

STATE OF FLORIDA  
DIVISION OF ADMINISTRATIVE HEARINGS

ALEJANDRO SOLORZANO, )  
 )  
 Petitioner, )  
 )  
 vs. ) Case No. 99-4731  
 )  
 DEPARTMENT OF BUSINESS AND )  
 PROFESSIONAL REGULATION, FLORIDA )  
 ENGINEERS MANAGEMENT CORPORATION, )  
 )  
 Respondent. )  
 \_\_\_\_\_ )

RECOMMENDED ORDER

Pursuant to notice, a formal hearing was held in this case on April 28, 2000, at Miami and Tallahassee, Florida, by video teleconference before Susan B. Kirkland, a designated Administrative Law Judge of the Division of Administrative Hearings.

APPEARANCES

For Petitioner: Alejandro Solorzano, pro se  
6675 Southwest 103 Court  
Miami, Florida 33173

For Respondent: William H. Hollimon, Esquire  
Ausley & McMullen  
227 South Calhoun Street  
Tallahassee, Florida 32301

STATEMENT OF THE ISSUE

Whether Petitioner is entitled to additional credit for his responses to Questions 132 and 294 of the Principles & Practice of Engineering portion of the engineering licensure examination

administered on April 23, 1999, by the National Council of Examiners for Engineers and Surveyors (the NCEES).

PRELIMINARY STATEMENT

On October 25, 1999, Petitioner, Alejandro Solorzano (Solorzano) filed a request for an administrative hearing with Respondent, Department of Business and Professional Regulation, Florida Engineers Management Corporation (Department), challenging the grade that he received on the Electrical Engineering Examination that was given on April 23, 1999. The case was forwarded to the Division of Administrative Hearings for assignment to an Administrative Law Judge.

The case was scheduled for final hearing on February 21, 2000, by video teleconference. The final hearing was commenced, but was unable to be concluded because of difficulty with the video equipment. The final hearing was rescheduled for April 28, 2000.

At the final hearing Solorzano testified in his own behalf and submitted no exhibits. The Department called Joseph Alan Lane as its expert witness and submitted Respondent's Exhibits 1-14, which were admitted in evidence. Respondent's Exhibits 7-10 were confidential test materials and were sealed.

The parties agreed to file proposed recommended orders within ten days of the filing of the Transcript, which was filed on May 15, 2000. Petitioner did not file a proposed recommended order. On May 22, 2000, Respondent filed its proposed

recommended order, which has been considered in the rendering of this Recommended Order.

#### FINDINGS OF FACT

1. On April 23, 1999, Solorzono sat for the Principles and Practice Engineering Examination in electrical engineering. This national examination is developed, controlled, and administered by the NCEES.

2. The examination candidates receive raw scores, which result in a converted score for the final examination score. A minimum converted score of 70 is required to pass the examination. A raw score of 48 equates to a converted score of 70.

3. Solorzano received a raw score of 45, resulting in a converted score of 67. If a candidate is not satisfied with his examination score, he may request the NCEES to review and rescore his examination answers. Solorzano formally requested the NCEES to rescore his examination. Upon rescoring, the NCEES determined that Solozano's raw score should be decreased to 43.

4. The examination questions at issue in this proceeding are Questions 132 and 294. Solorzano received a raw score of 4 on Question 132 and a raw score of 4 on Question 294. When the NCEES rescored the examination, it did not award any additional points for Question 132 and deducted two points for Question 294.

5. The NCEES develops an item-specific scoring plan (ISSP) for each examination question. Question 132 was scored by the

NCEES according to the ISSP for that question.

6. Question 132 contains three subparts, which require the examinee to address five discrete requirements:

(1) The problem solution as a three-phase problem, (2) The total MW, MVAR, and MVA of the load without the capacitor bank, (3) The size of the capacitor bank in kVAR to make the power factor equal to 0.9 lagging, (4) The complex power diagrams with and without the capacitor bank (MW same for both diagrams and correct phasor directions for both diagrams), (5) The MVA load with the capacitor bank connected.

7. Solozano correctly identified the problem as a three-phase power problem and satisfied the first requirement.

8. Solozano incorrectly calculated the MW, MVAR, and MVA, the real power, the imaginary power, and complex power for the load on the transformer without the capacitor bank. He failed to apply the correct concepts for "Y" transformer as given in the problem statement and based his solution on the concepts for "Delta" transformer. Solorzano failed to satisfy the second requirement.

9. Even though Solorzano's calculations carried through his error from the second requirement, he showed understanding of correcting the power factor and performed a correct analysis to size the capacitor bank. Solorzano satisfied the third requirement.

10. Solorzano made a significant conceptual error by showing an incorrect vector direction for the calculated Q value. He showed a negative polarity for the Q component when it should

have been positive. Solorzano failed to satisfy the fourth requirement.

11. In calculating the real complex power load on the transformer, with the capacitor bank connected, Solorzano used an incorrect concept, simply subtracting the load with the capacitor bank from the transformer's rating. He failed to satisfy the fifth requirement.

12. Having satisfied only two of the five requirements for Question 132, Solorzano is entitled to a raw score of 4 for Question 132.

13. Question 294 requires the examinee to address the following five requirements:

1. Correct truth table for 0-9 with at most one error.
2. Correct truth table for 10-15.
3. Map or table showing correct values for  $w,0,1$  entries.
4. Correct assignment for  $w,0,1$  entries to circuit with at most 1 error and no  $x,y,z$  entries.
5. Correct polarity for truth table and circuit for  $w,0,1$  (requires correct circuit values).

14. Solorzano constructed a truth table for 0-9 with one mistake for polarity. He fulfilled the first requirement.

15. Solorzano failed to complete the truth table for 10-15, arguing that the 10-15 segments were not used; therefore, it was not necessary to construct a truth table. The second requirement calls for the construction of a truth table for 10-15. It is necessary for a complete truth table to ensure that the output

for segment E is not affected by an input beyond 9. He failed to meet the second requirement.

16. Solorzano made a conceptual error by reversing the most significant bit and least significant bit, resulting in his failure to map a table showing correct values for judging zero and one. He failed to satisfy the third requirement.

17. In his development of the fourth requirement, Solorzano carried through an earlier error. However, he correctly utilized the incorrect information, satisfying the fourth requirement.

18. Requirement five called for the correct circuit values. Because Solorzano had used the incorrect polarity throughout his solution, he failed to meet the fifth requirement.

19. Solorzano satisfied two of the five requirements for Question 294; thus, he is entitled to a raw score of 45.

20. Questions 132 and 294, with their problem statements, provide all the necessary information necessary for an examinee to solve the problems. The questions are properly designed to test an examinee's competence in electrical engineering.

21. Solorzano is entitled to a raw score of 45, equating to a converted score of 67.

#### CONCLUSIONS OF LAW

22. The Division of Administrative Hearings has jurisdiction over the parties to and the subject matter of this proceeding. Section 120.57(1), Florida Statutes.

23. As a petitioner challenging examination questions,

Solorzano has the burden to establish that the scoring of the challenged questions was arbitrary or otherwise improper or erroneous. See Harac v. Department of Professional Regulation, Board of Architecture, 484 So. 2d 1333 (Fla. 3d DCA 1986).

24. Section 471.015(1), Florida Statutes, provides that the Department shall license any applicant who is qualified to practice engineering and who has passed the examination. Rule 61G15-21.004, Florida Administrative Code, requires that the applicant score a minimum of 70 on the electrical engineering examination in order to pass the examination.

25. Solorzano has not established that he is entitled to more than a raw score of 4 for Question 132 and a raw score of 4 for Question 294. He has not established that he is entitled to receive a converted score of at least 70; thus, he has failed to demonstrate that he has passed the electrical engineering examination.

#### RECOMMENDATION

Based on the foregoing Findings of Fact and Conclusions of Law, it is RECOMMENDED that a final order be entered finding that Solorzano is entitled to a converted score of 67 on the electrical engineering examination given on April 23, 1999, and has failed the examination.

DONE AND ENTERED this 6th day of June, 2000, in Tallahassee, Leon County, Florida.

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SUSAN B. KIRKLAND  
Administrative Law Judge  
Division of Administrative Hearings  
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Filed with the Clerk of the  
Division of Administrative Hearings  
this 6th day of June, 2000.

COPIES FURNISHED:

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NOTICE OF RIGHT TO SUBMIT EXCEPTIONS

All parties have the right to submit written exceptions within 15 days from the date of this Recommended Order. Any exceptions to this Recommended Order should be filed with the agency that will issue the Final Order in this case.