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OFFICE OF THE CHIEF  
FINANCIAL OFFICER



## DEPARTMENT OF LABOR (DOL) NEW CORE FINANCIAL MANAGEMENT SYSTEM (NCFMS) PRE-IMPLEMENTATION PERFORMANCE AUDIT REPORT

This audit was performed by KPMG LLP (KPMG), an Independent Public Accounting Firm, under contract to the U.S. Department of Labor, Office of Inspector General, and by acceptance, it becomes a report of the Office of Inspector General.

A handwritten signature in blue ink that reads "Elliot P. Lewis".

Assistant Inspector General for Audit

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January 13, 2010

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The United States (U.S.) Department of Labor (DOL) plans to migrate from its current core financial system, Department of Labor Accounting and Related Systems (DOLAR\$), to the New Core Financial Management System (NCFMS). The Office of Chief Financial Officer (OCFO) is responsible for the migration of the DOLAR\$ to the NCFMS. The migration of these systems is being accomplished using the methodology from DOL's System Development Life Cycle Management Manual (SDLCMM) and is scheduled to take place January 14, 2010.

The Office of Inspector General (OIG) contracted with us to conduct a pre-implementation performance audit of DOL's NCFMS prior to deployment. From November 19, 2009, to December 17, 2009, we performed test work related to the following four audit objectives:

- 1) Was the OCFO's user acceptance testing designed and executed in accordance with Federal, DOL, and system implementation industry standards?
- 2) Was the OCFO's batch interface testing designed and executed in accordance with Federal, DOL, and system implementation industry standards?
- 3) Was the OCFO's integration testing designed and executed in accordance with Federal, DOL, and system implementation industry standards?
- 4) Was the OCFO's mock data conversion testing designed and executed in accordance with Federal, DOL, and system implementation industry standards?

We compared the system migration policies, procedures, and controls the OCFO had in place through December 17, 2009, to industry standards, such as the Institute of Electrical and Electronics Engineers (IEEE) standards, and Federal and DOL standards.

We have identified 11 implementation risks related to the design and execution of user acceptance testing, batch interface testing, real-time interface testing and mock data conversion. These implementation risks were identified as a result of the work performed related to the four objectives listed above and we have summarized them in this report. We provided the condition, cause, criteria, and effect for each identified risk to assist in the timely and successful implementation of NCFMS.

In addition, as required by the U.S. Government Accountability Office generally accepted government auditing standards (GAGAS), we followed up on the prior two Alert



Memorandums that were issued during our initial performance audit dated August 21, 2009, and September 3, 2009.

The OIG had previously contracted with us to perform a pre-implementation performance audit when the NCFMS deployment was originally scheduled for October 14, 2009. From May 19, 2009, through September 23, 2009, we performed an initial pre-implementation performance audit in the following areas: (1) training, (2) cut-over process, (3) migration of DOLAR\$, (4) interface functionality, (5) the certification and accreditation (C&A) of the production environment, (6) change control, (7) segregation of duties, and (8) U.S. Standard General Ledger (USSGL) compliance. Based upon our fieldwork and in response to the risks that we identified, the OIG issued two Alert Memorandums to the OCFO, which were related to the following:

1. Training had not been appropriately completed by all pertinent DOLAR\$ users.
2. Cut-over reconciliation procedures had not been appropriately documented.

As of September 23, 2009, the OCFO decided to delay the implementation of NCFMS until January 2010.

We conducted this performance audit in accordance with GAGAS. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our results and recommendation based on our audit objectives.

This performance audit did not constitute an audit of financial statements in accordance with GAGAS. We were not engaged to, and did not, render an opinion on DOL's internal controls over financial reporting or over financial management systems (for purposes of the Office of Management and Budget's (OMB) Circular No. A-127, *Financial Management Systems*, as revised). Our audit fieldwork ended on December 17, 2009; we caution that projecting the results of our evaluation to future periods is subject to the risks that controls may become inadequate because of changes in conditions or because compliance with controls may deteriorate.

It is the responsibility of DOL management to make risk management decisions regarding the identified implementation risks and their realizable/potentially realizable impacts on controls and the financial statements. Conditions may exist that mitigate the risk of an identified finding that may not have been identified during our testing. Policy, practices, configurations, settings, architecture, auditing, monitoring, and detective controls may all work to mitigate the risk of an identified weakness. These controls should be identified and considered in the DOL's risk management decision-making process.

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**Results In Brief**

The New Core Financial Management System (NCFMS) was originally planned to be implemented on October 14, 2009. However, as of September 23, 2009, the Office of the Chief Financial Officer (OCFO) decided to delay the implementation of NCFMS until January 2010. The OCFO took corrective actions to address previously identified risks since the implementation delay of September 23, 2009. Specifically, the OCFO increased opportunities in the training of the Department of Labor (DOL) employees, DOL employees attended these additional training opportunities, and the OCFO refined the NCFMS Cut-Over Procedures from Department of Labor Accounting and Related Systems (DOLAR\$).

Provided in the table below are the results of our follow-up activities.

<b>Objective</b>	<b>Objective Area</b>	<b>Status of Previously Issued Alert Memorandums as of December 17, 2009</b>
1	Training	We noted that the OCFO continued to increase the availability of training throughout the remaining months leading up to the implementation and that DOL employees took the additional trainings as offered. In addition, the OCFO involved Subject Matter Experts (SMEs) and invited representatives from each agency and business process area to the trainings. Additionally, we confirmed through corroborative inquiry that the training environment was moved to the DOL Headquarters in Washington, D.C. to facilitate attendance at the training classes.
2	Cut-Over Process	The OCFO updated its cutover procedures. Per the updated procedures, an NCFMS Cut-Over Transactions Workbook (NCTW) will be used to manually track funds status (funding and spending) in fiscal year (FY) 2010 during the cutover period of NCFMS, and numerous reconciliations will occur during the cutover period.

Based upon our audit fieldwork since the resumption of the implementation, we identified that the OCFO’s user acceptance, batch interface, integration, and mock migration testing were not designed and executed in accordance with Federal, DOL and system implementation standards. Specifically we identified, in the table below, implementation risks as of December 17, 2009 that were not properly addressed by the OCFO.

<b>Objective</b>	<b>Objective Area</b>	<b>Implementation Risks as of December 17, 2009</b>
1	User Acceptance	<ul style="list-style-type: none"> <li>Comprehensive user acceptance testing was not conducted on the NCFMS version planned for</li> </ul>

Objective	Objective Area	Implementation Risks as of December 17, 2009
	Testing	<p>implementation. (Implementation Risk 1)</p> <ul style="list-style-type: none"> <li>• DOL users were not involved in all phases of user acceptance testing. (Implementation Risk 2)</li> <li>• Evidence could not be obtained to determine if all business process requirements under user acceptance testing were appropriately tested. (Implementation Risk 3)</li> <li>• Reconciliation of standard financial reporting has not yet been performed. (Implementation Risk 4)</li> </ul>
2	Interface Testing	<ul style="list-style-type: none"> <li>• A completeness and accuracy validation was not performed between the batch interfaces and NCFMS. (Implementation Risk 5)</li> </ul>
3	Integration Testing	<ul style="list-style-type: none"> <li>• Not all real-time interface requirements were appropriately tested during the user acceptance test phase. (Implementation Risk 6)</li> <li>• Evidence could not be obtained to determine if failed integration test cases were corrected and re-tested. (Implementation Risk 7)</li> <li>• A completeness and accuracy validation was not performed between the real-time interfaces and NCFMS. (Implementation Risk 8)</li> </ul>
4	Mock Data Conversion	<ul style="list-style-type: none"> <li>• Evidence to determine if a source system data extract was validated for completeness could not be obtained. (Implementation Risk 9)</li> <li>• Required throughput rates have not yet been reached. (Implementation Risk 10)</li> <li>• Mock IV data conversion test results do not include evidence that all planned tests to verify the accuracy of data migration were performed. (Implementation Risk 11)</li> </ul>

The implementation risks identified above present risks to the future integrity and availability of the DOL financial data and were caused by the following circumstances:

- Numerous software changes after user acceptance testing was completed and the timing of data interface and integration testing of the system was being conducted near the date of the decision to implement were symptomatic of a system development process that was not properly planned from start to finish;
- The DOL OCFO's oversight was not extensive enough to ensure proper acceptance of the testing and mock data conversion results; and
- Documentation associated with user acceptance, data interface, integration and mock data conversion testing was not historical and verifiable in a manner that



supports the ability to verify the completeness and accuracy of test results and related documentation provided by the OCFO.

We recommend that the OCFO take into consideration the above risks when making its decision to implement the NCFMS.

## **MANAGEMENT RESPONSE**

The OCFO responded to the draft report and stated that they followed the report's recommendation and considered in detail the 11 results and discussed the results in detail during the OCFO Change Control Board meeting in consideration of the NCFMS readiness to go forward. The entire OCFO written response to this draft report is included in Appendix C.

## **AUDITOR RESPONSE**

We reviewed Management's Response and updated sections of our report as appropriate. We analyzed management's response to the draft report and found nothing in their response that changed our conclusions regarding the implementation risks identified. Please refer to Appendix D for our analysis of Management's Response

## Results and Recommendation

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We performed procedures to assess whether the U.S. Department of Labor (DOL) Office of the Chief Financial Officer (OCFO) had controls in place to mitigate risks that the implementation of New Core Financial Management System (NCFMS) poses to the integrity, confidentiality, and availability of financial data. The results of our test work and the procedures executed during our scope period are described below.

### **Objective 1 – Was the OCFO’s user acceptance testing designed and executed in accordance with Federal, DOL, and system implementation industry standards?**

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The OCFO’s user acceptance testing was not designed and executed in accordance with Federal, DOL and system implementation standards. Details which support our determination are provided below.

The objective of user acceptance testing, a critical phase of a system implementation, is to have users perform test cases and validate that the system functionality and configurations meet the defined requirements needed for the financial system. As a result of user acceptance testing, issues relating to software defects can be identified and remediated prior to implementing the system in production. Without proper user acceptance testing, the risk exists that the system is delivered containing software defects, benefits identified in the business case are not realized, and agencies are unable to achieve business needs.

During the user acceptance testing conducted for NCFMS, users tested all 11 business process areas identified in the Gap Analysis Workshops as well as test cases pertaining to real-time and batch interfaces. These 11 business areas include the following: Acquire-to-Dispose, Record-to-Report (FIN), Record-to-Report (OPS), Request-to-Procure, System User Administration, Reimbursable Management, General Ledger Management, Procure-to-Pay, Build-to-Cost, Budget Execution, and Bill-to-Collect.

### **Implementation Risk 1 – Comprehensive user acceptance testing was not conducted on the NCFMS version planned for implementation.**

While management executed test cases for the 11 business process areas, the comprehensive set of test cases related to the business process areas and real time and batch interfaces was not always executed at each stage of testing. The table on the next page provides details as to the various testing stages and extent of UAT conducted during each phase.

<b>Period User Acceptance Testing Occurred</b>	<b>Extent of User Acceptance Testing</b>	<b>Additional Information Provided over Testing Phase</b>
Mid-August 2009	Full set of test cases	The extent of testing could not be determined due to a lack of readily available historical information that could be verified for the August testing. We were informed that the same set of test cases were executed in August as September; however, the OCFO placed reliance on testing performed in September.
Mid-September 2009	Full set of test cases	Upon review of the September test cases, we noted that the Procure-to-Pay, Working Capital Funds, and Job Corps Funding Allocation System (JFAS) interface test cases were not tested as of September 21, 2009, but appear in the overall testing results from December 2009.
October 2009	Re-tested Failed Test Cases	As a result of the testing completed in September, issues were identified that required software and configuration changes to be made to the system. Once these changes were implemented, a more limited round of testing was completed in October by the OCFO to retest the failed test cases to ensure the system issues were remediated.
December 23, 2009	Partial set of test cases	We were informed that purchase card (PCard) and cross-agency approvals are scheduled to have user acceptance test cases conducted in those areas.

In order to evaluate if changes occurred to the configuration baselines after the full set of user acceptance test cases were executed, we obtained and inspected documentation from the OCFO over the releases implemented in the user acceptance testing environment. Upon inspection of the documentation, we noted that ten NCFMS releases, which include both system changes and configuration changes for NCFMS and its interfaces, have been implemented on the NCFMS DOL Customer Instance and Shared Service Provider (SSP)<sup>1</sup> appliance instance since the beginning of September.<sup>2</sup> We were informed that DOL users were executing user acceptance test cases on September 4, 2009, and continued through the third week of September. Therefore, it appears that software changes were occurring during and subsequent to the user acceptance testing phase in September 2009. Additionally, we noted that not all of the

<sup>1</sup>A Shared Service Provider (SSP) is an organization which provides, in a collaborative manner, a product and/or service to another organization to enable increased effectiveness and efficiency of a function and/or process.

<sup>2</sup>The NCFMS system is comprised of two platforms, Financial Management Line of Business (FMLOB) SSP Appliance and the DOL NCFMS Customer Appliance. When system changes to software or configuration baselines are made, they can be implemented on either instance depending on the type of change. As a result, there are two distinct sets of release numbers and associated SPRs as changes to each appliance are tracked separately.

changes implemented were made to correct test case failures related to user acceptance test results.

The table below for the SSP Appliance and DOL instance, which make up NCFMS, depict the number of software releases that were implemented to modify the software and configuration baselines and include the specific number of changes associated with each software release:

Software Build Deployment Date	SSP Appliance		DOL Instance	
	Software Build No.	No. of Software Problem Reports (SPR) in Software Build	Software Build Number	Number of SPRs in Software Build
December 12, 2009	SSP-R12-Build-41	35	DOL-Build-23	10
November 19, 2009	SSP-R12-Build-40	16	DOL-Build-22	7
November 6, 2009	SSP-R12-Build-39	27	DOL-Build-21	4
October 23, 2009	SSP-R12-Build-38	11	DOL-Build-20	1
October 14, 2009	SSP-R12-Build-37	20	DOL-Build-19	3
October 2, 2009	SSP-R12-Build-36	13	DOL-Build-18	2
September 25, 2009	SSP-R12-Build-35	11	DOL-Build-17	4
September 20, 2009	SSP-R12-Build-34	11	DOL-Build-16	6
September 17, 2009	SSP-R12-Build-33	11	DOL-Build-15	9
September 10, 2009	SSP-R12-Build-32	2	DOL-Build-14	1
September 8, 2009	SSP-R12-Build-31	1	DOL-Build-13	4
September 1, 2009	SSP-R12-Build-30	2	DOL-Build-12	1

Upon review of the software release dates and phases of user acceptance testing, we could not determine whether the phases of testing were completed in an environment with a consistent configuration baseline for both NCFMS and its associated interfaces. Specifically, since the beginning of user acceptance testing, we noted that ten software releases have been implemented in the user acceptance test environment. These changes occurred during and after testing and we could not determine the extent of the changes and the potential impact to system functionality based upon the information received. We also noted that three of the releases were implemented during the months of November and December 2009, after the full set of user acceptance test cases had been executed. Additionally, we noted that 263 additional test cases were tested after September 21, 2009, in the areas of Request-to-Procure, Procure-to-Pay, Working Capital Funds, JFAS, Trust Fund, National Finance Center (NFC), and E-Grants. As management did not consider test cases classified as “others” as applicable for execution, these test cases were not conducted.

Furthermore, we were informed that changes were made to the system to correct errors identified in user acceptance testing so that re-testing could be performed. Due to the

numerous software releases and the differences in the overall number of test cases conducted after the September testing, we cannot determine if a comprehensive set of test cases were tested for system functionality and interdependency between business processes with the same baseline configurations.

Management informed us that the majority of the changes implemented affecting system functionality were made during the months of September and October 2009 in order to remediate issues identified during the initial phases of user acceptance testing so that they could be re-tested. Additionally, we were informed that when corrections to the software or baseline could be made to correct failed test cases, the build was implemented as soon as possible. Management indicated that this was done so that retesting could occur during the user acceptance testing window in which the original test was conducted. While we noted that management has prioritized and implemented a subset of changes during and after user acceptance testing, we were unable to obtain historical, verifiable support over the changes and timing of testing performed for each change. As a result, we could not determine whether a comprehensive approach was taken regarding user acceptance testing for all business processes and interfaces. Furthermore, without having this information readily available we were unable to fully assess the risk associated with the changes implemented or scheduled to be implemented prior to the implementation date.

We noted that the DOL Systems Development Lifecycle Management Manual (SDLCMM), version 2.2, section 6.3.2 states that acceptance testing is conducted in accordance with the Acceptance Test Plan finalized earlier in this phase. Users participate in acceptance testing to confirm that the developed system meets all user requirements identified in the Planning Requirements and Definition Phase. Acceptance testing is conducted in a simulated "real" user environment using simulated or real target platforms and infrastructures. Acceptance test results are documented in an Acceptance Test Report. Upon completion of acceptance testing, the approving authority verifies that the test results have been reviewed and that testing was successfully completed.

We noted that the Institute of Electrical and Electronics Engineers (IEEE) Standard (Std) 1012-1998, *Software Verification and Validation*, Test Certification Section states that test results should be certified by verifying that the tests were conducted using baseline requirements, a configuration control process, and repeatable tests, and by witnessing the tests. Certification may be accomplished at a software configuration item level or at a system level.

Additionally, IEEE Std 1008-1987, *Software Unit Testing*, Appendix A8, User Implementation and User Guidelines: User Involvement states that it can be very effective to involve those users in determining the requirements-based elements to be included in the testing. Asking users about their use of the software may bring to light valuable information to be considered during test planning.

We noted that there was not an adequate amount of management oversight pertaining to the implementation of DOL system changes as they relate to user acceptance testing. Specifically, the DOL OCFO did not maintain an accurate and complete listing of changes that had been implemented in the production environment and when they had been implemented. Additionally, changes were not reviewed and analyzed to determine if the modifications to the system could impact user functionality. As a result, user acceptance testing was not formally scheduled with DOL users for some smaller functionality changes that were to be subsequently being made.

In order to obtain the listing of system and configuration changes, documentation from OCFO had to be obtained to determine the timeframe in which the build implementations occurred. Management further informed us that currently the following types of changes are being developed and implemented for production prior to January 15, 2010:

- Performance improvements (these changes were improvements based upon results obtained through load testing)
- Data migration changes to address errors identified in the data migration software
- PCard Module changes
- Interfaces changes
- Functionality changes

Additionally, management informed us that performance improvements noted in the change listings were based on the results of the second load testing performed in the production environment. Since this second round of testing was performed after user acceptance testing during the connectivity testing, changes to the system were being implemented at the time of our report preparation.

Management also indicated that during the initial phases of development and testing for NCFMS, the PCard Module functionality was not originally scheduled to be implemented. Due to the system implementation delay, DOL management indicated that the NCFMS contractor now had time to develop and complete the PCard module software for the production rollout in January 2010. Therefore, the development of the PCard Module occurred after the initial user acceptance testing was completed in October, and as a result, the associated test cases for the PCard Module functionality were never executed during the initial user acceptance testing. DOL management indicated that they plan to schedule the testing in late December 2009.

Subsequent to the end of fieldwork, we received Management's Response to the draft report (see Appendix C), which indicated that that testing for the PCard Module was presently underway.

Upon further discussion regarding the December build, we were informed by the OCFO that a minimal number of SPR changes in the build pertain to functionality issues including interfaces that would require more user acceptance testing. Additionally, the OCFO noted that more user acceptance testing will be conducted over cross-agency

approvals and the PCard Module prior to the implementation of the system. However, management would have to do some further research to determine which other changes may impact functionality and may require user acceptance testing.

Due to the NCFMS production environment not containing the same software changes and configuration settings as the environment in which user acceptance testing was completed, DOL management is unable to fully rely upon the results obtained during testing. The functionality of the system and the successful results of test cases will be reproducible when the set of baselines for both software and configuration settings are consistent between the testing and production environment instances. However, when these instances are not identical, functionality that was tested during the initial phases of user acceptance testing may not reflect the functionality that is present in production. As a result, errors may occur in the NCFMS software that limits the system's ability to process financial data properly and meet DOL's financial reporting requirements.

Without fully testing the PCard Module functionality in the system, DOL management does not have assurance that the system functionality meets the defined business needs and user expectations. Additionally, untested portions of the system could deliver software defects that may potentially limit DOL's ability to use the PCard Module to execute the necessary business functions.

**Implementation Risk 2 – DOL users were not involved in all phases of user acceptance testing.**

Management provided user acceptance test cases and the results of testing performed related to the DOL business processes, interface, and integration testing for the NCFMS. Management also provided evidence of DOL management review and approval of these test cases and test results. However, upon review of the documentation, we were unable to determine, or obtain additional evidence, that DOL users performed user acceptance testing and the timeframe in which it was conducted by DOL.

Upon inquiry, OCFO management stated that there was a lack of participation from DOL users in the August and September phases of testing. We obtained and inspected documentation noting the DOL users who participated in the September testing. However, the listing was not comprehensive, and management informed us that detailed documentation over the test cases performed was not obtained from the users. As a result, the performance of user acceptance testing was supplemented by the NCFMS support contractor's testers.

After the completion of the September testing, software builds were implemented to fix issues identified during user acceptance testing. Once these changes were implemented, management informed us that the NCFMS support contractor's testers re-performed the user acceptance test cases that had previously failed to ensure that the functionality was working appropriately.

Additionally, management informed us that any changes made to the system since the October timeframe were tested through the NCFMS contractor's system life cycle development process. However, no formal user acceptance testing was conducted to test functionality with DOL users. Subsequent to the end of fieldwork, we received Management's Response to the draft report (see Appendix C), which indicated that that testing for the PCard Module is presently underway.

We noted that the DOL SDLCMM, version 2.2, section 1.6.3, states that active user participation is essential at all levels in the definition, design, and development of an IT system. Users are responsible for initiating and expeditiously resolving issues relating to both system development efforts and identification and documentation of requirements. Specifically, the user objectives should (1) provide a quick and consistent review of the requirements; (2) provide statistical information relative to the work processes; (3) develop performance standards; (4) review and refine the functional requirements and their documentation; (5) approve and prioritize requirements; and (6) perform user acceptance testing.

Additionally, DOL SDLCMM, version 2.2, section 6.1 states that during the Development and Test Phase, executable software is developed from detailed design specifications. The system is validated through a sequence of unit, integration, system, and acceptance test activities. The objective is to ensure the system functions as expected and user requirements are satisfied. This phase requires strong user participation in order to verify that all requirements have been thoroughly tested and meet all business needs.

Furthermore, we noted that the IEEE Std 1008-1987, Software Unit Testing, Appendix A8, User Implementation and User Guidelines: User Involvement, states that it can be very effective to involve those users in determining the requirements-based elements to be included in the testing. Asking users about their use of the software may bring to light valuable information to be considered during test planning.

OCFO management indicated that they made the opportunity available for end users to participate in the user acceptance testing. However, an insufficient number of DOL system users participated in the user acceptance testing to complete testing over all of the required test cases. As result, the remaining tests to be performed were completed by NCFMS contractor employees and not by DOL users. Additionally, the OCFO informed us that documentation over the number of test cases performed by DOL users and those performed by NCFMS contractor employees was not retained.

By not appropriately conducting user acceptance testing, the risk exists that end users will not be able to validate the system functionality based on the users' needs or ensure established functional requirements have been met. Additionally, by failing to thoroughly document the users responsible for testing specific test cases, there is a potential risk that the appropriate SMEs did not review the results of testing or ensure that adequate testing was performed. As a result, errors may occur in the NCFMS



software that limits the system’s ability to process financial data properly and meet DOL’s financial reporting requirements.

**Implementation Risk 3 – Evidence could not be obtained to determine if all business process requirements under user acceptance testing were appropriately tested.**

DOL SMEs defined critical business process requirements through Gap Analysis workshops. Based upon these defined requirements, test plans were created in order to test system functionality and ensure that the defined requirements were met. To determine if business process requirements were appropriately tested, we mapped the specified requirements to the test plans and test cases from the cumulative user acceptance test results provided by the OCFO. Specifically, gaps were noted in the testing of requirements in the following business process areas:

Business Process Area	Requirements Tested	Requirements Not Tested		Total
		Due to Test Case Failure	Requirements Not Tested*	
Acquire-to-Dispose	27	0	4	31
Bill-to-Collect	13	0	6	19
Budget Execution	54	0	2	56
Build-to-Cost	18	0	1	19
General Ledger Management	53	0	37	90
Procure-to-Pay	102	7	30	139
Record-to-Report	266	0	5	271
Reimbursable Management	16	1	4	21
Request-to-Procure	14	0	74	88
System User Administration	13	0	3	16
Working Capital Funds	20	1	2	23
<b>TOTAL</b>	<b>596</b>	<b>9</b>	<b>168*</b>	<b>773</b>

**\*Note 1:** The table above shows 168 requirements not tested. This number was derived from 147 requirements that were classified as “other” test cases in the user acceptance test results and were not tested, and 21 requirements that were not tested by test cases.

Additionally, we noted that during the user acceptance testing, each test case was classified as either passing, failing, or other. According to the documentation provided, the test cases were classified as “other” if:

- the required functionality was not yet implemented,
- the test case was no longer valid to the implementation, or

- the test case was a duplicate of another test case in a different testing section.

As a result, the portion of the test cases that were categorized as “other” during user acceptance testing were not tested, and therefore, gaps in testing of requirements exist. However, the OCFO informed us that test cases not tested or not covered by other test cases were low risk areas, considered similar to other requirements, or out of scope. We could not conclude as to the validity of the OCFO’s statement during our audit fieldwork.

IEEE Std 830-1998, *IEEE Recommended Practice for Software Requirements and Specifications (SRS)*, states that an SRS is complete if, and only if, it includes the following elements: a) All significant requirements, whether relating to functionality, performance, design constraints, attributes, or external interfaces. In particular, any external requirements imposed by a system specification should be acknowledged and treated. b) Definition of the responses of the software to all realizable classes of input data in all realizable classes of situations. Note that it is important to specify the responses to both valid and invalid input values. c) Full labels and references to all figures, tables, and diagrams in the SRS and definition of all terms and units of measure.

IEEE Std 830-1998, *IEEE Recommended Practice for SRS*, also states that an SRS is traceable if the origin of each of its requirements is clear and if it facilitates the referencing of each requirement in future development or enhancement documentation. The following two types of traceability are recommended: a) Backward traceability (i.e., to previous stages of development). This depends upon each requirement explicitly referencing its source in earlier documents. b) Forward traceability (i.e., to all documents spawned by the SRS). This depends upon each requirement in the SRS having a unique name or reference number. The forward traceability of the SRS is especially important when the software product enters the operation and maintenance phase. As code and design documents are modified, it is essential to be able to ascertain the complete set of requirements that may be affected by those modifications.

Business process requirements were documented in various design, interface, and gap analysis documents. As a result, requirements over business processes could appear in multiple locations and were difficult to map to all the test cases tested during user acceptance testing. DOL management confirmed that they also identified several requirement gaps and presented their analysis to the NCFMS contractor. However, the NCFMS contractor provided additional information over the test cases that were considered invalid or not within scope of the testing to further explain why certain gaps existed in the testing of requirements. Specifically, during the Gap Analysis phase, all requirements had test cases developed for them to ensure that the requirements were fully tested once the user acceptance test phase was initiated. However, as the system development progressed, certain test cases could not be tested because of the lag in timing of the software development of certain system functionality.

Additionally, when some test cases were written, they were written to test compliance requirements for the interfaced applications independent of NCFMS. These interfaced applications were developed separately by a subcontractor and the test cases developed were considered to be out of the scope of user acceptance testing by the OCFO and NCFMS contractor. Furthermore, the OCFO indicated that some of the requirements that could not be mapped to test cases may be accounted for in the testing of other functionality. However, evidence was not provided to substantiate this information for all of the requirements that were identified as not being tested.

User acceptance testing is necessary to verify whether the system meets the business needs and user expectations so that the system implemented is functioning as intended after the system implementation date. As a result, errors may occur in the software that limits the system's ability to process financial data properly and meet DOL's financial reporting requirements.

**Implementation Risk 4 – Reconciliation of standard financial reporting has not yet been performed.**

Reports including the Statement of Transactions (SF-224), Report on Budget Execution and Budgetary Resources (SF-133), and Federal Agencies' Centralized Trial-Balance System II (FACTS II) are required to be sent to the U.S. Department of the Treasury (Treasury) on either a monthly or quarterly basis. The OCFO tested reports in NCFMS for out-of-the-box functionality; however, no reconciliation of the data between NCFMS and DOLAR\$ was conducted during user acceptance testing. The OCFO was unable to verify that the information contained in the reports is a true representation of the information contained in the financial system.

Office of Management and Budget (OMB) Circular No. A-127, *Financial Management Systems*, Revised Transmittal Memorandum No. 1, dated July 23, 1993, section 6 states, "The Federal government's financial management system policy is to establish government-wide financial systems and compatible agency systems, with standardized information and electronic data exchange between central management agency and individual operating agency systems, to meet the requirements of good financial management. These systems shall provide complete, reliable, consistent, timely and useful financial management information on Federal government operations to enable central management agencies, individual operating agencies, divisions, bureaus, and other subunits to carry out their fiduciary responsibilities; deter fraud, waste, and abuse of Federal government resources; and facilitate efficient and effective delivery of programs through relating financial consequences to program performance."

A management decision was made not to place a high level of priority on the validation of reports prior to the implementation of NCFMS. Instead, these reports would be categorized in order of importance and implemented in time for the second quarter of FY 2010. Additionally, NCFMS has not yet been updated with all the required information to populate the reports for validity purposes due to the fact that the data migration has not been fully completed.

The accuracy of such reports is imperative due to the analysis and representation that the information presents to Treasury so that government-wide totals are meaningful. The OCFO's inability to reconcile the data between NCFMS and DOLAR\$ before the system implementation date increases the risk that a large number of reports waiting to be developed may not be implemented into NCFMS by the time the financial reports are due to Treasury and may have increased the risk that proper information is not included and reconciled to DOLAR\$.

**Objective 2 – Was the OCFO's batch interface testing designed and executed in accordance with Federal, DOL, and system implementation industry standards?**

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The OCFO's batch interface testing was not designed and executed in accordance with Federal, DOL and system implementation standards. Details which support our determination are provided below.

The purpose of batch interface testing is to evaluate and verify the exchange of data, transmission and control, and processing times. Since data entry into DOLAR\$ is either done manually through the user interface or through batch processes, it is imperative that user interface testing is appropriately performed. By not, or without properly completing interface testing, the risk exists that the interfaces will not function as intended once NCFMS is implemented.

The batch interfaces that were in-scope for our assessment were Central Contact Registration (CCR), JFAS, CitiBank (PCard), Payment Management System (PMS), Cost Analysis Manager (CAM), GSA Rent, Pitney Bowes, and Unemployment Trust Fund (UTF). These interfaces were tested during the user acceptance test phase. The user acceptance test phase was designed to test the functionality and interconnectivity of the system interfaces. As part of the interconnectivity tests, we performed test steps to validate the completeness and accuracy of data being transferred between the interfaces and NCFMS.

Management developed requirements for each of the interfaces listed above to ensure that the interface would operate as intended once NCFMS is implemented. Management also created test plans to test each of the requirements, and conducted testing to determine if the requirements were being met. If management identified issues during testing, management was to remediate the issues and retest the requirement prior to implementing NCFMS into production.

**Implementation Risk 5 – A completeness and accuracy validation was not performed between the batch interfaces and NCFMS.**

The user acceptance test phase was designed to test the functionality and interconnectivity of the batch interfaces. As part of the interconnectivity tests, management informed us that they were going to perform test steps to validate the completeness and accuracy of data being transferred between the interfaces and

NCFMS. We requested documentation demonstrating the results of the interconnectivity tests for each of the batch interfaces. Based on inspection of the test results, we determined that the interconnectivity tests were not appropriately designed, and as a result, tests for completeness and accuracy of data being transferred were not performed.

We inquired of the OCFO to determine if completeness and accuracy checks had been performed elsewhere. The OCFO informed us that while completeness and accuracy checks were not specifically conducted, the successful completion of the user acceptance tests and the interconnectivity tests demonstrate that data is able to be transferred accurately between the interfaces and NCFMS. However, management was unable to provide us with the evidence to substantiate this assertion during testing. As a result, we were unable to determine if completeness and accuracy testing took place.

The NCFMS User Acceptance Test Plan, Version 1.1, states that integration testing is used to “test integration software between NCFMS and external systems to validate that all integration points are functioning as expected.”

According to the National Institute of Standards and Technology (NIST) Special Publication (SP) 800-53, *Recommended Security Controls for Federal Information Systems*, an information system should check information for accuracy, completeness, validity, and authenticity.

OCFO management indicated that they did not perform a specific completeness and accuracy validation because they felt that sufficient checks were being performed through user acceptance testing and interconnectivity testing.

Without testing the completeness and accuracy of data being transferred between the batch interfaces and NCFMS, errors may occur that limit the system’s ability to process financial data properly and meet DOL’s financial reporting requirements.

**Objective 3 – Was the OCFO’s integration testing designed and executed in accordance with Federal, DOL, and system implementation industry standards?**

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The OCFO’s real-time interface testing was not designed and executed in accordance with Federal, DOL and system implementation standards. Details which support our determination are provided below.

Integration testing includes the real-time interfaces that connect with the NCFMS. The purpose of real-time interface testing is to evaluate and verify the exchange of data, transmission and control, and processing times. Since data entry into DOLAR\$ is either done manually through the user interface or through batch processes, it is imperative that system real-time interface testing is appropriately performed. By not properly completing real-time interface testing, the risk exists that the real-time interface(s) will not function as intended once NCFMS is implemented.

The real-time interfaces that were included in the scope of our audit were the E-Procurement System (EPS) and E-Grants. Management tested both of these real-time interfaces as part of the user acceptance test phase. The user acceptance test phase was designed to test the functionality and interconnectivity of the in-scope systems. As part of the interconnectivity tests, test steps were performed to validate the completeness and accuracy of data being transferred between the interfaces and NCFMS.

Management developed requirements for each of these real-time interfaces to ensure that the interface would operate as intended once NCFMS is implemented. Management created test plans to test each of the requirements, and conducted testing to determine if the requirements were being met. If issues were identified during testing, management was to remediate, and retest the requirement prior to implementing NCFMS into production.

**Implementation Risk 6 – Not all real-time interface requirements were appropriately tested during the user acceptance test phase.**

The real-time interface requirements that management tested during the user acceptance test phase were derived from several requirements documents. These documents (gap analysis<sup>3</sup> and interface design) were the basis for the real-time interface user acceptance test plans. Management should account for all requirements identified in the requirements documents in the user acceptance test plans and then test during the user acceptance test phase.

We performed a comparison to determine if these requirements were accounted for in the test plans, and then tested during the user acceptance test phase. We noted that one EPS requirement was missing user acceptance test results:

Requirement #	Requirement Description
NCFMS-REQ-FUNC-RTP- CONTRACT-APPROVE-32-v1.0	The EPS Contracting Module shall display all the errors received from the NCFMS interface to the end user

Due to time constraints, the OCFO indicated that they were unable to perform a review to ensure that all requirements were appropriately tested during the user acceptance testing phase. While the OCFO represented that this specific requirement did pass user acceptance testing, they were unable to provide verifiable evidence demonstrating that it was tested during the user acceptance test phase.

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<sup>3</sup>Per inquiry with DOL, the gap analysis documents should include all requirements referenced in the interface requirement documents.

We noted that the Request-to-Procure test plan, which includes EPS requirements, stated that the test plan provides coverage for the requirements enumerated in the corresponding gap analysis document.

Additionally, the NCFMS User Acceptance Test Plan stated that “the objectives of user acceptance testing are to validate the delivered system matches the formally defined requirements and verify the system meets the requirements identified and defined for the new financial system” and “the system will be considered “Accepted” once all requirements that are necessary for [implementation] have been accepted.”

IEEE Std 830-1998, *IEEE Recommended Practice for SRS*, states that an SRS is complete if, and only if, it includes the following elements: a) All significant requirements, whether relating to functionality, performance, design constraints, attributes, or external interfaces. In particular, any external requirements imposed by a system specification should be acknowledged and treated. b) Definition of the responses of the software to all realizable classes of input data in all realizable classes of situations. Note that it is important to specify the responses to both valid and invalid input values. c) Full labels and references to all figures, tables, and diagrams in the SRS and definition of all terms and units of measure.

IEEE Std 830-1998, *IEEE Recommended Practice for SRS*, also states that an SRS is traceable if the origin of each of its requirements is clear and if it facilitates the referencing of each requirement in future development or enhancement documentation. The following two types of traceability are recommended: a) Backward traceability (i.e., to previous stages of development). This depends upon each requirement explicitly referencing its source in earlier documents. b) Forward traceability (i.e., to all documents spawned by the SRS). This depends upon each requirement in the SRS having a unique name or reference number. The forward traceability of the SRS is especially important when the software product enters the operation and maintenance phase. As code and design documents are modified, it is essential to be able to ascertain the complete set of requirements that may be affected by those modifications.

Failure to appropriately test all of the identified requirements increases the risk that the corresponding interface will not operate as intended in the production environment. Specifically, not testing the requirement identified above increases the risk that a software defect that may cause errors in NCFMS will not be detected. This could preclude the identification of issues that affect the functionality of the interfaces and/or NCFMS. As a result, errors may occur in the system that limit its ability to process financial data properly and meet DOL’s financial reporting requirements.

**Implementation Risk 7 – Evidence could not be obtained to determine if failed integration test cases were corrected and re-tested.**

Real time interfaces were tested as part of the user acceptance test phase. During the first round of user acceptance testing in August, we noted that of the 415 integration test cases executed there were 17 issues identified. We requested documentation

demonstrating that these 17 issues had been remediated and retested; however, management was unable to provide us this documentation. The OCFO indicated that since overall user acceptance testing passed for real-time interfaces, it can be inferred that these 17 issues were remediated. However, we noted that management did not adequately document the evidence that failed integration test cases were corrected and re-tested to support their statement.

The NCFMS User Acceptance Test Plan, Version 1.1, states that “the objectives of [user acceptance testing] UAT are to validate the delivered system matches the formally defined requirements and verify the system meets the requirements identified and defined for the new financial system” and “the system will be considered “Accepted” once all requirements that are necessary for [implementation] have been accepted.”

By failing to ensure that all test cases achieve their desired objective, DOL increases the risk that the real-time interface(s) will not meet business needs and/or user expectations. Specifically, EPS or E-Grants may contain software defects that are not corrected before NCFMS is deployed into production. Additionally, if NCFMS is deployed with issues that are not resolved, and the documentation of how NCFMS evolved throughout the testing phases is not retained, management will not be able to determine how NCFMS was configured at a certain point in time. This could preclude the identification of issues that affect the functionality of the interfaces and/or NCFMS. As a result, errors may occur in the system that limit its ability to process financial data properly and meet DOL’s financial reporting requirements.

**Implementation Risk 8 – A completeness and accuracy validation was not performed between the real-time interfaces and NCFMS.**

The user acceptance test phase was designed to test the functionality and interconnectivity of the real-time interfaces. As part of the interconnectivity tests, we were informed that test steps were going to be performed to validate the completeness and accuracy of data being transferred between the interfaces and NCFMS. We requested documentation demonstrating the results of the interconnectivity tests for each of the in-scope real-time interfaces. Based on inspection of the test results, we determined that the interconnectivity tests were not appropriately designed, and as a result, tests for completeness and accuracy of data being transferred were not performed.

We inquired of the OCFO to determine if completeness and accuracy checks had been performed elsewhere. The OCFO informed us that while completeness and accuracy checks were not specifically conducted, the successful completion of the user acceptance tests and the interconnectivity tests demonstrates that data is able to be transferred accurately between the interfaces and NCFMS. However, we noted that management was unable to provide us with the evidence to substantiate this assertion during testing. As a result, we were unable to determine if completeness and accuracy testing took place.



The NCFMS User Acceptance Test Plan, Version 1.1, states that integration testing is used to, “test integration software between NCFMS and external systems to validate that all integration points are functioning as expected.”

According to the NIST SP 800-53, *Recommended Security Controls for Federal Information Systems*, an information system should check information for accuracy, completeness, validity, and authenticity.

OCFO management did not perform a specific completeness and accuracy validation because they felt that sufficient checks were being performed through user acceptance testing and interconnectivity testing.

Without testing the completeness and accuracy of data being transferred between the real-time interfaces and NCFMS, there is an increased risk that incorrect data will be input into NCFMS. As a result both data in NCFMS and, in some cases, data in applications that interface with NCFMS, may be incomplete or inaccurate. As a result, errors may occur in the system that limit its ability to process financial data properly and meet DOL’s financial reporting requirements.

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**Objective 4 – Was the OCFO’s mock data conversion testing designed and executed in accordance with Federal, DOL, and system implementation industry standards?**

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The OCFO’s mock data conversion testing was not designed and executed in accordance with Federal, DOL and system implementation standards. Details which support our determination are provided below.

The OCFO had developed data conversion processes to migrate data from the legacy systems (including DOLAR\$) to NCFMS and to verify the completeness and accuracy of data transfer.

To identify problems with the data conversion processes and with the data itself, the OCFO planned a series of five mock data conversion exercises prior to the system implementation date. The OCFO planned to use the results from subsequent mock data conversion exercises to verify that errors identified in earlier mock data conversions had been corrected. As of December 17, 2009, the OCFO has performed four of the five planned mock data conversions. The OCFO planned tests to verify that data was migrated completely and accurately from source data to NCFMS for each mock data conversion.

**Implementation Risk 9 – Evidence to determine if a source system data extract was validated for completeness could not be obtained.**

We determined that prior to the mock data conversions, source data to be migrated is extracted from DOLAR\$ and other source systems. For the Mock IV conversion, the OCFO validated the completeness of the DOLAR\$ general ledger extract by comparing

the extract to a DOLAR\$ trial balance report. However, the OCFO did not provide documentation to evidence that a validation over the completeness and accuracy of the DOLAR\$ Documents File extract was performed. The DOLAR\$ documents file contains sub-ledger data for obligations and grants.

The NCFMS Grants Management Migration Design, version 1.2, section 4.1.1.1 states, “The DOLAR\$ document file extract will be validated by DOL personnel prior to using in the grant data migration.”

The NCFMS Request-To-Procure (Open Obligation) Migration Design, version 1.2, section 4.1.1.1 states, “The DOLAR\$ document file extract will be validated by DOL personnel prior to using in the Request-to-Procure data migration.”

Management indicated that due to resource constraints and competing priorities for DOL’s staff and contractors who are supporting the migration of data from DOLAR\$ to NCFMS, DOL’s staff and contractors were not able to provide evidence that the DOLAR\$ documents file extract was validated for completeness and accuracy prior to the Mock IV data conversion.

Without documented evidence that all source system data extracts are validated for completeness, the risk exists that DOL’s mock data conversion processes and the cut-over data migration prior to implementation may not migrate all relevant DOL data into NCFMS.

**Implementation Risk 10 – Required throughput rates have not yet been reached.**

To effect the transfer of data from DOLAR\$ and other legacy systems to NCFMS, the OCFO planned a data conversion process that included automated process steps to load legacy system data extracts to staging tables, apply mapping logic to transform legacy data into NCFMS-compatible data, and process the transformed data into NCFMS. The OCFO uses the term “throughput” to refer to the percentage of source system records (i.e., from DOLAR\$) that are successfully processed from initial extraction to output as NCFMS-compatible records to records in the NCFMS. Source system records that fail at any point in the data conversion process and consequently are not successfully processed into NCFMS are not considered throughput. The NCFMS Data Migration Data Verification Plan, dated December 7, 2008, provides the throughput percentages that are required in order for data conversion to be considered successful. We noted that the Mock IV data conversion, the most recently completed mock data conversion exercise, which occurred on October 9, 2009, to November 6, 2009, yielded the following throughput values:

Business Process Area	Required Throughput Level	Mock IV Throughput Percentage
Request-to-Procure	99.5% to meet expectations, 99.7% to exceed expectations	97.97%
Suppliers	99.5% to meet expectations, 99.7% to exceed expectations	95.63%
Procure-to-Pay	99.5% to meet expectations, 99.7% to exceed expectations	96.20%

Business Process Area	Required Throughput Level	Mock IV Throughput Percentage
Bill-to-Collect	99.5% to meet expectations, 99.7% to exceed expectations	100.00%
Customers	100% to meet expectations	100.00%
Grants	99.5% to meet expectations, 99.7% to exceed expectations	99.88%
Acquire-to-Dispose	99.5% to meet expectations, 99.7% to exceed expectations	98.02%
Build-to-Cost	99.5% to meet expectations, 99.7% to exceed expectations	100.00%
Employees	99.5% to meet expectations, 99.7% to exceed expectations	73.28%
General Ledger	100% to meet expectations	100%

While we noted that action items were documented in the Mock IV control reports to resolve errors, we could not obtain evidence to determine if errors identified in the Mock IV data conversion were resolved. We noted that Mock V started on November 10, 2009, and was planned until December 18, 2009. However, final results of the exercise were not available as of the date we completed fieldwork; therefore, we could not determine if prior errors identified in Mock IV were addressed.

Additionally, control reports from the Mock IV data conversion exercise identified 66 data migration errors or issues, which were manifested in 21,958 individual errors. Management informed us that errors are being communicated to those responsible for resolving them through a variety of methods, including mock data conversion results debrief meetings, daily issue update meetings, submission of change control tickets, and other outlets. Although DOL has several methods of managing the resolution of data conversion errors, other than the results from subsequent mock data conversions, there is no centralized tracking of error resolution. As a result, we were unable to obtain evidence that all data migration errors identified by the Mock IV data conversion were being tracked through resolution.

By not tracking all data migration errors identified during the Mock IV data conversion through resolution, DOL management is relying on the results of the Mock V conversion for definitive information on the status of errors identified by Mock IV. Additionally, since Mock V results are not scheduled to be reviewed by management until December 24, 2009, there are a limited number of days prior to the planned go-live date in January 2010 for the OCFO to correct any remaining errors as may be necessary to achieve the required throughput levels.

**Implementation Risk 11 – Mock IV data conversion test results do not include evidence that all planned tests to verify the accuracy of data migration were performed.**

The OCFO's Mock IV data conversion documented test results included explicitly documented test results for 58 of 107 planned data verification tests. Although results for tests of completeness (i.e., to verify aggregate record counts and dollar amounts) were documented for all business processes, test results were not consistently documented for the planned tests of accuracy. Planned tests for which documented results were not available included tests to verify the accuracy of non-dollar amount fields containing data elements such as Common Government-wide Accounting

Classification (CGAC) lines, dates, names, descriptions, types, category codes, and bank account numbers. Also, for some accuracy tests, the test results were documented only to the extent that the relevant fields from DOLAR\$ and NCFMS were both included in the same worksheet, without any explicit indication that the DOLAR\$ and NCFMS fields had been compared. The OCFO's contractor informed us that in some such instances the accuracy testing of the relevant fields had consisted of an undocumented, haphazard review of field values. The table below shows by business process the number of planned accuracy verification tests for which the OCFO's contractor documented results.

Business Process Area	Number of Planned Verification Tests	Tests with Documented Results	Results Consist of Limited Evidence of Cursory Review	Planned Tests with No Results	Percentage of Tests Documented
Request-to-Procure	22	15	0	7	68.18%
Suppliers	4	3	1	0	75.00%
Procure-to-Pay	16	9	2	5	56.25%
Bill-to-Collect	7	4	1	2	57.14%
Customers	7	2	2	3	28.57%
Grants	18	14	0	4	77.78%
Acquire-to-Dispose	9	4	0	5	44.44%
Build-to-Cost	11	2	3	6	18.18%
Employees	5	2	1	2	40.00%
General Ledger	8	3	0	5	37.50%
<b>TOTAL</b>	<b>107</b>	<b>58</b>	<b>10</b>	<b>39</b>	<b>54.21%</b>

Additionally, the plans for data verification did not always clearly identify how data verification should be achieved by the OCFO.

NCFMS DOL Data Migration Strategy Document (Legacy Data Plan) Revised, section 2.6 states, "The migration approach contains the following themes ... measure and verify accuracy and throughput of the migration using the control reports and verification metrics."

IEEE/EIA Guide Industry Implementation of International Standard ISO/IEC 12207: 1995 (ISO/IEC 12207) Standard for Information Technology, Software life cycle processes, Implementation considerations section 5.5.5.2 states, "A migration plan shall be developed, documented, and executed. The planning activities shall include users. Items included in the plan shall include the following:

- a) Requirements analysis and definition of migration,
- b) Development of migration tools,
- c) Conversion of software product and data,
- d) Migration execution,
- e) Migration verification, and
- f) Support for the old environment in the future."

The OCFO has not documented the performance and results of each planned data verification step. OCFO management represented to us that in some cases they executed verification tests that involved non-dollar amount fields by performing a cursory review and comparison of migrated data to source data.

Failing to document the results for all planned data accuracy verification tests may lessen management's ability to exercise oversight of the performance of data verification tests, and as a result, the OCFO's mock conversion tests may not be performed consistent with management's intent, which may lead to verification testing that fails to detect instances where records were not accurately converted from source systems to NCFMS. This, in turn, may lead to inaccurate data conversion results during the live data migration that the OCFO will perform during the cut-over period.

### **Updates to Alert Memorandums**

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Additionally, we monitored the actions taken by DOL to address the two Alert Memorandums issued by the Office of Inspector General (OIG) based on the previous pre-implementation review effort.

#### **Update to Alert Memorandum #1 – Training has not been appropriately completed by all pertinent DOLAR\$ users.**

On August 21, 2009, the OIG issued an Alert Memorandum, OIG Report Number 22-09-014-13-001, noting that 23 percent of the DOLAR\$ users had not completed any required training for NCFMS. Additionally, the Alert Memorandum noted that none of the Procurement-Electronic Purchasing System (EPS), Grants-Electronic Grants, and Purchase Cards users had completed any of the required training. The OIG recommended that the Department ensure that all applicable DOL users be assigned appropriate roles and responsibilities, and receive adequate training prior to the implementation of NCFMS.

While the OCFO agreed with the recommendation and provided DOL users with additional training during September 2009, we were informed by various future NCFMS users that the training offered had not met their needs, and that they have requested additional training. As a result, we noted that the OCFO continued to increase the availability of training throughout the remaining months leading up to the implementation. The OCFO involved SMEs and invited representatives from each agency and business process area to the trainings. Additionally, we confirmed through corroborative inquiry that the training environment was moved from the NCFMS contractor's offices in Reston, Va., to the DOL Headquarters in Washington, D.C. to facilitate attendance at the training classes.

#### **Update to Alert Memorandum #2 – Cutover reconciliation procedures were not appropriately documented.**

On September 3, 2009, the OIG issued an Alert Memorandum, OIG Report Number 22-09-015-13-001, noting that the procedures to perform a reconciliation of all transactions recorded during the cutover period had not been finalized and were in draft as of August 31, 2009. The OIG recommended the following to the OCFO:

- Finalize the policies and procedures related to the process that will occur during the cutover period, including the use of workbooks to record transaction data;
- Make a priority to finalize the procedures to perform the reconciliation of all transactions recorded in workbooks with those recorded in NCFMS, and
- Incorporate the cutover period workbook process into the formal NCFMS training.

In response to the Alert Memorandum, the OCFO finalized the Cut-Over Plan. We inspected the plan and determined that the plan outlines the use of the workbooks that will be used to record transactions throughout the cutover period. We noted that the OCFO updated the cutover procedures. Per the policy, a NCFMS Cut-Over Transactions Workbook (NCTW) will be used to manually track funds status (funding and spending) in FY 2010 during the migration period of NCFMS. The NCFMS queue will be used to hold all transactions processed from e-Travel (E2), EPS, and E-Grants during the cut-over period. Each day, the transactions in the queue will be provided to DOL budget offices and OCFO's Office of Fiscal Integrity (OFI) (sorted by agency) to manage their availability of funds from January 1 – 13, 2010. The OCFO will be providing a daily file from the NCFMS queue to DOL that will list all transactions processed and approved in E2, EPS, and E-Grants during cut-over. The data in the file can be summarized and recorded in the NCTW for commitments, contract obligations, and travel authorizations.

The policy also included that numerous reconciliations will occur during the cut-over period. The following is a list of reconciliations to be performed by the responsible organization:

- OFI will reconcile the NCTW and files provided by the OCFO to the availability of funds to ensure that funds are not exceeded at the allotment and apportionment level.
- Agencies will reconcile funds available to transactions processed in the NCTW and files provided by the OCFO.
- Departmental Budget Center (DBC) will, for small agencies, reconcile funds available to the NCTW and files provided by the OCFO (that include all transactions processed during the cut-over period).
- Office of Financial Systems (OFS) will reconcile all transactions recorded in the NCFMS queue to transactions processed in NCFMS after migration. This will ensure all transactions in the queue are recorded in NCFMS.

The policy states that supporting documentation will be made available for all reconciliations listed above.

## **RECOMMENDATION**

We recommend that the OCFO take into consideration these risks when making its decision to implement the NCFMS.

## **MANAGEMENT RESPONSE**

The OCFO response stated that they followed the report's recommendation and considered in detail the 11 risks and discussed the results in detail during the OCFO Change Control Board meeting in consideration of the NCFMS readiness to go forward. The OCFO also stated that they believed that the short audit time frame contributed to the challenges in providing historical and verifiable documentation and also led to some misunderstandings associated with the documentation. The entire OCFO written response to this draft report is included in Appendix C.

## **AUDITOR RESPONSE**

We reviewed Management's Response and updated sections of our report as appropriate, specifically the Mock IV Throughput Table in Implementation Risk #10. However, we believe that historical and verifiable documentation supporting user acceptance, batch interface, integration, and mock migration testing should have been available for the OCFO to be able to properly oversee the third party contractor responsible for the implementation and to accept the associated deliverables as needed. In addition, we analyzed management's response to the draft report and found nothing in their response that changed our conclusions regarding the implementation risks identified. Please refer to Appendix D for our analysis of Management's Response.

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## Appendices

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## Appendix A

### Background

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The United States (U.S.) Department of Labor (DOL or Department) is comprised of 30 agencies and more than 17,000 employees located within the District of Columbia and in six regions throughout the U.S. The Department's responsibilities include, but are not limited to, establishing and monitoring standards related to occupational safety, wages and hours; unemployment insurance benefits; and re-employment services.

DOL's financial management functions, processes, and activities are currently distributed across multiple information systems and financial applications, and are all centered on the Department of Labor Accounting and Related Systems (DOLAR\$) mainframe accounting system. DOLAR\$ has been in service since 1989 and has been both enhanced and extended to meet departmental and external requirements. While DOLAR\$ has been able to meet the Department's needs, its technology is outdated and is no longer able to efficiently and effectively meet the DOL's financial management requirements.

To effectively support the organization, DOL plans to migrate from DOLAR\$ to a new core financial management system (NCFMS). In July 2008, DOL elected to contract with an external third-party vendor as its Financial Management Line of Business (FMLoB) SSP. As such, a third party contractor provided DOL with a preconfigured environment using a Financial Systems Integration Office (FSIO) certified Commercial Off-the-Shelf (COTS) financial management system, Oracle Federal Financials. Additionally, the OCFO's support contractor plans to perform various configurations of the modules and sub-modules to meet the requirements of the DOL business processes. These configurations will follow the OMB financial system guidelines.

Through the implementation of the NCFMS, DOL plans to provide standardized products, systems, and services to DOL as well as remain aligned with the FMLoB and FSIO guidelines. DOL expects costs to be reduced by customizing the preconfigured SSP system, services, and infrastructure and by automating previously manual processes. In addition, DOL plans to maintain an auditable financial system through the systematic implementation of internal controls.

After contracting with a support contractor in July 2008, DOL planned a 15-month implementation period that would conclude at the 2009 fiscal year end. The NCFMS implementation was segmented into the following five phases: Conceptual Planning, Planning and Requirements, Design, Development and Testing, and Implementation.

Originally, DOLAR\$ was planned to process its last transaction on September 28, 2009, and NCFMS was scheduled to be fully operational by October 14, 2009. However, on September 23, 2009, the OCFO postponed the planned deployment of the new system until January 14, 2010.

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## Appendix B

### Objectives, Scope, Methodology, and Criteria

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#### OBJECTIVES

We conducted a performance audit of the United States (U.S.) Department of Labor (DOL) Office of the Chief Financial Officer's (OCFO) and contractor's procedures, oversight, and controls during the New Core Financial Management System (NCFMS) implementation. We designed and executed our audit procedures to address the following audit objectives:

- 1) Was the OCFO's user acceptance testing designed and executed in accordance with Federal, DOL, and system implementation industry standards?
- 2) Was the OCFO's batch interface testing designed and executed in accordance with Federal, DOL, and system implementation industry standards?
- 3) Was the OCFO's integration testing designed and executed in accordance with Federal, DOL, and system implementation industry standards?
- 4) Was the OCFO's mock data conversion testing designed and executed in accordance with Federal, DOL, and system implementation industry standards?

In addition, we performed follow-up activities on the following previous findings related to NCFMS pre-implementation activities and communicated by the OIG as Alert Memorandums:

- 1) Training has not been appropriately completed by all pertinent Department of Labor Accounting and Related Systems (DOLAR\$) users.
- 2) Cutover reconciliation procedures were not appropriately documented.

#### SCOPE

We performed procedures to determine if there were any gaps in the planned implementation of NCFMS that pose a risk to the integrity, confidentiality, and availability of financial data. We conducted our test work at DOL Headquarters in Washington, D.C., and the OCFO's support contractor's offices in Reston, Va., during the period of November 19, 2009, through December 17, 2009.

#### METHODOLOGY

We conducted our testing by interviewing DOL and contractor management and staff, and inspecting relevant documentation. More specifically, for the four audit objectives, we used the following methodologies:

## **Objective 1 – User Acceptance Testing**

We inquired of the OCFO and contractor members of the NCFMS Team, and inspected DOL requirements documents, test cases, and test results in order to assess whether user acceptance testing was appropriately completed by DOL users.

To assess if the user acceptance environment was the same environment that would be put into production and modified based upon the results of user acceptance testing, we inspected a listing of when software builds were implemented into the NCFMS and the Shared Service Provider (SSP) Appliance. We also obtained the detailed changes associated with each software release and assessed the types of changes made to determine if they could be tied back to errors identified in user acceptance testing. Additionally, we compared the dates associated with each software build to determine if user acceptance testing was appropriately performed.

To assess if user acceptance testing was appropriately performed, we inspected the Gap Analysis documents to identify the business functional requirements. Based upon the requirements identified, we inspected User Acceptance Test Plans, associated test cases, and results to determine if the test cases and results tested for each business case were appropriately documented for each requirement.

To assess the number of DOL users who participated in user acceptance testing, we inspected the user acceptance test results to assess the extent of which DOL users participated. Additionally, we obtained documentation evidencing the OCFO's re-performance of user acceptance testing and reviewed listings provided by the OCFO indicating which DOL users participated in portions of user acceptance testing.

## **Objective 2 – Interface Testing**

We inquired of the OCFO and contractor members of the NCFMS Team, and inspected DOL interface design and requirements documents, test cases, and test results to assess whether batch interface testing was appropriately performed.

To assess DOL controls relative to the testing of data interfaces between NCFMS and other systems, we inspected requirements documentation to determine whether it included a list of interfaces, and for each interface, included a functional description, integration requirements and process flows. We inspected the interface design documentation for each interface to determine whether the interface requirements were addressed within the interface designs and inspected user acceptance test plans and test results to determine if the requirements were appropriately tested.

We inspected the interface test plans for the in-scope batch systems that will interface with NCFMS and determined if the test plans covered the interface requirements. We subsequently inspected test results to determine whether testing was completed in accordance with the documented interface requirements and test plans.

If issues were identified during testing, we determined whether or not the issue had been remediated and the requirement had been retested prior to implementing NCFMS into production.

Additionally, we inspected interconnectivity test results to determine if tests were performed around the completeness and accuracy of data transferred between the batch interfaces and NCFMS.

### **Objective 3 – Integration Testing**

We inquired of the OCFO and contractor members of the NCFMS Team, and inspected DOL integration design and requirements documents, test cases, and test results to assess whether integration testing was appropriately performed.

To assess DOL controls relative to the testing of data interfaces between NCFMS and other systems, we inspected requirements documentation to determine whether it included a list of real-time interfaces, and for each interface, included a functional description, integration requirements and process flows. We inspected the interface design documentation for each real-time interface to determine whether the interface requirements were fully addressed within the interface designs and inspected user acceptance test plans and test results to determine if the requirements were appropriately tested.

We inspected the interface test plans for the real-time systems that will interface with NCFMS and determined if the test plans covered the interface integration requirements. We subsequently inspected test results to determine whether testing had been completed in accordance with the documented real-time interface requirements and test plans.

If issues were identified during testing, we determined whether or not the issue had been remediated and the requirement had been retested prior to implementing NCFMS into production.

Additionally, we inspected interconnectivity test results to determine if tests were performed around the completeness and accuracy of data transferred between the real-time interfaces and NCFMS.

## **Objective 4 – Mock Data Conversion**

We inquired of the OCFO and contractor members of the NCFMS Team, and inspected DOL mock data conversion design and verification documents, data conversion control reports, data validation techniques, source data extract procedures, and error tracking methods.

To assess the mock data conversion process, we reviewed data validation documents and noted the fields to be converted and verified through the mock conversion iterations. We compared the validation fields to the control reports for each business process area to determine if there were any gaps. For gaps that were identified, we inquired of OCFO management to determine if there were explanations for gaps.

We noted errors identified on the control reports and inquired of OCFO management to determine if errors were being tracked through resolution.

Additionally, we spoke to, and reviewed the work of, individuals responsible for providing and validating data extracts used as the source data for the conversion to determine if controls helped ensure that source data was complete and accurate.

The performance audit was conducted in accordance with *Government Auditing Standards*, issued by the Comptroller General of the United States. The system implementation process areas we included in the scope of this performance audit were identified by the DOL, Office of Inspector General using a risk-based approach, which took into account those areas with the highest level of risk associated with the implementation, as well as those that could potentially have an impact on future DOL financial statements.

## **CRITERIA**

Guidance for our pre-implementation performance audit included, but was not limited to, the following:

- DOL System Development Life Cycle Management (SDLCM), Version 2.2
- Office of Management and Budget (OMB) Circular No. A-127: *Financial Management Systems*
- National Institute of Standards and Technology (NIST) Special Publication (SP) 800-53, *Recommended Security Controls for Federal Information Systems*
- Institute of Electrical and Electronics Engineers (IEEE) Standard (Std) 1012-1998, *Software Verification and Validation*



- IEEE Std 1008-1987, *Software Unit Testing*
- IEEE Std 830-1998, *IEEE Recommended Practice for Software Requirements and Specifications*
- IEEE Std 12207:1995, *Standard for Information Technology, Software Life Cycle Process*

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Management Response

U.S. Department of Labor

Office of the Chief Financial Officer  
Washington, D.C. 20210



DEC 24 2009

December 23, 2009

MEMORANDUM FOR ELLIOT P. LEWIS

Assistant Inspector General  
for Audit

FROM:

LISA FIELY *Lisa D. Fiely*  
Acting Chief Financial Officer

SUBJECT:

Response to OIG "Report on the Department of Labor Financial  
Management System Pre-Implementation Performance Audit, Draft  
Report No. 22-014-13-001"

We appreciate the opportunity to review the OIG draft audit report and provide you with our comments. The Draft report contains 4 identified risk areas with 11 associated results that the OIG recommends we consider in our decision process to either go forward with the New Core Financial Management System (NCFMS) or postpone implementation.

We understand that the OIG contracted with KPMG to perform a pre-implementation performance audit of DOL's NCFMS prior to deployment, and that KPMG's work was conducted from November 19, 2009 through December 18, 2009. We think that the short time frame for all audit work and the associated short turn around time for providing documentation and explanation of documentation has led to some misunderstandings. We have included our analysis and response to those 11 results as an attachment to this memorandum.

We followed your recommendation and considered in detail the 11 results and discussed the results in detail during the most recent meeting of the OCFO Change Control Board (CCB) in our consideration of the NCFMS readiness to go forward. Again we appreciate the opportunity to receive your insight and ability to consider it during our CCB meeting.

Attachment

cc: T. Michael Kerr, Assistant Secretary for Administration and Management  
John Blair, Associate Deputy Chief Financial Officer for Financial Systems

Objective Area	Audit Results as of December 17, 2009	OCFO Response
User Acceptance Testing	<ul style="list-style-type: none"> <li>Comprehensive user acceptance testing was not conducted on the NCFMS version planned for implementation. (Result 1)</li> <li>DOL users were not involved in all phases of user acceptance testing (Result 2)</li> <li>Evidence could not be obtained to determine if all business process requirements under user acceptance testing were appropriately tested. (Result 3)</li> <li>Reconciliation of standard financial reporting has not yet been performed (Result 4)</li> </ul>	<ul style="list-style-type: none"> <li>Result 1 - Disagree. UAT encompassed 1749 test cases (see Table 1), and met all of the valid Go-Live requirements for NCFMS; of the 1749 tests conducted, 1742 passed and 7 failed. As confirmed in the IV&amp;V report, 7 were identified as non-critical and will be resolved post go-live. Additional testing for P-Card functionality is presently underway</li> <li>Result 2 - Disagree. Approximately 129 DOL users participated in UAT testing including specific support from the PMO and from the IV&amp;V team; this represents more than 30% of the current total number of DOLARS users</li> <li>Result 2 - More than 1900 users attended training; most of them receiving training in hands-on workshops; there are approximately 1100 anticipated NCFMS users</li> <li>Result 3 – Disagree. In the audit report, KPMG identified 600 unique and valid requirements (from the gap workshops) required for Go-Live; of the 600 requirements, KPMG identified only 6 reports as being unavailable for testing; these reports were deferred until after Go-Live; all other valid requirements were met by NCFMS and this result is confirmed by the IV&amp;V report</li> </ul>

Attachment  
Page 2 of 6

		<ul style="list-style-type: none"> <li>Result 4 – Agree. Standard financial reports are out of the box functionality offered by Oracle Federal Financials as a FSIO-certified COTS financial management software application (and thus are tested by Oracle pending certification from GSA)</li> <li>The DOL Trial Balance Report was verified and reconciled by DOL. Reconciling the remaining financial reports containing DOL production data is planned for after Go-Live</li> <li>It should be noted that all of the other financial reports use the trial balance data sets as their foundation.</li> </ul>
Interface Testing	<ul style="list-style-type: none"> <li>A completeness and accuracy validation was not performed between the batch interfaces and NCFMS (Result 5)</li> </ul>	<ul style="list-style-type: none"> <li>Result 5 – Disagree. All interfaces including batch and real-time were fully tested for completeness and accuracy of the data transfer during UAT; all related test cases were passed and confirmed by the IV&amp;V report</li> <li>This type of testing, while repeated in the course of more recent connectivity testing, was never intended to be repeated during the connectivity tests</li> <li>BLS integration testing of new Checkbook interface to EPS is completed</li> </ul>
Integration Testing	<ul style="list-style-type: none"> <li>Not all real-time integration requirements were appropriately tested during the user acceptance test phase (Result 6)</li> <li>Evidence could not be obtained to determine if failed integration test cases were corrected and re-tested (Result 7)</li> </ul>	<ul style="list-style-type: none"> <li>Result 6 - Disagree. Result 6 specifically refers to a single test case related to EPS error messages showing up for the user; this test was passed and documentation was provided to KPMG. All real-time requirements</li> </ul>

	<ul style="list-style-type: none"> <li>A completeness and accuracy validation was not performed between the real-time interfaces and NCFMS (Result 8)</li> </ul>	<p>were tested and passed during UAT and confirmed in the IV&amp;V report; KPMG's assessment of the requirements passing is further evidenced in their report's description of the 600 requirements that were tested and passed</p> <ul style="list-style-type: none"> <li>Result 7 - Disagree. All 17 issues related to integration testing identified during UAT were corrected and passed; this is confirmed in the IV&amp;V report.</li> <li>Result 8 – Disagree. The accuracy and completeness of data exchanged between systems was performed as part of UAT in accordance with the test plans. All test results were made available to the audit team. KPMG incorrectly ascribes expected outcomes to the testing phases of UAT and Connectivity Testing, often using each term interchangeably. Accuracy and completeness testing of data exchanged was not an aim of Connectivity Testing</li> </ul>
Mock Data Conversion	<ul style="list-style-type: none"> <li>Evidence to determine if a source system data extract was validated for completeness could not be obtained (Result 9)</li> <li>Required throughput rates have not yet been reached (Result 10)</li> <li>Mock IV data conversion test results do not include evidence that all planned tests to verify the accuracy of data migration were performed (Result 11)</li> </ul>	<ul style="list-style-type: none"> <li>Result 9 – Disagree. Subject Matter Experts from DOL and GCE held multiple workshops for each data type to be extracted. These workshops were held throughout the Data Migration Conversions and included detailed analysis of the validity and completeness of each extract. Control</li> </ul>

<p>reports were produced and reviewed extensively with data owners to validate each the accuracy and completeness of each extract</p> <ul style="list-style-type: none"><li>• Result 10 – Disagree. KPMG incorrectly calculates throughput rates. Throughput rates are based upon valid transactions and do not include exempted data. Actual throughput values have been included below in Table 2</li><li>• Result 11 – Agree. Not all of the evidence of data verification performed for the “Lowest” levels of data verification was available in the form of an artifact that was independent of the workshops held with SMEs and data owners</li></ul>		
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Table 1. UAT Results

Business Process	Total	Passed	Failed	Other
Acquire-to-Dispose	128	114	0	14
Record-to-Report (FIN)	45	39	0	6
Record-to-Report (OPS)	459	453	0	6
Request-to-Procure	189	42	0	147
System User Administration	37	35	0	2
Reimbursable Management	68	54	3	11
General Ledger Management	104	57	0	47
Procure-to-Pay	65	106	3	50
Build-to-Cost	65	55	0	10
Budget Execution	92	91	0	1
Bill-to-Collect	82	59	0	23
Working Capital Funds	42	30	1	11
<b>Total</b>	<b>1470</b>	<b>1135</b>	<b>7</b>	<b>328</b>

Batch Interface	Total	Passed	Failed	Other
Trust Fund	53	47	0	6
DEBS	27	27	0	0
MIS	19	19	0	0
CORS	19	19	0	0
CAM	19	19	0	0
JFAS	29	29	0	0
NFC	67	60	0	7
<b>Total</b>	<b>233</b>	<b>220</b>	<b>0</b>	<b>13</b>

Real-time Interface	Total	Passed	Failed	Other
E2	102	97	0	5
EPS (Requisition Module)	94	61	0	33
EPS (Contracting Module)	94	79	0	15
EGrants	157	150	0	7
<b>Total</b>	<b>447</b>	<b>387</b>	<b>0</b>	<b>60</b>



Business Process Area	Required Throughput Level	KPMG Throughput Measurement	Actual Throughput	Basis for Inaccurate Measurements Provided by KPMG
Request to Procure	99.5% to meet expectations, 99.7% to exceed expectations	79.66%	98.74%	Request to Procure constitutes the migration of obligations in the Grants and PO migration. Grants throughput is 99.8% and PO is 97.59%
Suppliers	99.5% to meet expectations, 99.7% to exceed expectations	95.84%	95.84%	
Procure to Pay	99.5% to meet expectations, 99.7% to exceed expectations	87.46%	97.38%	Procure to Pay constitutes the migration of advances and invoices in Grants and PO migrations. Grants throughput is 99.18% and PO throughput is 95.57%
Bill to Collect	99.5% to meet expectations, 99.7% to exceed expectations	100.00%	100.00%	
Customers	100% to meet expectations	60.00%	100.00%	The customer file included customers that were assigned to closed receivables and excluded from migration. These customers should be excluded from throughput measurement
Grants	99.5% to meet expectations, 99.7% to exceed expectations	99.41%	99.88%	The grants throughput should only consider the obligation throughput. The Cost reports, advances, and receipts are measured in Procure to Pay
Acquire to Dispose	99.5% to meet expectations, 99.7% to exceed expectations	89.39%	98.02%	The throughput measurement should exclude the capital assets that have been retired and will not be migrated (499 assets exists).
Build to Cost	99.5% to meet expectations, 99.7% to exceed expectations	45.00%	100.00%	The Build to Cost measurement should exclude those projects that were closed and will be excluded from the migration (29 Projects).
Employees	99.5% to meet expectations, 99.7% to exceed expectations	73.28%	73.28%	
General Ledger	100% to meet expectations	100%	100%	

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**Appendix D**

**Auditor Response**

Objective Area	Implementation Risk as of December 17, 2009	OCFO Response dated December 24, 2009	Auditor Response
<b>User Acceptance Testing</b>	Comprehensive user acceptance testing was not conducted on the NCFMS version planned for implementation. (Risk 1)	Risk 1 – Disagree. UAT encompassed 1749 test cases (see Table 1), and met all of the valid Go-Live requirements for NCFM; of the 1749 test conducted, 1742 passed and 7 failed. As confirmed in the IV&V report, 7 were identified as non-critical and will be resolved post go-live. Additional testing for P-Card functionality is presently underway.	<p>Implementation Risk 1 - Based upon the documentation reviewed, we could not determine whether UAT testing was completed in an environment with a consistent configuration baseline for both NCFMS and its associated interfaces. The 1,749 test cases referred to the OCFO were completed by the end of October. However, we noted three software releases have been implemented in the user acceptance test environment. These changes occurred after UAT completion and no evidence was provided by the OCFO to support the position that UAT, which supports the full functionality of the system, was conducted on the NCFMS instance that plans to go-live.</p> <p>Subsequent to the issuance of our draft report, the IV&amp;V team issued its final report; however, it did not include any discussion or results associated with UAT testing.</p>
	DOL users were not involved in all phases of user acceptance testing. (Risk 2)	Risk 2 – Disagree. Approximately 129 DOL users participated in UAT testing including specific support from the PMO and from	Implementation Risk 2 – DOL could not provide evidence to support that 129 DOL users were involved in all phases of UAT testing covering the period of August through October. We were informed

Objective Area	Implementation Risk as of December 17, 2009	OCFO Response dated December 24, 2009	Auditor Response
		<p>the IV&amp;V team; this represents more than 30% of the current total number of DOLAR\$ users.</p> <p>More than 1,900 attended training; most of them received training in hands-on workshops; there are more than 1,100 anticipated NCFMS users.</p>	<p>by OCFO that DOL users did not perform all the UAT test scenarios and that their support contractor conducted UAT on those test cases not tested by DOL users. Furthermore, the final IV&amp;V report did not include any discussion or results on UAT, indicating that the OCFO was placing inappropriate reliance on the IV&amp;V team for the success of UAT testing.</p> <p>Training is not a substitute for user acceptance testing being performed by users. While it is beneficial for a user to become familiar with system functionality and menus, specific user acceptance test cases were not developed and tested by the users to formally test functionality of the system during the training sessions.</p>
User Acceptance Testing (continued)	Evidence could not be obtained to determine if all business process requirements under user acceptance testing were appropriately tested. (Risk 3)	Risk 3 – Disagree. In the audit report, KPMG identified 600 unique and valid requirements (from the gap workshops) required for Go-Live; of the 600 requirements, KPMG identified only 6 reports as being unavailable for testing; these reports were deferred until after Go-Live; all other	Implementation Risk 3 – The focus of our review was on identifying if all business process requirements were included in the planned UAT and that the requirements were actually tested. We noted 168 unique requirements out of the 773 total requirements that were identified in the OCFO's gap analysis workshops that were never tested during UAT. The OCFO did not provide evidence to support that this set of 168 requirements had

Objective Area	Implementation Risk as of December 17, 2009	OCFO Response dated December 24, 2009	Auditor Response
		<p>valid requirements were met by NCFMS and this result is confirmed by the IV&amp;V report.</p>	<p>at least one test case that was tested and passed. Therefore, we determined that not all of the valid business process requirements were tested during UAT.</p> <p>Furthermore, the final IV&amp;V report did not include any discussion or results on UAT, indicating that the OCFO was placing inappropriate reliance on the IV&amp;V team for the success of UAT testing.</p>
	<p>Reconciliation of standard financial reporting has not yet been performed. (Risk 4)</p>	<p>Risk 4 – Agree. Standard financial reports are out of the box functionality offered by Oracle Federal Financial as a FSIO-certified COTS financial management software application (and thus tested by Oracle pending certification from GSA). The DOL Trial Balance Report was verified and reconciled by DOL. Reconciling the remaining financial reports containing DOL production data is planned for after Go-Live. It should be noted that all of the other financial reports use the trial balance data</p>	<p>Implementation Risk 4 – No further comments. Management agreed with the risk as stated in the report.</p>

Objective Area	Implementation Risk as of December 17, 2009	OCFO Response dated December 24, 2009	Auditor Response
		sets as their foundation.	
<b>Batch Interface Testing</b>	A completeness and accuracy validation was not performed between the batch interfaces and NCFMS (Risk 5)	<p>Risk 5 - Disagree. All interfaces including batch and real-time were fully tested for completeness and accuracy of the data transfer during UAT; all related test cases were passed and confirmed by the IV&amp;V report. This type of testing, while repeated in the course of more recent connectivity testing, was never intended to be repeated during the connectivity tests. BLS integration testing of new Checkbook interface to EPS is completed.</p>	<p>Implementation Risk 5 – While the OCFO stated that batch and real-time interfaces were tested for completeness and accuracy during UAT, this testing was not evidenced in the UAT test results provided to us by the OCFO for all of the in-scope interfaces. We noted that the UAT test results only demonstrate that the functionality of the interfaces connecting to NCFMS are operating as intended. However, they do not specifically validate that data is able to be transferred completely and accurately between the interfaces and NCFMS.</p> <p>On December 16, 2009, we inquired of the OCFO and requested documentation to determine if completeness and accuracy testing was performed elsewhere. We were informed that the connectivity test results would include evidence to demonstrate that data is able to be passed between the interfaces and NCFMS completely and accurately. However, we reviewed the connectivity test results and determined that these tests did not include the necessary test steps to validate that data being passed between the</p>

<b>Objective Area</b>	<b>Implementation Risk as of December 17, 2009</b>	<b>OCFO Response dated December 24, 2009</b>	<b>Auditor Response</b>
			<p>interfaces and NCFMS was complete and accurate.</p> <p>The BLS integration testing was completed after our fieldwork end date, December 17, 2009. Therefore, we cannot comment on it.</p>
<b>Real-Time Interface Testing</b>	Not all real-time interface requirements were appropriately tested during the user acceptance test phase. (Risk 6)	Risk 6 - Disagree. Result 6 specifically refers to a single test case related to EPS error messages showing up for the user; this was passed and documentation was provided to KPMG. All real-time requirements were tested and passed during UAT and confirmed in the IV&V report; KPMG's assessment of the requirements passing is further evidenced in their report's description of the 600 requirements that were tested and passed.	Implementation Risk 6 - On December 16, 2009 we were provided the OCFO evidence to satisfy this requirement, which included a screen print of one error message. The requirement was to ensure that "all" error messages were available to users. Accordingly, we concluded that this requirement was not appropriately tested because certain error messages were not tested by the UAT.
Real-Time Interface Testing (continued)	Evidence could not be obtained to determine if failed integration test cases were corrected and re-tested. (Risk 7)	Risk 7 - Disagree. All 17 issues related to integration testing identified during UAT were corrected and passed; this is confirmed in the IV&V report.	Implementation Risk 7 – Throughout our fieldwork, we requested evidence to demonstrate that the 17 integration issues identified were corrected, retested, and followed the change management process. The OCFO did not provide any

Objective Area	Implementation Risk as of December 17, 2009	OCFO Response dated December 24, 2009	Auditor Response
			documented evidence regarding these 17 issues.
Real-Time Interface Testing (continued)	A completeness and accuracy validation was not performed between the real-time interfaces and NCFMS. (Risk 8)	Risk 8 - Disagree. The accuracy and completeness of data exchanged between systems was performed as part of UAT in accordance with the test plans. All test results were made available to the audit team. KPMG incorrectly ascribes expected outcomes to the testing phases of UAT and Connectivity Testing, often using each term interchangeably. Accuracy and completeness testing of data exchanged was not an aim of Connectivity testing.	<p>Implementation Risk 8 – We reviewed the UAT test results for two real-time interfaces and determined that completeness and accuracy testing was not performed. According to the OCFO’s test plans, UAT was designed to validate that the functionality of the real-time interfaces was operating as intended. Additionally, based upon the documentation provided by the OCFO, UAT testing did not specifically validate that data is able to be transferred completely and accurately between the interfaces and NCFMS.</p> <p>On December 16, 2009, we inquired of the OCFO and requested documentation to determine if completeness and accuracy testing was performed elsewhere. We were informed by OCFO that the connectivity test results included evidence to demonstrate that data is able to be passed between the interfaces and NCFMS completely and accurately. We reviewed the connectivity test results and determined that these tests did not include the necessary test steps to validate that data being passed between the</p>



Objective Area	Implementation Risk as of December 17, 2009	OCFO Response dated December 24, 2009	Auditor Response
			interfaces and NCFMS was complete and accurate.
<b>Mock Data Conversion</b>	Evidence to determine if a source system data extract was validated for completeness could not be obtained. (Risk 9)	Risk 9 – Disagree. Subject Matter Experts from DOL and the third party contractor held workshops for each type of data to be extracted. These workshops were held throughout the Data Migration Conversions and included detailed analysis of the validity and completeness of each extract. Control reports were produced and reviewed extensively with data owners to validate the accuracy and completeness of each extract.	<p>Implementation Risk 9 – On December 11, 2009, we requested evidence to document steps taken to identify the completeness of source system data extracts used for Mock IV data conversion. The OCFO did not provide any documented evidence that a validation over the completeness and accuracy of the DOLAR\$ Documents File source system data extract was performed.</p> <p>The mock data conversion control reports and other documentation provided by the OCFO do not contain sufficient data to perform such a comparison. In order to validate the accuracy and completeness of a source system data extract, one would typically need to compare the extract to a report from the source system to determine if the extract was accurate and complete.</p>
Mock Data Conversion (continued)	Required throughput rates have not yet been reached. (Risk 10)	Risk 10 – Disagree. KPMG incorrectly calculates throughput rates. Throughput rates are based upon valid	Implementation Risk 10 – Based upon the response received from the OCFO, we updated the report on our calculations of throughput attained in the Mock IV data

Objective Area	Implementation Risk as of December 17, 2009	OCFO Response dated December 24, 2009	Auditor Response
		<p>transactions and do not include exempted data.</p>	<p>conversion exercise by: a) excluding exempted data, and b) by correcting differences between our initial mapping of datasets to business processes and the OCFO's mapping. After adjusting our calculations, throughput rates for the Mock IV data conversion still fall short of the throughput rates required by the NCFMS Data Migration Data Verification Plan for five of the ten business process areas. We revised the report accordingly.</p> <p>However, for three of the business processes, throughput percentages calculated by the OCFO are higher than the throughput percentages calculated by us. For two of those business processes, we have identified the cause of the discrepancy. For Request-to-Procure and for Procure-to-Pay, the OCFO calculated throughput using an arithmetic average rather than a weighted average. This has the effect of skewing the OCFO's throughput calculations. For example, for Request-to-Procure, the OCFO calculated throughput by giving equal weight to Grants and Purchase Orders, even though Purchase Orders had almost five times as many records as Grants to be migrated (16,335 records for</p>

<b>Objective Area</b>	<b>Implementation Risk as of December 17, 2009</b>	<b>OCFO Response dated December 24, 2009</b>	<b>Auditor Response</b>
			Purchase Orders versus 3,315 records for Grants).
Mock Data Conversion (continued)	Mock IV data conversion test results do not include evidence that all planned tests to verify the accuracy of data migration were performed. (Risk 11)	Risk 11 – Agree. Not all of the evidence of data verification performed for the “Lowest” levels of data verification was available in the form of an artifact that was independent of the workshops held with SMEs and data owners.	Implementation Risk 11 – No further comments. Management agreed with the risk as stated in the report.

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**Appendix E**

**Acronyms and Abbreviations**

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C&A	Certification and Accreditation
CAM	Cost Analysis Manager
CCR	Central Contract Registration
CGAC	Common Government-wide Accounting Classification
COTS	Commercial Off the Shelf
DBC	Departmental Budget Center
DOL	Department of Labor
DOLAR\$	Department of Labor Accounting and Related Systems
EPS	E-Procurement System
FACTS	Federal Agencies' Centralized Trial-Balance System
FM	Financial Management
FMLoB	Financial Management Line of Business
FSIO	Financial Systems Integration Office
FY	Fiscal Year
GAGAS	Generally Accepted Government Auditing Standards
GAS	Government Auditing Standards
GCE	Global Computer Enterprises
IEEE	Institute of Electrical and Electronics Engineers
JFAS	Job Corps Funding Allocation System
NCFMS	New Core Financial Management System
NCTW	NCFMS Cut-Over Transactions Workbook
NFC	National Finance Center
NIST	National Institute of Standards and Technology
OCFO	Office of the Chief Financial Officer
OFI	Office of Fiscal Integrity
OFS	Office of Financial Systems
OIG	Office of Inspector General
OMB	Office of Management and Budget
PCARD	Purchase Card

PMS	Payment Management System
SDLCMM	System Development Life Cycle Management Manual
SME	Subject Matter Expert
SP	Special Publication
SPR	Software Problem Reports
SSP	Shared Service Provider
SRS	Software Requirements and Specifications
UAT	User Acceptance Testing
US	United States
USSGL	US Standard General Ledger
UTF	Unemployment Trust Fund