

GAO

Fact Sheet for Congressional Requesters

March 1990

TELECOMMUNICATIONS

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Issues Concerning
Licensing of
Telecommunications
Engineers and
Technicians



94-23499



**Resources, Community, and
Economic Development Division****B-238431****March 19, 1990****The Honorable Edward J. Markey
Chairman, Subcommittee on Telecommunications
and Finance
Committee on Energy and Commerce
House of Representatives****The Honorable Matthew J. Rinaldo
Ranking Minority Member
Subcommittee on Telecommunications
and Finance
Committee on Energy and Commerce
House of Representatives****DTIC
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In your letter of February 27, 1989, you requested that we report on the status of state involvement in the licensing of radio and telecommunications engineers and technicians in the wake of the Federal Communication Commission's (FCC) elimination of its own program for licensing operators of certain telecommunications equipment. This issue has been raised by the National Association of Radio and Telecommunications Engineers (NARTE), which is concerned about state licensing statutes governing all professional engineers¹ being enforced against telecommunications engineers.

As agreed, this fact sheet addresses FCC's past involvement in licensing operators (section 1), states' enforcement of professional engineering statutes (section 2), views on states' actions by various affected organizations (section 3), and discussion of a proposal to preempt state jurisdiction (section 4). We contacted nine states where NARTE and others we spoke with claimed that activity against telecommunications engineers had occurred.

In summary, we were able to document efforts by six states to enforce their statutes governing the licensing of professional engineers against certain individuals working in the telecommunications industry. These individuals have

¹The title "professional engineer" is given to those licensed by a state under its professional engineering statute.

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either offered engineering services to the general public or have held themselves out to the public as "engineers." Unresolved issues that have given rise to these actions are (1) whether "telecommunications engineering" constitutes the "practice of engineering" as defined by state engineering statutes and (2) whether individuals can offer engineering services or hold themselves out as "engineers" to the public without being state-licensed. Complicating these issues is the absence of an agreed-upon definition of what constitutes telecommunications engineering. We found no consensus among various groups within the telecommunications industry concerning the impact these issues have on them.

FEDERAL LICENSING OF TELECOMMUNICATIONS OPERATORS

For years FCC administered tests and required that individuals have FCC "operator" licenses to operate, maintain, repair, or install equipment at FCC-licensed facilities. More recently, however, FCC has eliminated most of its licensing and testing requirements in order to reduce unnecessary federal regulations. In this regard, in 1983 FCC supported an amendment to the Communications Act of 1934,² known as the Pressler Amendment,³ allowing it to "endorse" industry certification programs covering persons working in the private land mobile and fixed services.⁴ Organizations operating such certification programs include NARTE, the National Association of Business and Educational Radio, and the Society of Broadcast Engineers.

STATES' ENFORCEMENT OF PROFESSIONAL ENGINEERING STATUTES

State engineering boards along with the National Society of Professional Engineers, a group representing all engineering disciplines, are concerned about individuals who hold themselves out to the public as engineers and practice engineering without professional registration. We documented efforts, between 1981 and 1989, in six states, to enforce professional engineering statutes against

²47 U.S.C. 151 et seq.

³47 U.S.C. Section 154 (f) (4) (E).

⁴FCC includes in this category such services as mobile radio services operated by the police, fire departments, and businesses, as well as stationary microwave communications towers operated by railroads and others.

individuals working in the telecommunications industry. In five of these states we identified complaints made against individuals for alleged violations of professional engineering statutes.⁵ Generally, use of the terms "engineer" or "engineering" in advertisements was at issue rather than the type of "engineering" work actually being performed. The language in the state statutes contributed to this ambiguity, since it was general and did not specify tasks that constituted engineering work.

Some of the individuals cited have challenged the boards' assertion of jurisdiction over them. Responses by the states varied, ranging from simply letting the matter drop in one case to proposing a change in the state statute to specifically define telecommunications engineering.

REACTION OF PROFESSIONAL ORGANIZATIONS

NARTE has charged that some states are trying to fill a "regulatory void" left when FCC eliminated its testing and licensing requirements for operators by extending existing state statutes that govern all professional engineers to also cover telecommunications engineers. NARTE's arguments against state regulation include (1) telecommunications engineering is different from other engineering disciplines, (2) states do not offer tests in telecommunications engineering, and (3) telecommunications is interstate in nature, negating any state regulation. Other organizations we contacted within the telecommunications industry do not share NARTE's views, and we found no consensus that a problem exists.

PROPOSED CHANGES TO THE PRESSLER AMENDMENT

NARTE advocates changes in the Pressler Amendment to preempt state jurisdiction over telecommunications engineers. NARTE would require mandatory industry-sponsored certification of telecommunications engineers and technicians. FCC does not support NARTE's proposal, and one FCC official commented that it would broaden the scope of the Pressler Amendment beyond what it originally stated. Both FCC officials and

⁵In the sixth state, its implementing regulations covered organizations within the telecommunications industry, but we found no evidence of complaints filed against any individuals.

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professional engineers have stated that FCC licensed "operators," not "engineers."

Other organizations we contacted had a variety of views. The Society of Broadcast Engineers does not support NARTE's specific proposal but is concerned about state licensing and recently proposed that FCC preempt state licensing of technical operators who work exclusively at FCC-regulated facilities. The National Association of Business and Educational Radio generally supports a national licensing requirement for radio technicians, although it is unaware of any state attempts to exert jurisdiction over its members. The United States Telephone Association opposes NARTE's proposal and is unaware of any state efforts to exert jurisdiction over employees of its member telephone companies. In any event, however, the Association said it would not support mandatory certification.

SCOPE AND METHODOLOGY

In performing our work we reviewed state professional engineering statutes and contacted appropriate officials and representatives in the states of Colorado, Michigan, Nevada, New Jersey, New Mexico, Oregon, Pennsylvania, Texas, and Washington. These states had been identified by NARTE and others as states where actions have been taken against telecommunications workers. We also reviewed federal legislation and FCC documents and talked with FCC officials, private organizations, and individuals working in the telecommunications industry.

Our audit work was conducted between June and September 1989. We discussed the factual information in this report with FCC officials during the course of our work and have incorporated their views where appropriate. However, as your office requested, we did not obtain official agency comments on this report. As agreed, we are sending copies of this fact sheet to interested parties and will make copies available to others upon request.

Major contributors to this fact sheet are listed in appendix I. If I can be of further assistance, please contact me at (202) 275-5525.

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ABBREVIATIONS

FCC	Federal Communications Commission
GAO	General Accounting Office
NABER	National Association of Business and Educational Radio
NARTE	National Association of Radio and Telecommunications Engineers
NSPE	National Society of Professional Engineers
SBE	Society of Broadcast Engineers
USTA	United States Telephone Association

SECTION 1

FEDERAL LICENSING OF TELECOMMUNICATIONS OPERATORS

THE COMMUNICATIONS ACT OF 1934

The Communications Act of 1934 as amended¹ directs the Federal Communications Commission (FCC) to regulate interstate and foreign commerce via wire and radio communications. Section 303(L)(1) of the act gives FCC the "authority to prescribe the qualifications of station operators, to classify them according to the duties to be performed, to fix the forms of such licenses, and to issue them to persons who are found to be qualified by the Commission...."

FCC TESTING AND LICENSING PROGRAMS

To carry out its responsibilities, FCC over the years administered testing and licensing programs. Individuals were required to hold an FCC "operator's license" to operate, maintain, repair, or install equipment at communications facilities licensed to operate by FCC. An operator's license was considered by many in the telecommunications industry to be an indicia of a certain level of technical competence and a reliable basis on which to determine threshold qualifications of applicants for employment as technicians. However, in recent years FCC has moved to cut back many of its operator licensing requirements and its testing and certification programs, first in 1981 for the broadcast services, and then in 1984 for the private land mobile and fixed services.

FCC's objective in eliminating these requirements was to create to the maximum extent possible an unregulated, competitive, marketplace environment for the development of telecommunications and to eliminate unnecessary regulations and policies. FCC stressed that owners of FCC-licensed facilities are ultimately responsible for the proper operation of their stations. FCC reasoned that competitive market forces and economic self-interest would better ensure that licensees employ competent operators and technicians to operate equipment in accordance with FCC rules than would a written operator's examination. Moreover, an FCC-commissioned study asserted that commission-imposed rules, requirements, and potential sanctions may render technical operator licensing largely redundant. Finally, FCC officials stated that FCC did not have the resources (budget and personnel) to periodically revise and update the test to incorporate rapidly changing technology in the telecommunications industry. Accordingly, FCC claimed the test did not accurately reflect technical competence.

¹47 U.S.C. 151 et seq.

Many small businessmen, license holders, and organizations opposed these moves, particularly FCC's decision to remove licensing requirements in the private land mobile and fixed services. Their concerns focused on the likelihood of increased interference, a decline in signal quality, and unqualified personnel performing this work.

THE PRESSLER AMENDMENT

The conflict over FCC's actions was assuaged by legislation that amended the act. Section 10 of the "Federal Communications Commission Authorization Act of 1983,"² was viewed by the Congress and FCC as a compromise between FCC's deregulatory philosophy and the concern of the private land mobile and fixed services communities.

The new legislation allowed FCC to endorse private industry certification of individuals to perform transmitter installation, operation, maintenance, and repair duties in the private land mobile and fixed services. The specific language reads as follows:

The Commission shall have the authority to endorse certification of individuals to perform transmitter installation, operation, maintenance, and repair duties in the private land mobile services and fixed services (as defined by the Commission by rule) if such certification programs are conducted by organizations or committees which are representative of the users in those services and which consist of individuals who are not officers or employees of the Federal Government.

In FCC's view, this amendment allowed it to endorse, but not necessarily sanction, private sector efforts to implement a comparable substitute to FCC's operator licensing program in the private land mobile and fixed services. While FCC makes clear that certification is not a requirement, it does strongly endorse and encourage the establishment of one or more national industry certification programs for technicians that reflect effective standards of technical competence.

PRIVATE CERTIFICATION EFFORTS

In the wake of FCC's decision to no longer license operators, several private organizations, including the National Association of Business and Educational Radio (NABER) and the National Association of Radio and Telecommunications Engineers (NARTE),

²47 U.S.C. Section 154(f)(4)(E) (commonly referred to as the Pressler Amendment).

started their own certification programs.³ The Society of Broadcast Engineers (SBE) has had a certification program in place since 1975. According to these organizations, many employers require their employees to be industry-certified as a means of identifying a threshold level of technical competence in the telecommunications industry.

NABER is a broad-based membership trade association with approximately 5,000 members. NABER tests and certifies radio technicians, many of whom work in radio shops installing two-way radios. Formal education at a college or university is not required to become certified. Approximately 34,000 radio technicians have taken NABER's examination and have become NABER-certified radio technicians.

SBE tests and certifies broadcast engineers and technicians who work primarily as employees of radio and television stations. Some of its 5,300 members also perform consulting work, although they constitute a minority. Approximately 4,500 broadcast engineers and technicians have become SBE-certified since SBE started its certification program.

NARTE, with approximately 6,000 members, tests and certifies both telecommunications technicians and engineers, offering several levels of testing and certification for technicians and engineers. NARTE characterizes its certification program as broadly based, covering the entire telecommunications industry. Formal education at a college or university is not required to become certified. NARTE has certified approximately 8,000 technicians and engineers since it began its certification program.

³These programs offer certification for technicians and engineers. The title "engineer" is often used as an internal job classification with the telecommunications industry.

SECTION 2

STATES' ENFORCEMENT OF PROFESSIONAL ENGINEERING STATUTES

State professional engineering licensing statutes are designed to protect the health, safety, and welfare of the citizens of the state. As a general rule, the prerequisites for registration as a professional engineer are

- graduation from a 4-year accredited engineering program,
- successful completion of an 8-hour examination covering fundamentals in engineering,
- successful completion of an 8-hour examination covering principles and practice of engineering, and
- 4 years of engineering experience.

Some states allow experience to substitute for lack of formal education, although discretion to make such a decision is within the exclusive province of the state licensing board. State law also provides for reciprocity and, in most cases, it is granted without further registration, provided that the standards under which original registration was obtained meet or exceed those of the granting state.

State statutes prohibit the use of the title "professional engineer" unless one is a state-licensed professional engineer. Statutes may also contain provisions that prohibit or restrict the use of the title "engineer" or the offer to perform engineering services to the public unless an individual is a professional engineer or otherwise exempt from the licensing requirement under a provision in the statute.

Engineering statutes define the "practice of engineering" through the use of broad general concepts, which vary from state to state. Practicing "engineering" constitutes a violation of the statute unless one is either a professional engineer or otherwise exempt under a provision in the statute. Whether the practice of "telecommunications engineering" constitutes the "practice of engineering" within the scope of professional engineering statutes is a fundamental point of dispute between NARTE and some state boards. The lack of an agreed-upon definition of telecommunications engineering has contributed to this dispute.

EXEMPTION PROVISIONS

Exemption provisions contained in state statutes may permit certain categories of individuals to call themselves engineers and to practice engineering under certain circumstances without

complying with the provisions of the statute. For example, "employer's exemptions" may permit individuals who work exclusively for one employer to use the title "engineer" as an internal job classification title and to practice engineering without the need to be state-licensed, provided that neither the employee nor the employer offers engineering services to the general public. Employer exemption provisions are based on the rationale that the employee is not offering engineering services to the public but rather is working exclusively for one employer whose business does not consist of rendering engineering services to the general public. Similar types of exemptions may cover employees of public utility companies and employees who perform engineering services for federal, state, and local government agencies.

CONCERNS OF STATES AND PROFESSIONAL ENGINEERS

In discussions with several of the representatives of the state boards with whom we talked and with the National Society of Professional Engineers (NSPE),¹ concerns were expressed about individuals who hold themselves out to the public as "engineers" and practice engineering without professional registration. For example, NSPE expressed concern about those who call themselves telecommunications engineers and hold themselves out to the public as such but are not registered professional engineers. These individuals are precluded under some state statutes from using the title "engineer." Whether or not they are performing "engineering" work depends on how states interpret the definition of the practice of engineering in their statute. Also of concern to NSPE are technicians who work primarily in the broadcast industry. It is NSPE's position that the majority of these "broadcast engineers," as they describe themselves, are not engaged in the practice of engineering as defined by state law but rather perform technical functions. Therefore, NSPE classifies them as "technical operators" and not "engineers." NSPE does not consider the title "engineer" to be a generic title available for use by those who do not engage in the practice of engineering.

STATE ACTIONS

We documented efforts, between 1981 and 1989, in six states to enforce professional engineering statutes against individuals working in the telecommunications industry. In five of these states we identified complaints filed with state boards against individuals for alleged violations of state professional engineering statutes. In the sixth state, its implementing regulations covered organizations within the telecommunications

¹NSPE, a voluntary organization representing all engineering disciplines, has about 70,000 members, of which about 50,000 are professional engineers.

industry, but we found no evidence of complaints filed against any individuals.

These complaints were generally triggered by the use of the terms "engineer" or "engineering," typically found in advertisements placed in trade magazines and telephone directories. Although use of these terms seems to have been the initial impetus for filing a complaint with a board, the absence of available documentation frequently made it difficult for us to determine whether these complaints stemmed solely from the use of these terms or whether they were also prompted by a concern that the individual was actually practicing engineering within the scope of the state statute. Further, lack of an agreed-upon definition of what constitutes telecommunications engineering makes such a determination difficult.

In some of the cases we identified, the individuals cited have challenged the state board's assertion of jurisdiction over them. States have responded to these challenges in different ways ranging from simply dropping the matter to proposing changes to their statute. According to NARTE, disputes over state regulation have created a regulatory crisis for telecommunications engineers and technicians. The following are summaries of state activity we identified and for which we were able to obtain some documentation.

New Jersey

We identified two separate incidents in New Jersey, the first occurring in 1984 and the second occurring in 1988. In the first case, the New Jersey state board of professional engineers notified an individual that a "systems requirement study" (which the individual had contracted to perform) constituted the practice of engineering in violation of the professional engineering statute. The individual against whom this claim was made told us that the board had received a complaint from a local competitor alleging that he was practicing engineering without a license. The notice from the board offered the individual an opportunity to settle the matter and thereby avoid litigation by signing an agreement to "cease and desist from such future representation."

We learned from this individual that he had also been advertising himself as a "telephone engineer" and was performing telephone consulting work. According to the individual, a letter from his attorney to the board put the matter to rest for 18 months, after which time he said the board sent another letter stating that it was not prepared to pursue the case any further. However, he stated that the board enclosed an affidavit for his signature stating that he would agree to stop using the term "engineer" or "engineering." The individual said that he signed the affidavit and thereafter identified his work as "telephone management consulting." This case illustrates the difficulty of determining whether the board is concerned only with the fact that

the individual advertised himself as an "engineer" or whether it is concerned that the individual is actually performing engineering work without a professional engineer's license.

In the second case, a telecommunications engineer received notice from the board of a complaint that had been filed against him for advertising or offering "engineering services." A copy of the advertisement was attached to the complaint. This individual told us that he is certified by NARTE as an Engineer, Class I, and advertised only in a magazine published by NARTE. After his attorney sent a letter to the board challenging the board's jurisdiction over telecommunications engineers, the individual has received no further correspondence from the board.

New Jersey is considering legislation that would amend its professional engineering statute to include a specific definition of telecommunications engineering. According to a representative of the New Jersey Office of the Attorney General, the proposed changes are intended to regulate unlicensed telecommunications engineers who deal directly with the public and who are not now regulated by another agency. Even without the amendment, however, he said that the statute can be interpreted to include much of the activity of telecommunications engineers within its scope.

Michigan

According to an official of the Michigan Department of Licensing and Regulation, telecommunications engineers do not come within the scope of the Michigan code that regulates professional engineers. According to this official, the code contains no prohibition against use of the terms "engineer" or "engineering" and does not authorize regulation of persons who term themselves "engineers." The official stated that the only applicable title restriction is a requirement that persons using the title "professional engineer" be licensed. He did assert, however, that the code regulates the practice of professional engineering and that the board looks at the actual services offered to determine if the code has been violated. The official acknowledged to us, however, that use of the terms "engineer" or "engineering" still could trigger a complaint. He stated that several formal investigations involving broadcast engineers, telecommunications engineers, and telephone consultants are currently underway.

We learned of one incident that occurred in Michigan in 1988 in which a complaint was registered with the Michigan Department of Licensing and Regulation² on the basis of an advertisement in a broadcasting magazine for a firm that advertised as "broadcast consultants and engineers." A copy of the advertisement was

²The Board of Professional Engineers falls under the jurisdiction of the Department of Licensing and Regulation.

attached with the complaint. The individual cited claimed that his business is limited to maintenance and repair of radio systems. The complaint did not allege that the type of work performed was at issue, but rather appeared to be based solely on the wording of the advertisement. It requested that the department check on "the legalities of the advertisement." On the basis of this complaint, the department notified the individual that it had received a complaint alleging a possible violation of the code and warned of potential civil and criminal penalties if a violation were established.

Through an attorney, the individual denied violating any law, rule, or regulation and demanded written specifics of the statutory violations claimed. Ultimately, the matter was dropped, although according to the individual against whom the complaint was made, not until after a difficult encounter with an investigator from the Department of Licensing and Regulation.

New Mexico

We did not identify any specific actions taken against individuals performing telecommunications work in New Mexico. However, New Mexico's engineering statute was brought to our attention because concerns were expressed about how the statute might be interpreted. According to the Chairman of the New Mexico State Board of Registration for Professional Engineers and Professional Surveyors, New Mexico's licensing statute will not permit the use of the title "engineer" under any circumstances unless one is a registered professional engineer. However, he did state that the use of the term "broadcast engineer," "chief engineer," or "project engineer" is permitted if the titles are used internally within an employment relationship and services are not offered to the general public.

The Chairman also stated that the statute gives the board authority for jurisdiction over telecommunications engineers. While the statute itself does not refer specifically to telecommunications engineering, the New Mexico state board has adopted Regulations and Rules of Procedure, which it relies upon to carry out the intent of the statute. The rules state that organizations in the telecommunications industry that are not otherwise covered under the conditions set forth in section 61-23-22 of the state professional engineering statute (which provides for specific exemptions) should submit an application to the board for an exemption provided that engineering services are not rendered to the public. According to the Chairman, this procedure permits the board to judge the work of those in the telecommunications industry who come before the board.

Colorado

In Colorado, we talked with an individual who referred to himself as a broadcast engineering consultant. He said that a complaint was filed against him with the State Board of Registration for Professional Engineers in 1981, alleging a violation of the statute for advertising as an "engineer." One official of the state board stated that a broadcast engineer or radio engineer performs maintenance, repair, and operation of equipment, which does not constitute the "practice of engineering" within the scope of the state licensing statute and therefore does not require a professional engineering license. The official also said that use of the title "engineer" is not prohibited by the statute as long as the individual is not holding himself out to the public to perform engineering work.

While the board claims to have jurisdiction over telecommunications engineers specifically, the individual against whom the complaint was filed claims it does not. He believes that as a result of his case the Colorado legislature specifically directed the board to limit its jurisdiction to the six specific areas of engineering mentioned in the state statute. Telecommunications and broadcast engineering are not among the six mentioned. While we were not able to clearly document the events in this case or its outcome, it does illustrate the confusion surrounding this issue.

Texas

We identified two incidents that occurred in Texas. In both cases, the state board appears to have been concerned with terminology used and not with the actual work performed. Both incidents involve allegations of an apparent violation of the state licensing statute by an individual who advertised himself to the public as being legally qualified to engage in the practice of engineering. In the first case, an advertisement included the title "telecommunications engineers" and an offer of "engineering services." The advertisement in the second case included the term "engineering."

The first incident occurred in 1987 and was resolved when the individual against whom the allegation was made voluntarily agreed to revise the advertisement. The individual continued to practice his livelihood as before but was required to advertise without reference to the terms "engineer" or "engineering."

The second incident occurred in 1989 and was not the result of an outside complaint, but rather was prompted by the board's own review of the telephone directory. The board informed an individual that it was unable to identify a state-registered professional engineer within his firm. The board explained further that through the use of the word "engineering" in the individual's

advertisement in the telephone directory, it appeared that he was making a representation to the public as being legally qualified to engage in the practice of engineering. In response, the attorney for the individual stated that his client sells, installs, and services radio microwave equipment, referred to collectively as "engineering activities." The board offered to close the case contingent on agreement by the individual to request that the publisher of the directory "delete all mention of engineering from the advertisement." The offer was declined in August 1989 and as of January 1990 no further communication from the state has been received.

A representative of the Texas board told us that telecommunications engineering does come within the scope of the state statute. He acknowledged that the board has received complaints against some telecommunications engineers for alleged misuse of the title "engineer." According to this representative, it is a violation of the Texas statute to represent oneself to the public as an "engineer" unless one is a state-licensed professional engineer.

Washington

In 1986, a complaint was made against a telecommunications engineer to Washington's Board of Registration for Professional Engineers and Land Surveyors. The complaint alleged that the individual had entered into a contract to provide engineering and/or architectural services. The board gave the Office of the Attorney General authorization to attempt to resolve the matter. The Office of the Attorney General offered to refrain from filing a criminal complaint and injunction on the condition that the individual agree to sign a Stipulation and Agreement "to refrain from providing engineering services and offering to provide said services by the use of the terms, engineer, engineering and/or engineers in your business cards and/or letterheads unless and until you become registered with the Board as a Professional Engineer." The engineer challenged the board's jurisdiction, and in 1988 the board withdrew the Stipulation and Agreement on the basis of a prior lawsuit, Martin v. TX Engineering, Inc.³ In that case, the court concluded that the state engineer licensing statute cannot be construed to include the field of electronic engineering within its regulatory requirements since electronic engineering had not yet emerged in 1947 when the statute was enacted. In a written statement, the board referred to Martin v. TX Engineering and stated that the individual was "entitled to practice without a license within the limits of Martin vs TX Engineering."

³719 P.2d 1360, 43 Wash. App. 865 (1986).

Despite this decision, a representative of the Washington state board told us that telecommunications engineers and consulting engineers who represent themselves to the general public as performing engineering work come within the scope of the state statute. These conflicting statements are further evidence of the confusion surrounding this issue.

SECTION 3

REACTION OF PROFESSIONAL ORGANIZATIONS

NARTE has reacted to state actions by charging that they are trying to extend jurisdiction over the licensing of radio and telecommunications engineers and technicians through enforcement of existing state licensing statutes that govern the licensing of professional engineers. NARTE believes that states are attempting to fill a "regulatory void" left when FCC eliminated its testing and licensing requirements. NARTE's concerns were brought to the attention of both the House Subcommittee on Telecommunications and Finance and FCC. Other organizations we contacted have not expressed similar sentiments, and we found no consensus among various groups within the telecommunications industry regarding whether a problem exists, due to the differing perspectives of organizations within the industry.

NARTE'S POSITION

NARTE advances a number of arguments to support its belief that broad state engineering statutes are not applicable to telecommunications engineers and technicians. For example, NARTE argues that telecommunications engineering is inherently interstate in nature, and therefore state regulation is inappropriate. In addition, it asserts that the United States has industry-developed national telecommunications standards, not state standards, which make uniform national licensing imperative. According to NARTE, uniform national standards are necessary if the United States is to compete effectively in the global telecommunications market.

NARTE also points out that states do not provide for testing in telecommunications engineering, nor do they recognize it as a separate engineering discipline. These facts, NARTE asserts, illustrate the states' lack of a defensible public interest rationale for regulating telecommunications engineers and technicians. Several state boards we contacted suggested that the electrical engineering examination they offer is an appropriate exam for those individuals who wish to practice telecommunications engineering. This suggestion has been strongly opposed by NARTE, which asserts that telecommunications engineering is a separate and distinct discipline. The electrical engineering exam, NARTE believes, has little relevance to telecommunications engineering.

NARTE has expressed doubt that states could devise a test that could keep up with the fast pace of change in the telecommunications industry. On the other hand, NARTE says it has prepared a series of examinations for its seven-tiered certification program, ranging from entry level Class IV Technician to Class I Engineer, that encompasses the entire telecommunications industry. This type of certification program,

NARTE contends, gives the individual the incentive to strive for greater knowledge and ability in order to receive the next higher level of certification.

NARTE contends that states have overstepped their authority in staking exclusive claim to the title "engineer" and that use of the term by itself does not mislead the public into believing that telecommunications engineers are "registered" or "professional" engineers. NARTE argues that "engineer" is not synonymous with "registered engineer" or "professional engineer," or else the words "registered" and "professional" would have no contextual meaning.

COMMENTS FROM OTHER ORGANIZATIONS

SBE is concerned about state regulation of technical operators at federally-licensed radio facilities. As discussed further in section 4, SBE recently claimed, in a filing with FCC, that there have been instances of attempted enforcement of state statutes against technical operators who work exclusively on FCC-licensed communications facilities. FCC declined to rule on the filing, saying that SBE presented no evidence to substantiate its claim.

NABER states that it is unaware of any state attempts to regulate its members. NABER did state, however, that some of its members have complained that state and local governments are unaware of FCC's prior deregulatory actions and therefore still require an FCC license as a prerequisite for some kinds of employment.

The United States Telephone Association (USTA) represents most of the local telephone companies in the United States. These telephone companies employ both telecommunications engineers and technicians. The telecommunications engineers work exclusively for the local telephone company, performing engineering services for their employer. At this time, USTA is unaware of any state efforts to require certification of telecommunications technicians and engineers.

NSPE says that it recognizes the legal right of one who claims a statutory exemption to engage in the practice of engineering without state registration, but it nevertheless encourages employers to consider the benefits of professional licensing for such employees.

FCC distances itself from the issue, maintaining that it never licensed "engineers," only "operators," and states that it is not aware of any state efforts to license operators at this time.

SECTION 4

PROPOSED CHANGES TO THE PRESSLER AMENDMENT

NARTE has proposed federal legislation in the form of changes to the Pressler Amendment as its solution to the problem of state attempts to regulate telecommunications engineering. NARTE seeks a clear congressional statement of the need for a uniform national licensing program under the auspices of the FCC but administered by qualified private-sector groups such as NARTE, NABER, SBE, and others. The Pressler Amendment with NARTE's proposed changes follows. Text in [brackets] is to be deleted. Underlined text is to be inserted.

The Commission shall [have the authority to endorse] require the certification of individuals to perform transmitter installation, operation, maintenance, [and] repair and system design or engineering duties in [the private land mobile services and fixed] all radio and telecommunications services (as defined by the Commission by rule) if such certification programs are conducted by organizations or committees which are representative of users in those services and which consist of individuals who are not officers or employees of the Federal Government.

NARTE believes these changes w'll preempt state jurisdiction over the licensing of telecommunications engineers and technicians. Certification instead would be conducted by private sector groups. According to NARTE, FCC would have a watchdog role, conducting oversight and coordination functions. However, one FCC official commented that these changes would broaden the scope of the amendment beyond what it originally stated. Furthermore, FCC officials have stated that FCC licensed "operators," not "engineers."

ANALYSIS OF PROPOSED CHANGES

Changing the wording in the statute to read that FCC shall require the certification of individuals who perform specified duties makes certification mandatory. According to FCC, the law as now written allows FCC to endorse the concept of private sector certification. But while FCC does encourage its licensees to have their equipment serviced by industry-certified technicians, it makes clear that certification is not a requirement.

Adding "and system design or engineering" expands the definition of the duties as currently stated. Those duties-- installation, operation, maintenance, and repair--are considered to be technical in nature and generally are not within the scope of

state professional engineering statutes. Some professional engineering statutes specifically exclude these duties from the scope of the statute. Also, changing the wording to include "all radio and telecommunications" services enlarges the scope of those affected by the amendment to include not just those in the private land mobile and fixed services but possibly all technicians and engineers in all radio and telecommunications services.

REACTIONS OF INTERESTED GROUPS

As discussed in section 3, we found no consensus among various groups within the telecommunications industry regarding whether a problem exists. Similarly, we found no consensus of views concerning NARTE's proposal to correct the problem.

SBE has expressed some concern over the issue of state licensing but does not support NARTE's proposed federal legislation. Recently, SBE pursued its own course of action and submitted a Request for Issuance of Declaratory Ruling to FCC, requesting that the Commission "issue a declaratory ruling delineating the limitations of local and State regulatory authorization over the licensing of technical operators at Federally-licensed radio facilities."

In its request, SBE claimed that there have been instances of attempted enforcement of state statutes against technical operators who work exclusively on FCC-licensed communications facilities. According to SBE, technical operators "repair, maintain and operate the equipment" at FCC-regulated broadcast facilities. SBE argued that regulation of such functions is solely the statutory responsibility of FCC. SBE asserts in its request, however, that the titles "engineer," "chief engineer," or "broadcast engineer" are appropriate designations for technical operators and those who perform these technical functions at the broadcast facilities. In September 1989, FCC declined to rule on SBE's request on the basis that SBE presented no evidence to substantiate its claim that states are attempting to exert jurisdiction over operators who maintain, operate, and repair equipment at FCC-regulated facilities.

NABER maintains that it is not familiar with NARTE's proposed legislation and also that it is unaware of any state attempts to regulate its members. NABER did state, however, that some of its members have complained that state and local governments still require an FCC license as a prerequisite for some kinds of employment. According to NABER, the fact that FCC continues to issue licenses in some areas (maritime, aviation, and international services) contributes to this confusion. NABER contends that a clarification of the law concerning certification of technicians and more effective communication of FCC's deregulatory actions is needed. NABER supports a national certification standard for radio

technicians, not necessarily federally mandated, but with FCC actively encouraging participation.

USTA opposes NARTE's proposed legislation and advocates no federal involvement unless it finds a substantial or potential problem regarding the development of regulation in the states. At this time, USTA states that it is unaware of any state efforts to exert jurisdiction over its members but in any event would not support mandatory certification.

FCC states that it does not presently see any compelling justification for supporting any preemptive legislation. Likewise, FCC declined to rule on SBE's Request for Issuance of Declaratory Ruling for lack of evidence that states are attempting to exert jurisdiction over operators who maintain, operate, and repair equipment at FCC-licensed facilities.

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