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DEPARTMENT OF REGULATORY AGENCIES

STATE ELECTRICAL BOARD

PERFORMANCE AUDIT

STATE of COLORADO
Denver

STATE OF COLORADO
DEPARTMENT OF REGULATORY AGENCIES
STATE ELECTRICAL BOARD
PERFORMANCE AUDIT
REPORT OF STATE AUDITOR

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STATE OF COLORADO
OFFICE OF STATE AUDITOR

ROBERT J. SCOTT, C. P. A.
State Auditor

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November 23, 1977

Legislative Audit Committee
1200 Lincoln Street, Suite #601
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Members of the Legislative Audit Committee:

The following report contains the results of the performance audit required under the Sunset Law, Section 24-34-104, C.R.S., 1973, as amended. This report presents our findings, conclusions, and recommendations concerning performance of the State Electrical Board.

We have reviewed all the areas required by the Sunset Law and others deemed necessary in a report of this nature.

Respectfully submitted,

ROBERT J. SCOTT, CPA
State Auditor

STATE OF COLORADO
"DEPARTMENT OF REGULATORY AGENCIES
STATE ELECTRICAL BOARD
PERFORMANCE AUDIT"

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STATE OF COLORADO
DEPARTMENT OF REGULATORY AGENCIES
STATE ELECTRICAL BOARD
PERFORMANCE AUDIT

INTRODUCTION

To protect the public from the dangers associated with electricity, state and local governments have commonly used a combination of licensure of electricians and inspection of electrical work to enforce compliance with minimum standards. In Colorado, the setting of standards, (in Colorado the minimum standard is based on the National Electrical Code), inspection, and licensure are all, directly or indirectly, the responsibility of the State Electrical Board (SEB). The Board is the sole licensing authority for electricians who do electrical work for hire. Employees of industrial concerns, power plants, etc., are exempt as detailed in appendix 4, page 49. The various licenses issued by the Board are discussed in detail on page 7 & 8.

The Board is statutorily responsible for all electrical inspections in the state. They perform all inspections except, where any incorporated town or city, any county, or any city and county has its own electrical code and inspections equal to the minimum standards. In 1977 the Board performed approximately 30,000 inspections. Additionally, the Board is charged with insuring that inspections performed by other agencies are in compliance with statutory requirements and the standards adopted by the Board.

PURPOSE AND SCOPE OF AUDIT

The purpose of this audit is to provide information, as required by Section 24-34-104 (7), C.R.S. 1973, as amended (The Sunset Law), regarding the public need for the continued existence of the State Electrical Board.

We have reviewed the operation of the Board, taking into consideration the following factors required by the Sunset Law, paragraph 8 (b):

- I. The extent to which the Board has accepted qualified applicants;
- II. The extent to which the Board has complied with affirmative action requirements;
- III. The extent to which the Board has operated in the public interest and the extent to which its operation has been impeded or enhanced by existing statutes, procedures, and practices of other agencies, and any other circumstances, including budgetary, resource, and personnel matters;
- IV. The extent to which the Board has recommended statutory changes to the General Assembly which would benefit the public as opposed to the persons regulated;
- V. The extent to which the Board has required licensed electricians and contractors to report to it on the impact of Board activities on the public;
- VI. The extent to which licensed electricians and contractors have been required to assess problems in their industry affecting the public;

- VII. The extent to which the Board has encouraged public participation in making its rules and decisions;
- VIII. The efficiency with which public complaints have been processed;
- IX. The extent to which changes are necessary in the enabling laws to comply with the above factors.

Our review included, and our comments and recommendations are based upon:

- . Interview with the president of the Board;
- . Attendance at two Board meetings and extensive discussion with all Board members at these meetings;
- . Examination of files, records, documents, minutes, and correspondence of the Board;
- . Interviews and discussions with personnel of the following State agencies:
 - (i) The Department of Regulatory Agencies
 - (ii) The Department of Personnel
 - (iii) The Department of Law
 - (iv) The Division of Labor
 - (v) The Governor's Office
 - (vi) The Division of Housing
 - (vii) The Office of State Budget & Planning
 - (viii) The Division of Accounts & Control
- . Comments from the public in response to a request for information placed in newspapers throughout the state.
- . Review of responses to questionnaires sent to applicants for licenses.

- . Review of testimony by the Board before legislative committees.
- . Interviews with members of the Colorado Legislature particularly interested in the activities of the SEB.
- . Review of applicable statutes.
- . Review of 1976 Management Services report concerning Board inspections and discussion with the authors of this report, (the Kennedy Report).

We reviewed the inspection procedures of the Board, however, it was not feasible to conduct a comprehensive field review of the inspections themselves.

HISTORY AND STRUCTURE OF THE BOARD

The Board was established in 1959, primarily to license electricians. At that time the composition of the Board was, two contractors who were also licensed electricians, two licensed master or journeymen electricians who were not contractors, and one public member. All appointments were (are) made by the Governor subject to the consent of the Senate and all appointments to be for five years.

In 1965 the Board was given the responsibility for inspecting electrical installations in those places where there was no inspection by a local authority. Also in 1965, the membership of the Board was increased from five to seven. The two additional members were required to be representatives of power companies supplying power to the public. In 1975 the membership of the Board was further increased by the addition of two members from the public at large.

The Department of Regulatory Agencies (DORA) is ultimately responsible for Board actions. To understand precisely how this relationship works it is useful to understand the distinction between type-1 and type-2 agencies as defined in the Reorganization Act of 1968. The purpose of this Act was to organize the Colorado State Government into a comparatively small number of departments. Currently, there are twenty such departments. Existing agencies that did not become departments were absorbed into these departments by either type-1 or type-2 transfers.

A type-1 transfer "...shall be administered under the direction and supervision of that principal department, but it shall exercise its prescribed statutory powers, duties, and functions including rule-making, regulation and standards and the rendering of findings, orders, and adjudications independently of the head of the principal department". However, under a type-2 transfer, all powers, duties, and functions as specified above are transferred to the head of the department into which the agency is transferred.

The SEB was transferred to DORA as a type-1 agency in 1968. This status was changed to type-2 as of July 1, 1975. Aside from three boards created in 1976 (State Board of Social Worker Examiners, Mobile Home Licensing Board, and Board of Hearing Aid Dealers) all other regulatory agencies are type-1 agencies.

SUMMARY AND CONCLUSIONS

Performance of the Board

The Board's performance of its two main functions, inspection and licensing (examinations), has been widely criticized. Indeed, these criticisms were instrumental in causing the Sunset review of the Board to be changed from 1981 to 1978.

Our review shows that these criticisms are largely unfounded or greatly exaggerated and that the Board has performed satisfactorily, although hindered by inadequate supervision by the Department of Regulatory Agencies and an inadequate budget. Areas needing attention are:

- . The training of inspectors and inspection procedures;
- . Monitoring of other inspection authorities for compliance with State standards;
- . The examinations;
- . Development of procedures that will enable the Board to use inspections to identify licensees whose work is substandard;
- . Scheduling of examinations and review at places other than the Denver area.

We feel that the Board is aware of these problems and is working towards solving them.

Need for the Board

The Sunset Act requires an assessment of the need for the continued existence of agencies under review. Presumably this requires two steps. First, it must be determined to what extent there is a need for the functions of the agency, in this case inspecting and

licensing. If such a need is determined, then the need for this particular agency to perform these functions must be considered.

It is clear, although not explicitly stated in the statute, that the purpose of inspection and licensure is to protect the public from the dangers commonly associated with electricity. We have assumed that some dangers, i.e., electrocution and fire do, in fact, exist and that by the very nature of modern life and the complexity of electricity, the public is, of necessity, both users of electricity and dependent upon the work of specialists. This being the case, it seems appropriate for the State to establish procedures for the protection of the public.

Given this assumption, the problem is to determine whether the method of protection adopted by Colorado is sufficient to protect the public without unduly restricting employment for qualified electricians.

One method of protection would be to not license at all and to rely completely on inspection. Then the consumer would have no guidance in hiring a competent contractor and, even though proper inspection would prevent the dangers discussed above, the potential extra costs and delays to the public lead us to favor the current system. The current system provides for competent installers and as a control, inspection of their installations. What remains to be done, therefore, is to consider each of the licenses issued by the Board.

- . Journeyman's License - This license permits the holder to do all electrical work without supervision although a master electrician assumes ultimate responsibility for the work. As discussed on page 10, we feel the requirements for this license are reasonable, and that the

licensing requirement is itself consistent with the need for public protection as discussed above.

. Residential Wireman's License - Although our review of the requirements for this license was not as intense as for the journeyman's license, the requirements for this license appear to be adequate. The effect of this license is to lessen the restrictions on employment by not requiring electricians who wire only residences to have the knowledge and expertise of commercial and industrial wiring required for journeymen.

. Master's License - A master electrician must have one more year of experience than a journeyman and must pass a test that has much in common with the journeyman's examination. Also, the master electrician is required to have practical experience in planning, laying out and supervising installations.

As previously stated, a master electrician must assume the ultimate responsibility for all work performed by the individuals licensed by the Board. Although an electrical contractor is not required to be a licensed electrician in Colorado, he must provide proof to the Board that he has a master electrician in his employ before the Board will issue this license. The master may also be a contractor under this system.

Thus, in Colorado it is the master's license that provides the basic protection to the public by providing supervision of installations and fixing the responsibility

for the quality of the work. This method appears to produce adequate results.

Whether it should be a Board or some other entity that is responsible for inspection and licensing cannot be determined in an absolute sense.

However, this method of regulation, i.e., boards consisting of citizens appointed by the Governor, provides the opportunity for both the public and the industry to contribute to the regulation process. The Board has informed us there has been no appreciable change in its operations since becoming a type II agency within the Department of Regulatory Agencies in 1975. We are not aware of any other State agency capable of providing the expertise required to regulate this specialized field.

DETAILED FINDINGS AND RECOMMENDATIONS

I. LICENSURE REQUIREMENTS

Colorado statutes provide that "No person shall engage in or work at the business, trade, or calling of a journeyman electrician, master electrician, or residential wireman in this state until he has received a license from the Division of Registrations (of the Department of Regulatory Agencies) upon written notice from the Board or the director, acting as the agent thereof, or a temporary permit from the State Electrical Board, the State Electrical Director or his agent".

The following requirements for each license are also statutory:

- . Master Electrician - Must either, (i) be a graduate electrical engineer with at least one year of experience in the construction industry, or (ii) be a graduate of an electrical trade school and have at least four years of practical experience in elec-

trical work or (iii) have had at least five years of practical experience in planning, laying out, supervising, and installing wiring, apparatus or equipment for electrical heat, light, and power. Additionally, all applicants must take a written examination of at least thirty questions designed to fairly test the applicants knowledge and the technical application thereof in the following subjects:

- (I) The national electrical code;
- (II) Cost estimating for electrical installations;
- (III) Procurement and handling of materials needed for electrical installations and repair;
- (IV) Reading of blueprints for electrical work;
- (V) Drafting and layout of electrical circuits;
- (VI) Knowledge of practical electrical theory.

. Journeyman Electrician - Must either, (i) have had at least four years apprenticeship in the electrical trade, or (ii) have had four years practical experience in wiring for, installing and repairing electrical apparatus and equipment for light, heat, and power including at least two years experience in commercial and industrial work. Additionally, all applicants must take a written examination covering:

- (I) The Ohm's Law
- (II) The national electrical code
- (III) Layout and practical installation of electrical circuits.

. Residential Wireman - Must have had either, (i) two years of accredited training, or (ii) two years of practical experience in wiring one, two, three, or four family dwellings. Additionally, all applicants must pass a test on the subject of residential wiring based on the national electrical code.

The Examination

Each of the examinations is four hours long and consists of questions on the national electrical code, calculations, and questions on diagrams pertaining to wiring, switches, motors, transformers, etc. Reference to the code is permitted at all times and calculators are allowed.

Over the past two or three years, these examinations have been the object of much criticism. Chief among the complaints is that the examination is too theoretical. To some, this means that the calculations and analysis required in some questions are not pertinent to the usual activities of the working electrician, while to others, it means that although the material covered by the questions is relevant, it is not reasonable to require such answers in a closed book examination since, in practice, when such calculations are required, the electrician would have access to books, tables, etc., and that, in any case, such calculations are usually made by engineers and included in the blueprints.

We discussed the examinations and the criticisms with the two examining officers who were primarily responsible for constructing these examinations. Both are licensed master electricians with many years experience in electrical work as well as in teaching electricity and in constructing examinations. On the basis of these discussions, as well as discussions with the current acting director of the Board who continues to review and improve these examinations, we feel that it is the intent of the Board and its staff to give the fairest possible examination (within the context of a written examination) that will enable them to meet their statutory responsibility to license all qualified applicants. Since, once licensed, an electrician may do any electrical work whatsoever, the Board feels it is reasonable to test over material that some, or even many, of the applicants have not encountered but that once they are licensed might become involved with as they continue to do electrical work. Thus, for example, there appears to be a good deal of difficulty with questions about motors and transformers and, while an applicant may have many years experience without encountering these sorts of electrical problems and may not contemplate ever doing this sort of work, still he will be licensed for such activities and the Board feels that questions on such topics are indeed appropriate.

While this may create a hardship for some who have extensive experience and expertise in some particular area and for which they need to be licensed to continue their employment, the alternative to requiring knowledge in some unfamiliar areas would be to issue different licenses for different electrical specialties.

Such special licenses may indeed become required as the uses of electricity becomes more complicated but, for the present, we feel that the general license - with a comprehensive test - is quite proper.

The use of closed book examinations is well established for such occupations as law, medicine and accounting. We see nothing unique about the electrician examinations that would preclude the use of such examinations. Certainly in actual practice doctors, lawyers and accountants have the use of all available references. The various licensing agencies feel that it is reasonable to find out what the applicant has absorbed in the course of his studies and experience. Thus, while there may be good arguments against closed book examinations, we feel that they are one way of determining ability and their use by the Board is quite reasonable.

Another frequent criticism is that since the pass rate is so low,

Results of Examinations Given in
January, March, May and July of 1977

Type	Took	Passed	%
Masters	304	94	30.9
Journeyman	611	229	37.5
Residential Wireman	77	24	31.1

either the test is too difficult or the questions do not measure the capabilities of the working electrician. However, since the pass rate for journeyman for the period January 1976 to July 1977 was 30% and the pass rate for applicants who had completed a union apprenticeship program which includes 144 hours of classroom study per year was 88%, the low pass rate seems to be more of an indication of insufficient preparation than of an unreasonably difficult or irrelevant test or, as some have charged, an attempt to limit the number of people in the trade.

Clearly, no four-hour examination can precisely determine whether an applicant has learned enough in four or five years of experience and study to be a competent electrician, however, other forms of examinations such as practical examinations or oral examinations are not feasible at this time, primarily because of financial considerations. Thus, we feel that the Board's approach is satisfactory; tests are designed to determine the applicants' ability to understand and use the code and also to determine if there is some familiarity with the underlying principles of electricity. The staff of the Board is well aware that the examinations are by no means perfect. They continually review the confusing portions and make revisions to improve the examinations.

Experience Requirement

The basic experience requirement for licensure is four years for journeymen. Requirements for master electricians and residential wiremen appear to be determined by reference to the journeyman requirement. The specification of four years is closely related to the four-year requirement for formal apprenticeship programs.

Thus, to evaluate the reasonableness of this requirement we first consider the apprenticeship program. Not everyone who serves as an apprentice or trainee to a licensed journeyman or master electrician is an apprentice in the formal sense. Most skilled industrial occupations have a formal apprenticeship program which provides for on-the-job training of employees so that at the end of the apprenticeship program (four years for electricians) the successful apprentice becomes a journeyman, the basic level of competence in the trade.

The State of Colorado maintains, in the Division of Labor, the Colorado Apprenticeship Council to register and provide overall supervision and control of apprenticeship programs. Registration with the Council is not mandatory. Each registered program is developed by an employer or a group of employers and must meet certain standards. When a union contract is involved, the union works with the employer(s) to develop and administer the program. These standards are concerned with how the apprentice is supervised, to what extent there is a planned program that will ensure adequate exposure to the different aspects of the trade, how formal study is supervised, etc.

The apprenticeship council works closely with the Federal Bureau of Apprenticeship Training and their actions must be in accordance with federal guidelines. Acceptance into a registered apprenticeship program allows an individual to be gainfully employed while receiving formal training in a skilled occupation; obviously a desirable situation. Thus, there are usually more applicants than openings. Accordingly, registered programs are required to have approved selection procedures (in accordance with,

among other things, affirmative action) to insure that applicants are ranked on some reasonable basis and then selected for the program in accordance with this ranking.

Since the four-year requirement is an industrywide standard accepted by employers and employees and formally endorsed by the Federal Government, we feel that Board adoption of this standard is reasonable.

The appropriateness of the experience requirements for master electrician and residential wireman is more difficult to determine and the most we can say is that the requirements do not appear unreasonable.

II. RECOMMENDED STATUTORY AND RULE CHANGES

The statute (article 23 of title 12, C.R.S. 1973 as amended) governing the State Electrical Board is long and comprehensive. Since it is recently written (1959) and has been extensively amended, there are comparatively few of the archaic restrictions that plague many boards and commissions. However, there are parts of this article that we feel should be modified to better accomplish the objectives of this sort of regulation; to adequately protect the public at the lowest cost and with minimum restrictions on those wishing to be electricians.

Composition of the Board (Section 12-23-102, C.R.S. 1973)

The composition of the Board has been changed twice since it was established in 1959 (see page 4) and we hesitate to recommend another change just for the sake of fine tuning. However, our review of the Board minutes has shown the Board often makes decisions on extremely technical matters. Therefore, we feel that a majority

of the Board, five instead of the present four, should be licensed electricians. We also feel that two members from the public at large will serve the purpose of public representation as well as three. We recommend replacing one of the public members with a licensed electrician.

Exemptions (Section 12-23-111, C.R.S. 1973)

Not all electrical work must be done by licensed electricians. For example, home-owners working on their own home, employees of electrical utilities and others as specified in paragraphs (1) - (6) in this section are exempt (see text in appendix 4, page 49). We recommend two modifications. First, the exemptions should be reconsidered. The Board feels that some of the exemptions are too liberal; some of those exempted should not be. As part of this reconsideration a more precise definition of maintenance, repair, and alteration should be given. Clearly, there is a difference between adding an outlet and installing wiring in a basement, yet both are often considered to be alteration. We note that these definitions could probably be done by the Board as part of its rule-making ability; if so, the statute should so direct. Second, we feel that this section is confusing as written and should be rephrased to make it more comprehensible.

Inspection of Mobile Homes (Section 12-23-116, C.R.S. 1973)

According to paragraph (2) of this section, "All new mobile homes, travel trailers, modular homes, and campers shall, in advance of sale to the public be inspected by a State electrical inspector either at the place of manufacture or upon the vendor's

premises". However, in 1974, the Federal Government pre-empted this sort of inspection and designated the Division of Housing in the Department of Local Affairs as the agency responsible for mobile home inspection in Colorado. The statute should be modified to reflect this change.

Supervision of Apprentices and Trainees (Section 12-23-111(7), C.R.S. 1973)

This section of the statute was enacted in 1977 and provides that, while acquiring the four years of experience to become a journeyman, a trainee must be supervised by a licensed journeyman or master electrician who is not supervising anyone else. Even though this requirement is much more liberal than the original proposal which would permit only one trainee to each three license holders (as is the case for registered apprentice programs) we feel that it is unreasonable, particularly since the Board could not tell us how this ratio was determined. We feel that this section should be repealed and that the Board be allowed to establish needed restrictions as part of their rules.

Low Voltage Wiring (Board Rule -V-B)

There has been considerable discussion over the last few years as to whether installers of intercom systems, music systems, burglar alarms, etc., should be licensed. These sorts of installations are referred to as "low-voltage wiring".

The Board feels that to the extent such installations tie in to higher voltage wiring, there are hazards associated with such installations. They do not, however, require installers to be licensed. Instead, they require only that they register with

the Board. Since the Board has no provisions for revocation of registration in the event of incompetent work, this registration does not provide a control over this type of wiring. If the Board feels that the hazards are sufficient to require the sort of regulation that is exercised over other installations, they should establish a license in this area. If not, then the registration requirement should be eliminated.

Requirements for Masters License (Section 12-23-106, C.R.S. 1973)

The statutory experience requirements for a master electrician includes five years practical experience in planning, laying out and supervising. Even though the four-year experience requirement for a journeyman does not include any of the above areas, the Board considers a journeyman license plus one year of experience sufficient to satisfy the master requirement. This appears reasonable but nevertheless does not comply with the statute and we feel that either the statute should be changed or the practice eliminated.

Eligibility for Examination

Although we do not feel that the examinations are unreasonable, they are difficult and many applicants require two or more attempts to pass. This being so, we feel that applicants should not have to have all of their experience completed before taking the examination so that they would be more likely to have passed the examination when their experience requirement is completed. Specifically, we recommend that anyone with all but six months of the required experience be allowed to take the examination.

Yearly Renewal of License (Section 12-23-106 (4), C.R.S. 1973)

We see no purpose in yearly renewal of licenses and think renewal should be at most every three years. Further, we feel that the renewal fee is too high; for the year ending June 30, 1977, total renewal fees collected by the Board was \$183,500 while the total direct expenses for issuance of all licenses were about \$14,500.

Summary of Recommendations

1. Amend 12-23-102 to change public at large members from three to two and licensed electricians from four to five.

AGENCY RESPONSE: Rejected. Requires legislative action. To increase the number of electricians from four to five members does not appreciably affect the technical expertise of the Board, but it does reduce significantly the potential for input from the public.

2. Amend 12-23-111 to better specify exemptions and to clarify wording.

AGENCY RESPONSE: Requires legislative action. Agree. Rewrite and clarify exemption sections of the statute.

3. Repeal paragraph 12-23-116 (2) regarding mobile home inspections.

AGENCY RESPONSE: Rejected. Defer comment.

4. Review paragraph 12-23-111 (7) regarding supervision of apprentices and trainees to see if such restriction is reasonable and also whether this sort of regulation is better done by Board rule.

AGENCY RESPONSE: Requires legislative action. Agree.
Reconsider the one-to-one requirement.

5. Repeal the Board regulation requiring registration of installers of low voltage systems.

AGENCY RESPONSE: Agree. Repeal registration requirement and investigate the feasibility of licensing installers of low voltage systems.

6. Either change the statutory experience requirements for the masters license to comply with current Board practice or enforce the statute.

AGENCY RESPONSE: Requires legislative action. Agree.
Statutes should be changed to require one year experience in planning, layout, and supervision for a master electrician beyond the journeyman requirement.

7. Modify Board regulations to allow applicants to take examination before experience requirement is satisfied.

AGENCY RESPONSE: Agree. Only so far as the period of time between the bi-monthly examinations is concerned.

8. Require license renewal, at most, every three years and alter the renewal fee so that the total fees collected more closely approximate the expenses of renewal

AGENCY RESPONSE: Requires legislative action. Agree in part. We feel that it is important that revenue generated by the Electrical Board through licensing and inspection fees be sufficient to meet the total cost of regulation. If licenses are renewed on less than an annual basis, it may necessitate a fee increase.

III. FAILURE OF DEPARTMENT OF REGULATORY AGENCIES TO SUPERVISE THE SEB

As discussed on page 5, the executive director of DORA has the ultimate responsibility for Board activities. We feel that the following examples show that the director is not adequately discharging this responsibility.

Overall Review of Board Activities

The executive director does not have a systematic procedure for reviewing activities of the Board. Thus, minutes of Board meetings and official Board publications are not reviewed and ratified to determine that actions taken by the Board are in compliance with all statutory restrictions as well as being acceptable to the director. For example, the study sheet which is sent to all applicants states, "After January 1, 1975, a failure of a trainee or apprentice to register as provided in 12-23-111 (9) of the C.R.S. 1973 will normally result in a disallowance of the experience". This statement does not appear to be enforceable and the Board's attorney says that he has recommended that the statement be deleted. We were unable to obtain evidence that the executive director had approved, or for that matter, seen this document.

Training of Inspectors

We feel, and the Board agrees, that inspectors, as part of their duties should collect evidence of substandard work by licensees for possible Board action. To properly accumulate such evidence, it is necessary for the inspectors to have some training as to what sort of evidence is required for the formal hearings required by the administrative procedures act. Thus, in one recent important hearing by the Board, all charges were dropped due to insufficient evidence.

According to the Board's attorney the evidence was insufficient, to some extent, because it was improperly collected. The Board's attorney feels that the training required would take only 8 - 12 hours and could be done by the staff of the Department of Law. However, DORA has not initiated any training, nor do they have any immediate plans for such training. The Department recognizes the need for such training as a general goal for all of the regulatory agencies, but they do not feel that they have a greater responsibility towards this rather large type-2 agency than to any of the smaller type-1 agencies within the Division of Registration.

Inspection of State Construction Building

In 1977, the General Assembly passed an act (Senate Act 55) which exempted State construction projects from the general statutory provisions for inspection, and provided that, for one year only, the Office of State Budget and Planning would be responsible for insuring that State electrical standards were being met. The legislation further provides that "The State Electrical Board shall make a report to the second regular session of the fifty-first

general assembly (1978 session) based on its spot inspection projects, as to the operation and effectiveness of electrical inspections made by the Office of State Planning and Budgeting". At the time of our review, more than one-third of the way through the year, no spot inspections had been scheduled. The executive director did not appear to have any knowledge of this statutory requirement and, in any case, had instituted no procedures to insure that adequate spot inspections would be made and the required report prepared.

Supervision of Examinations

One of the statutory requirements regarding the administration of licensing examinations (paragraph 12-23-106 (3), C.R.S. 1973) was changed, in 1977, from "...shall be anonymously graded by the board" to "...shall be anonymously graded by the board. THE EXAMINATION SHALL BE CONDUCTED AND GRADED BY THE DEPARTMENT OF REGULATORY AGENCIES. THIRTY DAYS PRIOR TO EACH EXAMINATION, THE DEPARTMENT SHALL EXAMINE THE PROPOSED QUESTIONS AND, WHEN DESIRABLE, SHALL MODIFY THE QUESTIONS OR DELETE THE QUESTIONS" (capitals indicate new material and dashes indicate deleted material).

This change became effective on July 1, 1977. To date, no changes have been made in the preparation or administration of examinations. No non-electrical board staff are involved in the preparation of examinations and apparently no such involvement is planned. The executive director of DORA feels that this statute is being complied with since all of the staff of the SEB are actually employees of DORA. This interpretation means that all the legislature intended was to insure that the staff who prepares the examination should review their own work at least thirty days before the exam is given.

Compliance with Sunshine Act

The staff of the Board has been unaware of the requirements of the Sunshine Act and has not notified the public of Board meetings. The executive director was unaware of this situation and has not established procedures to insure compliance with this law.

Restructuring of Examinations

In May of 1975, the Executive Director of DORA in testimony before the Senate Judiciary Committee asserted that the examinations given by the Board should be improved and alternative types of examination should be considered. He made a personal commitment to be active in this effort as, for example, when he said, "We are not going to stop at this particular examination one that had been given the previous week we want to look at each and every examination as it comes along and try to improve these examinations".

The former director also expressed concern over the plight of applicants who might be qualified electricians but who, for one reason or another, just could not do well on the academic sort of examination given by the Board. Although the examinations were extensively revised, neither of the two examining officers who did the revising discussed what should be done or what was done with anyone but the Board itself. No one on the Board can recall any discussions, except possibly in very broad terms, with anyone from DORA. Certainly no attempts were ever made to study the alternative methods of testing expressed by the director.

Supervision of Board Employees

The position of Director of the State Electrical Board was vacant from May 1975 to July 1977. During this period the day-to-day supervision was done by an acting director who was later determined to be not eligible for the position of director by the State Department of Personnel. We feel that this situation required more supervision than normal by DORA, but we could not find evidence of any supervision whatsoever. In particular, no periodic employee evaluation, which is to be given at least yearly according to the Department of Personnel, was given during the entire two-year period.

Report to the Governor and the General Assembly

Section 12-23-113, C.R.S. 1973, requires that the Board prepare and transmit annually a report "...accounting to the governor and the general assembly for the efficient discharge of all responsibilities assigned by law or directive to the board". No report has been prepared for several years and the Executive Director of DORA has not requested one since DORA became responsible for all Board activities.

The problem evidenced by the above examples appears to be that DORA never adopted procedures to assume the added responsibility given them by the change of the Board from a type-1 to a type-2 agency. Accordingly, our recommendations address the overall problem as well as the specific issues discussed above.

Recommendations

9. DORA should develop a policy, evidenced by written procedures, regarding the relationship between the executive director and the State Electrical Board. This policy should include, at least, a procedure for review of all Board decisions by the executive director and all reviews should be properly documented.

AGENCY RESPONSE: Agree. Procedures and policy have been developed; however, they have not been reduced to writing.

10. DORA should ensure that the statutorily required annual report is prepared.

AGENCY RESPONSE: Agree. Proper funding is required.

11. DORA should, in cooperation with the Department of Law institute the training of Board inspectors in the proper methods of collecting evidence regarding substandard performance of licensees.

AGENCY RESPONSE: To be implemented 1/78. Agree. The training is being implemented in the field so as not to hamper the ongoing inspection process.

12. DORA should adopt procedures to provide for spot reinspections of State building projects and prepare a report in accordance with Senate Act 55.

AGENCY RESPONSE: To be implemented 1/78. Agree. We are in the process of developing procedures to comply with Senate Act 55.

13. DORA should review the examinations prepared by the Board and participate in the administration of these examinations in accordance with the provisions of House Act 1368.

AGENCY RESPONSE: Implemented 12/77. Agree. DORA has had an ongoing review through its staff representative, the Director of the Electrical Board. The Executive Director of DORA is now directly involved in reviewing the examination activities of the Board.

14. DORA should develop procedures to insure that the Board is in compliance with the Sunshine Act.

AGENCY RESPONSE: To be implemented 12/77. Agree. DORA in conjunction with the Attorney General's Office, is now in the process of implementing a uniform notification schedule for all departmental boards and commissions.

15. DORA should exercise closer supervision over the director of the Board in accordance with regulations of the Department of Personnel.

AGENCY RESPONSE: To be implemented 12/77. Agree. DORA has implemented an ongoing employee appraisal plan.

IV. COMPENSATION FOR INSPECTORS

By failing to observe the statutory distinction between maintenance electricians and construction electricians, the Personnel Department has established salaries for State electrical inspectors that are much less than similarly qualified electricians. This situation hinders the recruitment and retention (there was a 54% turnover during fiscal year 1977, of highly qualified inspectors. Specifically, State inspectors are paid \$7.38 per hour while the union rate for licensed journeymen in the Denver area is \$11.69 per hour. Our very limited review indicates that non-union licensed journeymen make at least \$9.00 per hour. Since inspectors are required to be licensed journeymen, the Personnel Department has established the inspectors' salary to be that of a journeyman. However, in establishing the base salary for journeymen, the Personnel Department has surveyed only maintenance electricians for whom there is no licensing requirement (and hence no minimum standard of competence). Even though the Personnel Department maintains that they surveyed only maintenance electricians who possessed journeymen licenses, we feel that in order to comply with Section 24-50-111, C.R.S. 1973, which requires that prevailing wages be paid, the proper group to survey are those licensed electricians doing work for which they are licensed.

Just as they have failed to distinguish between two uses of the word electrician, the Personnel Department has failed to distinguish between two uses of the word "journeyman". As a generic term, journeyman means "the full working, non-supervisory, fully-trained employee." In establishing pay grades for journeymen, the Personnel Department has considered journeymen in all of the various trades to be the same in spite of the fact that "journeyman" as applied to electricians is a technical term requiring four years of well supervised training and passing a difficult examination. This lack of distinction has resulted in, according to the Department of Personnel, "consistently (apparently) overpaying carpenters and underpaying electricians".

The same problem occurs regarding the salary established for the examining officer. Although the examining officer is required to have some knowledge of testing in addition to being a licensed journeyman, the salary for this position is also \$7.38 per hour. A further problem is that all that is required for this position is licensure as a journeyman even though the examining officer must construct the masters examination and review it with applicants who do not pass. Clearly, any recommendation regarding the situations discussed here should be directed to the Department of Personnel. Our audit was of the SEB and did not include a comprehensive review of the salary surveys of the Department of Personnel, so we do not make a formal recommendation. We would, however, welcome a response from the Department.

V. PERFORMANCE OF THE BOARD

As discussed elsewhere in this report, it is the executive director of DORA who is ultimately responsible for all Board actions. However, we mention here some areas of concern which we feel could and should be handled by Board action.

. Limitation of Examinations and Reviews to Denver

Aside from one examination given on the western slope in July of 1977, all examinations and reviews of examinations are available only in the Denver area. We feel that examinations should be given in other areas of the state and an opportunity to review examinations at other locations should also be available. Further consideration should be given to giving examinations and providing review outside of normal working hours.

. Test equipment for inspectors - The Kennedy Report

(appendix 3) recommended that all inspectors be equipped with standardized test equipment. Although both the Board and the staff agree with the recommendation, this has not been done. According to the acting director of the Board, the cost would be approximately \$100 - \$150 for each of the thirty inspectors. We feel that some of the inspectors, and probably all of them, could be provided for out of the current year's budget.

. Training of Inspectors - The Board has not estab-

lished a formal training program for inspectors. The current procedure is for a newly hired inspector to accompany an experienced inspector for one to two weeks and then to be given full responsibility. The recent issue of a manual for inspectors (November of 1977) gives some guidelines for standardization of inspections. We feel that the experienced inspector

should be provided with formal procedures specifying what the new inspector should be taught and, to some extent, how.

Review of Inspections Not Performed by the Board

Although local authorities may perform electrical inspections, the Board has the responsibility to insure compliance with State requirements including the requirement that all such inspections be performed by licensed journeymen. However, the Board has established no procedures for review of other inspecting agencies. To some extent, this appears to be a budgetary problem (see discussion on page 34). The Board could, as a start, require letters from all inspecting agencies certifying that all inspections complied with all Colorado requirements.

Complaints - While we found the Board to be concerned about complaints regarding their activities, they have no procedure for recording these complaints or the disposition thereof. Thus, we were unable to determine how effectively complaints are handled. The Board does not have a systematic way of keeping track of complaints or the action taken regarding them.

Recommendations

16. The Board should, in the immediate future, adopt a policy of giving examinations and providing reviews at locations other than Denver.

AGENCY RESPONSE: Implemented 7/77 and 12/77. Agree. The Board has a policy of conducting examinations in locations outside the Denver area. Examinations have been conducted twice in the last six months in Grand Junction, but the implementation of this policy is constrained by financial limitations. We agree that reviews should be provided in these areas, but the same financial limitations exist.

17. The Board should equip all inspectors with standardized test equipment.

AGENCY RESPONSE: To be implemented. Agree. This will be implemented when money is available.

18. The Board should establish procedures for the training of newly hired inspectors.

AGENCY RESPONSE: Implemented 12/77. Agree. Although no formal procedures have been instituted, a detailed inspection procedures manual has been prepared. On-the-job training will be given to all new inspectors.

19. The Board should develop procedures for ascertaining that other inspecting authorities in Colorado are performing inspections in accordance with all State requirements.

AGENCY RESPONSE: To be implemented. Requires legislative action. Agree. This requires sufficient manpower and a clarification of statutes.

20. The Board should develop procedures for the formal handling of complaints.

AGENCY RESPONSE: Implemented 11/77. Agree. The Electrical Board has begun to coordinate its complaint process with the centralized complaint section in the Executive Director's Office.

VI. INSUFFICIENT NUMBER OF INSPECTORS

Based upon the time standards developed in the Kennedy Report (Appendix 3) and an analysis of the projected number of permits which will be issued during 1977-78, the State Electrical Board requires, at least, ten more inspectors. Results of this inadequate staffing include:

- . Sizeable amounts of uncompensated overtime has been required of inspectors to keep pace with the demand for inspections.
- . Supervisory inspectors are required to fill in for ill or vacationing inspectors which has hampered the quality control program (discussed on page 35).
- . The Board has not been able to formulate procedures to obtain verification that other inspecting jurisdictions are in compliance with State requirements.

Recommendation

21. The Legislature should appropriate adequate funds to enable the State Electrical Board to perform all required inspections.

AGENCY RESPONSE: Agree.

VII. INSPECTIONS

Inspections are required to ascertain that all electrical work is done in accordance with the National Electrical Code. Exceptions are noted in detail on the inspection report (one copy of which goes to the contractor) and the inspector will not notify the power supplier that power may be turned on until all exceptions are corrected.

We did not consider it feasible to determine the adequacy of the inspections because, at the time of our review, there were not written procedures governing these inspections which we could review for compliance and, in any case, the time and expense required to review enough inspections on which we could base an opinion were beyond the resources of our office. Also, as discussed below, the Board's own system of review was largely inoperative and could not provide us with any information.

We did, however, review the Board's procedures for insuring that inspections were timely, that results were properly recorded and that information pertaining to the inspection was recorded and maintained in such a way as to capture all information and make it readily available when required. We felt that all of these procedures were adequate as was their implementation.

QUALITY CONTROL OF INSPECTIONS

To assess the quality of inspections done by the Board, the Board has informally adopted a policy that 5% of all inspections should be reviewed by a supervising inspector. We were not able to determine the exact number of reinspections done during the year ending June 30, 1977, but according to the Board staff, it was substantially less than 1%. Further, the Board has no procedure for

selecting which inspections shall be reviewed or for documenting the results of the reinspection so that conclusions may be drawn and weak areas identified and corrected. The main cause of this problem is that due to an insufficient number of inspectors, the supervisors have to spend an inordinate amount of time doing actual inspections rather than supervising inspectors.

Recommendations

22. Same as Recommendation #21

AGENCY RESPONSE: Agree.

23. The Board should develop procedures:

- . to select the inspections to be reinspected.
- . that specify exactly what should be done on the reinspection.
- . that specify how to record the results of the reinspection.
- . for a systematic review of the reinspections that will help to identify problems and, perhaps suggest ways of solving these problems.

AGENCY RESPONSE: Agree. However current allocated FTE is insufficient to implement these procedures.

VIII. RECIPROCITY

The Board is statutorily authorized to issue licenses by reciprocity to individuals licensed in other states that provide for reciprocity and whose requirements are at least equal to the Colorado requirements. Currently the Board has agreements with North Dakota, South Dakota, Idaho, and Montana. Until recently the Board also had agreements with Minnesota and Wyoming but both states changed their requirements so that they were no longer as stringent as Colorado's and the agreements were cancelled.

In our review of Board records, we were unable to find documentation as to how the determination is made that examinations given by other states are equivalent to the Colorado examination or how the Board is made aware of any changes in these examinations.

While the Board is receptive to reciprocal agreements, they do not appear particularly aggressive in seeking out such agreements, possibly because the Colorado standards seem to be generally higher than other states.

Recommendations

24. The Board should determine the licensure requirements for every other state and initiate discussions regarding reciprocity with states whose standards appear to be comparable with Colorado.

AGENCY RESPONSE: Rejected. Disagree. The Board does not have adequate staffing capability to initiate reciprocity agreements and maintain an updating service to ensure that each state maintains standards equivalent to Colorado. The Board does have the capability of responding to requests by other states. Through the use of temporary permits, out-of-state electricians with sufficient experience are allowed to work before the next examination.

25. The Board should obtain documentation establishing the equivalence between the examinations given by states with whom Colorado has reciprocity agreements and the examinations given in Colorado.

AGENCY RESPONSE: Agree in principle. It is difficult in practice because of confidentiality requirements which render most states reluctant to distribute their exams to us.

IX. FINANCIAL INFORMATION

To provide a more complete view of the operations of the State Electrical Board, the following unaudited financial information is presented for the fiscal year ended June 30, 1977.

Financial Activities of the SEB for the Year Ending 6/30/77⁽¹⁾

<u>Functional Area</u>	<u>Revenue</u>	<u>Expenditures</u>	<u>Excess (deficit) of Revenue Over Expenditures</u>
Licensure	\$183,500	\$ 14,500	\$169,000
Examinations	24,500	24,000	500
Inspections	499,500	524,000	(24,500)
Administration		<u>39,000</u>	<u>(39,000)</u>
Total	<u>\$707,500</u>	<u>\$601,500</u>	<u>\$106,000</u>

(1) Amounts are taken from the State Central Accounting System. Expenditures include our allocation of such things as postage, telephone, etc.

X. AFFIRMATIVE ACTION

The Board has no program for affirmative action nor does it have employees. All supporting employees are employed by the Department of Regulatory Agencies which does have an affirmative action program. The Board is not required to have an affirmative action program for the industry it regulates and has no authority in this area.

However, the Colorado Apprenticeship Council is the policing authority, in the affirmative action area, for the programs registered with it. The electrical industry itself is required to have such programs and are monitored by other governmental agencies.

* * * * *

We wish to express our thanks to Board members, Board staff and the Department of Regulatory Agencies for their cooperation during our review. We also wish to express our appreciation to those people who responded to our requests for comments and answered our questionnaires.

STATE OF COLORADO
DEPARTMENT OF REGULATORY AGENCIES
STATE ELECTRICAL BOARD
PERFORMANCE AUDIT

APPENDIX 1

Consideration of Specific Factors as Required by Section 24-34-104(7)
C.R.S. 1973

<u>Factor</u>	<u>Discussion</u>
The extent to which:	
I. Qualified applicants have been accepted.	I. See discussion on page 11 regarding the examination and on page 14 regarding the experience requirement. Reciprocity is discussed on page 37. Finally we note that although Section 12-23-108, C.R.S. 1973 permits the Board to issue a license without examination to a "holder of a valid license issued by any city or other political subdivision of the state providing for the examination and licensing of electricians", the Board has adopted a policy of requiring passing of their examination since they have been unable to evaluate the other examinations which were often-times given some years ago. There has been some criticism of this policy but, in our opinion, it is a reasonable exercise of their authority.
II. Affirmative action requirements have been complied with.	II. See comment entitled "Affirmative Action", page 39.
III. The Board has operated in the public interest and the extent to which its operation has been impeded or enhanced by existing statutes, procedures, and practices of the Department of Regulatory Agencies and any other circumstances including budgetary resource and personnel matters.	III. Recommended statutory changes are considered beginning on page 16. Inadequate involvement is discussed at length beginning on page 18. See also the discussion concerning the Department of Personnel on page 29.

- | | |
|---|---|
| <p>IV. The Board has recommended statutory changes which would benefit the public as opposed to the persons it regulates.</p> | <p>IV. The Board has recommended statutory changes which they feel would better enable them to insure safer electrical installations in Colorado.</p> |
| <p>V. The Board has required registrants to report to it concerning the impact of rules and decisions of the agency on the public regarding improved service, economy of services, and availability of service.</p> | <p>V. The Board has no such requirement.</p> |
| <p>VI. Registrants have been required to assess problems in their industry which affect the public.</p> | <p>VI. The Board has no such requirement.</p> |
| <p>VII. The Board has encouraged participation by the public in making its rules and decisions as opposed to participation solely by the registrants.</p> | <p>VII. The Board has been unaware of the Sunshine Act (page 25) but has expressed their intention to comply with it in the future. Rule changes have been done in accordance with the Administrative Procedures Act. Also, three of nine members represent the public-at-large and only four are registrants.</p> |
| <p>VIII. Formal public complaints have been efficiently processed.</p> | <p>VIII. Board has no formal procedures for processing complaints.</p> |
| <p>IX. Changes are necessary in the enabling laws of the agency to adequately comply with the factors listed above.</p> | <p>IX. Recommended statutory changes are discussed beginning on page 16 .</p> |

STATE OF COLORADO
DEPARTMENT OF REGULATORY AGENCIES
STATE ELECTRICAL BOARD
PERFORMANCE AUDIT

APPENDIX 2

Questionnaires were sent to 150 persons, selected at random, who had taken a licensing examination in 1977 (see Table below for distribution and response).

Type of Examination	Result	Number Sent	Number of Responses	% of Responses
Master	Passed	25	10	40
Master	Failed	41	18	44
Journeyman	Passed	20	10	50
Journeyman	Failed	46	16	35
Residential Wireman	Passed	8	2	25
Residential Wireman	Failed	12	1	8

The primary purpose of this questionnaire was to obtain specific comments about the licensing examinations. We also sought comments regarding the operation of the Board and the requirements for licensure.

Summary of Responses

As expected, those who passed were more favorable towards the examination than those who did not. However, those who passed were overwhelmingly pleased while those who did not were not uniform

in their criticisms and to a large extent were not specific enough to enable us to tell precisely in what way the examinations were unfair or irrelevant (the two most common comments). As noted in the discussion, most of the complaints involved motors, transformers, theoretical questions and calculations, but looking at the responses as a whole, we see no reason to alter our conclusion.

There was general approval of the operation of the Board and particularly of the examination review by the examining officer. Specific complaints about the Board staff appeared to concern isolated events which were indicative of the sort of misunderstandings that occur from time-to-time between the public and office staffs rather than a systematic disregard of the public.

The most frequent complaint regarding policies of the Board was that examinations are given only in Denver as are reviews (see page 31 for our recommendation regarding this problem).



RICHARD D. LAMM
Governor

JOHN I. LAY
Executive Director

DEPARTMENT OF ADMINISTRATION

724 State Services Building
Denver, Colorado 80203

6/30/76

APPENDIX 3

To: Mrs. Lois Terry, Acting Director
State Electrical Board

From: John R. Kennedy, Assistant Director
General and Management Services
Department of Administration

Subject: Electrical Inspections

This letter is in response to your request, dated January 23, 1976, concerning the amount of time required to complete an electrical permit by an electrical inspector of the State Electrical Board.

Mr. Richard C. Westermann, Jr., Management Analyst I-C, of the Division of Management Services, has completed your work request and the results of the study are contained in this letter.

The purpose of the study was to evaluate the time required to complete an electrical permit, in order to verify or adjust the present time factors used in calculating manpower projections for electrical inspectors of the State Electrical Board.

The study was limited to a time evaluation by permit category of the methods and procedures used by an electrical inspector in completing an electrical permit.

A non-repetitive study was conducted within fifteen different geographical areas of the State of Colorado, over a four-week period, as shown in enclosure 1.

The actual amount of time required to perform each elemental part of inspection activities was recorded. The leveled time for each activity was then calculated by multiplying the actual time of the activity observed by the individual performance rating determined by the observer, as shown in enclosure 2 (Sample Non-Repetitive Time Study Sheet).

Findings

1. Eight different types of categories for electrical permits were identified and the average time observed for completing the various permits is as follows:

<u>Permit Category</u>	<u>Avg. Observed Time in Hours</u>
1. Residential	2.43
2. Residential Temporary Meter	1.10
3. Residential Temporary Heat	1.10
4. Commercial	2.82
5. Commercial Temporary Meter	1.10
6. Commercial Temporary Heat	1.10
7. Mobile Home	1.10
8. Service Only	1.10

These observed times were derived by averaging individual inspector's leveled (adjusted by rating his level of performance) time for each category of permit. Allowance factors for travel, office, paper work on inspection, consultation, personal (including fatigue), unavoidable delay (i.e., can't find property or location), and foreign element time (i.e., policing, auto breakdown) were calculated and added to the average level time for the various types of permits as shown in enclosure 3.

2. Written policies and procedures and standard criteria for conducting an electrical inspection are not available to the State Electrical Inspectors. Inspectors use the Electrical Inspection Report Checklist as a guide in conducting an inspection. However, the Correction Notice, Meter Release Form, and the Reinspection Notice were completed by inspectors using varying procedures.
3. Definitions for reporting inspection, office/administrative, consultation, policing, and travel times are not available to inspectors. Consequently, inspectors integrate these different time elements in an inconsistent variety of combinations. Inspection time may be reported as a combination of consultation, policing, and office/administrative time. In addition, travel time may be reported as a combination of policing and consultation time.
4. The electrical inspectors report time elements for travel, inspection, and consultation, etc. in incremental blocks of fifteen minutes. If one inspection takes fewer than this, fifteen minutes will be reported. This helps explain the significant variance between time observations set by this study and the inspector's time reported to the Denver office. A significant "spin off" of this inaccurately reported time is that it prohibits accurate forecasting of manpower requirements.
5. Each inspector uses his own procedure for recording his total daily inspection activity. A number of inspectors record their time elements on a separate sheet as they complete inspections, while other inspectors

record travel time and inspection time for an inspection on the Electrical Inspection Report. All time elements are usually totaled at the end of the day. At the end of the week, the daily time records are retotaled on the inspector's Weekly Activity Report and sent to the Denver Office, where they are summarized once again.

6. A number of electrical inspectors were unsure of their specific territorial responsibility, thus causing an unnecessary overlap of area coverage and an imbalance of inspection workload. Consequently, inspectors may not be used to their fullest potential within assigned areas.
7. Electrical inspectors who live in remote geographical areas within the State must work out of their own homes. Because of this situation, these inspectors are required to handle a certain amount of administrative tasks in addition to conducting inspections. Because of the lack of policies and procedures for inspectors, home office practices and time allotted vary with each inspector.
8. The electrical inspector's daily work plan is determined during the first hour of his day, based upon telephone calls received for inspections. Through cursory scheduling and route planning, each inspector determines his own activity. Some travel schemes zigzag while other travel schemes move in a circle within a particular area. This non-uniform practice does not allow inspectors to efficiently allocate available inspection time.
9. Electrical inspectors are required to furnish their own electrical test equipment. The test equipment, as well as the procedures of using it, vary by inspector. This may cause a wide variation in the quality of inspections.

Recommendations

1. It is recommended that the following time observations which represent an average time to complete various types of permits, be used by the State Electrical Board. These can apply to the planning and control of manning requirements.

<u>Permit Category</u>	<u>Avg. Observed Time in Hours</u>
1. Residential	2.43
2. Residential Temporary Meter	1.10
3. Residential Temporary Heat	1.10
4. Commercial	2.82
5. Commercial Temporary Meter	1.10
6. Commercial Temporary Heat	1.10
7. Mobile Home	1.10
8. Service Only	1.10

These various time observations are recommended based upon the similarity of the electrical permit task sequence. These times represent the present method for completing various types of permits. When used for projecting manning requirements, these time observations should not be arbitrarily lumped into one time for completing a permit by using the arithmetic mean, but should be treated as specific categories of workload, as shown in enclosure 4.

2. It is recommended that written policies and procedures be developed for conducting an electrical inspection. Policies and procedures should describe work methods for planning, inspection criteria, control, accurate, consistent reporting, as required in performing inspections and related activities. Policies and procedures will provide a more uniform method of conducting an electrical inspection.

In addition to providing consistency of action, written policies and procedures will increase the accuracy of planning and control of manning requirements by the State Electrical Board.

3. It is recommended that clear definitions for office/administrative, inspection, policing, consultation, and travel times be developed for the electrical inspectors. A clear definition of terms will allow a more uniform practice for reporting time elements. Sample definitions:

Office Time: Time spent in office answering telephone, planning daily schedule, completing reports.

Inspection Time: Time spent conducting an on-site electrical inspection. Time reported will include physical inspection time on the job, as well as time taken to complete required forms. (Meter Release, Correction Notice, etc.)

Consultation Time: Time spent in advising contractor or home owner regarding deficiencies and/or answering questions regarding electrical requirements of the job.

This will enhance the time element data base for projecting and controlling manning requirements. Definitions should be included in the appendix of the Policy and Procedure Manual.

4. It is recommended that actual time for performing an inspection or related activity as described in recommendation 3 be reported, and the practice of reporting time to the nearest fifteen-minute period be discontinued. Accurate time data must be available in order to project and control manning requirements. If the data is reported based on the nearest fifteen-minute period, the projections will not represent the true requirements.
5. It is recommended that an electrical inspector's daily activity report be designed, duplicated and used to record inspection activities. The content of the form should include instructions for reporting all daily

work activities by inspection category as described in recommendation 1. The form would allow inspectors to record element times for performing an electrical inspection or related activities. Inspectors should not be required to total time elements for each day. The Denver office should compile all totals. This would eliminate the duplication for totaling time elements which exists as the current practice. A sample of this form is shown on enclosure 5.

6. It is recommended that territorial responsibility for each inspector be clearly delineated in order to eliminate duplication of area coverage. By clear demarcation of territorial responsibility, greater efficiency should result.
7. Electrical inspection test equipment should be standardized. The actual time for making an inspection should decrease as a result of using standard equipment and inspection procedures. In addition, training and inspection efficiency should increase.
8. It is recommended, based upon the acceptance of recommendation 7, that the State Electrical Board provide standard test equipment to the inspectors. The cost of such equipment should not be the responsibility of the individual inspector, but should be the responsibility of the State Electrical Board.
9. It is recommended that the Electrical Inspection Report and the Corrections Notice be combined into the same form. Observations during this study indicated that the Electrical Inspection Report was being used as a Corrections Notice and that the Corrections Notice was not being used. One form would increase the efficiency of inspectors by eliminating the present Corrections Notice. A sample of a recommended form is shown as enclosure 6.

It is our opinion that these recommendations will significantly improve the operations of the State Electrical Board. The times for completing permits developed in this study provide an accurate frame of reference to planning and control of inspector manning requirements.

We will be pleased to assist in the implementation of these recommendations upon your request.

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STATE OF COLORADO
DEPARTMENT OF REGULATORY AGENCIES
STATE ELECTRICAL BOARD
PERFORMANCE AUDIT

APPENDIX 4

Exemptions for Licensing

12-23-111. Exemptions. (1) Employees of public service corporations, rural electrification associations, or municipal utilities generating, distributing, or selling electrical energy for light, heat, or power, or for operating street railway systems, or telephone or telegraph systems, or their corporate affiliates and their employees or employees of railroad corporations shall not be required to hold licenses while doing electrical work for such purposes.

12-23-111. Exemptions. (2) Nothing in this article shall be construed to require any individual to hold a license before doing electrical work on his own property or residence if all such electrical work, except for maintenance, repair, or alteration of existing facilities, is inspected as provided in this article; if, however, such property or residence is intended for sale or resale by a person engaged in the business of constructing or remodeling such facilities or structures or is rental property which is occupied or is to be occupied by tenants for lodging, either transient or permanent, or is generally open to the public, the owner shall be responsible for, and the property shall be subject to, all of the provisions of this article pertaining to inspection and licensing, unless specifically exempted therein.

(3) Nothing in this article shall be construed to require any regular employee of any firm or corporation to hold a license before doing any electrical work on the property of such firm or corporation, whether or not such property is owned, leased, or rented, if the firm or corporation employing any employee performing such work shall have all such electrical work installed in conformity with the minimum standards as set forth in this article, and all such work shall be subject to inspection by the state electrical board or its inspectors by request in writing in accordance with subsection (14) of this section, and if the property of any such firm or corporation is not generally open to the public. No license for such firm or corporation, nor inspection by the state electrical board or its inspectors, nor the payment of any fees thereon shall be required, with the exception of inspection by the board or its inspectors when performed by written request. Nothing contained in this article shall be construed to require any license, any inspection by the state electrical board or its inspectors, or the payment of any fees for any electrical work performed for maintenance, repair, or alteration of existing facilities which shall be exempt as provided in this section.

(4) If any person, firm, or corporation whose property is rental property or is developed for sale, lease, or rental, or is occupied or is to be occupied by tenants for lodging, either transient or permanent, or is generally open to the public, then such property of any such person, firm, or corporation shall be subject to all the provisions of this article pertaining to inspection, except for the maintenance, repair, or alteration of existing facilities which shall be exempt as provided in this section.

(5) Nothing in this article shall be construed to cover the installation, maintenance, repair, or alteration of vertical transportation or passenger conveyors, elevators, escalators, moving walks, dumbwaiters, stagelifts, man lifts, or appurtenances thereto, beyond the terminals of the controllers. Furthermore, the licensing of elevator contractors or constructors shall not be considered a part of the licensing requirements of this article.

(6) Nothing in this article shall be construed to require any individual to hold a license before doing any maintenance, repair, or alteration of existing facilities on his own property or residence, nor to require inspection by the state electrical board or its inspectors, nor to pay any fees connected therewith. Likewise, nothing in this article shall be construed to require any firm or corporation or its regular employees to be required to hold a license before doing maintenance, repair, or alteration of existing facilities on the property of any such firm or corporation whether or not any such property is generally open to the public; nor shall inspection by the state electrical board or its inspectors nor the payment of any fees connected therewith be required.

(7) Any person may work as an apprentice or trainee working at the trade to a licensed electrician but shall not do any electrical wiring for or installation of electrical apparatus or equipment for light, heat, or power except under the direct supervision of a licensed electrician or residential wireman. The provisions of article 15 of title 8, C.R.S. 1973, shall govern the employment of all electrical apprentices and trainees working at the trade.

COLORADO

Department of Regulatory Agencies
State Electrical Board

George K. Waterhouse, Director

Room 211
201 East Colfax
Denver, CO 80203
(303) 839-3791

Richard D. Lamm, Governor
Gail H. Klapper, Executive Director

December 22, 1977

APPENDIX 5

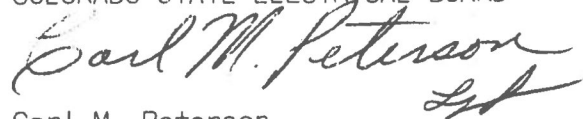
Mr. Mike Mandell
Senior State Auditor
Office of State Auditors
1200 Lincoln Street, Suite 601
Denver, Colorado 80203

Dear Mr. Mandell:

Enclosed please find the Board's response to your performance audit, as per your request. If you have any questions, please feel free to write or call.

Very truly yours,

COLORADO STATE ELECTRICAL BOARD



Carl M. Peterson
President

CMP:ew

Enclosure

Report Page Ref.	No.	STATE ELECTRICAL BOARD	See Comments	Requires Legislative Action **	Implemented*	To Be Implemented*	Deferred **	Rejected **
	1.	Amend 12-23-102 to change public at large members from three to two and licensed electricians from four to five.	*	*				
	2.	Amend 12-23-111 to better specify exemptions and to clarify wording.	*	*				
	3.	Repeal paragraph 12-23-116 (2) regarding mobile home inspections.	*	*				*
	4.	Review paragraph 12-23-111 (7) to see if such restriction is reasonable and also whether this sort of regulation is better done by Board rule.	*	*				
	5.	Repeal the Board regulation requiring registration of installers of low voltage systems.	*					*
	6.	Either change the statutory experience requirements for the masters license to comply with current Board practice or enforce the statute.	*	*				
	7.	Modify Board regulations to allow applicants to take examination before experience requirement is satisfied.	*					*
	8.	Require license renewal, at most, every three years and alter the renewal fee so that the total fees collected more closely approximate the expenses of renewal.	*	*				*
	9.	DORA should develop a policy, evidenced by written procedures, regarding the relationship between the executive director and the State Electrical Board. This policy should include, at least, a procedure for review of all Board decisions by the	*					

11/77

Report Page Ref.	No.	STATE ELECTRICAL BOARD	See Comments	Requires Legislative Action **	Implemented*	To Be Implemented*	Deferred **	Rejected **
	9.	(continued) executive director and all reviews should be properly documented.						
	10.	DORA should ensure that the statutorily required annual report is prepared.	*					
	11.	DORA should, in cooperation with the Department of Law institute the training of Board inspectors in the proper methods of collecting evidence regarding substandard performance of licensees.	*		*	11/77		
	12.	DORA should adopt procedures to provide for spot reinspections of State building projects and prepare a report in accordance with Senate Act 55.	*		*	6/77		
	13.	DORA should review the examinations prepared by the Board and participate in the administration of these examinations in accordance with the provisions of House Act 1368.	*					
	14.	DORA should develop procedures to insure that the Board is in compliance with the Sunshine Act.	*		*	10/77		
	15.	DORA should exercise closer supervision over the director of the Board in accordance with regulations of the Department of Personnel.	*					
	16.	The Board should, in the immediate future, adopt a policy of giving examinations and providing reviews at locations other than Denver.	*		*	7/77		

Report Page Ref.	No.	STATE ELECTRICAL BOARD	See Comments	Requires Legislative Action **	Imple- mented*	To Be Imple- mented*	Deferred **	Reject **
	17	The Board should equip all inspectors with standardized test equipment.	*			* 1978		
	18.	The Board should establish procedures for the training of newly hired inspectors.	*		* 10/77			
	19.	The Board should develop procedures for ascertaining that other inspecting authorities in Colorado are performing inspections in accordance with all State requirements.	*			* 1978		
	20.	The Board should develop procedures for the formal handling of complaints.	*		* 11/77			
	21.	The Legislature should appropriate adequate funds to enable the State Electrical Board to perform all required inspections.	*					
	22.	Same as Recommendation #						
	23.	The Board should develop procedures: <ul style="list-style-type: none"> . to select the inspections to be reinspected. . that specify exactly what should be done on the reinspection. . that specify how to record the results of the reinspection. . for a systematic review of the reinspections that will help to identify problems and, perhaps, suggest ways of solving these problems. 	*			* 1978		

Report age ef.	No.	STATE ELECTRICAL BOARD	See Comments	Requires Legislative Action **	Imple- mented*	To Be Imple- mented*	Deferred **	Rejected **
	24.	The Board should determine the licensure requirements for every other state and initiate discussions regarding reciprocity with states whose standards appear to be comparable with Colorado.	*					*
	25.	The Board should obtain documentation establishing the equivalence between the examinations given by states with whom Colorado has reciprocity agreements and the examinations given in Colorado.	*					

1. The Board assumes a neutral position on this item. We see no problem with either option.
2. The Board agrees with the recommendation and in the past has unsuccessfully submitted legislation to clarify this wording.
3. The Board disagrees with the recommendation and feels that all electrical inspections should be under the auspicious of the State Electrical Board.
4. The Board feels that this regulation is necessary under Statute, and that the current apprentice to journeyman ratio is fair and proper.
5. The Board disagrees with this item and feels that continued registration is necessary.
6. The Board feels that the current Board practice regarding the requirements for master licensing is proper and correct, and would agree that a Statutory change should be made to clarify this wording.
7. The Board disagrees and feels that the current practices coincide with national standards and formalized apprentice programs.
8. The Board disagrees with this item, and would recommend continuation of the Yearly renewal.
9. The Board agrees with this item and understands that steps are presently being taken to conform with this recommendation.
10. The Board agrees, when the proper funding is provided.
11. The Board agrees with this item, and it is our understanding that steps are being taken to accomplish this goal.
12. The Board agrees with this item, and it is our understanding that steps are being taken to accomplish this goal.
13. The Board agrees
14. The Board agrees, and steps have been taken to implement this procedure.
15. The Board agrees.
16. Electrical examinations are now being given on the Western Slope when the number applicants warrants it.

17. The Board agrees with this item and is asking for additional funding to provide this equipment.
18. The Board agrees.
19. The Board agrees and is preparing procedures to implement this practice when additional manpower is provided.
20. The Board agrees.
21. The Board emphatically agrees.
23. The Board agrees with this item and is preparing to implement same.
24. The Board disagrees, but does feel that it should be receptive to inquiries from other States whose standards appear to be the same as Colorado.
25. The Board agrees, but recognizes a problem that this would create, i.e., confidentiality of exam questions from other States, as well as those of Colorado. The Board also feels that it would be impractical to send a staff member to review these exams.

SOUTH ADAMS COUNTY FIRE PROTECTION DISTRICT

6550 E. 72nd Avenue
Commerce City, CO 80022
Phone 288-0835

FIRE PREVENTION BUREAU ... Don Kennerson, Fire Marshal

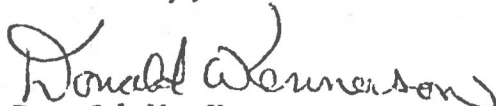
December 19, 1977

Mr. George K. Waterhouse
Executive Director
Colorado State Electrical Board
210 State Office Building
Denver, CO 80203

Dear George:

Enclosed are my comments on the Sunset review survey. If
you need anything else, just give ma a call.

Sincerely,


Donald W. Kennerson
District Fire Marshal

DWK:kk

SOUTH ADAMS COUNTY FIRE PROTECTION DISTRICT

6550 E. 72nd Avenue
Commerce City, CO 80022
Phone 298-0835

FIRE PREVENTION BUREAU ... Don Kennerson, Fire Marshal

COMMENTS ON SUNSET REVIEW

1. I feel present Board make-up to be adequate and functioning well. Members-at-large bring other areas of expertise to the complexion of the Board.
2. Agree.
3. I feel that because of recent problems regarding electrical wiring in mobile homes that the Board should be providing this service.
4. Agree.
5. Because of the complexities of this type of wiring, I feel it necessary for the Board to control it.
6. Agree.
7. Agree.
8. Agree.
9. Agree.
10. Agree.
11. Totally agree.
12. Agree.
13. Agree.
14. Agree.
15. Agree.
16. Agree, but need funds to provide this service.
17. Agree, already in progress.
18. Totally agree.
19. Totally agree.
20. Agree.
21. Totally agree.
22. Agree
23. Agree.

Page Ref.	No.	STATE ELECTRICAL BOARD	See Comments	Legislative Action **	Imple-mented*	Imple-mented*	Deferred **	Rejecte- **
	1.	Amend 12-23-102 to change public at large members from three to two and licensed electricians from four to five.						X
	2.	Amend 12-23-111 to better specify exemptions and to clarify wording.	X					
	3.	Repeal paragraph 12-23-116 (2) regarding mobile home inspections.						X
	4.	Review paragraph 12-23-111 (7) to see if such restriction is reasonable and also whether this sort of regulation is better done by Board rule.	X					
	5.	Repeal the Board regulation requiring registration of installers of low voltage systems.						X
	6.	Either change the statutory experience requirements for the masters license to comply with current Board practice or enforce the statute.	X					
	7.	Modify Board regulations to allow applicants to take examination before experience requirement is satisfied.	X					
	8.	Require license renewal, at most, every three years and alter the renewal fee so that the total fees collected more closely approximate the expenses of renewal.	X					
	9.	DORA should develop a policy, evidenced by written procedures, regarding the relationship between the executive director and the State Electrical Board. This policy should include, at least, a procedure for review of all Board decisions by the						

Page Ref.	No.	STATE ELECTRICAL BOARD	See Comments	Requires Legislative Action **	Implemented*	To Be Implemented*	Deferred **	Reject **
	9.	(continued) executive director and all reviews should be properly documented.	X					
	10.	DORA should ensure that the statutorily required annual report is prepared.	X					
	11.	DORA should, in cooperation with the Department of Law institute the training of Board inspectors in the proper methods of collecting evidence regarding substandard performance of licensees.	X					
	12.	DORA should adopt procedures to provide for spot reinspections of State building projects and prepare a report in accordance with Senate Act 55.	X					
	13.	DORA should review the examinations prepared by the Board and participate in the administration of these examinations in accordance with the provisions of House Act 1368.	X					
	14.	DORA should develop procedures to insure that the Board is in compliance with the Sunshine Act.	X					
	15.	DORA should exercise closer supervision over the director of the Board in accordance with regulations of the Department of Personnel.	X					
	16.	The Board should, in the immediate future, adopt a policy of giving examinations and providing reviews at locations other than Denver.	X					

Port age of.	No.	STATE ELECTRICAL BOARD	See Comments	Requires Legislative Action **	Imple- mented*	To Be Imple- mented*	Deferred **	Rejected **
	17	The Board should equip all inspectors with standardized test equipment.	X					
	18.	The Board should establish procedures for the training of newly hired inspectors.	X					
	19.	The Board should develop procedures for ascertaining that other inspecting authorities in Colorado are performing inspections in accordance with all State requirements.	X					
	20.	The Board should develop procedures for the formal handling of complaints.	X					
	21.	The Legislature should appropriate adequate funds to enable the State Electrical Board to perform all required inspections.	X					
	22.	Same as Recommendation #	X					
	23.	The Board should develop procedures: <ul style="list-style-type: none"> . to select the inspections to be reinspected. . that specify exactly what should be done on the reinspection. . that specify how to record the results of the reinspection. . for a systematic review of the reinspections that will help to identify problems and, perhaps, suggest ways of solving these problems. 	X					

Recommendations		(*Include Date)		(**If checked-explain in comments)				
rt e .	No.	STATE ELECTRICAL BOARD	See Comments	Requires Legislative Action **	Imple- mented*	To Be Imple- mented*	Deferred **	Rejected **
	24.	The Board should determine the licensure requirements for every other state and initiate discussions regarding reciprocity with states whose standards appear to be comparable with Colorado.						
	25.	The Board should obtain documentation establishing the equivalence between the examinations given by states with whom Colorado has reciprocity agreements and the examinations given in Colorado.						



DEPARTMENT OF REGULATORY AGENCIES

116 STATE SERVICES BUILDING • 1525 SHERMAN STREET
DENVER, COLORADO 80203 • TELEPHONE 303/892-3304

STATE OF COLORADO
RICHARD D. LAMM
GOVERNOR

GAIL H. KLAPPER
EXECUTIVE DIRECTOR

ROBERT E. BROOKS
DEPUTY DIRECTOR

MEMORANDUM

TO: Bob Scott, State Auditor
State of Colorado

FROM: Gail H. Klapper, Executive Director
Department of Regulatory Agencies *Gail H. Klapper*

SUBJECT: Comments on the Performance Audit of the Electrical Board

DATE: December 20, 1977

We disagree that the Electrical Board should return to a type 1 transfer status. Accountability and agency performance are two criteria, among others, for determining a transfer type; we feel it is inappropriate to make a change back to a type 1 transfer merely for the sake of consistency. Moreover, we think that the shortcomings of the Electrical Board are better remedied through continuation of the type 2 status than through reinstating the total autonomy of the Board.

COMMENTS TO SPECIFIC RECOMMENDATIONS

- | No. | Comment |
|-----|---|
| 1. | <u>Disagree.</u> To increase the number of electricians from four to five members does not appreciably affect the technical expertise of the Board, but it does reduce significantly the potential for input from the public. |
| 2. | <u>Agree.</u> Rewrite and clarify exemption sections of the statute. |
| 3. | <u>Disagree.</u> Defer comment. |
| 4. | <u>Agree.</u> Reconsider the one-to-one requirement. |
| 5. | <u>Agree.</u> Repeal registration requirement and investigate the feasibility of licensing installers of low voltage systems. |
| 6. | <u>Agree.</u> Statutes should be changed to require one year experience in planning, layout, and supervision for a master electrician beyond the journeyman requirement. |
| 7. | <u>Agree.</u> Only so far as the period of time between the bi-monthly examinations is concerned. |

8. Agree in part. We feel that it is important that revenue generated by the Electrical Board through licensing and inspection fees be sufficient to meet the total cost of regulation. If licenses are renewed on less than an annual basis, it may necessitate a fee increase.
9. Agree. Procedures and policy have been developed; however, they have not been reduced to writing.
10. Agree. Proper funding is required.
11. Agree. The training is being implemented in the field so as not to hamper the ongoing inspection process.
12. Agree. We are in the process of developing procedures to comply with Senate Act 55.
13. Agree. DORA has had an ongoing review through its staff representative, the Director of the Electrical Board. The Executive Director of DORA is now directly involved in reviewing the examination activities of the Board.
14. Agree. DORA in conjunction with the Attorney General's office, is now in the process of implementing a uniform notification schedule for all Departmental boards and commissions.
15. Agree. DORA has implemented an ongoing employee appraisal plan.
16. Agree. The Board has a policy of conducting examinations in locations outside the Denver area. Examinations have been conducted twice in the last six months in Grand Junction, but the implementation of this policy is constrained by financial limitations. We agree that reviews should be provided in these areas, but the same financial limitations exist.
17. Agree. This will be implemented when money is available.
18. Agree. Although no formal procedures have been instituted, a detailed inspection procedures manual has been prepared. On-the-job training will be given to all new inspectors.
19. Agree. This requires sufficient manpower and a clarification of statutes.
20. Agree. The Electrical Board has begun to coordinate its complaint process with the centralized complaint section in the Executive Director's office.
21. Agree.
22. Agree.
23. Agree. However current allocated FTE is insufficient to implement these procedures.

24. Disagree. The Board does not have adequate staffing capability to initiate reciprocity agreements and maintain an updating service to ensure that each state maintains standards equivalent to Colorado. The Board does have the capability of responding to requests by other states. Through the use of temporary permits, out-of-state electricians with sufficient experience are allowed to work before the next examination.
25. Agree in principle. It is difficult in practice because of confidentiality requirements which render most states reluctant to distribute their exams to us.

Report Page Ref.	No.	STATE ELECTRICAL BOARD	See Comments	Legislative Action **	Imple- mented*	Imple- mented*	Deferred **	Rejecte **
	1.	Amend 12-23-102 to change public at large members from three to two and licensed electricians from four to five.		XX				XX
	2.	Amend 12-23-111 to better specify exemptions and to clarify wording.		XX				
	3.	Repeal paragraph 12-23-116 (2) regarding mobile home inspections.						XX
	4.	Review paragraph 12-23-111 (7) to see if such restriction is reasonable and also whether this sort of regulation is better done by Board rule.		XX				
	5.	Repeal the Board regulation requiring registration of installers of low voltage systems.	XX					
	6.	Either change the statutory experience requirements for the masters license to comply with current Board practice or enforce the statute.		XX				
	7.	Modify Board regulations to allow applicants to take examination before experience requirement is satisfied.	XX					
	8.	Require license renewal, at most, every three years and alter the renewal fee so that the total fees collected more closely approximate the expenses of renewal.		XX				
	9.	DORA should develop a policy, evidenced by written procedures, regarding the relationship between the executive director and the State Electrical Board. This policy should include, at least, a procedure for review of all Board decisions by the	XX					

(continued)

Report Page Ref.	No.	STATE ELECTRICAL BOARD	See Comments	Requires Legislative Action **	Imple- mented*	Imple- mented*	Deferred **	Rejected **
	9.	(continued) executive director and all reviews should be properly documented.						
	10.	DORA should ensure that the statutorily required annual report is prepared.	XX					
	11.	DORA should, in cooperation with the Department of Law institute the training of Board inspectors in the proper methods of collecting evidence regarding substandard performance of licensees.	XX			1/78		
	12.	DORA should adopt procedures to provide for spot reinspections of State building projects and prepare a report in accordance with Senate Act 55.	XX			1/78		
	13.	DORA should review the examinations prepared by the Board and participate in the administration of these examinations in accordance with the provisions of House Act 1368.	XX		12/77			
	14.	DORA should develop procedures to insure that the Board is in compliance with the Sunshine Act.	XX			12/77		
	15.	DORA should exercise closer supervision over the director of the Board in accordance with regulations of the Department of Personnel.	XX			12/77		
	16.	The Board should, in the immediate future, adopt a policy of giving examinations and providing reviews at locations other than Denver.	xx			7/77 and 12/77		

Port No. f.	Recommendations	See Comments	Requires Legislative Action **	Imple- mented*	To Be Imple- mented*	Deferred **	Rejected **
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18.	The Board should establish procedures for the training of newly hired inspectors.	XX		12/77			
19.	The Board should develop procedures for ascertaining that other inspecting authorities in Colorado are performing inspections in accordance with all State requirements.		XX		X		
20.	The Board should develop procedures for the formal handling of complaints.	XX		11/77			
21.	The Legislature should appropriate adequate funds to enable the State Electrical Board to perform all required inspections.						
22.	Same as Recommendation #						
23.	The Board should develop procedures: <ul style="list-style-type: none"> . to select the inspections to be reinspected. . that specify exactly what should be done on the reinspection. . that specify how to record the results of the reinspection. . for a systematic review of the reinspections that will help to identify problems and, perhaps, suggest ways of solving these problems. 	XX					

Recommendations		(*Include Date)		(**If checked-explain in comments)			
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24.	The Board should determine the licensure requirements for every other state and initiate discussions regarding reciprocity with states whose standards appear to be comparable with Colorado.						XX
25.	The Board should obtain documentation establishing the equivalence between the examinations given by states with whom Colorado has reciprocity agreements and the examinations given in Colorado.	XX					