired signal. Unfortunately, this is not possible. In order to suppress more adjacent channel energy, a radio receiver's filters must also reject more of the desired signal's energy.

Three years ago, as part of a testing program to ascertain the performance of several proposed digital radio broadcasting systems, the Digital Audio Radio Subcommittee of the Electronic Industries Association ("EIA") published a report describing the results of laboratory testing which it had conducted.[28] As part of this testing, the performance characteristics of five typical radio receivers were thoroughly documented. Two of the receivers tested were automotive receivers, one was a tuner for a home stereo system, and two were portable radios. The receiver characterization portion of the EIA report is attached as Appendix D.

One of the most important points clearly illustrated by the EIA test results is that non-automotive receivers generally have higher fidelity (meaning their audio output more accurately represents the original audio) than automotive receivers. On the other hand, automotive receivers are generally better at rejecting adjacent channel interfering signals than non-automotive receivers.[29] These results were expected. Radios used in moving vehicles

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[28] Thomas B. Keller, David M. Londa, Robert W. McCutcheon & Stanley S. Toncich, *Digital Audio Radio Laboratory Tests: Transmission Quality, Failure Characterization and Analog Compatibility*, Electronic Industries Association, Consumer Electronics Group (1995).

[29] *See* Appendices A-C.

have to perform in environments where the vehicle is travelling away from the desired station's transmitter and toward an interfering station's transmitter on the same or adjacent frequencies. In order to enable the listener to remain tuned to a desired station as long as possible, a radio must be able to reject the interfering signal for as long as possible. That is, it must be able to receive the weakening desired signal in the presence of the strengthening interfering signal.

The problem is that in order to be good at rejecting adjacent channel interfering signals, a receiver must sacrifice some audio fidelity. If too much station-to-station interference is permitted in the FM band, then receiver designs gradually will incorporate more and more compromises that result in lower and lower audio fidelity. As alluded to above, the critical importance of maintaining the technical integrity of the FM (and AM) broadcast service is accentuated at this point in history because radio broadcasters may soon find themselves competing for listeners with 200 new channels of digitally transmitted, satellite delivered audio in the SDARS service. The SDARS service is expected to primarily serve listeners in vehicles. Therefore, maximum AM and FM fidelity in automotive receivers is even more critical now than ever before. Automotive receivers will be the first to lose fidelity if the Commission allows increased interference in the FM band.

The relationship between IF filter bandwidths and audio fidelity is generally well understood by most broadcasters and receiver manufacturers. A description of this relationship is provided in Chapter 7.2 of the *NAB Engineering Handbook, Eighth Edition.*[30] In this chapter it is noted that:

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[30] *NAB Engineering Handbook, Eighth Edition*; National Association of Broadcasters; Washington, DC (1992).

> "... there is always a compromise between the signal bandwidth and selectivity. This compromise is determined by the number of poles the filter has and the Q of the resonators. There is also a compromise between the shape of the filter response and the desired distortion and stereo separation of the radio. It is not possible to build a filter with very high selectivity and have good group delay to the edges of the passband unless surface wave filters are used. This is the reason ... why FM car radios with very high adjacent channel selectivity often have relatively high distortion."[31]

The EIA test report (attached as Appendix D) provides documented evidence of this relationship. Pages 2, 14, 26, 40 and 52 in this appendix provide data showing how strong first- and second-adjacent channel interfering signals can be while still allowing each radio to provide audio with a signal-to-noise ratio of 45 dB. These data are summarized in Table 1.

Table 1 : Desired-to-Undesired Signal Ratios (dB) above which Audio Signal-to-Noise Ratio is at Least 45 dB

	FCC[1]	Rcvr #1	Rcvr #2	Rcvr #3	Rcvr #4	Rcvr #5
Lower 1st Adj	6	4.1	23.6	27.3	31.9	-6.2
Upper 1st Adj	6	5.4	12.5	27.2	21.2	-6.1
Lower 2nd Adj	-40	-24.2	-24.7	-22.4	-15.2	-44.4
Upper 2nd Adj	-40	-24.2	-33.2	2.2	-14.9	-46.2

[1]These are the D/U ratios which the FCC uses to determine acceptable levels of interference between FM stations.

If one were to rank the five receivers tested in descending order from best at rejecting adjacent channel interference to worst, the ranking would most likely be 5, 1, 2, 3-4 (tie). With this ranking in mind, it is informative to look at the data for each receiver's stereo separation vs. radio frequency signal level. These data are found on pages 6, 18, 30, 44 and 56 of Appendix D. Receiver Five, which was the best at rejecting adjacent channel interference, clearly has the worst stereo separation performance of all receivers tested. Furthermore, while the other four receivers each have somewhat similar stereo separation

[31] *Id.* at page 1142.

performance in the presence of a strong signal, receiver One's stereo separation deteriorates much closer to the desired station's transmitter than does that of the other three receivers. Receiver One, of course, was generally better at rejecting adjacent channel signals than the other three receivers.

It is very important to understand that, while protected contours are very useful for allocating FM broadcast frequencies, they are not something that listeners or receiver manufacturers care much about or something about which they are even aware. Listeners simply want to listen to a station they like for as long as possible as they move farther away from it; and receiver manufacturers simply want to meet the demands of their customers (the listeners). If widespread additional interference were introduced to the FM band, receiver manufacturers would react by attempting to make their products less susceptible to this interference. They would incorporate designs which, among other things, would narrow the bandwidth of decoded FM signals, resulting in lower fidelity (albeit more interference-free) audio for FM listeners.

In the past, the desire of individual AM station licensees to maximize the bandwidth of their signals in the face of competition from the FM service led to generally increased interference in the AM band and ultimately forced the Commission to take action in an attempt to "fix" the AM band.[32] Now, the FCC is contemplating embarking down a similarly self-destructive path for the FM service. Although negotiated interference agreements might be helpful for some FM broadcasters individually, they would ultimately lead to disaster for the service as a whole. George Santayana once said, "those who cannot remember the past are condemned to repeat it." The Commission must recall the experiences of the AM band

[32] *See, e.g., Report and Order* in MM Docket No. 87-267, *supra* note 24.

and prevent similar events from occurring in the FM band. It must reject the idea of negotiated interference agreements.

IV. THE FCC SHOULD ACCEPT AND PROCESS CONTINGENT APPLICATIONS THAT MEET EXISTING INTERFERENCE, TECHNICAL AND ALLOCATIONS STANDARDS

An existing FCC rule prohibits the filing of applications the grant of which is "contingent" on the FCC granting one or more *other* applications in the FM service.[33] It *has* allowed such applications to be filed by AM stations.[34] But the FM rule has provided a disincentive for FM stations wanting to work together to improve or otherwise modify their respective stations' services.[35]

The Commission proposes to allow the filing of "minor change" (see discussion of minor/major changes, below) contingent applications for, among other things, one-step station upgrades and downgrades and facility relocations.[36] The applications would be processed as a unit - with all being granted or all being dismissed the only possible outcomes.[37] No more than four applications could be filed simultaneously, on a contingent basis.[38] Also, the FCC proposes to give these contingent applications a new degree of protection against the filing of competing allotment or minor change proposals.[39]

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[33] 47 C.F.R. § 73.3517 (1997).

[34] 47 C.F.R. § 73.3517(c) (1997).

[35] In some cases, a single licensee may want to modify the service of several of his or her stations in one particular region by filing a set of contingent applications.

[36] *Notice* at ¶ 14.

[37] *Id.* at ¶ 13.

[38] *Id.* at ¶ 15.

[39] *Id.* at ¶ 14.

NAB supports the filing and processing of contingent applications. However, we would oppose any acceptance of contingent applications that would be inconsistent with current interference protection standards and/or might involve some form of "interference negotiation." Allowing contingent applications would provide greater certainty and flexibility for applicants. But, by forbidding these applicants from seeking any departure from existing interference/allocation rules, we would avoid introducing objectionable interference into the FM band.

V. COMMISSION AND LICENSEE INTERESTS WOULD BE ADVANCED BY THE REDEFINING OF MANY MAJOR CHANGES AS MINOR CHANGES

Under current FCC FM rules, the only proposed changes in station facilities that are classified as "major" changes (requiring 30-day local public notice, and providing the opportunity for the filing of petitions to deny and/or competing applications) are those involving a change in the community of license or certain changes in frequency or station class.[40] For AM, noncommercial FM and FM translator stations, a great many more applications are characterized as "major."[41] In the *Notice*, the Commission proposes to expand the definition of "minor" changes for AM, noncommercial FM and FM translator services to conform with the commercial FM model.[42]

NAB supports these proposals. By redefining as "minor" what primarily are technical changes of lesser consequence, the FCC would lift burdens and delays imposed on both broadcasters and the Commission's staff. However, in supporting these changes we emphasize the need for the FCC to engage in a thorough review of each such application's

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[40] *See* 47 C.F.R. § 73.3573 (1997).

[41] *See* 47 C.F.R. §§73.3571 and 73.3572 (1997).

[42] *Notice* at ¶ 49.

merits - particularly in terms of interference and adherence to mileage separations and other service-protection standards.[43]

There is another, perhaps more compelling factor to consider in this regard. Under new – and perhaps still evolving - FCC rules,[44] major change applications will be subject not only to competing applications but also to "auctions" if a competing application (an application seeking either a new facility or an existing station facility change on the same or an adjacent channel) is filed.[45] Thus, if facility change applications are considered "minor," they will not be subject to competing applications or auctions, though the FCC would judge each on the basis of compliance with technical interference standards, etc.

Such a result would be in the public interest. It would give greater "cost" certainty to a licensee proposing a change in facilities. By not subjecting these changes to the auction process and other procedures associated with major changes, the Commission would expedite the grant of these applications and hasten the improvement of service to the public.[46]

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[43] NAB expressed similar concerns in our comments in the Commission's non-technical streamlining proceeding. There we questioned the wisdom of – and opposed – the FCC's plan to seek less technical and interference-related information from broadcast applicants.

[44] NAB is aware that several dozen Petitions for Reconsideration of the new auction rules have been filed with the Commission. Additionally, we understand that nearly a dozen direct court appeals also have been filed.

[45] *See First Report and Order* in MM Docket No. 97-234, GC Docket No. 92-52 and GEN Docket No. 90-264 (Aug. 18, 1998).

[46] Due to the uncertainty surrounding when the Commission's auction rules will be effective in light of the many petitions for reconsideration and court appeals, NAB requests that the FCC issue a prompt *First Report and Order* in this proceeding, addressing the "minor" change and contingent applications issues, so that stations are not unfairly disadvantaged by not being able to file these "minor" change applications.

VI. REDUCING MILEAGE SEPARATIONS FOR SECOND AND THIRD ADJACENT CHANNEL STATIONS WOULD NOT BE IN THE PUBLIC INTEREST

The FCC has proposed to afford some stations additional flexibility to move their transmitter sites.[47] The stations that would be affected by this proposal are those currently blocked from moving their transmitter sites by second-adjacent and/or third-adjacent channel stations. Presently under the rules, stations in this category are afforded no more than 3 km of flexibility.[48] The FCC's proposal would increase this geographic range to 6 km.[49]

As noted earlier in these comments, most automotive receivers are designed to be considerably better at rejecting adjacent channel interference than most home stereo and portable receivers. The price paid by automotive receivers for this increased selectivity is lower fidelity audio from their speakers. The change proposed by the Commission regarding second-and third-adjacent channel separation requirements would likely have a considerably negative impact on home stereo and portable receivers, and on some lesser expensive automotive receivers. Because this proposed change would exacerbate interference problems that already exist in the FM band, we believe it should be rejected.

Another compelling reason to reject the idea of relaxing second-and third-adjacent channel separation is that the IBOC DAB systems currently under development all add digital signals to the adjacent channel spectrum around the host analog signal. Because of this system design, adjacent channel stations' digital signals will interfere with one another to a far greater degree than their analog signals do now. This interference will have a significant impact on IBOC DAB signals, and the IBOC DAB developers are well aware of it and are

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[47] *Notice* at ¶ 37.

[48] 47 C.R.F. § 73.207 (1997).

designing their systems to combat the adjacent channel interference that exists in *today's* environment. Any changes to the adjacent channel interference criteria at this point could thwart these efforts of the IBOC DAB developers.

VII. IT IS PREMATURE FOR THE FCC TO ACCEPT THE POINT-TO-POINT CONTOUR PREDICTION METHOD FOR REGULATORY PURPOSES

NAB opposes the Commission's proposal to adopt a point-to-point ("PTP") contour prediction method for determining the distance to FM radio protected service contours. We believe that the use of this method would increase interference in the FM band leading to lower fidelity receivers and, ultimately, to an FM broadcasting service with audio quality that is not competitive. Furthermore, we note that while the PTP method appears to be a somewhat more accurate method of predicting coverage than the existing F(50,50)/F(50,10) method for certain types of terrain, it is considerably *worse* than F(50,50)/F(50,10) for other types of terrain. It would be inappropriate for the Commission to adopt this method knowing that it will actually be worse than the existing F(50,50)/F(50,10) methods in many situations. We further explain this NAB position below.

Subsequent to the Commission's release of the *Notice* in this proceeding, it issued a *Public Notice* announcing the availability of additional technical information related to the proposed PTP method.[50] This additional technical information compares the predicted signal levels (using both the PTP method and the curves in 47 C.F.R. § 73.333) from various transmitters with actual measured signal strength data. These data clearly illustrate that the PTP method would significantly underestimate signal strength in many situations. Such

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[49] *Notice* at ¶ 37.

[50] *Public Notice*, "Technical Information Relating to MM Docket No. 98-93," DA 98-1406, released July 23, 1998.

underestimating of signal strength ultimately would lead to many FM stations being located closer together than should be allowed; and this would lead to excessive interference in the band.

As an example of how the PTP model can underestimate signal strength, consider the data from New York City that the Commission supplied as part of its additional technical information.[51] On the chart for the 340 degree radial in New York at 573.2 MHz, after passing the mountainous terrain between 50 and 60 km, the PTP model significantly underestimates the signal strength in the valley beyond.[52] As another example, note that in Philadelphia there are similar problems along the 300 degree radial at 197.8 MHz. Here, after hitting the rugged terrain at about 50 km, the PTP model significantly underestimates the signal strength at the points beyond.[53] In general, inspection of the charts referred to by the Commission in its July 23, 1998, *Public Notice* reveals that there are numerous data points where the signal strength predicted using the existing curves in Section 73.333 is closer to reality than the signal strength predicted by the PTP method. While it is true that there are also a number of instances where the signal strength predicted by the PTP method is closer to reality than that produced by the curves, clearly the PTP method is not accurate enough to be a reliable predictor of actual interference to any greater degree than the existing method.

Most of the technical information referred to in the *Public Notice* relates to frequencies outside of the FM band. Nevertheless, these data are still useful for studying the accuracy of the proposed PTP method. As part of our analysis of the PTP method proposed

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[51] Federal Communications Commission (last modified October, 1998), <http://www.fcc.gov/oet/fm/ptp/>.

[52] *Id.*

[53] *Id.*

by the Commission, we compared the mean and standard deviation figures for each of the three FM band transmission facilities for which data was available. These results are shown in Table 2.

Table 2: Comparison of Existing Contour Prediction Method and Proposed Point-to-Point Model with Measured Data

Radial	73.333 Std Dev	PTP Std Dev	Lowest Std Dev	73.333 Corr.	PTP Corr.	Closest Corr.
Philadelphia, 90.9 MHz, 20.0°	11.1	13.6	73.333	0.84	0.74	73.333
Philadelphia, 90.9 MHz, 65.0°	5.4	5.5	73.333	0.95	0.97	PTP
Philadelphia, 90.9 MHz, 110.0°	3.4	5.0	73.333	0.98	0.97	73.333
Philadelphia, 90.9 MHz, 165.0°	3.9	6.7	73.333	0.99	0.98	73.333
Philadelphia, 90.9 MHz, 220.0°	3.3	6.3	73.333	0.98	0.96	73.333
Philadelphia, 90.9 MHz, 260.0°	9.2	9.4	73.333	0.89	0.89	Same
Philadelphia, 90.9 MHz, 300.0°	9.5	10.5	73.333	0.86	0.83	73.333
Philadelphia, 90.9 MHz, 340.0°	9.4	9.7	73.333	0.88	0.87	73.333
Springfield, 93.1 MHz, 7.0°	12.3	9.5	PTP	0.87	0.91	PTP
Springfield, 93.1 MHz, 60.0°	10.5	11.9	73.333	0.82	0.79	73.333
Springfield, 93.1 MHz, 110.0°	9.0	11.3	73.333	0.90	0.78	73.333
Springfield, 93.1 MHz, 153.0°	9.8	9.7	PTP	0.88	0.88	Same
Springfield, 93.1 MHz, 190.0°	4.1	6.1	73.333	0.96	0.92	73.333
Springfield, 93.1 MHz, 227.0°	5.7	6.5	73.333	0.95	0.92	73.333
Springfield, 93.1 MHz, 262.0°	12.4	6.8	PTP	0.81	0.94	PTP
Springfield, 93.1 MHz, 310.0°	8.6	7.7	PTP	0.86	0.86	Same
Wilkes-Barre, 98.5 MHz, 30.0°	12.4	11.2	PTP	0.68	0.78	PTP
Wilkes-Barre, 98.5 MHz, 75.0°	8.3	8.8	73.333	0.92	0.86	73.333
Wilkes-Barre, 98.5 MHz, 120.0°	6.7	15.3	73.333	0.61	-0.26	73.333
Wilkes-Barre, 98.5 MHz, 165.0°	9.2	12.8	73.333	0.82	0.77	73.333
Wilkes-Barre, 98.5 MHz, 207.0°	11.5	14.1	73.333	0.69	0.66	73.333
Wilkes-Barre, 98.5 MHz, 248.0°	11.8	9.9	PTP	0.76	0.76	Same
Wilkes-Barre, 98.5 MHz, 300.0°	10.7	8.4	PTP	0.84	0.89	PTP
Wilkes-Barre, 98.5 MHz, 345.0°	10.8	11.9	73.333	0.79	0.73	73.333

As can be seen in Table 2, the existing contour prediction method results in a lower standard deviation from actual measured data far more often (17 of 24 radials, or 71 percent of the time) than the PTP method.[54] Furthermore, the signal strength predicted by the existing contour prediction method correlates more closely with the actual measured data more often (15 of 24 radials, or 63 percent of the time) than the PTP method. All of this evidence clearly indicates that the PTP method is simply not an accurate enough predictor of actual signal strength for the Commission to rely on it to allow stations, which otherwise would be prohibited from moving closer together due to interference concerns, to move closer together.

To the extent that, in some situations, use of the PTP method would permit certain FM stations to move closer together than currently permitted, it will result in more interference in the FM band. In this context it is important for the Commission to realize that, although the planning factors for allocating FM channels to specific communities specify protected contours for these FM channels, actual radio listening extends well beyond the protected contour. Even though a station is only protected from interference within its protected contour, the contour itself is not a "brick wall" beyond which no listening occurs. This is a particularly important point when receiver design is taken into consideration.

To illustrate this point, consider two hypothetical FM stations. Under the existing rules these two stations are geographically as close together as possible. However, due to the roughness of the terrain between them they would be permitted to move closer together if the PTP method were to be adopted. Regardless of whether using the PTP method does or does not result in actual (as opposed to predicted) interference that exceeds the Commission's desired-to-undesired signal ratio planning factors within these stations' protected contours, it

[54] The existing contour prediction method is based on the charts found in 47 C.F.R § 73.333.

is clear that the amount of interference between the two stations would increase. Because listeners (the customers for whom radio receiver manufacturers are designing their products) expect to listen to these stations from locations that are both within and outside of their protected contours, they will notice this additional interference. As more and more stations would employ the PTP method in order to move closer to other stations, more and more interference will appear in the band. As increased interference appears, receiver manufacturers will modify their designs to keep customers from complaining about it. These modified receivers will result in FM audio that, while generally less prone to interference from nearby stations, is of generally lesser fidelity. This will greatly harm FM radio's ability to compete with the digital audio from compact discs and the new SDARS service.

On the subject of digital audio, it also must be noted that the radio broadcasting industry's plans for migration to the digital era are based on an IBOC digital audio broadcasting system. There are currently three companies developing IBOC DAB technology – Digital Radio Express, Lucent Digital Radio and USA Digital Radio. USA Digital Radio recently started the process moving for a Commission proceeding on this subject by filing a *Petition for Rule Making* on October 7, 1998.

The IBOC DAB concept involves the insertion of digital signals in the spectrum just above, and just below the analog signal. During a presentation at the September 1998 IEEE Broadcast Symposium, one of the companies developing IBOC DAB indicated its belief that, in order to implement this technology, the Commission will need to modify its FM emissions mask to permit digital signals above and below the analog signal that are 20 dB below the level of the analog signal. The current mask stipulates that an FM station's emissions in this

part of the spectrum must be 25 dB below the level of its analog carrier.[55] Should this proponent's claims turn out to be true, and should the industry and the Commission agree that it is desirable to sacrifice some adjacent channel analog coverage in order to provide digital coverage of a particular quality, then the amount of interference between adjacent channel stations would increase considerably with the implementation of IBOC DAB. Any modification of the Commission's rules at this point which would allow adjacent channel stations to move closer together would simply exacerbate this problem in the future. This is yet another reason for the Commission not to adopt a PTP contour prediction model.

VIII. THE COMMISSION'S PLAN FOR ACROSS-THE-BOARD CLASS C STATION DOWNGRADING SHOULD BE REJECTED.

NAB opposes the Commission's proposal to downgrade Class C FM stations with antenna heights above average terrain ("HAATs") below 451 meters to a new Class C0 status.[56] Although, on the surface, such an action may seem logical because these stations have not built facilities that are the maximum permitted for their Class C status, we believe it would be inappropriate for several reasons.

This proposal would affect 519 of the 863 Class C stations currently licensed.[57] Stations reclassified to Class C0 would still be able to operate with a maximum effective radiated power (ERP) of 100 kW.[58] However, should they ever raise their antenna to a height above average terrain that is more than 450 meters, they would have to lower their ERP.[59]

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[55] 47 CFR § 73.317 (1997).

[56] *Notice* at ¶ 43.

[57] *Id.* at ¶ 42.

[58] *Id.* at ¶ 43.

[59] *See* 47 C.F.R. § 73.211(b) (1997).

This change would give *some* other stations who want to move their transmitters, but are prohibited from doing so because of the need to protect Class C stations, a degree of additional flexibility. It might also allow some new stations to be added in areas where, under the current rules, no room for new stations exists. However, the exact extent to which new stations could be added is unknown at this time.

NAB believes that the costs that would be imposed on stations to increase antenna height would be very large. For a significant number of these current Class C stations that might spend the money for increasing height, the gain in audience reach would be small. On the other hand, it does not appear that there would be commensurate gains by other existing broadcasters seeking to improve or otherwise modify their service as the result of these stations being downgraded by *not* increasing height to the newly-proposed minimum.

On this basis, NAB concludes that the construction costs to existing Class C stations far outweighs the benefit that might come from the prospect of increased service by other stations and/or possible entry by new stations.

Again, NAB recognizes that the downgrading of these Class C stations might provide the opportunity for other stations to move closer to them and/or upgrade their facilities. However, while this action might provide some additional flexibility to other licensees, this positive impact is offset by the negative effect that the downgrading would have on the affected Class C stations.

Broadcast licenses are allocated very differently from many of the other licenses that have been the focus of media attention lately. The Personal Communications Service ("PCS"), cellular telephone service and the wireless communications service, to name a few,

have all been licensed on the basis of *geographic* service areas.[60] Specific geographic boundaries are defined and licenses issued to provide service within these boundaries. It is then up to the licensee to design a network of transmitters that provides adequate coverage of the licensed service area.

In the FM broadcasting service, licenses are issued for a particular power, antenna height and transmitter site.[61] Licensees are required to demonstrate that their "city grade" contour covers the entire community to which they are licensed (generally a smaller area than that licensed to cellular, PCS, etc. licensees).[62] The FM stations do not have a "right" to provide service to other nearby communities that might, in reality, be closely associated with their community of license. Typically, their signals can reach such communities, but in some cases interfering signals may prevent good coverage.

Because broadcasters are not licensed to serve geographically defined areas like cellular telephone and PCS licensees, they generally do not have the option of adding additional transmitter sites and/or moving existing transmitter sites in order to meet the changing needs of their communities. Instead, a broadcaster must resort to moving its one and only main transmitter facility if, for example, the area around its community of license is growing rapidly in a direction that is not adequately served by its existing facility. When available, broadcasters also have the option of applying for a translator license.[63]

When an FM station, whether it be a Class A, B, B1, C, etc., does not build the maximum facility for which it is licensed under the Commission's rules, its choice can be

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[60] 47 C.F.R. §§ 24,102 and 24.202 (1997).

[61] *See* 47 C.F.R. §§ 73.210 and 74.211 (1997).

[62] *See* 47 C.F.R. § 73.315 (1997).

based on a number of very appropriate factors. In some cases, the licensee may have determined that there are few potential listeners to be served at the outskirts of what would be its maximum facility, so it opts to conserve resources and costs by not consuming the electricity required to reach the fringes of this service area. In this situation the licensee fully may anticipate that, in the future, there will be people in these fringe areas that it can serve and it would expect to maximize its facility at that time.

In other cases, the Federal Aviation Administration may have prohibited the licensee from building a tower that would be high enough to allow it to operate at its maximum facility. Local zoning restrictions may also dictate the same result.[64] However, the tower site may otherwise be very desirable, such that the licensee may have chosen to operate there with a slightly less than maximum facility.

However, in other cases the licensee may not have had the funding available at the time it constructed its facility to build a tower tall enough to maximize its operation, but the licensee could be planning to build a full facility as soon as the funds become available. In all of these cases, and others, it would be inappropriate for the Commission to punish the licensee for not having constructed a maximum facility by downgrading the license.

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[63] *See* 47 C.F.R. Part 74 (1997).

[64] The Commission has yet to release a decision in the pending proceeding regarding the limited preemption of local authorities regarding tower citing. *See Notice of Proposed Rule Making* in MM Docket 97-182, ___ FCC Rcd ___ (1997).

IX. THE COMMISSION'S REVIEW OF THE CLASS D RULES SHOULD RESULT IN BENEFITS TO EXISTING LICENSEES WHILE NOT ESTABLISHING A REVISED FRAMEWORK FOR FUTURE LOW POWER FM LICENSING

The Commission has proposed to alter the technical and service rules applying to the remaining 135 Class D FM stations.[65] These ten-watt facilities generally are licensed to colleges as over-the-air "campus" radio stations. In 1979, the FCC adopted rules that declared such ten-watt operations to be "inefficient" uses of the spectrum and encouraged these stations, if possible, to either increase power on the existing channel or to migrate to any available channel on the commercial portion of the FM band.[66] The FCC said it no longer would license new Class D stations - a point the Commission reiterated in its *Notice*.[67]

Each license renewal cycle, the remaining Class D stations are required to migrate to a commercial channel (at higher power) or to demonstrate the unavailability of such a channel.[68] In the *Notice,* the FCC proposes to dispense with this requirement of a showing and to allow Class D stations to operate on any FM frequency as long as interference protection standards are met.[69] For Class D stations causing interference on their existing channel, the FCC proposes a series of options for these stations under which they likely could remain on the air.[70] The FCC also proposes to "revise" the Class D FM station technical

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[65] *Notice* at ¶¶ 59 – 68.

[66] *See Second Report and Order*, 69 FCC 2d 240 (1978); *Memorandum Opinion and Order*, 70 FCC 2d 972 (1979).

[67] *See* 47 C.F.R. § 73.512(c) (1997); *Notice* at footnote 109 ("This Notice neither makes nor proposes any change to this permanent freeze policy.").

[68] 47 C.F.R. § 73.512(a) (1997).

[69] *Notice* at ¶ 62.

[70] *Id.*

definition from one with a ten-watt effective radiated power limit to one that allows a station to provide a 60 dBu contour not exceeding five kilometers in radius.[71]

Whenever the Commission addresses "ten-watt" FM stations, it raises the specter of the FCC laying the groundwork for a new "low-power FM" service. While the FCC proposals for revising the rules applying to the remaining 135 Class D campus radio stations may indeed be innocent and ultimately found to be unrelated to any future creation of low-power FM, NAB must address that possible connection.

NAB is opposed to *any* action of the FCC that might be used as a blue print for low power FM. We would not oppose the rescission of Class D stations' paperwork burdens at license renewal time. We also support efforts of the FCC to find ways that these existing Class D stations could improve their specific facilities. However, we oppose other aspects of the Class D proposals that would redefine these stations' technical and interference characteristics and perhaps provide a model for future licensing of additional "inefficient" uses of the radio spectrum. The Commission has already recognized that the remaining 135 Class D stations are an inefficient use of spectrum.[72] While they have been allowed to continue operating because of their "grandfathered" status, the fact still remains that they are inefficient spectrum users and no new similar facilities should be authorized.

X. CONCLUSION

The Commission's proposals in this *Notice* are detailed and far-reaching. It is not an easy task to decipher each separate proposal alone, then take a step back to determine the impact of all of the proposals together. NAB suggests that the FCC look at these issues in the

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[71] *Id.* at ¶ 64.

[72] *See Second Report and Order*, *supra* note 67.

same manner that we have – by bearing in mind the four basic principles outlined at the beginning of our comments: (1) The preservation of the technical integrity of the FM band; (2) Providing reasonable applicant flexibility; (3) The costs and benefits of the proposals; and (4) The impact on IBOC development.

In analyzing the proposals with these four principles, NAB supports the FCC's proposals to accept and process contingent applications and to redefine what AM changes are considered "major." However, NAB believes the Commission should not permit negotiated interference, nor should it reduce 2nd and 3rd adjacent channel mileage separations or downgrade certain Class C FM stations. It is also premature to accept the point-to-point contour prediction method. Additionally, although the Commission should try to provide some relief for existing Class D FM stations, it should not revise or redefine any of its rules so that a new low power FM service blueprint is created.

Respectfully submitted,

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