in a manner which is consistent with the federal regulatory scheme envisioned by Congress and established by the Commission.

2. *State and Local Tower Siting and Construction Regulations "Stand as an Obstacle" to the Swift Conversion to DTV*

The Commission has concluded that to ensure the continued viability of free, over-the-air television service the country's broadcasters must undertake rapid construction of DTV facilities. By requiring network affiliated stations in the top markets to proceed most quickly, the Commission is seeking to expose a significant number of households to DTV as quickly as possible. The success of DTV and the realization of the benefits anticipated by the Commission requires the most ambitious construction schedule in the history of American broadcasting, followed by a rapid and broad acceptance of the new technology by American households.

Plainly, tower siting is an integral part of the Commission's regulation of DTV service. The Commission has recognized that existing broadcast towers cannot accommodate all of the new DTV antennas and associated equipment.[42] Accordingly, new towers will have to be constructed and existing towers will have to be modified. DTV antennas must be located on some structure so that the proper signal can be broadcast. Moreover, DTV antennas must be located near the communities which their associated stations are licensed to serve. Indeed, the Commission's DTV rules constrain the location of DTV antennas to an area within three miles of their existing facilities.

State and local zoning and land use regulations of the sort discussed at pages 10-15, *supra*, have the potential to wreak havoc on broadcasters' ability to carry out the necessary

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[42] *Sixth Report and Order*, MM Docket No. 87-268, ¶ 102.

tower construction and modifications. Laws and regulations that require environmental impact statements, special use permits or variances have the potential to add months and, in many cases, years to the DTV conversion process. These procedures also introduce the very real possibility of protracted litigation by disgruntled neighbors that can extend the approval process even longer in the courts.[43] This type of regulation unquestionably "stands as an obstacle" to the implementation of the DTV conversion and to the institution and improvement of broadcast service generally.

Because the Commission has authority to order a swift conversion to DTV, and because nonfederal regulations present serious barriers to that objective, the Commission has the authority to preempt such regulations. The remaining question is whether as a matter of policy the Commission *should* preempt such regulation and, if so, how and to what extent.

B. The Commission Should Adopt a Carefully Crafted Rule to Ensure That State and Local Regulations Do Not Unduly Burden the Conversion to DTV, and the Institution and Improvement of the Service Generally, while at the Same Time Reflecting Maximum Sensitivity to State and Local Governments' Land Use Planning Authority

The Commission has long recognized its obligation to ensure that federal communications policies are not frustrated by nonfederal regulations that interfere with the accomplishment of the Commission's objectives.[44] In carrying out this obligation, the

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[43] *See, e.g., Butters v. Hauser, supra.*

[44] *See, e.g.,* Preemption of Local Zoning or Other Regulation of Receive-Only Satellite Earth Stations, *Report and Order*, CC Docket No. 85-87, 59 RR 2d 1073 (Released: Feb. 5, 1986) ("*Receive-Only Satellite Order*"); Preemption of Local Zoning Regulation of Satellite Earth Stations, *Notice of Proposed Rule Making*, IB Docket No. 95-59, FCC 95-180, 2 CR (Pike and Fisher) 2175 (Released: May 15, 1995), ¶ 41 ("*Satellite Earth Station Notice*").

Commission must make "a reasonable accommodation of [the] conflicting policies that were committed to [its] care by statute . . . ."[45] While the Commission has recognized the strong non-federal interest in land use regulation,[46] it has explained that "the relative importance to states or local jurisdictions of their own laws is not the proper focus in a decision to preempt . . . . [P]reemption is not automatically precluded merely because zoning has been called a traditionally local matter."[47]

In light of this regulatory authority -- indeed responsibility -- the Commission, consistent with its preemption of other local laws and regulations, should take action to help ensure the success of its regulatory scheme for DTV conversion.

1. *Exercise of Preemptive Authority is Consistent with Commission Action in Similar Cases*

The Commission has exercised its preemptive authority on several previous occasions with respect to local land use regulations. In varying forms and degrees, the Commission has repeatedly limited local land use authority over issues otherwise within the jurisdiction of the Commission.

For example, in a 1983 order, the Commission preempted local land use regulations which "have the effect of interfering with, delaying, or terminating" the operation of SMATV

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[45] *City of New York v. FCC*, 486 U.S. at 64 (*quoting U.S. v. Shimer*, 367 U.S. 374, 383, 81 S. Ct. 1554, 6 L. Ed.2d 908 (1961)).

[46] *See, e.g., Receive-Only Satellite Order*, ¶ 3.

[47] *Receive-Only Satellite Order*, ¶ 27 (citing *Free v. Bland*, 369 U.S. 663, 666 (1962); *Fidelity Federal Savings and Loan Assoc. v. De La Cuesta*, 458 U.S. 141, 153 (1982); *Garcia v. San Antonio Metropolitan Transit Authority*, 105 S.Ct. 1005, 1016 (1985)).

systems.[48] The basis cited by the Commission for its preemptive authority was its general regulatory authority over interstate satellite signals. In issuing its order, the Commission noted:

> [W]e do not wish to preclude a state or locality from exercising jurisdiction over certain elements of an SMATV operation that properly may fall within its authority, such as zoning or public safety and health, provided the regulation is not undertaken as a pretext for the actual purpose of frustrating achievement of the preeminent federal objective and so long as the nonfederal regulation is applied in a nondiscriminatory manner. Local authority over such concerns must be exercised so that a local jurisdiction in fact does not inhibit or interfere with the delivery of interstate signals through the exercise of its authority.[49]

In a 1985 order, the Commission preempted local land use regulations which prohibited the installation of amateur radio antenna facilities.[50] The Commission issued this order based solely on the strong federal interest evidenced by the Commission's comprehensive regulation of the service. In so holding, the Commission concluded:

> Because amateur station communications are only as effective as the antennas employed, antenna height restrictions directly affect the effectiveness of amateur communications. . . . [L]ocal regulations which involve placement, screening, or height of antennas based on health, safety, or aesthetic considerations must be crafted to accommodate reasonably amateur communications, and to represent the minimum practicable regulation to accomplish the local authority's legitimate purpose.[51]

In 1986, the Commission adopted a rule preempting local regulation of satellite earth

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[48] Earth Satellite Communications, Inc., *Memorandum Opinion, Declaratory Ruling and Order*, FCC 83-526, 55 RR 2d (Pike & Fisher) 1427 (Released: Nov. 17, 1983).

[49] *Id.*, ¶ 21.

[50] Federal Preemption of State and Local Regulations Pertaining to Amateur Radio Facilities, *Memorandum Opinion and Order*, FCC 85-506, 58 RR 2d (Pike and Fisher) 1452 (Released: Sept. 9, 1985).

[51] *Id.*, ¶ 25.

stations that differentiated between satellite receive-only antennas and other types of antenna facilities, unless the regulations (a) have a reasonable and clearly defined health, safety, or aesthetic objective and (b) do not put unreasonable limitations on or prevent reception of satellite signals or impose unreasonable costs on end users.[52]

In 1995, the Commission revisited its *Receive-Only Preemption Order*. In a Notice of Proposed Rule Making (the *Satellite Earth Station Notice*), the Commission proposed to amend its preemption rule in light of problems which had arisen in enforcing the original rule. Many parties presented evidence that the original preemption rule had been disregarded by many local government authorities and that many blatant restrictions on the placement of receive-only other satellite antennas still existed.[53] Based on these problems as well as the Commission's own experience in implementing the 1986 receive-only preemption rule, the Commission proposed to eliminate the threshold differentiation requirement, to specify instances of *per se* "unreasonable" local requirements, and to provide procedures for review of local decisions by the Commission.[54] In putting forth this proposal, the Commission confirmed that "[the Commission] cannot ignore [its] responsibility to protect and promote the strong federal interest

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[52] *Receive-Only Preemption Order*, ¶ 1.

[53] *See, e.g.*, Comments of Hughes Network Systems, Inc., File No. 45-DSS-Misc-93, Report No. DS-1311 (July 12, 1993); Comments of Satellite Broadcasting and Communications Association of America, Report No. DS-1311 (July 12, 1993); Petition for Declaratory Ruling, Hughes Network Systems, Inc. (April 19, 1993); Petition for Declaratory Ruling, Satellite Broadcasting and Communications Association of America (April 16, 1991).

[54] The Commission also proposed to modify its exhaustion of remedies requirement in light of the Second Circuit's decision in *Town of Deerfield, New York v. FCC*, 992 F.2d 420 (2d Cir. 1992) ("*Deerfield*") (holding that the FCC has no jurisdiction to review a decision of a federal court concerning interpretation of FCC rules).

in widespread access to satellite communications."[55]

In March 1996, the Commission adopted its proposed rule with only minor modifications.[56] As adopted, Section 25.104 of the Commission's rules adopts a "presumptive" approach to preemption, presuming that certain state and local regulations are unreasonable unless the presumption is rebutted by local authorities. In addition, the rule provides specific procedures for the review of local decisions impacting or limiting the installation or use of satellite earth station antennas.

In August 1996, pursuant to Section 207 of the 1996 Act, the Commission amended Section 25.104 of its rules by adopting a rule of more general application.[57] The amended rule preempts state, local and private restrictions that impair a viewer's ability to receive video programming services through devices designed for over-the-air reception of television broadcast signals, multichannel multipoint distribution service, or direct broadcast service.[58] Restrictions "impair" the use of such facilities if they (1) unreasonably delay or prevent installation, maintenance or use, (2) unreasonably increase the cost of installation, or (3) preclude reception of an acceptable quality signal.

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[55] *Id.*, ¶ 42.

[56] Preemption of Local Zoning Regulation of Satellite Earth Stations, *Report and Order, Further Notice of Proposed Rule Making*, DA 91-577, 45-DSS-MISC-93, FCC 96-78, 2 CR (Pike and Fischer) 723 (Released March 11, 1996) (modifying Section 25.104 of the Commission's rules, 47 CFR § 25.104).

[57] Preemption of Local Zoning Regulation of Satellite Earth Stations, *Report and Order, Memorandum Opinion and Order, and Further Notice of Proposed Rule Making*, IB Docket No. 95-59, FCC 96-328, 3 CFR (Pike and Fischer) 1308) (Released: August 6, 1996) ("*Over-the-Air Reception Devices Preemption Order*").

[58] Section 25.104 of the Commission's Rules (47 CFR § 25.104).

The NAB has previously brought to the Commission's attention the need for the exercise of preemptive power in the context of local land use regulation of broadcast towers and facilities, but the Commission has thus far declined these requests on the grounds that the request extended the scope of the proceeding in which the request was filed. For example, in a Petition for Partial Reconsideration of the Commission's *Receive-Only Preemption Order*, the NAB urged the Commission to adopt a preemption policy which would apply to all broadcast antennas. Subsequently, in connection with the FCC's *Satellite Preemption Notice*, the Commission declined the invitation of the NAB and others to expand the scope of the satellite preemption rules. The Commission stated:

> We decline to expand the scope of this proceeding to include preemption of local regulation of all antennas. The focus of this proceeding is satellite earth stations and is based on a record detailing problems with satellite antennas. Expansion to other types of facilities would be inappropriate. However, we note this should not be construed as approval of unreasonable local regulation of non-satellite antenna facilities. <u>The Commission is committed to assist in the expansion of telecommunications in general. Local regulation that needlessly inhibits such expansion is contrary to our goals and policies.</u>[59]

Given the Commission's sanction of an accelerated implementation of DTV in the Advanced Television Systems proceeding, the Commission must now complete the task that was left undone in the earlier proceedings and craft a preemption rule which has broad application and appropriately harmonizes the federal, state and local interests at issue.

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[59] *Id.*, ¶ 75 (emphasis added).

2. *The Rule Proposed Will Further the Commission's Goals and Promote the Public Interest*

Here the Commission policy of promoting a swift conversion to DTV conflicts with an array of state and local regulations that will add severe procedural delays to the siting and modification of towers needed to support DTV. To strike a "reasonable accommodation" of these conflicting policies, the Commission should adopt rules to preempt certain nonfederal regulations. However, it should do so in a careful and circumscribed way so as to displace as little as possible the state and local policies that underlie those regulations.

To this end, Petitioners propose that the Commission adopt a rule which provides for a limited preemption of restrictive state and local land use and other regulations regarding the construction or alteration of television towers. The full text of Petitioners' proposed rule is set forth in Exhibit A.

The proposed rule emphasizes the procedural aspects of tower siting and construction. For example, the rule provides specific time limits for state and local government action in response to requests for approval to place, construct, or modify broadcast transmission facilities. These time limits will ensure that applications for construction authority are processed by state and local government officials in an efficient and expeditious manner. As shown above at pages 10-15, *supra*, one of the most pervasive problems faced by broadcasters in constructing and altering towers is delay. In the event an appeal is taken, the local approval process can take several years to finalize. Even where no appeal is taken, multiple levels of administrative review can cause tower requests to linger for months and months. In a similar context, this concern was recognized by Congress in enacting Section 704 of the 1996 Act by requiring local

governments to act within a "reasonable period of time" in response to PCS tower siting requests.

The proposed rule would also specifically preempt certain types of tower restrictions, including regulations based on radio frequency emissions, interference with other telecommunications signals and consumer electronics equipment, tower marking and lighting, and other health, safety and welfare restrictions where applications otherwise comply with traditional land use requirements. These issues are all expressly within the sphere of federal government control and regulation. Because the FCC and the FAA comprehensively regulate issues such as interference, tower lighting and RF radiation exposure, preemption of local authority over these issues is appropriate.[60] Again, Congress has approved such an approach with respect to PCS by preempting local regulations relating to human exposure to RF radiation in Section 704 of the 1996 Act. The Commission itself has consistently taken the position that its jurisdiction over radiofrequency interference (RFI) is exclusive and that local regulation of RFI is preempted.[61]

In addition, the proposed rule provides procedures for the expeditious review of tower siting decisions, including arbitration by the Commission. This will encourage broadcasters and local authorities to work together to the greatest extent possible to resolve differences over tower

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[60] A Petition for Further Notice of Proposed Rule Making, filed by the Electromagnetic Energy Association on December 22, 1994, to preempt local regulation of RF radiation regulation applicable to the construction and operation of FCC-licensed transmission antennas, is currently pending before the Commission.

[61] *See, e.g.*,Letter from Robert L. Pettit, General Counsel, FCC, to Edward W. Hummers, Jr., dated June 18, 1991 (attached as Exhibit F);Letter from Reed E. Hundt, Chairman, FCC, to Honorable Susan Golding, Mayor, City of San Diego, dated March 15, 1996 (attached as Exhibit G).

issues, but at the same time allow the Commission to retain authority over the decision making process. Moreover, the use of alternative dispute resolution will allow decisions on tower siting issues to be resolved quickly, an issue of paramount concern to television broadcasters.

The Commission has, in the past, expressed its concern that it not become a "national zoning board."[62] The rule proposed here is plainly sensitive to such concerns. The rule sets out clear boundaries for permissible local regulation of zoning matters as they affect the siting of broadcast transmission facilities. "Traditional" land use regulations would not be eviscerated by the proposed rule. For example, regulations which have clearly defined and expressly stated health or safety objectives (other than RF radiation, interference, and tower marking and lighting) are not preempted.

As suggested by the Second Circuit's decision in *Town of Deerfield, New York v. FCC, supra*, the Commission must retain exclusive jurisdiction over tower siting issues. At root, tower siting is simply another element in the Commission's broadcast station licensing process. Non-federal concerns, regardless of their importance, cannot be permitted to frustrate the important federal objective at issue here.

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[62] *See, e.g., Satellite Preemption Notice*, ¶ 42.

III.

CONCLUSION

For the reasons expressed herein, Petitioners respectfully request that the Commission issue a Notice of Further Proposed Rule Making proposing to adopt the preemption rule set forth in Exhibit A attached hereto.

Respectfully submitted,

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May 30, 1997

Index to Exhibits

Exhibit A	Petitioners' Proposed Preemption Rule
Exhibit B	Engineering Statement of Lynn Claudy
Exhibit C	Joel Brinkley, "Crews Are Scarce for TV's High-Danger Task," *The New York Times,* May 4, 1997, page 1.
Exhibit D	Jefferson County, Colorado Ordinance, Planned Development for Telecommunications Towers
Exhibit E	*Butters v. Hauser*, 125 Idaho 79, 867 P.2d 953 (1993)
Exhibit F	Letter from Robert L. Pettit, General Counsel, FCC, to Edward W. Hummers, Jr., dated June 18, 1991
Exhibit G	Letter from Reed E. Hundt, Chairman, FCC, to Honorable Susan Golding, Mayor, City of San Diego, dated March 15, 1996

Exhibit A

Petitioner's Proposed Preemption Rule

Sec. ___ Broadcast Antenna Facility Siting.

In order to facilitate the rapid deployment of Digital Television ("DTV") services, as authorized by the Commission in MM Docket No. 87-268, and in recognition of the need to facilitate the siting and construction of broadcast transmission facilities generally, the following procedures and rules shall apply to the siting of new broadcast transmission facilities or the alteration or relocation of existing broadcast transmission facilities by television and radio stations whose operations have been authorized by the Commission.

(a) *Siting Procedures.* A State or local government or instrumentality thereof shall act on any request for authorization to place, construct, or modify broadcast transmission facilities within a reasonable period of time after a written request is filed with such government or instrumentality for any required permit or other authorization. For purposes of this subsection, a "reasonable period of time" shall mean:

(1) within twenty-one (21) days, with respect to requests to (i) modify existing broadcast transmission facilities where no change in location or overall height is proposed, and (ii) strengthen or replace an existing broadcast transmission facility;

(2) within thirty (30) days, with respect to requests to (i) relocate existing broadcast transmission facilities from a currently approved location to another location within 300 feet; (ii) consolidate two or more broadcast transmission facilities on a common tower or other structure, whether the tower or other structure is pre-existing or new; or (iii) increase the height of an existing tower;

(3) in all other cases, within forty-five (45) days.

The failure of a state or local government or instrumentality thereof to act on any request within a reasonable period of time will result in the request being deemed granted.

(b) *Preemption.*

(1) No state or local government or instrumentality thereof may deny a request to place, construct or modify a broadcast antenna facility on the basis of:

(i) the environmental or health effects of radio frequency emissions to the extent that such facility has been determined by the Commission to comply with the Commission's regulations and/or policies concerning such emissions;

(ii) interference effects on existing or potential telecommunications providers, end users, broadcasters or third parties, to the extent that the broadcast antenna facility has been determined by the Commission to comply with applicable Commission regulations and/or policies concerning interference;

(iii) lighting, painting, and marking requirements, to the extent that the facility has been determined by the Federal Aviation Administration ("FAA") or the Commission to comply with applicable FAA and Commission regulations and/or policies regarding tower lighting, painting and marking;

(2) Any state or local land-use, building, or similar law, rule or regulation that impairs the ability of federally authorized radio or television operators to place, construct or modify broadcast transmission facilities, is preempted unless the promulgating authority can demonstrate that such regulation is reasonable in relation to:

(i) a clearly defined and expressly stated health or safety objective other than

one related to those set forth in Section (1)(i)-(iii) above; and

(ii) the federal interests in (i) allowing federally authorized broadcast operators to construct broadcast transmission facilities in order to render their service to the public; and (ii) fair and effective competition among competing electronic media.

(c) *Written decision.* Any decision by a State or local government or instrumentality thereof to deny a request to place, construct, or modify a broadcast antenna facility shall be in writing and supported by substantial evidence contained in a written record. Such written decisions shall be delivered to all applicants within five (5) days.

(d) *Alternative Dispute Resolution.* In the event that an applicant is denied approval to place, construct, or modify a broadcast antenna facility, the applicant may elect to have its request submitted to an alternate dispute resolution process which shall be administered by the Commission. An applicant whose request has been denied may elect arbitration by filing a written notice of election, including a copy of the written decision of the state or local government or instrumentality thereof, with the Commission within ten (10) days of receipt of the decision of the state or local government or instrumentality thereof. The Commission shall select an arbitrator to hear and resolve the dispute within five (5) days of receipt of the notice. The Commission shall conduct and complete the arbitration within fifteen (15) days of receipt of the applicants' written request for arbitration. If it is determined that the decision of the state or local government or instrumentality thereof is unsupported by the evidence in the record and would, if allowed to stand, frustrate the federal interests set forth above in paragraph (b)(2)(ii), the Commission shall issue an order vacating the decision of the state or local government or instrumentality thereof and granting the applicant's request to place, construct, or modify its broadcast antenna facility.

(e) *Declaratory Relief.* Any radio or television operator adversely affected by any final action or failure to act by a State or local government or any instrumentality thereof that is inconsistent with this rule may, within 30 days after such action or failure to act,

petition the Commission for a declaratory ruling requesting relief. The Commission shall act on such petitions within thirty (30) days.

(f) *Definitions*. For purpose of this section:

(i) "Broadcast transmission facilities" shall mean towers, broadcast antennas, associated buildings, and all equipment cables and hardware used for the purpose of or in connection with federally authorized radio or television broadcast transmissions.

(ii) "Broadcast operator" shall mean a person, firm, corporation or other form of business organization which has been issued a construction permit, license, experimental authorization, special temporary authorization, or other authority from the Federal Communications Commission.

Exhibit B

Engineering Statement of Lynn Claudy

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

In the Matter of	)	
	)	
Advanced Television Systems	)	MM Docket No. 87-268
and Their Impact upon the	)	
Existing Television Broadcast	)	
Service	)	

STATEMENT OF LYNN CLAUDY

I, Lynn Claudy, under penalty of perjury, state and allege as follows:

1. I am employed by the National Association of Broadcasters ("NAB") as Senior Vice President, Science and Technology.

2. The first purpose of this statement is to assess the ability of television broadcasters to construct and modify broadcast towers in connection with the transition to digital television ("DTV") ordered by the Commission. This information, contained below in Section I, is based on my personal knowledge, a study conducted by the Advisory Committee for Advanced Television Service ("ACATS"), Implementation Subcommittee, Working Party Two ("WP2") on Transition Scenarios, and informal telephone surveys conducted by NAB. The methodology for the survey is described below in paragraphs 11 and 12.

3. The second purpose of this statement is to estimate the number of FM radio stations that are sharing tower structures with television stations. This information will help provide insight into how the addition of DTV antennas to existing tower structures may affect FM broadcasters. This information is contained below in Section II and is based on my personal knowledge and analysis performed by NAB staff on the FCC's station database. The methodology for this analysis is described below in paragraph 16.

I.
The Number of Television Towers Affected by Conversion to DTV

Overview

4. Assessing the ability of broadcasters to construct or modify broadcast towers requires an assessment of the amount of construction work needed and the resources available to do that construction work.

5. There are three major types of industry-wide resources needed to construct towers. They are raw materials, manufacturing facilities, and labor (erection crews). NAB analysis indicates that the number of tall tower erection crews will be the critical limiting resource in the conversion to digital television. By contrast, transmitter and antenna manufacturers appear to be adequately positioned to respond to the increased demand that will be created by the conversion to DTV.

6. In light of the scarcity of tower crews and the nature and extent of the work involved, NAB estimates that it will take the entire television broadcast industry at least eight years to construct and alter television towers in connection with the transition to DTV.

Demand

7. The actual timeline for the DTV build-out process obviously depends on the number and size of new or reinforced towers that will need to be constructed. To determine this information, in 1989, the ACATS Implementation Subcommittee WP2 on Transition Scenarios surveyed a sample of station engineers and asked about their stations' ability to install new antennas on their existing towers. For the case where the station's DTV facility would operate at same power as its current NTSC facility, only seven percent (7%) of the survey respondents believed that their existing towers could be upgraded to accommodate the new DTV antennas; 65% felt a new tower would be needed. For the case where the DTV facility would operate at a lower (i.e., 20dB)[1] power than the station's NTSC facility, the corresponding survey responses were 5% and 45% respectively. We now know that DTV facilities will operate at a power level that is approximately 6dB lower than the stations' NTSC facilities in order to achieve equivalent coverage. Interpolating the results of the 1989 survey to account for this difference in the power, yields an estimate of about 66% of stations that would need their towers upgraded or for which a new tower will need to be constructed[2].

8. Since the time of the ACATS study, and according to data collected by NAB in its informal survey described below in paragraphs 11 and 12, tower companies report that the rate of new tower construction has remained about the same or somewhat slower than in the few years before 1989. Also in this interim period since the ACATS study, tower design standards have been upgraded, with the result that the engineering calculations now predict that more towers must be strengthened to

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[1] At the time the 1989 survey was conducted it was known that DTV facilities would likely operate at a lower power that its NTSC counterpart, however, the exact relationship of NTSC to DTV power had not yet been established. For the purposes of the 1989 survey 20dB lower was used.

[2] A facility operating at the "6dB lower" power level will generally require a more substantial transmission line and antenna than would a station operating at the "20dB lower" power level thus placing an increased structural load on a station's tower. Therefore more stations' towers will likely need to be modified or replaced. The 66% figure was calculated by performing an interpolation between the survey response numbers of the "full power" case and the "20dB" lower case.

support additional loading. Together, the tougher tower standards and the conversion to DTV mean that even more new or reinforced tower work will be needed than originally predicted by the ACATS study. Based on a consideration of all these factors, it appears that approximately 70% of existing television stations will need new or upgraded towers in order to convert to DTV.

9. With a total of about 1400 television towers nationwide[3], this would translate to a workload of about 1000 towers. In addition to the DTV build-out, normal maintenance and repair activities and emergency replacements -- estimated at about 40 jobs per year -- will require additional construction work.

10. Tower construction work can be roughly divided into three groups: short towers (i.e., up to 300 feet above ground level), medium towers (i.e., 300 to 1000 feet), and tall towers (i.e., above 1000 feet). An analysis of the distribution of tower heights in 1992 (1307 towers) showed that 40% were above 1000 feet and 43% were between 300 feet and 1000 feet[4]. Since it costs more to build tall towers with significant extra capacity, disproportionately more of the reinforcing workload is expected to be required on tall towers. Applying these ratios to the tower work load stated above in paragraph 9, NAB estimates that about 400 new or upgraded tall tower jobs and 430 medium tower jobs will be needed. In addition, about 300 antenna installations on medium towers (with little or no reinforcement) will be needed.

Supply

11. There are three major companies that manufacture the large steel sections for tall TV towers: LeBlanc, Stainless, and Kline. In the fall of 1996, NAB staff held informal discussions with representatives of each of these three companies regarding production capacities. NAB believes that, given the current utilization of fabrication facilities, significant capacity expansion is possible to support the anticipated demand generated by the DTV transition. Thus, NAB does not expect that fabrication capacity will be a limiting factor in the conversion to DTV. One company indicated that obtaining sufficient steel to manufacture the large towers may be a delaying factor because the steel is imported and there are only a few supply sources. However, the other companies did not share this concern. One recent contact indicated that, if demand is great enough, U.S. steel manufacturers could begin producing steel with about a six-month lead-time.

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[3] This value was derived by taking the current number of full service, on-air television stations (1545 - queried from the FCC's TV database) and subtracting from that the number of stations that share tower facilities (150 – based on methodology used by Vaughan and Banker referenced in footnote 4).

[4] T. Vaughan and J. Banker, *Antenna and Transmission Line for the Simulcast Period,* 1992 NAB HDTV World Conference Proceedings.

12. Also in the fall of 1996, NAB held informal discussions with the companies that provide the labor to build and modify tall towers to determine the tower erection capability in the United States. We identified nine companies and 21 crews that can erect towers over 1000 feet high. Tower manufacturers, Stainless and Kline, use subcontractors for erection. LeBlanc (Canada) has its own crews. Several industry representatives set the number of "good" crews at 10 to 12, based on their individual experience. NAB estimates there are, at best, 20 crews qualified to do tall tower work.

13. ACATS IS/WP2 estimated that a tower modification project will require three months for the actual tower alteration and an additional month for antenna/feedline installation. ACATS IS/WP2 estimated that construction of a new tower will require six months, with an additional month for antenna/feedline installation. Since site preparation activities make up the bulk of the time difference between tower modification and construction, ACATS IS/WP2 assumed that three to four months per project would be the typical time required for each site erection team. Based on recent information from tower erection companies, NAB believe that three months (four jobs per year per crew) is a better estimate for modeling the current industry capacity. This time estimate covers new towers or major reinforcement jobs and includes antenna installation. Separate installation of antennas was modeled at one-crew-month each.

14. Growth in the tower construction work force is likely to be slow due to the long training period for new workers. Each crew needs a very experienced top man and a crew leader. Training is provided via understudy on the job, and many jobs require learning different skills, which further extends the training period. Once the understudy for one of these positions is ready, a new crew must be created to provide an increase in industry capacity. Fortunately, training of red iron trade/support workers for other positions is less of a constraint. Some new tall tower crews may come from experienced medium tower crews combined with a capital equipment upgrade. NAB estimates growth in the tower construction workforce at 5% in the next year and 10% for the next two years, followed by 20% compound growth per year until there is a two-year backlog remaining. At the end of this period there would be 40 crews in the field (vs. 20 now). With these assumptions NAB estimates that the tall tower work will be completed seven to eight years from now. Since there are more crews to work on medium tower jobs, and about the same volume of jobs as for tall towers, the industry can almost handle the peak demand for medium tower work, projected to occur in years 3 to 6, and should be able to complete all the necessary work in 6 ½ years.

15. Some of the other jobs (those under a few hundred feet) will likely be handled by less specialized PCS tower or other erection companies who choose to increase their capability. However, TV towers require custom designs, which involve a unique skill set and much more design and planning time. In addition, building towers above 200-300 feet in height requires specialized equipment and erection methods that are substantially more complex than those methods used for short PCS-type structures.

II.
The Number of FM Antennas Which May Be Affected By the Conversion to DTV

Methodology

16. On May 5, 1997, NAB downloaded the Commission's FM and TV engineering databases from the FCC's World Wide Web site. We then imported these two databases into Microsoft Access and designed a query to report all instances where an FM station is located at the exact same geographic coordinates as a TV station. We then generated a report that lists all of the separate geographic coordinates at which there is at least one FM station and one TV station.

17. When performing the above analysis, we considered only licensed FM stations (i.e., no construction permits, pending applications, etc. were considered). We also excluded FM translators and FM boosters. In the TV database, we considered only licensed facilities (i.e., no construction permits or applications were considered). Both full service *and* low power TV stations were included in this analysis because low power TV stations will also be converting to DTV.

18. The major limitation on this analysis is that it only identifies stations that share the same geographic coordinates -- and it is possible for two stations to share the same geographic coordinates and not be located on the same tower because one second of latitude or longitude is equivalent to approximately 100 feet in the continental United States. At this time, there is no way to confirm whether or not two separate antennas are located on the same tower based solely on the FCC's engineering databases.

Results

19. The results of this study show that, in the United States (including Guam, Puerto Rico, and the U. S. Virgin Islands), there are 1,320 FM stations that are located at the same geographic coordinates as at least one TV station.

III.
Verification of Petition

21. I have read the foregoing Petition for Further Notice of Proposed Rule Making and the same is true and accurate to the best of my knowledge except as to those items which are alleged upon information and belief, and as to those items, I believe them to be true.

This the 30th day of May 1997.

Lynn D. Claudy

Lynn Claudy

Exhibit C

Joel Brinkley, "Crews are scarce for TV's high-danger task,"
***The New York Times*, May 4, 1997, page 1.**