

September 14, 2006

Mail Stop 4561

John V. Moran
Chief Executive Officer
GSE Systems, Inc.
7133 Rutherford Road, Suite 200
Baltimore, MD 21244

Re: **GSE Systems, Inc.**
Registration Statement on Form S-3/A
Filed on August 31, 2006
File No. 333-134569

Form 10-KSB for the year ended December 31, 2005, as amended
Forms 10-QSB for the quarters ended March 31, 2006 and June 30, 2006
File No. 1-14785

Dear Mr. Moran:

We have reviewed the above-referenced filing and response letter dated August 31, 2006 and have the following additional comments.

Form S-3

Prospectus Summary

Recent Developments, page 2

1. On page 2, you refer to the formation of Emirates Simulation Academy, LLC and to a contract award with that entity that was announced in January 2006. You indicate that GSE holds a ten percent interest in ESA, and that a contract with GSA accounted for 12.6% of your consolidated revenues for June 30, 2006. We are unable to find the contract among the exhibits to your Form 10-K for 2005 or subsequent Forms 10-Q. It appears that this agreement should be filed to conform to the requirements of paragraphs (b)(10)(i) and (b)(10)(ii)(B) of Item 601 of Regulation S-K. Accordingly, please file that agreement in an amendment to an appropriate periodic report, or advise us in detail concerning the basis of any belief that the agreement is not required to be filed. Provide us with a copy of the

agreement, in the event you have not filed it before your next amendment to the registration statement.

2. In your response letter tell us who holds the 90% interest in ESA that is not owned by GSE and indicate the nature of any affiliation between any of the holders of that 90% interest and affiliates of GSE. Please review the descriptive information concerning this agreement on page 2 of the prospectus and ensure that the description of the rights and obligations of the parties under this agreement is materially complete. Explain what is meant by the reference to a “contract valued at over \$15 million”. State whether this is the minimum contract payment that ESA has agreed to pay GSE upon GSE’s performance under the contract. If some portion of the \$15 million is to be paid to someone other than GSE, clarify this, and if the contract payments may vary from the \$15 million, explain the circumstances in which the variance would occur and quantify the potential extent of the variance.
3. Item 13 of the Form 10-K/A filed on May 1, 2006 does not contain disclosure concerning the related party agreement between ESA and GSE. Please explain why in your response letter. In this respect, it appears that a materially complete discussion of the agreement would be necessary to provide disclosure responsive to Item 404 of Regulation S-K. We note the apparent significance of this arrangement to the business and financial position of GSE, and that the agreement appears to have been entered into prior to the filing of the Form 10-K as well as the filing of the Form 10-K/A. Additionally, we note that the text of Item 404 refers to “transactions since the beginning of the registrant’s last fiscal year” which would be the period beginning January 1, 2005.

Description of the February 27, 2006 Offering, page 2

4. The sections of the prospectus summary that begin with the heading “Description of the February 27, 2006 Offering” are too detailed for a summary, which must satisfy the requirements of Rule 421(d). Please summarize the most significant information in the summary, and move the detailed descriptions to an appropriately captioned section of the body of the prospectus. As indicated in the prior comments, it appears that the detailed information concerning transactions with the selling security holders should be presented near the Selling Security Holder section.

Risk Factors, page 6

5. Revise the final paragraph of the first risk factor to state the dollar amount needed for you to fund anticipated operations for a minimum period of 12 months from the desired effective date of your filing. Stating that you have enough capital for the remaining three months of 2006 is not a meaningful or sufficient description

John V. Moran
GSE Systems, Inc.
September 14, 2006
Page 3

of your current liquidity position, nor does it provide quantitative information concerning your needs during the immediate future, which should be a 12-month period, at a minimum.

Risk of International Sales and Operations, page 7

6. Tell us whether you have any written agreements with Battelle. We note that Batelle's Pacific Northwest Laboratory has been a principal customer of GSE in each of the past three fiscal years. If you have an agreement with Batelle, provide your analysis supporting your determination that the agreement need not be filed as a material contract to respond to Item 601 of Regulation S-K. Note that agreements upon which you are substantially dependant generally must be provided, even if those contracts concern the ordinary business of a filer.

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As appropriate, please amend your filings in response to these comments. With respect to the comments on the periodic reports, your response should be provided as soon as possible and not later than September 28, 2006.

If you have any questions you may contact me at (202) 551-3462 or in my absence Barbara C. Jacobs, Assistant Director at (202) 551-3730.

Sincerely,

Mark P. Shuman
Branch Chief—Legal

cc: James R. Hagerty and Valerie Pelton
Facsimile: (202) 223-6625