

STATE OF FLORIDA AUDITOR GENERAL

Information Technology Operational Audit

Report No. 2016-025
October 2015

**NORTH EAST FLORIDA EDUCATIONAL
CONSORTIUM**

Educational Technology Services



Sherrill F. Norman, CPA
Auditor General

North East Florida Educational Consortium Board of Directors and Executive Director

The North East Florida Educational Consortium (NEFEC) is governed by a Board of Directors (Board) composed of representatives from its member districts. The Board selects an Executive Director who is responsible for the daily operations of NEFEC.

The NEFEC Board of Directors and Executive Director who served during the period of our audit are listed below:

Representative	Member District
Sherrie Raulerson, Superintendent	Baker County District School Board
Chad Farnsworth, Superintendent	Bradford County District School Board
Terry L. Huddleston, Superintendent	Columbia County District School Board
Mark A. Rains, Superintendent	Dixie County District School Board
Jacob Oliva, Superintendent	Flagler County District School Board
Dr. Jeanne Glidden Prickett, President	Florida School for the Deaf and the Blind
Robert G. Rankin, Superintendent	Gilchrist County District School Board
Thomas P. Moffses, Jr., Superintendent	Hamilton County District School Board
Robert Edwards, Superintendent	Lafayette County District School Board
Robert O. Hastings, Superintendent	Levy County District School Board
Dr. John L. Ruis, Ed.D., Superintendent	Nassau County District School Board
Dr. Lynda Fender Hayes, Director	P. K. Yonge Developmental Research School
Phyllis Criswell, Superintendent	Putnam County District School Board
Jerry A. Scarborough, Superintendent	Suwannee County District School Board
Carlton Faulk, Superintendent	Union County District School Board

Dr. James Surrency, Executive Director

The team leader was Benjamin Ho and the audit was supervised by Chris Gohlke, CPA, CISA.

Please address inquiries regarding this report to Arthur Hart, CPA, Audit Manager, by e-mail at arthart@aud.state.fl.us or by telephone at (850) 412-2923.

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NORTH EAST FLORIDA EDUCATIONAL CONSORTIUM

Educational Technology Services

SUMMARY

The North East Florida Educational Consortium (NEFEC) is a regional, nonprofit, educational service agency composed of 15 member districts. NEFEC was established to provide cooperative services to its member districts including data center services (referred to as Educational Technology Services [ETS]).

This operational audit focused on evaluating selected information technology (IT) controls applicable to NEFEC ETS. As summarized below, the audit disclosed areas in which improvements in NEFEC ETS controls and operational processes were needed.

Finding 1: NEFEC ETS environmental controls needed improvement to better ensure that computer equipment and services are not adversely impacted in the event of an environmental hazard.

Finding 2: NEFEC ETS disaster recovery planning needed improvement to reduce the risk of critical operations being compromised in the event of an actual disaster or other interruption in business operations.

BACKGROUND

The North East Florida Educational Consortium (NEFEC) is an auxiliary operation of the Putnam County District School Board and is a regional, nonprofit, educational service agency composed of 15 member districts. NEFEC is governed by a Board of Directors composed of representatives from its member districts. NEFEC provides programs and services, such as employee health benefits, online certifications, risk-management programs, and data center services (referred to as Educational Technology Services [ETS]). NEFEC ETS provides a variety of data center services including hardware and software hosting, application support, disaster recovery, and data and system backups. Of the 15 NEFEC member districts, 12 use NEFEC ETS as shown in **Table 1**.

Table 1
Member Districts

Baker County District School Board*	Lafayette County District School Board*
Bradford County District School Board	Levy County District School Board*
Columbia County District School Board*	Nassau County District School Board
Dixie County District School Board*	P. K. Yonge Developmental Research School*
Flagler County District School Board*	Putnam County District School Board*
Florida School for the Deaf and the Blind*	Suwannee County District School Board
Gilchrist County District School Board*	Union County District School Board*
Hamilton County District School Board*	

* District utilizes NEFEC ETS.

FINDINGS AND RECOMMENDATIONS

Finding 1: Environmental Controls

Environmental controls help mitigate or prevent potential damage to computer equipment or interruption of services in the event of an environmental hazard, such as fire or water leakage, and include the use of items such as fire extinguishers, automated fire suppression systems, and water detectors. Our review of NEFEC ETS environmental controls disclosed that, while the NEFEC ETS data center had multiple fire extinguishers, there was no automated fire suppression system in place. Additionally, the NEFEC ETS data center did not have water detectors. Without appropriate environmental controls in place to help mitigate or prevent potential damage to computer equipment or interruption in services, the risk is increased that computer equipment may be damaged or services may be adversely impacted in the event of an environmental hazard.

Recommendation: NEFEC ETS management should improve environmental controls to reduce the adverse impact of environmental hazards on computer equipment and services.

Finding 2: Disaster Recovery Planning

The availability and reliability of the NEFEC ETS computing infrastructure is critical to the successful operation of its member districts. Effective information technology (IT) controls include a comprehensive written disaster recovery plan that helps ensure the business continuity of critical operations in the event of a disaster or other interruption in business operations. The disaster recovery plan should be tested periodically and the results documented and evaluated to determine changes that may be needed to facilitate proper conduct in the event of an actual disaster or other interruption in business operations. The disaster recovery plan should also identify an alternate processing facility for recovery purposes that is geographically separated by distance from the primary processing facility so as not to be susceptible to the effects of a disaster or interruption affecting the primary processing facility's geographical area.

NEFEC ETS management developed and tested a written disaster recovery plan for the restoration of critical NEFEC ETS processing functions. However, the plan lacked appropriate documentation requirements for the disaster recovery test, including an evaluation of changes needed as a result of the test to ensure that the plan functions as intended in the event of an actual disaster or other interruption in business operations. Additionally, the NEFEC ETS alternate processing facility for recovery purposes was not geographically separated by distance from the NEFEC ETS primary processing facility. Without appropriate disaster recovery test documentation and evaluation requirements and an alternate processing facility geographically separated by distance from the primary processing facility, the risk is increased that the continuity of critical operations may be compromised in the event of an actual disaster or other interruption in business operations.

Recommendation: NEFEC ETS management should improve the written disaster recovery plan by developing disaster recovery test documentation and evaluation requirements to ensure that the plan functions as intended in the event of a disaster or other interruption in business operations. Additionally, to provide reasonable assurance of continuing critical operations in the event of a disaster or other interruption affecting the primary processing facility's geographical

area, NEFEC ETS management should identify an alternate processing facility that is geographically separated by distance from the primary processing facility.

OBJECTIVES, SCOPE, AND METHODOLOGY

The Auditor General conducts operational audits of governmental entities to provide the Legislature, Florida's citizens, public entity management, and other stakeholders unbiased, timely, and relevant information for use in promoting government accountability and stewardship and improving government operations.

We conducted this IT operational audit from April 2015 through July 2015 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for the audit findings and our conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for the audit findings and our conclusions based on our audit objectives.

This IT operational audit focused on evaluating selected IT controls applicable to NEFEC ETS during the period April 2015 through June 2015. The overall objectives of the audit were:

- To determine the effectiveness of selected IT controls in achieving management's control objectives in the categories of compliance with controlling laws, administrative rules, and other guidelines; the confidentiality, integrity, availability, relevance, and reliability of data; and the safeguarding of IT resources.
- To identify statutory and fiscal changes that may be recommended to the Legislature pursuant to Section 11.45(7)(h), Florida Statutes.

This audit was designed to identify, for NEFEC ETS systems and controls included within the scope of the audit, deficiencies in management's internal controls; instances of noncompliance with applicable governing laws, rules, or contracts; and instances of inefficient or ineffective operational policies, procedures, or practices. The focus of this audit was to identify problems so that they may be corrected in such a way as to improve government accountability and efficiency and the stewardship of management. Professional judgment has been used in determining significance and audit risk and in selecting the particular IT controls, legal compliance matters, and records considered.

As described in more detail below, for NEFEC ETS systems and controls included within the scope of this audit, our audit work included, but was not limited to, communicating to management and those charged with governance the scope, objectives, timing, overall methodology, and reporting of the audit; obtaining an understanding of NEFEC ETS systems and controls; exercising professional judgment in considering significance and audit risk in the design and execution of the research, interviews, tests, analyses, and other procedures included in the audit methodology; obtaining reasonable assurance of the overall sufficiency and appropriateness of the evidence gathered in support of the audit findings and our conclusions; and reporting on the results of the audit as required by governing laws and auditing standards.

This audit included the selection and examination of NEFEC ETS system controls and records. Unless otherwise indicated in this report, these items were not selected with the intent of statistically projecting the results, although we have presented for perspective, where practicable, information concerning relevant population value or size and quantifications relative to the items selected for examination.

An audit by its nature does not include a review of all records and actions of agency management, staff, and contractors and, as a consequence, cannot be relied upon to identify all instances of noncompliance, fraud, abuse, or inefficiency.

In conducting this audit, we:

- Interviewed NEFEC ETS staff.
- Obtained an understanding of NEFEC ETS business processes related to contracting with member districts for services.
- Obtained an understanding of physical access controls at NEFEC ETS, environmental safeguards, and the NEFEC ETS disaster recovery process, including backup procedures protecting IT resources.
- Obtained an understanding of NEFEC ETS background screening controls and related processes.
- Observed and evaluated the effectiveness of physical access controls to NEFEC ETS.
- Observed and evaluated the effectiveness of NEFEC ETS environmental safeguards in place to protect IT resources.
- Observed and evaluated the effectiveness of disaster recovery planning and testing and controls in place for the continuity of NEFEC ETS operations, including proper tape backup and rotations and provisions for an off-site backup facility.
- Evaluated the appropriateness of physical access to NEFEC ETS. Specifically, we tested documentation for all NEFEC ETS staff who had access to the data center as of May 11, 2015, to determine whether the staff had appropriate physical access and authorizations.
- Evaluated the effectiveness of background screening controls as of May 11, 2015, to ensure that NEFEC ETS management performed and periodically updated background screenings for all NEFEC ETS staff who are able to access member district IT resources.
- Communicated on an interim basis with applicable officials to ensure the timely resolution of issues involving controls and noncompliance.
- Performed various other auditing procedures, including analytical procedures, as necessary, to accomplish the objectives of the audit.
- Prepared and submitted for management response the findings and recommendations that are included in this report and which describe the matters requiring corrective actions. Management's response is included in this report under the heading **MANAGEMENT'S RESPONSE**.

AUTHORITY

Section 11.45, Florida Statutes, provides that the Auditor General may conduct audits of the IT programs, activities, functions, or systems of any governmental entity created or established by law. Pursuant to the provisions of Section 11.45, Florida Statutes, I have directed that this report be prepared to present the results of our IT operational audit.



Sherrill F. Norman, CPA
Auditor General

MANAGEMENT'S RESPONSE



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Board of directors:

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Baker

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Executive Director

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October 16, 2015

Sherrill F. Norman, CPA
Auditor General

Dear Ms. Norman:

Please find enclosed the North East Florida Educational Consortium's written response to preliminary and tentative audit findings received by our office on September 29, 2015, resulting from the information technology operational audit.

Please feel free to contact us if you need any additional information.

Sincerely,

Dr. James A. Surrency
Executive Director, NEFEC

JAS/bp

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DATE: October 13, 2015

TO: Sherrill F. Norman, CPA
Auditor General

FROM: Dr. Jim Surrency, Executive Director
North East Florida Educational Consortium
3841 Reid Street
Palatka, Florida 32177

RE: Response to Preliminary and Tentative Audit Findings

As summarized below, the audit disclosed areas in which improvements in NEFEC ETS controls and operational processes were needed.

Finding 1: NEFEC ETS environmental controls needed improvement to better ensure that computer equipment and services are not adversely impacted in the event of an environmental hazard.

Recommendation: NEFEC ETS management should improve environmental controls to reduce the adverse impact of environmental hazards on computer equipment and services.

Response: While the NEFEC ETS data center has multiple fire extinguishers, there is not an automated fire suppression system in place. Additionally, the NEFEC ETS data center did not have water/flood detectors. The NEFEC ETS Operations Staff acknowledges that there is not an automated fire suppression system in place in the data center, however, they feel the risk of a conventional water-based suppression system will cause a much higher risk to equipment, data, and personnel (e.g. electrocution). Alternative systems will be investigated that use gas or powder as a fire suppression system, but cost will be a hindrance. The team is looking at purchasing sensors that are capable of detecting water, and can be easily added to our current data center control and warning systems. Purchase will be made by December 31, 2015.

Finding 2: NEFEC ETS disaster recovery planning needed improvement to reduce the risk of critical operations being compromised in the event of an actual disaster or other interruption in business operations.

Recommendation: NEFEC ETS management should improve the written disaster recovery plan by developing disaster recovery test documentation and evaluation requirements to ensure that the plan functions as intended in the event of a disaster or other interruption in business operations. Additionally, to provide reasonable assurance of continuing critical operations in the event of a disaster or other interruption affecting the primary processing facility's geographical area, NEFEC ETS management should identify an alternate processing facility that is geographically separated by distance from the primary processing facility.

Response: The NEFEC ETS data center will improve the disaster recovery plan by

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expanding filed documentation of the disaster recovery test and procedures to evaluate the validity of the test results. If any changes are needed, the committee will go through the ITIL procedures to update the disaster recovery document. A form will be created to standardize the reporting along with creating procedures regarding evaluating the test.

NEFEC does operate a disaster recovery site that is located approximately 1 mile from NEFEC. Although this is not the ideal geographical location, this site offers a Gigabit fiber backbone that allows high speed backups and redundant data storage at a free, secure, and category 5 hurricane rated building. Cost and bandwidth have been a major hindrance in allowing us to have an alternative site that is of greater geographical separation from our primary location. However, new e-rate laws and the new Second E-rate Modernization Order will allow us to investigate creating a new site further away while helping build a broadband infrastructure that is conducive in handling the traffic produced from backups.

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