



**U.S. SMALL BUSINESS ADMINISTRATION
OFFICE OF INSPECTOR GENERAL
WASHINGTON, D.C. 20416**

ADVISORY MEMORANDUM

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To: Herbert P. Mitchell
Assistant Administrator,
Office of Disaster Assistance

From: /S/ **original signed**
Robert G. Seabrooks
Assistant Inspector General for Auditing

Subject: Improvement is Needed in Interface Error Correction between SBA's
DCMS and FEMA's NEMIS

The purpose of this memorandum is to inform SBA of the need for improved error correction procedures when processing disaster victim updates between the Disaster Credit Management System (DCMS) and the Federal Emergency Management Agency (FEMA)'s National Emergency Management System (NEMIS). Error correction delays have resulted in disaster victims not always receiving needed assistance in a timely manner. SBA has estimated that about 83,000 errors have occurred and been corrected during system updates relating to the Gulf Hurricane Relief effort. SBA's Office of Disaster Assistance provided comments to a draft of this report. SBA's comments were incorporated where applicable and appropriate. SBA's entire comments are included in Attachment "A" to this report.

Generally, FEMA registers individual disaster victims in NEMIS and refers them through an automated interface to the SBA's DCMS. Disaster victims are eligible for FEMA grants for up to \$26,200. Disaster victims are referred to SBA based upon indications of income, household size or self-employment, and indication of loss of real or personal property. Disaster victims are eligible for SBA disaster assistance loans up to \$200,000 for housing repair or replacement and \$40,000 for personal property replacement. A major component of SBA's loan program is that the disaster victim must have repayment ability before a loan can be approved. Otherwise, the disaster victim is referred back to FEMA where they may be eligible for other grant assistance.

At the present time, SBA provides FEMA with daily file updates containing status changes to SBA disaster loan applications (for example, "loan denied," "loan approved" or "loan disbursed"). For SBA to correctly notify FEMA about the disposition of disaster

victim applications, system updates from DCMS to NEMIS must be successful. Part of the control mechanism includes a check sum which is added to all records exported to SBA. If the check sum is not included in the records when the status code is updated, an error log is created in NEMIS which identifies the erroneous records.

Roles and responsibilities related to the data exchange between SBA and FEMA are documented in the “Draft – NEMIS-Individuals & Households (IH) & SBA Interface Requirements Specifications” last updated July 28, 2003. The purpose of the NEMIS-IH & SBA Interface Requirements Specification document is twofold. The first objective is to detail the requirements for NEMIS registration data tables and the data elements within the tables that are sent to SBA. The second objective is to detail the requirements for the SBA loan information data table and data elements within the table that are sent back to NEMIS. Error correction procedures and responsibilities were identified in the document, however systemic errors were not adequately covered when large error conditions were identified.

The DCMS Operations Center in Herndon, Virginia identified at least three different systemic error types which have not always successfully updated between DCMS and NEMIS. Additionally, these error types were not fully considered in the Draft – NEMIS-IH & SBA Interface Requirements and Specifications document. These error types are:

- A. Special Character Errors – Special characters in name fields (such as apostrophes and dashes which have been added to applicant’s last names for SBA legal requirements for completing a disaster loan application) can result in errors when those modified last names are then updated to NEMIS. According to SBA, this problem was not identified until disaster loan victims complained that they had not been referred back to FEMA after an SBA disaster loan denial.
- B. Disaster Victims not referred by FEMA – The NEMIS does not recognize the disaster victim information sent by SBA in cases where disaster victims applied for disaster loans with SBA, but either: 1) the applicant does not register with FEMA for disaster assistance or 2) SBA processes their disaster loan applications prior to receiving FEMA’s victim referral. In this case, the check sum referred to above does not exist when SBA exported the loan applicant information to NEMIS.
- C. Duplicate Registrations – A number of disaster victims have registered multiple times with FEMA. In response, SBA and FEMA have implemented controls to eliminate the risk of processing duplicate registrations. However, effective coordination does not always exist between SBA and FEMA to determine which registration is being used for processing. As an example, if SBA processes a disaster loan application under a FEMA referral which has been cancelled, the status updates to the application will be sent to an incorrect FEMA registration record. According to SBA, this problem was not initially detected until disaster loan victims complained that there is a discrepancy between SBA and FEMA information.

Neither SBA nor FEMA has been able to identify the entire scope of the problems. As a part of SBA's system update process, the DCMS OC has error resolution procedures to confirm whether the NEMIS records are updated. While the error resolution process attempts to reconcile the status changes from the two systems (and then determines whether there are errors in the update files or whether the files processed correctly), our review identified that during data transfers between the two systems there is not always recognition that:

- Errors in updating specific records had occurred,
- The specific records affected were always identified,
- Errors that took place were logged, and
- A feedback loop for correcting the information and ensuring its resolution was utilized.

SBA has taken interim steps to verify that its batch export files correctly update NEMIS. If a discrepancy is discovered, SBA: (1) initiates manual procedures to identify the record or records within the batch file that caused the problem, and (2) takes appropriate action to correct them and re-send the batch. As a preventive measure, SBA has implemented an automated computer program to remove special characters and dashes (Condition A) from the fields prior to exporting those records back to FEMA. SBA also has implemented an additional check by reviewing status updates and ensuring that the last record to be updated in the file transfer is correct once a status update is completed. These procedures indicate that SBA had to perform manual file reviews to uncover discrepancies between SBA's files and FEMA's files, and does not have assurance that key records exchanged between the two systems are complete, accurate and valid.

While the NEMIS and DCMS system update process was tested prior to DCMS implementation, it is apparent that error conditions have surfaced that were not contemplated. We believe the unprecedented volume of production transactions and aforementioned error types justifies a more formalized structure for handling the resolution of errors. This more formalized structure would perform ongoing testing of the DCMS and NEMIS update process with a wide range of data (both valid and invalid). These procedures could identify and resolve data integrity and control issues and therefore, strengthen interface controls prior to the next disaster event.

Recommendations: We recommend that SBA:

1. Coordinate with FEMA to establish a Configuration Change Control Board and updated NEMIS-Individuals & Households (IH) & SBA Interface Requirements Specifications with defined responsibilities for data element ownership, data administration and data correction responsibilities within both SBA's DCMS and FEMA's NEMIS for all records transmitted between SBA and FEMA.
2. Coordinate with FEMA to identify the conditions that will cause records to abort status update processing. Design appropriate program edits to prevent and report these conditions. Update the interface documentation to include these conditions.

3. Coordinate with FEMA to develop a formalized error resolution process with trouble tickets and mechanisms to identify specific aborted record processing.

Management Response: In its response to the draft report, SBA identified in Attachment "A" that it disagreed with portions of the draft report. SBA indicated that recommendation 1, to create a Configuration Change Control Board process could help, only where it is empowered to achieve results. Recommendations 2 and 3 would be the responsibility of the proposed CCCB.

According to SBA, a better solution to reduce or eliminate the errors would be to replace the existing interface with a more reliable and dynamic system-to-system interface. Both agencies must consider error handling within the perspective of overall data sharing and not as an issue wholly unto itself.

OIG Comments: The OIG concurs that improving the data exchange by utilizing a more reliable and dynamic system-to-system interface would be a better long-term solution for both SBA and FEMA. However, any long-term solution would not be achievable by the 2006 hurricane season. Changes to the current environment(s) are needed in the short-term to improve SBA and FEMA performance factors for the 2006 hurricane season. Therefore, all recommendations from the draft report remain in the final report and will be resolved during the audit resolution process.

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Our review was conducted in conjunction with the President's Council on Integrity and Efficiency (PCIE) as part of its examination of relief efforts provided by the Federal government in the aftermath of Hurricane Katrina and Rita. As such, a copy of the report has been forwarded to the PCIE Homeland Security Working Group which is coordinating Inspectors General review of this important subject. The nature and brevity of this assessment precluded the use of our normal audit protocols; therefore, this review was not conducted in accordance with generally accepted government auditing standards. Had we followed such standards, other matters might have come to our attention.

The recommendations in this report are subject to review and implementation of corrective action by your office in accordance with existing Agency procedures for audit follow-up. Please provide your management decisions for the recommendations to our office within 30 days of the date of this report using the attached SBA Forms 1824, Recommendation Action Sheet. If you have any questions, please contact Jeff Brindle, Director Information Technology and Financial Management Audit Group at (202) 205-[FOIA Ex. 2].

Cc: Stephen D. Galvan, Chief Operating Officer

MEMORANDUM

TO: Robert G. Seabrooks
Assistant Inspector General for Auditing

FROM: Herbert L. Mitchell
Associate Administrator for Disaster Assistance

RE: Draft Advisory Memorandum entitled “Improvement is Needed in Interface Error Correction between SBA’s DCMS and FEMA’s NEMIS.”

DATE: March 30, 2006

We have reviewed your Draft Advisory Memorandum entitled “Improvement is Needed in Interface Error Correction between SBA’s DCMS and FEMA’s NEMIS.” We understand that the stated purpose of the Memorandum is to “inform SBA of the need for improved error correction procedures when processing disaster victim updates between the Disaster Credit Management System (DCMS) and the Federal Emergency Management Agency (FEMA)’s National Emergency Management System (NEMIS). In that document, you recommend that SBA take three actions, including, but not limited to, coordinating with FEMA to establish a Configuration Change Control Board and updated Memorandum of Agreement with defined responsibilities for data element ownership, data administration and data correction responsibilities within FEMA and DCMS; coordinating with FEMA to identify conditions that will cause records to abort status update processing; and coordinating with FEMA to develop a formalized error resolution process with trouble tickets and mechanisms to identify aborted record processing. For the reasons elaborated on herein, we disagree with each of these recommendations and respectfully recommend a different path to resolution of the issues identified.

The issues identified in your memorandum address several of the FEMA/SBA interface issues experienced in the 2005 Hurricane season, but certainly not all of them. The recommendations address the effects of errors rather than the underlying causes of the interface issues. Error handling is only part of the inadequacy in the interface between SBA and FEMA. As we read them, recommendation 1, to create a Configuration Change Control Board process could help, only where it is empowered to achieve results. Recommendations 2 and 3 would be the responsibility of the proposed CCCB.

There are two underlying symptoms of these problems discussed in the OIG draft Report: lack of policy and old technology. The OIG recommendations touch on these items, but do not go far enough to have meaningful impact.

Policies and procedures on the data sharing/exchange process are ineffective or non-existent. ODA has made several efforts to coordinate with FEMA at the working level for initiatives including improved data sharing. We have a designated POC who has been immersed in fixing the errors rather than performing tasks for which he was hired relative to improving the process. This manpower drain is in fact noted in your report.

SBA has made extra efforts to ensure all disaster loan applicants are properly referred. The most significant message that we can send is that a change in policy requiring errors to be handled differently must have a meaningful impact to disaster victims. Policy which dictates that when either agency makes an exchange of data by sending to the other agency, it is the responsibility of both organizations to validate the exchange was successful. Any exceptions to a successful exchange will be addressed by the organization which reflects the inaccurate or out-of-sync data or records. In other words, FEMA will be responsible for updating its system when we reflect current data and likewise with SBA.

Furthermore, the elimination or reduction of issues can only be accomplished through better exchanges of data. Both organizations have much improved technology, but still use very old interface methods. To specifically address the problems this memorandum discusses, SBA and FEMA should be committed to improving the technology behind the interface. The CCCB may or may not be the mechanism to accomplish this, but the need for improvement should be more narrowly focused in scope to address the two primary reasons for the problems, not simply provide another mechanism for documenting known problems.

The FEMA/SBA interface does not make the best use of current technology. FEMA and SBA jointly developed the flat file data exchange several years ago for use between both agencies' legacy systems. Both are now replaced with newer technology. The flat file data exchange is the major cause of the issues experienced during the 2005 Hurricane season. Replacement of that exchange should be the focus of improvements to the interface.

As it currently exists, the flat file data exchange relies on each individual system to identify errors in the integration of data from the other agency. A better solution to reduce or eliminate the errors would be to replace the existing interface with a more reliable and dynamic system-to-system interface. By doing so we could create many opportunities to share data, reduce the costs of governmental administration of both disaster programs, improve the quality of the data used by both agencies in the eligibility determination process and improve service to disaster victims. Both agencies must consider error handling within the perspective of overall data sharing and not as an issue wholly unto itself.

In summary, whichever recommendation put forward should address the interface globally and not just one part of the interface deficiency. The error-handling issues that have been the focus of the Inspector General's office are just aspect of a broader need for improvement in the FEMA/SBA interface.

In the second paragraph of your memo you state that "Disaster victims are eligible for FEMA grants for up to \$10,000. Disaster victims with estimated losses greater than \$10,000 are referred to SBA for disaster loan assistance." This is incorrect. Disaster victims who register with FEMA with income that exceed the "Minimum Income Test" are referred to SBA for disaster loan assistance. At registration no estimate of the damage has been completed. Further, FEMA grant assistance may be up to \$26,200. We look forward to your thoughts on our response.

Cc: Stephen D. Galvan, Chief of Staff and Chief Operating Officer