

STATE BOARD OF REGISTRATION  
FOR PROFESSIONAL ENGINEERS

Staff Report  
to the  
Sunset Advisory Commission

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## FOREWORD

The Texas Sunset Act (Article 5429k V.A.C.S.) terminates named agencies on specific dates unless continued. The Act also requires an evaluation of the operations of each agency be conducted prior to the year in which it terminates to assist the Sunset Commission in developing recommendations to the legislature on the need for continuing the agency or its functions.

To satisfy the evaluation report requirements of Section 1.07, Subsection (3) of the Texas Sunset Act, the Program Evaluation section of the Legislative Budget Board has evaluated the operations of the State Board of Registration for Professional Engineers, which will terminate on September 1, 1981 unless continued by law.

Based on the criteria set out in the Sunset Act, the evaluation report assesses the need to continue the agency or its function and provides alternative approaches to the current method of state regulation. The material contained in the report is divided into seven sections: Summary and Conclusions, Background, Review of Operations, Other Alternatives and Constraints, Compliance, Public Participation, and Statutory Changes. The Summary and Conclusions section summarizes the material developed in the report from the standpoint of whether or not Sunset criteria are being met, assesses the need for the agency or the agency's functions relative to the findings under the various criteria and develops alternative approaches for continued state regulatory activities. The Background section provides a brief history of legislative intent and a discussion of the original need for the agency. The Review of Operations section combines, for the purposes of review, the Sunset criteria of efficiency, effectiveness, and the manner in which complaints are handled. The Other Alternatives and Constraints section combines the Sunset criteria of overlap and duplication, potential for consolidation, less restrictive means of performing the regulation, and federal impact if the agency were modified or discontinued. The Compliance Section combines the Sunset criteria relating to conflicts of interest, compliance with the Open Meetings Act and the Open Records Act, and the equality of employment opportunities. The Public Participation section covers the Sunset criterion which calls for an evaluation of the extent to which the public participates in agency activities. The final section, Statutory Changes, deals with legislation adopted which affected the agency, proposed legislation which was not adopted and statutory changes suggested by the agency in its self-evaluation report.

This report is intended to provide an objective view of agency operations based on the evaluation techniques utilized to date, thus providing a factual base for the final recommendations of the Sunset Commission as to the need to continue, abolish or restructure the agency.

## **I. SUMMARY AND CONCLUSIONS**

In the early periods of the nation's history, the engineering tasks and skills required to support a largely rural society were comparatively simple and offered relatively little potential for public harm. However, during the first decades of the Twentieth Century, this simplicity changed as the nation underwent rapid industrialization and urbanization with a greater dependence on an increasingly complex engineering technology. Increased demand for engineering services coupled with the growing complexity and technical nature of engineering increased the need to protect the public.

The explosion and collapse of the New London school in 1937 emphasized that the growing need to protect the public from the incompetent practice of engineering in Texas had reached a level requiring state intervention. In recognition of this need, the Forty-fifth Legislature created the Board of Registration for Professional Engineers in 1937 and provided for the regulation of the practice of engineering.

The board, composed of six registered engineers, presently regulates 34,957 licensees through its licensing and enforcement functions. Additional responsibilities include determining the qualifications of applicants for licensure and enforcing provisions against the unauthorized practice of engineering. Operations of the board are supported entirely from fees collected by the agency and appropriated for its use from the Professional Engineers Fund in the State Treasury.

Review of board operations reveals that the regulatory activities of the board generally serve to ensure an adequate level of public protection. In the areas of administration and licensing, agency operations are generally conducted in an efficient and effective manner. One concern, however, was noted with regard to the examinations for record purposes that are offered by the board as a service to

those desiring licensure in other states. The fee charged for these examinations is not specifically authorized by statute. With respect to enforcement activities, the board's efforts have been primarily directed toward the prevention of unlicensed practice. Board efforts to enforce the Act as applied to registered engineers have been hampered in two respects. First, the board, before investigating a complaint filed against a licensee, requires that the complaint be from a Texas resident as well as be in writing and verified by the complainant under oath. Also, the range of penalties available to the board is limited to such a degree that appropriate sanctions are not available for minor violations. Additional enforcement concerns were noted with regard to board rules which restrict advertising and provide that competitive bidding for engineering services is a violation of the Engineering Practice Act.

Other concerns identified by the review include the absence of public members on the board and exclusion of certain private buildings from any requirement that their design and construction be supervised by a professional engineer.

### **Need to Regulate**

As in the case of other regulated activities, regulation of engineers should be undertaken by the state only when there is a continuing need to protect the public health, safety or welfare. Conditions that existed prior to the imposition of regulation in 1937 indicate that the potential for the collapse of improperly engineered structures posed a significant danger to the public. This danger to the public created the need to regulate the practice of engineering to help reduce the potential harm caused by improperly engineered structures.

Conditions which exist today indicate that this need to protect the public is greater, primarily as a result of two factors: the expanded use of engineering

services, and the increasingly complex nature of such services. Without state regulation, there would be no state determination of minimum levels of competence before a person could practice engineering. Any person, therefore, regardless of competence, could legally practice engineering. The consumers of engineering services would have only professional association standards and reputations of engineering firms as indicators of an engineer's competence. Thus, the public would be subject to an unnecessary risk of harm which could result from faults in design or construction of structures and equipment by incompetent engineers. It can be concluded, therefore, that there is a continuing need to protect the public's health, safety, and welfare from the incompetent practice of engineering.

This need for regulation can be most effectively met through an agency which performs licensing and enforcement functions. Licensure as a method of regulation for engineers is currently imposed in all states, including Texas. However, as demonstrated by agency structure in these states, several organizational schemes may be used to carry out this regulatory function.

### **Alternatives**

If the legislature determines that the regulatory function and/or board should be continued, the following alternatives could be considered:

1. CONTINUE THE BOARD AND ITS FUNCTIONS WITH MODIFICATIONS.

This approach would maintain an independent board to perform licensing and enforcement activities at no expense to the General Revenue Fund. The review indicated that the following modifications would result in more effective regulation of the engineering profession:

- a) provide for the additional appointment of at least three members of the general public who would participate in all board matters except the review of

applications for licensure under Board Rule 383.01.08.002 which provides for the circulation of applications for review by individual board members (page 32);

b) provide statutory authority which allows the board to charge a fee for examinations for record purposes (page 16);

c) amend the statute to remove provisions requiring the board to proceed upon sworn information when investigating charges against a licensee, and to remove the state residency requirement for persons filing complaints (page 18);

d) provide for the imposition of intermediate penalties specifically authorizing the board to issue formal and informal reprimands (page 19);

e) include a provision in the Act which prevents the board from adopting rules restricting advertising and competitive bidding except to prohibit false, misleading, or deceptive practices (page 19);

f) amend the statute to provide that the engineering plans and specifications and the engineering construction of private buildings included within the scope of the Act shall be executed under the direct supervision of a registered engineer (page 34).

2. TRANSFER THE FUNCTIONS CURRENTLY PERFORMED BY THE BOARD OF LAND SURVEYING TO THE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS (page 25).

This approach would consolidate the regulation of engineers and surveyors under one board as is presently done in 29 other states. Merging the regulation of surveyors and engineers would result in a more efficient allocation of the state's resources by eliminating significant duplication of the administrative procedures associated with the regulation of both surveyors and engineers. Consolidation would also contribute to minimizing fiscal and management concerns associated with agencies similar in size to the Board of Land Surveying. Effective implementation of this alternative would require certain modifications which include, in part, the following:

a) modify the composition of the Board of Registration for Professional Engineers to provide that at least two of the registered engineer board members shall also be licensed surveyors; and

b) the structural and substantive changes contained in the preceding alternative should also be made.

## II. BACKGROUND

### Historical Perspective

Prior to the creation of the Board of Registration for Professional Engineers in 1937, the practice of engineering in Texas was not regulated by the state. Although the need to protect the public health, safety and welfare through the regulation of engineering had been addressed by other states as early as 1907, recognition of the need in Texas was a more gradual process.

In the years preceding the board's creation, the perceived need for state regulation grew with the changing nature of engineering. In early periods of the nation's history, engineering tasks and skills required to support a largely rural society were comparatively simple and offered little potential for public harm. However, this simplicity changed as the nation underwent rapid industrialization and urbanization during the first decades of the Twentieth Century. These fundamental changes in American society were dependent on an increasingly complex engineering technology and the widespread availability of sophisticated engineering services.

As the nation and the state became increasingly dependent on complex engineering skills, the potential for public harm resulting from the use of engineering services also grew. The complexity of the occupation presented a greater opportunity for serious error in its practice; additionally, the widespread demand for such services increased the probability of such errors occurring. This increased potential for serious public harm was clearly underscored in Texas by the explosion and collapse of the New London School in 1937. This disaster resulted from faulty engineering practice and killed 295 students and teachers.

In response to this disaster, in 1937, the Forty-fifth Legislature established the Board of Registration for Professional Engineers. In general, the act

establishing the board made it unlawful for a person either to use a title giving the impression that he is a professional engineer, or to practice the profession of engineering, without being registered with the agency or exempted by the act. Among other less significant exceptions, exempted under the act were persons erecting private dwellings and any employee of a registered engineer provided that employee was not in responsible charge of engineering design or supervision. In the area of enforcement, the board was given the authority to revoke an engineer's certificate of registration on the basis of fraud or deceit in obtaining the certificate, or gross negligence or incompetence in the practice of professional engineering.

The original scope of the board's authority was significantly altered in 1965 by the Fifty-ninth Legislature and has remained essentially unchanged since that date. Along with other amendments that year, the legislature extended the categories of persons exempted from the act's certification requirements. One of the most significant of these exemptions was extended to employees of private industry. This exemption was sought primarily by industry, who viewed the earlier certification requirement as unnecessarily restrictive. In addition, the board's enforcement authority was strengthened through provisions which 1) made it easier for the board to get an injunction against a person practicing professional engineering without a certificate, and which 2) provided for suspension, as well as revocation, of a certificate for any violation of the act rather than the more limited grounds previously laid out. These changes in enforcement authority were provided as a result of board difficulties in obtaining compliance with the act through its earlier remedies.

The six-member board heading the agency is composed entirely of registered engineers appointed to overlapping six-year terms by the governor with the advice

and consent of the senate. This board oversees a staff of 23 full-time employees. At present, 34,957 engineers representing 19 engineering disciplines are registered with the board. Operations of the agency are supported entirely from fees collected by the agency and appropriated for its use from the Professional Engineers Fund No. 56 in the State Treasury. In fiscal year 1979, the board collected \$854,979 in fees and other charges and expended \$593,473, not including building costs.

### **Comparative Analysis**

To determine the pattern of regulation of the occupation of engineers within the United States, a survey of the 50 states was conducted.

The need to regulate the occupation of engineering is currently expressed through licensing requirements imposed by all of the 50 states. From the standpoint of organizational patterns, 30 states, including Texas, meet this expressed need through an independent board or commission. In 20 states, boards regulating the practice of engineering are associated with an umbrella administrative agency. Representatives of the general public serve on boards regulating the practice of engineering in nine states. In Texas, as in seven other states, the board regulating the practice of engineering has no responsibility for the regulation of other professions.

Surveyors and engineers are jointly regulated by the same state board in 29 states. Regulation of engineers, surveyors and architects is performed by a single state board in eight states. Architects and engineers are regulated by one board in two states. Engineering, along with other professions, is regulated by a registration board for technical occupations in three states.

In order to regulate the practice of engineering, 33 states, including Texas, have adopted rules of professional conduct. Professional practice is further

regulated through the requirement, imposed by 45 states, including Texas, that an engineer's seal be placed on plans, drawings, specifications and designs prepared by the engineer. Texas imposes restrictions on the use of the title engineer as do 30 other states. All fifty states surveyed restrict the use of the title of professional engineer.

States which regulate the occupation of engineering indicate the necessity of performing the basic regulatory functions of administration, review of applicant qualifications, license issuance, and enforcement.

### **III. REVIEW OF OPERATIONS**

The material presented in this section combines several sunset criteria for the purposes of evaluating the activities of the agency. The specific criteria covered are the efficiency with which the agency operates; the objectives of the agency and the manner in which these objectives have been achieved; and the promptness and effectiveness with which the agency disposes of complaints concerning persons affected by the agency.

#### **Organization and Objectives**

Through the enactment of the Engineering Practice Act, the legislature mandated the Board of Registration for Professional Engineers to regulate defined categories of persons who practice or attempt to practice engineering and all persons who hold themselves out to the public as engineers. Additionally, the Act prohibits businesses from conducting their operations or using words and titles which might lead the public to believe that they are engaged in the practice of engineering unless the business is actually engaged in such practice under the supervision of a registered professional engineer. Exemptions to the Act's coverage significantly limit the extent of the board's regulatory authority. Regular full-time employees of a business in private industry, a privately owned utility or an operating telephone company are excluded from the purview of the Act, as well as persons who design and construct small private buildings and persons who install or repair equipment. Other significant exemptions include federal employees, non-resident engineers temporarily working within the state and research scientists. The implementation of this statutory mandate to regulate the practice of engineering is accomplished through the licensure of qualified, competent professional engineers, and through agency enforcement efforts aimed at ensuring the continued

competency of licensees and preventing violations of the Act.

The Board of Registration for Professional Engineers consists of six professional engineers appointed by the governor with the advice and consent of the senate. To be qualified for appointment to the board, a professional engineer must be a citizen of the United States and a resident of Texas for a period of ten years prior to appointment. Also, the appointee must have been engaged in the practice of professional engineering for at least ten years with two years credit permitted for graduation from an approved engineering school. The teaching of engineering is considered the practice of engineering and may be counted toward the fulfillment of the board member practice requirement. Statutorily required board duties include promulgating rules and regulations, reviewing qualifications of applicants, issuing certificates of registration, conducting certificate revocation hearings, instituting actions to enjoin the violation of the Act and generally aiding in the enforcement of the Act.

Although the board is authorized 26 positions (2 exempt positions and 24 classified positions) through the current general appropriations act, staff for the board currently consists of 23 full-time employees. Activities generally performed by the staff in the traditional areas of administration, licensing and enforcement include processing license renewals, checking license applications for completeness, maintaining records, publishing a biennial roster of licensees, administering examinations, investigating violations of the Act, and providing secretarial services to the board.

Funding for the board is provided exclusively from fees collected by the agency under the provisions of the Act and deposited in the State Treasury to the credit of the Professional Engineers Fund (Fund 56). Although all money held in this fund is designated for use by the agency, amounts available for agency

expenditure are limited to those specifically appropriated to the board by the legislature.

### **Evaluation of Agency Activities**

As with most other licensing agencies, the operations of the Board of Registration for Professional Engineers can be broken down into three basic activities: administration, licensing and enforcement. Below, each of these activities were reviewed to determine the degree to which agency objectives have been met. To make this determination, the evaluation focused on whether the board has complied with statutory provisions, whether these provisions facilitate accomplishment of the objectives, whether agency organization, rules, and procedures are structured in a manner that contributes to cost-effective accomplishment of the agency's task, and whether procedures provide for fair and unbiased decision-making.

#### **Administration**

The general objective of any administration activity is to provide for efficient operation of all agency functions. The review of board activities indicated that agency administration is generally conducted in an efficient and effective manner. Board activities and staff duties are clearly defined, thus preventing duplication of efforts and contributing to the overall efficiency of the operation. Also, agency procedures related to record-keeping, mail processing and funds management were adequate. No significant problems or deficiencies in the area of administration were encountered during the review.

#### **Licensing**

The objective of the licensing activity of the board is to ensure that a minimum standard of competency has been achieved by persons authorized to

minimum standard of competency has been achieved by persons authorized to practice engineering in the state. To accomplish this objective, the board evaluates the qualifications of each applicant to determine whether the statutory standards for registration have been satisfied.

The board is directed by statute to collect certain fees for the licensing services provided. The Act sets the fee for registration at a specific amount; however, it allows board discretion with regard to the level of renewal fees up to a statutory limit. The chart below presents an historical overview of licensing fees. As the chart indicates, the renewal fees charged by the board have historically been well under the maximum fee allowed by law.

Exhibit III-1

**HISTORICAL OVERVIEW OF LICENSING FEES**

Application/Registration Fee

<u>Year</u>	<u>Statutory Fee</u>
1938-1975	\$ 25
1975-present	\$ 50

Renewal Fee

<u>Year</u>	<u>Statutory Limit</u>	<u>Actual Fee</u>
1938-1966	\$ 10	\$ 5.00
1967-1969	10	2.00
1970	10	3.50
1971-1975	10	10.00
1976-1979	45	20.00
1980	45	16.00

The requirements for registration established by the Engineering Practice Act provide three methods through which a license may be issued: 1) education and experience, 2) experience and examination, and 3) reciprocity.

Registration as a professional engineer under education and experience provisions requires at least an undergraduate degree in an approved course in engineering from a recognized school or college and a specific record of at least four years active practice in engineering work of a character satisfactory to the board. An applicant without an engineering degree can be registered under the examination and experience criteria provided the applicant successfully passes two eight-hour examinations and demonstrates a specific record of at least eight years of active practice in engineering work of a character satisfactory to the board. The reciprocity provisions of the Act allow a person who is registered in another state to be registered in Texas provided that the requirements for licensure in Texas have been satisfied. Exhibit III-2 displays the number of licenses issued by method in the last four fiscal years.

Exhibit III-2

**NUMBER OF LICENSES ISSUED  
BY METHOD, 1976-1979**

<u>Method</u>	<u>1976</u>	<u>Percent of 1976 Total</u>	<u>1977</u>	<u>Percent of 1977 Total</u>	<u>1978</u>	<u>Percent of 1978 Total</u>	<u>1979</u>	<u>Percent of 1979 Total</u>
By Education & Experience	1,134	71%	993	65%	1,011	55%	1,215	52%
By Examination & Experience	110	7%	180	12%	358	20%	508	22%
By Recipro- city	<u>344</u>	<u>22%</u>	<u>363</u>	<u>23%</u>	<u>451</u>	<u>25%</u>	<u>600</u>	<u>26%</u>
Sub-total	1,588	100%	1,536	100%	1,820	100%	2,323	100%
By Renewal	<u>29,698</u>		<u>30,515</u>		<u>31,448</u>		<u>32,634</u>	
Total Regis- trants	31,286		32,051		33,268		34,957	
Percent Increase			2%		4%		5%	

As the table illustrates, the number of engineers registered in Texas is sizable and has increased by nearly 12 percent since 1976.

Insight into the characteristics of the licensee population can be gained through analysis of a sample survey of registered engineers. Survey results indicate that a significant number of the engineers surveyed (47 percent) have been licensed for more than 15 years and that 80 percent of the survey group have been licensed for more than five years. A majority of those surveyed (57 percent) practice engineering on a full-time basis, while 22 percent are inactive. Survey responses also suggest that 65 percent of the respondents work in a corporate setting. Membership in a professional association was reported by 70 percent of the persons surveyed. Additionally, 36 percent of the engineers surveyed are also licensed in another state.

The listing below gives an indication of the principal area of proficiency of registered engineers.

Exhibit III-3

**NUMBER OF ENGINEERS BY  
AREA OF PROFICIENCY, 1979**

<u>Proficiency Area</u>	<u>Number of Registrants</u>	<u>Proficiency Area</u>	<u>Number of Registrants</u>
Civil	8,612	Agricultural	268
Mechanical	7,931	Geological	197
Electrical	5,477	Engineering Science	99
Petroleum	4,090	Environmental	62
Chemical	2,976	Nuclear	62
Structural	2,277	Ceramic	40
Industrial	1,077	Biomedical	20
Aeronautical	515	Textile	11
Metallurgical	305	Oceanography	7
Sanitary	268	Unknown	<u>663</u>
		TOTAL	34,957

The review of the activities of the licensing process indicates that it functions in a satisfactory manner. The board has developed thorough procedures for receiving and reviewing applications. Additionally, the computerization of some functions has enhanced the efficiency of the licensing process.

A review of licensing requirements in Texas shows that, contrary to requirements in all other states, an examination is not a basis for licensure for the majority of applicants. The examination in Texas is used primarily for record purposes in order that registrants may obtain reciprocal privileges with other states.

Analysis of the examination process showed that a fee of \$20 is charged for the examination. However, the fee is not statutorily authorized. The examination for record purposes provides a useful service, and the authority of the agency should be modified to clearly authorize a fee for this purpose.

In addition to record purposes, the examination is also required of all applicants without an approved engineering degree. Exhibit III-4 presents examination pass/fail rates for the two-part national examination in fiscal years 1976-1979.

Exhibit III-4

**LICENSING EXAMINATION PASS/FAIL RATES  
FISCAL YEARS 1976-1979**

<u>Year</u>	<u>Total Examined</u>	<u>Number Passed</u>	<u>Percent Passed</u>	<u>Number Failed</u>	<u>Percent Failed</u>
<u>1976</u>					
Fundamental	1,552	1,160	74.7%	392	25.3%
Principles & Practice	982	757	77.1%	225	22.9%
<u>1977</u>					
Fundamental	1,641	1,259	76.7%	382	23.3%
Principles & Practice	1,109	869	78.4%	240	21.6%

<u>Year</u>	<u>Total Examined</u>	<u>Number Passed</u>	<u>Percent Passed</u>	<u>Number Failed</u>	<u>Percent Failed</u>
<u>1978</u>					
Fundamental	1,975	1,465	74.2%	510	25.8%
Principles & Practice	1,133	845	74.6%	288	25.4%
<u>1979</u>					
Fundamental	2,226	1,666	74.8%	560	25.2%
Principles & Practice	<u>1,430</u>	<u>1,122</u>	<u>78.5%</u>	<u>308</u>	<u>21.5%</u>
<u>TOTAL</u>					
Fundamental	7,394	5,550	75.1%	1,844	24.9%
Principles & Practice	4,654	3,593	77.2%	1,061	22.8%

### Enforcement

The basic objective of the enforcement activity is to protect the public by identifying and, where necessary, taking appropriate action against persons not complying with the provisions of the Act or board rules. The board receives a large number of complaints (in fiscal years 1976-1979, 3,257 new complaints were received) and employs a full-time investigative staff to carry out enforcement efforts. Exhibit III-5 displays the number of complaints by type for fiscal years 1976-1979.

Exhibit III-5

### NUMBER OF COMPLAINTS RECEIVED BY TYPE, 1976-1979

<u>Type of Complaint</u>	<u>Fiscal Year</u>				<u>Total</u>	<u>Percent</u>
	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>		
Complaints Against Licensees	30	19	5	6	60	2%
Unlicensed Practice	475	484	755	704	2,418	74%
Illegal Use of Title	143	132	110	189	574	18%
Complaint Arising from License Application	6	7	6	11	30	1%
Miscellaneous	<u>13</u>	<u>71</u>	<u>74</u>	<u>17</u>	<u>175</u>	<u>5%</u>
TOTAL	667	713	950	927	3,257	100%

Review of board enforcement activities indicated that agency complaint procedures are adequate and that complaint files are properly maintained. A significant portion of the board's enforcement effort is directed toward violations by unlicensed persons and these enforcement efforts are carried out in an effective manner. However, enforcement activities concerning complaints against licensed engineers have been hampered by two aspects of the current statute.

Analysis of these statutory provisions shows that the enforcement authority of the board has been restricted by a provision which prevents any board action concerning a licensee unless a formally sworn complaint has been filed by a Texas resident. As indicated by both the agency and the Texas Society of Professional Engineers, this requirement has had the effect of limiting the number of complaints against licensed engineers. Exhibit III-5 shows that only two percent of agency complaints were filed against this group.

A review of the enabling statutes of other major licensing agencies in Texas shows that these agencies either have no sworn complaint requirement, or that the sworn complaint is only required to initiate formal hearing proceedings. In the latter instances, the agencies can investigate any complaint received and, on the basis of an investigation, can file a formal complaint in their own name. In the case of the Engineer Board, however, the sworn complaint provision has been interpreted to preclude all action, including staff investigation, unless a sworn complaint has been filed by a resident of this state.

The board's statute should be modified to make agency action consistent with that of the other licensing agencies. Thus, a sworn complaint would be required only before formal hearing proceedings could be initiated and the complaint could be filed by any reliable person, regardless of their state of residency. In addition, the board would be given clear authority to investigate any complaint and to file, under its name, a formal, sworn complaint against a registered engineer.

A second condition which hampers board enforcement efforts is the limited range of sanctions that may be imposed by the board for violations of the Act. Current provisions authorize the board to either suspend or revoke a license. The board has indicated that minor violations do not warrant such severe penalties and has requested that it be authorized to issue reprimands. Additionally, the board has indicated that enforcement efforts could be improved if this authorization was granted.

As a general principle, an agency's range of penalties should be able to conform to the seriousness of the offenses presented to it. The review indicated that there are areas where a reprimand would be a more appropriate response. The board's enforcement powers should therefore be expanded to authorize the issuance of formal and informal reprimands.

A final concern in the enforcement area relates to rules developed by the board concerning advertising and competitive bidding. In its consideration of other licensing agencies, the Sunset Commission, through an across-the-board approach, has determined that agency rules regarding advertising and competitive bidding should be constructed so as to only prohibit such practices that are false, misleading, or deceptive. This approach has been incorporated in the enabling statutes of affected agencies.

Current board rules relating to advertising by engineers appear to be consistent with the general intent of the Sunset Commission approach, as well as recent court decisions regarding permissible advertising restrictions. However, contrary to the approach used by the Sunset Commission, the board's policy in this area is not established by statute. As a result, the policy is subject to change by the board through its rule-making process. To ensure that the advertising approach

recommended by the Sunset Commission and required by the courts continues to be followed, the advertising provision should be made statutory. Thus, any change in policy would have to be preceded by proper legislative consideration.

In its Code of Professional Conduct, the board has also established rules which prohibit competitive bidding for professional engineering services. Violation of this prohibition is grounds for the suspension or revocation of a license.

The issue of competitive bidding for professional services has been addressed by federal courts in recent years under the provision of the Sherman Anti-trust Act. Where federal law applies, this Act makes it illegal to be involved in an unreasonable restraint of trade. These provisions are based on the widely held belief that the unreasonable restraint of trade violates the principle of free competition upon which the American economy is founded.

In reviewing the competitive bidding cases tried under the federal Act, the case involving the National Society of Professional Engineers is of particular interest. In its "Code of Professional Conduct," the Society had included a provision which prohibited the use of a competitive bidding process by engineers. The courts found this prohibition to be an unreasonable restraint of trade.

At this time, it is unclear whether the federal anti-trust law can be formally applied to actions of state regulatory boards and, thus, to the prohibitive rule concerning competitive bidding promulgated by the professional engineers' board. Apart from the question of strict legal applicability, however, the rule should be reviewed to determine its compatibility with the free market principle underlying federal legislation.

In this regard, federal action in striking down the competitive bidding prohibition of the National Society of Professional Engineers has particular relevance to the Texas rule. Given the similarity of the restrictive provisions and

their application to the same profession, it would appear that the Texas rule would also constitute an unreasonable restriction to trade in violation of the free market principle. The prohibition on competitive bidding should therefore be removed as an inappropriate limitation on the purchase of engineering services. The application of this principle would not prohibit any party from determining that competitive bidding was not appropriate. Thus, for example, the State of Texas, which has currently determined through provisions of Article 664-4, V.A.C.S., that competitive bidding for these types of services is not appropriate could continue this policy and other public and private parties could also make this type of determination.

### Summary

The Board of Registration for Professional Engineers is composed of six registered engineers appointed to six-year overlapping terms by the governor with the advice and consent of the senate. The board is directed by statute to regulate the practice of engineering through the licensure of all qualified applicants and the enforcement of statutory provisions.

The operations of the board can be broken down into three activities; administration, licensing, and enforcement. With regard to administration, the board generally meets the objective of efficient management. In the licensing activity, the objective of ensuring a minimum level of competency has been effectively addressed. One concern, however, was noted regarding the lack of specific statutory authority to charge a fee for the examination for record purposes. The review indicated that this service should be continued and that the board should be authorized to collect a fee for the examination for record purposes. In the area of enforcement, board efforts toward achieving compliance with regard to unlicensed practice are effectively carried out. However, the review indicated that the area of complaints against registered engineers has been

hampered by two statutory conditions: a provision which prevents any enforcement action concerning a registered engineer unless a sworn complaint has been filed by a Texas resident; and, the limited range of sanctions the board is empowered to impose. These conditions could be addressed through a modification of the statute to: 1) provide that a sworn complaint be required only in order to initiate formal hearing proceedings, authorize the board to file such complaints, and provide that complaints could be filed by any reliable person, regardless of state residency; and 2) provide the board with the authority to issue formal and informal reprimands.

Additional enforcement concerns were raised regarding board rules which restrict advertising and prohibit competitive bidding. Current board policy with regard to advertising restrictions are consistent with the approach recommended by the Sunset Commission and recent court decisions. This restriction, however, should be made statutory to ensure continued compliance so that any change in this policy would have to be preceded by proper legislative consideration. With regard to competitive bidding, the present prohibition should be removed as it appears to be a restraint of trade which contradicts the general principles of free competition embodied in federal antitrust law.

#### **IV. OTHER ALTERNATIVES AND CONSTRAINTS**

The material presented in this section combines several Sunset criteria for the purposes of evaluating the activities of the agency. The specific criteria covered are the extent of overlap and duplication with other agencies and the potential for consolidation with other agencies; an assessment of less restrictive or alternative methods of performing any regulation that could adequately protect the public; and the impact in terms of federal intervention or the loss of federal funds if the agency is abolished.

##### **Existence of Like Functions**

Services provided by other state agencies which are similar to those provided by the Board of Registration for Professional Engineers have been reviewed to determine if a potential for consolidation exists within the state framework. Although no other state agencies possess regulatory authority which significantly impacts on the practice of engineering, two state licensing agencies do administer the regulatory functions of licensing and enforcement to occupations which have traditionally been associated with engineering -- the Board of Architectural Examiners and the Board of Land Surveying. This association arises, historically, from the utilization of the services of the professions of engineering, architecture and surveying in related projects and from the technical nature of such services. Currently, the Board of Architectural Examiners regulates approximately 6,640 registrants and the Board of Land Surveying regulates approximately 1,660 licensees. Because of the interrelated nature of these professions and the similar functions of licensing and enforcement performed by these regulatory boards, a potential for consolidation exists.

### **Alternative Organizational Approaches in Other States**

Professional engineers are licensed in all 49 other states through several different organizational schemes. Seven states, including Maryland, New Hampshire and Delaware, maintain an independent board to regulate only professional engineers. In Tennessee and Nebraska, a single board assumes the licensure function for both the engineers and architects. However, in 29 states, including New York, Oklahoma, California and Indiana, the licensing of engineers and surveyors is administered by a single board. Eight states delegate the administration of the licensure function for engineers, architects and surveyors to one agency, including Michigan, Virginia and Missouri. A licensing approach utilizing a department of registration which issues licenses to a wide range of occupations is employed in three states.

### **Alternative Methods of Regulation**

Although all 50 states currently regulate the practice of engineering through the licensure of professional engineers, other methods of regulation should be reviewed to determine if a less restrictive approach would better serve the public. One method is no regulation. Under this least restrictive approach, there would be no state determination of minimum levels of competence before a person could practice engineering and no state action to ensure that such levels were maintained. The implementation of this alternative would allow anyone to practice engineering, regardless of that person's knowledge or ability. Consumers of engineering services would have to rely upon professional association standards and reputations of engineering firms to indicate competence.

Another approach which provides a less restrictive method of regulation is voluntary certification. This alternative would establish optional competency

requirements for engineers. Certification as a professional engineer would be granted to any engineer who met certain minimum qualifications. Once certified, an engineer could hold himself out to the public as a certified professional engineer. Although this alternative would provide a system to identify those engineers who at some time met minimum state standards, certification would not be required in order to practice engineering. If this alternative were implemented, the protection against the improper practice of engineering currently provided by licensure would be substantially reduced, thus placing a greater burden on the consumer of engineering services to make a determination as to competence.

### **Potential Benefits**

Due to the experience in other states and the few safeguards against incompetent engineering practices offered to the public by less restrictive approaches to regulation, the alternative methods of regulation discussed above appear to offer little benefit over the current method of regulation through licensing which seems to provide an adequate level of public protection without unnecessarily restricting the profession. However, an organizational framework which places the regulatory functions now performed by the Board of Land Surveying and the Board of Registration for Professional Engineers under one board could improve the overall efficiency of the operations. This potential enhancement of agency efficiency is possible primarily for three reasons. First, the licensing and enforcement functions performed by the Board of Land Surveyors could be carried out by the Board of Registration for Professional Engineers with a probable decrease in overall administrative personnel. Next, as experience in other states demonstrates, a single board composed of engineers and surveyors could adequately

perform the duties necessary to administer the functions of licensing and enforcement in both professions. Also, consolidation of the agencies should result in a decrease of overall operating costs and board expenses allowing a reduction in the current \$50 renewal fee for surveyors.

### **Federal Impact**

Presently, no specific federal legislation attempts to certify the competency of persons who practice engineering in Texas and no federal funds are channeled to this state for that purpose. There are, however, federal standards or practices in several programs that require involvement of engineers licensed by the State of Texas in certain projects which are funded totally or partially by the Federal Government. Should the state discontinue licensing engineers, a possible suspension of engineering activities on federally funded projects could occur and could result in the loss of federal dollars.

### **Summary**

Currently, state regulation of the engineering, architecture, and surveying professions is provided through three separate regulatory boards: the Board of Registration for Professional Engineers, the Board of Architectural Examiners, and the Board of Land Surveying. Because of the similarity of the regulatory functions performed and the interrelated nature of the professions, a potential for consolidation exists.

A majority of other states (29) have consolidated the regulation of engineers and surveyors in one board. In Texas, such a consolidation could result in lower administrative costs and, as a result, the possible reduction of license renewal fees.

Licensure of engineers is the method of regulation employed by all 50 states. The use of this regulatory approach by all states indicates that less restrictive

forms of regulation are generally considered to provide an inadequate level of public protection against incompetent engineering services.

While there is presently no specific federal legislation which attempts to certify the competency of engineers, certain federally funded projects do require that engineering services be provided by engineers licensed in this state. Federal funds could be lost if the state eliminated its licensing requirement for engineers.

## V. COMPLIANCE

The material presented in this section combines several sunset criteria for the purposes of evaluating the activities of the agency. The specific criteria covered are the extent to which the agency issues and enforces rules relating to potential conflict of interest of its employees; the extent to which the agency complies with the Open Records Act and the Open Meetings Act; and the extent to which the agency has complied with necessary requirements concerning equality of employment opportunities and the rights and privacy of individuals.

In its efforts to protect the public through licensing and enforcement, the agency's operations should be structured in a manner that is fair and impartial to all interests. The degree to which this objective is met can be partially judged on the basis of potential conflicts of interest in agency organization and operation, as well as agency compliance with statutes relating to conflicts of interests, open meetings, and open records.

### Conflict of Interest

Board members, as appointed state officers, are subject to statutory standards of conduct and conflict-of-interest provisions (Article 6252-9b., V.A.C.S.). A review of the documents filed with the Office of the Secretary of State indicates that both the board members and the executive director of the agency have complied with the filing requirements set out in the state's general statute dealing with conflict of interest. In addition, disclosures entered into the minutes of board meetings demonstrate board members' adherence to the statutory provision which requires members to refrain from participating or voting on matters before the board in which they have a personal or private interest.

### **Open Meetings - Open Records**

Meetings and activities conducted by the Board of Registration for Professional Engineers show general compliance with the requirements of the Texas Open Meetings Act and the Texas Open Records Act. As evidenced by the board minutes and publications in the Texas Register, board meetings have been preceded by adequate and timely notice to the public and demonstrate proper procedure relating to executive session. In response to formal requests for information, the agency appears to have been diligent in either making the information available to the public or, as required under the Open Records Act, requesting an Attorney General determination regarding the responsibility of the agency to withhold or release the requested information. Three types of information, as indicated in the agency's self-evaluation report, continue to be considered confidential by the agency at this time - enforcement cases that are still under investigation, applications for registration that have not been acted on by the board and applicant reference forms received prior to June 14, 1973.

### **Employment Policies**

Although the agency is operating under an Affirmative Action Plan developed in 1974 and currently has no written formal grievance procedures, the agency has never received a formal complaint in the area of employment practices.

An analysis of the board's work force at the time of review indicates that seven of the twenty-three full-time positions are held by minorities. Of these seven minority employees, six are females employed in clerical type positions while one black female is the supervisor of the Applications and Examinations section of the agency. Interviews with agency administrative personnel disclosed that work on an updated Affirmative Action Plan and a written employee grievance procedure is in progress.

### Summary

The board generally complies with the requirements set forth in the Conflict of Interest statute, the Open Meetings Act and the Open Records Act. With respect to formal requests for information, the board has either supplied the material or asked for a determination from the Attorney General as to the public or private nature of the information. With regard to employment practices, the agency is currently in the process of updating its Affirmative Action Plan and developing a written employee grievance procedure. The agency has not received any formal complaints concerning its employment practices.

## **VI. PUBLIC PARTICIPATION**

The review under this section covers the sunset criterion which calls for an evaluation of the extent to which the agency has encouraged participation by the public in making its rules and decisions as opposed to participation solely by those it regulates and the extent to which the public participation has resulted in rules compatible with the objectives of the agency.

The degree to which the agency has involved the public in the rule-making and decision-making processes of the agency can be judged on the basis of agency compliance with statutory provisions on public participation, the availability of information concerning rules and agency operations, and the existence of public members on the board.

### **Agency Activities**

Review of pertinent records indicates that the board has adopted six rule changes in the last four fiscal years. The rules adopted relate to registration requirements and record-keeping procedures. The adoption of these rules has been in compliance with public participation requirements found in general state law; however, public involvement in these processes has been extremely limited.

Public awareness of the provisions of the Texas Engineering Practice Act and the functions of the board is limited. Although the board has taken efforts to increase understanding of the Act and responsibilities of the board, these seem to be directed to registrants or to potential registrants. These efforts include: biennial publication of a roster of registered engineers which is distributed in response to requests; annual publication of an information pamphlet, which includes the Act and board rules, and is distributed upon request; publication of a newsletter for distribution to registrants; and seminars concerning the requirements of the Engineering Practice Act.

### Public Membership

A review of the statutory composition of the board shows the absence of any members from the general public. The lack of such members eliminates one means by which the point of view of the general public in the development of rules and the deliberation of other matters can be represented. This drawback is even more significant for a board such as the Professional Engineers which regulates a profession which is involved in such a wide range of activities and whose regulatory activities are not readily visible to the public.

Because of the heavy workload presently placed upon the board in reviewing applications for licensure and because public members would not have the professional background to substantially assist in evaluating the qualifications of applicants, it would appear undesirable to reduce the number of professional engineers on the board when adding public members. Should a board consisting of one-third public members be desired, the board composition could thus be modified to include six professional engineers and three public members.

### Summary

While the board has complied with public notification requirements, public participation in the policy processes of the board has been minimal. The board's efforts to inform the public through speaking engagements and other public information efforts has been primarily directed to registrants or potential registrants. To help ensure that the public's point of view is properly represented, three public members should be placed on the board in addition to the six registered engineer board members.

## **VII. STATUTORY CHANGES**

The material presented in this section combines several sunset criteria for the purposes of evaluating the activities of the agency. The specific criteria covered are whether statutory changes recommended by the agency or others were calculated to be of benefit to the public rather than to an occupation, business, or institution the agency regulates; and statutory changes recommended by the agency for the improvement of the regulatory function performed.

### **Past Legislative Action**

Since the enactment of the legislation which originally established the Board of Registration for Professional Engineers in 1937, the Act has been amended five times. In 1965 the Act was extensively revised through the passage of legislation (Senate Bill No. 74, Fifty-ninth Legislature) which clarified the engineering activities regulated by the Act while also increasing the number of specific exceptions to the coverage through the addition of exemptions for private business employees, utility employees, scientists and judicial witnesses. The board's enforcement capabilities were increased through the establishment of board powers to identify standards of conduct for licensees, to institute actions to enjoin violations of the Act by unlicensed individuals, and to suspend or revoke a certificate for any violation of the Act rather than the more limited areas previously laid out. Additionally, the amendments barred business entities from using certain titles related to engineering in their names unless they were engaged in the practice of engineering under the supervision of a registered professional engineer. The legislature also delegated the power to determine the amount of the license renewal fee while setting the maximum limit for such fee at ten dollars.

In 1973 the board was given the authority to adopt a system of staggered

renewals (Senate Bill No. 831, Sixty-third Legislature). Authorization for the publication of the licensee roster was limited in 1975 from a yearly to a biennial edition and the registration fee and renewal fee limit was increased to \$50 and \$45, respectively (Senate Bill No. 532 - Sixty-fourth Legislature). In 1977 the legislature made the board subject to the provisions of the Sunset Act (Senate Bill No. 54, Sixty-fifth Legislature) and provided that the teaching of engineering was the practice of engineering (Senate Bill No. 641 - Sixty-fifth Legislature).

Although the Engineering Practice Act was not amended during the Sixty-sixth legislative session, the exemption relating to professional engineers in the statute regulating the practice of surveying was removed, thus preventing engineers from practicing surveying under their professional engineer's seals (Senate Bill No. 313 - Sixty-sixth Legislature).

#### **Proposed Legislative Action**

Apart from the successful legislation mentioned above and the companion bills to such legislation, no other attempts to amend the Engineering Practice Act were made during the past four legislative sessions.

In the agency's self-evaluation report, the agency has made the recommendation that Section 20(f) of the Act be amended so that the role of the professional engineer in supervising the construction of private structures which exceed certain size limitations is clarified. Although the Act as interpreted by the agency does not currently require such supervision, the agency advocates the extension of the Act's coverage in this area. The agency has cited a recent investigation involving a school building in Danbury, Texas as an example of improper construction which might have been prevented had a professional engineer been involved in the supervision of the construction.

### Summary

Since the enactment of the board's enabling legislation in 1937, the Act has been significantly amended five times. Generally, these amendments clarified the activities regulated by the Act, added new exemptions to the coverage of the Act, increased the enforcement powers of the board, gave the board the authority to set the amount and stagger the collection of renewal fees, and made the teaching of engineering subject to the provisions of the Act. In the last four legislative sessions, no other attempts to amend the Engineering Practice Act have been made. However, the agency has recommended a statutory change which would require a professional engineer to supervise the construction of certain private structures.