NATIONAL ARCHIVES

OFFICE *of* INSPECTOR GENERAL

Date : March 30, 2012

Reply to Attn of : Office of Inspector General (OIG)

Subject : Advisory Report No. 12-08, The National Archives and Records Administration's Reliance on Legacy Systems to Meet Electronic Records Mission Needs

To : Debra Steidel Wall, Deputy Archivist of the United States

The purpose of this Advisory Report is to inform you the National Archives and Records Administration's (NARA's) continued reliance on outdated legacy systems to fulfill its mission as it relates to electronic records comes at considerable cost to the agency. As we reported in our July 15, 2011 Advisory Report No. 11-16 entitled, "Implementation Status of the Electronic Records Archives System Requirements," 58 percent of the original requirements were no longer planned to be included in the system at the end of the development phase on September 30, 2011. By not implementing these requirements the Electronic Records Archives (ERA) System lacks much of the functionality originally envisioned for the system. As a result, NARA is spending almost $7 million a year to operate and maintain (O&M) eight older, outdated, legacy systems that were supposed to be retired and/or subsumed with the implementation of the ERA System. This is in addition to the estimated annual cost of $23 - $25 million to operate and maintain[1] the ERA System. In addition to the legacy systems' O&M costs, NARA plans to spend almost $2 million between fiscal years 2011 and 2012 in system development, modernization, and enhancements for two of these systems.

The ERA System is a major information system intended to preserve and provide access to massive volumes of all types and formats of electronic records, independent of their original hardware or software. The system was developed to fulfill NARA's mission in the digital age: to safeguard and preserve the records of our government; ensure people can discover, use, and learn from this documentary heritage; and ensure continuing access to the essential documentation of the rights of American citizens and the actions of their government. In addition, the use of ERA will be mandatory for all Federal agencies in September 2012.

[1] The estimated costs include the Operations and Maintenance contract, hardware/software licenses, technology refresh, and corrective and adaptive maintenance activities.

According to the ERA Business Case Analysis (BCA), the majority of the quantitative benefits of the ERA System will be achieved by the reduction in costs of operating and maintaining numerous stove pipe systems not capable of meeting NARA's long term electronic records lifecycle needs. However, in order to realize these quantitative benefits the legacy systems need to be retired and/or subsumed by ERA.

ERA's BCA states, "Retaining the Status Quo will make it impossible for NARA to successfully accession and preserve electronic records and accomplish its mission as an agency." Retaining the status quo considers the costs of maintaining NARA's existing systems, as well as accounting for costs to modify and enhance these systems.

NARA identified four systems in the ERA BCA and three in the ERA Exhibit 300 (Capital Asset Plan and Business Case Summary) that were planned to be retired with the implementation of the ERA System. An additional system was identified in NARA's system inventory to be subsumed by ERA. These eight legacy systems are:

Archival Preservation System (APS),

Accessions Management Information System (AMIS),

Archival Electronic Records Inspection and Control System (AERIC),

Access to Archival Databases System (AAD),

Archives Declassification Review and Redaction System (ADRRES),

Unclassified Redaction and Tracking System (URTS),

Archival Research Catalog (ARC), and

Presidential Electronic Records Library (PERL).

Attachment A contains a description of these eight systems.

The ERA System Concept of Operations (dated July 27, 2004) states NARA's Information Technology infrastructure consists of multiple independent systems and/or applications that do not meet the mission needs, or effectively address NARA's complete business process or the entire lifecycle management of electronic records. NARA's records lifecycle management processes, and its preservation processes for electronic records, are neither fully automated nor fully integrated. NARA's legacy systems are stove pipe systems incapable of scale, extensibility, and interoperability with other systems. For example, systems such as APS and

AERIC allow NARA to preserve the bits that make up electronic records and verify their structure and content, but only for limited types of electronic records.

According to a senior ERA Program official, these legacy systems will not be retired until all the data they contain is migrated into ERA, or their role in managing the legacy tape collection has been completed when the legacy tape migration is complete. This official stated there are no specific dates for finalizing the migration of all legacy data and functionality required into ERA. She added they will not be able to shut the legacy systems down in 2012, and without knowing how much work on these systems will be budgeted in 2013, it is unknown when NARA would be able to do so.

The NARA official responsible for the ERA Business Requirements Group (BRG), which is charged with managing the process of identifying and prioritizing needs for corrective and adaptive maintenance on the ERA System, stated "the actual plans for retirement of legacy systems are managed by the system owners." The BRG receives requests for changes from the business owners who are responsible for identifying and submitting descriptions of what they need in order to do their work better, retire legacy systems, or support NARA strategic objectives.

Unfortunately, ERA's lack of a backup site has left NARA relying on legacy systems as alternatives in case the ERA's primary site is unavailable. We reported in our January 30, 2012 Advisory Report No. 12-04 entitled, "Inadequate Contingency Planning Continues to be a Significant Risk for the Electronic Records Archives System," there is not a backup site for the ERA System. In the event of a disaster rendering the current ERA production data center[2] unusable, NARA does not have an alternative processing site to continue ERA operations. The ERA Business Impact Analysis and ERA Contingency Plan both address a primary site unavailability scenario by utilizing the existing NARA legacy applications: APS, AMIS, and AERIC. In the event of unavailability of the ERA System at Rocket Center, these plans call for customers to continue their business functions by using these legacy systems which are currently in place at Archives II, and which are running parallel operations. However, as discussed previously, ERA's BCA identified these three legacy systems as systems that will be replaced by ERA because, individually and collectively, they are not adequate to NARA's mission needs, their designs cannot be accommodated into the NARA Target Architecture, and/or they automate certain processes that will no longer be necessary.

We acknowledge that without the original planned functionality in the ERA System, or an alternative processing site, it is unrealistic to retire/subsume these legacy systems at this time. However, NARA should develop a plan with milestones identifying the steps needed to retire/subsume these legacy systems in order to stop incurring the annual O&M costs, as well as the costs for upgrades/adaptive maintenance in order to keep them functioning. The Chief Information Officer should take the lead on this effort and not rely solely on the system owners

[2] The ERA System's production data center is at the Allegany Ballistics Lab in Rocket Center, West Virginia.

to develop plans for the retirement of their systems. Our review effort consisted primarily of reviewing applicable ERA documentation such as the ERA Concept of Operations, ERA Exhibit 300 (Capital Asset Plan and Business Case Summary), and ERA Business Case Analysis; and interviews with responsible NARA officials.

As with all OIG products, we will determine what information is publically posted on our website from this report. Should you have any redaction suggestions based on FOIA exemptions, please submit them to my counsel within one week from the date of this report. Should we receive no response from you by this timeframe, we will interpret that as confirmation NARA does not desire any redactions to the posted report. If you have any questions concerning the information presented in this Advisory Report, or there are other areas of the ERA Program that you would like for us to review, please do not hesitate to contact me or James Springs, Assistant Inspector General for Audits at (301) 837-3000.

Paul Brachfeld
Inspector General

cc: I (M. Wash)

Description of Legacy Systems

Archival Preservation System (APS)

APS preserves electronic files, including copying them onto tape and other media, and maintains a catalogue database of the technical specifications of the electronic data files. The core function of the APS is preservation processing of permanent, accessioned Federal electronic records. Preservation processing for APS includes functions such as capture of metadata about recording characteristics, master/backup copy generation, master/backup association management, technical file specifications, tape location management, media recopy and media refresh scheduling, annual sampling for retrieval viability, and fulfilling reference requests.

Accessions Management Information System (AMIS)

AMIS tracks electronic records accessions from the arrival of the records, to the submission of the change of assets. The system tracks the accessioning and initial processing of electronic records.

Archival Electronic Records Inspection and Control (AERIC) System

AERIC preserves the logical structure of databases, and verifies that the records received are those supported by the accompanying documentation. The system is used to automate the verification of electronic records received from Federal agencies. The process of verification compares the actual content of records received from Federal agency to the description of those records as represented by the layout and codes provided by the agency.

Access to Archival Databases (AAD) System

The AAD System provides online access to certain, highly structured electronic records, such as databases. AAD provides users with the capability to search for and retrieve specific records from selected series and data files over the Internet. With AAD, users are able to select a series of electronic records, select a specific data file within a series, and are then provided with the capability to search for pertinent records by entering unique values, such as personal names, dates, cities, and states.

Archives Declassification Review and Redaction System (ADRRES)

ADRRES automates the process of reviewing and redacting sensitive and classified materials in response to legal mandates. The system indexes classified documents that have been withdrawn from accessioned records. ADRRES produces withdrawal notices that are inserted in place of the classified document so researchers are aware that a file or a portion of a file is missing.

Unclassified Redaction and Tracking System (URTS)

URTS extends the ADRRES System for the processing of unclassified Federal records, including sensitive materials to be redacted. URTS data consists of unclassified collections that may be submitted by any Federal agency. It is an automated system that redacts, indexes, stores, and tracks these collections. Information subject to statutory protection, such as grand jury information, income tax information, wiretap information, along with highly sensitive privacy and law enforcement information will be in URTS. These types of information must be protected from an inadvertent disclosure just as the classified information must be protected.

Archival Research Catalog (ARC)

ARC is the online catalog of NARA's nationwide assets in the National Archives in Washington, Regional facilities, and Presidential Libraries. ARC provides the capability to act as a discovery tool for both online and hardcopy records. Invoking ARC, a user has the ability to search descriptions (in the catalog) for identification of potential desired records of interest. Search results include the return of Record Group, Set, series, file unit, and item level descriptions informing the user that records of interest pertaining to a specific subject matter exist. ARC is also used by NARA staff to create descriptions of its records, and of the people and organizations that created them.

Presidential Electronic Records Library (PERL)

PERL contains electronic Presidential records. The system provides search and retrieval functionality for the electronic records of the Ronald Reagan, George Bush, and William Clinton Presidential Libraries.