

AUDIT REPORT

Oregon Department of Administrative Services: Oregon State Payroll System Follow Up



Bill Bradbury, Secretary of State
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Summary

PURPOSE

The purpose of this audit was to follow up on our previous application control review of the Department of Administrative Services (DAS) Oregon State Payroll System (OSPS).

RESULTS IN BRIEF

Although DAS has corrected several prior audit findings, many important issues have not been fully resolved.

RECOMMENDATIONS

We recommend that the department resolve the prior audit findings and correct the new conditions noted during this audit.

AGENCY RESPONSE

The Department of Administrative Services generally agrees with the recommendations.

Introduction

The Oregon State Payroll System (OSPS) operates within the Department of Administrative Services State Controller's Division. OSPS is the central payroll system, processing payroll for approximately 34,000 state employees per month.

OSPS interfaces with other statewide computer systems, including the Statewide Financial Management System (SFMS) for payroll accounting.

The State Controller's Division (SCD) manages the OSPS. The department's Information Resources Management Division (IRMD) provides technical services to maintain the OSPS.

Objectives, Scope and Methodology

The primary objective of this audit was to follow up on our prior audit report No. 2000-14, *Department of Administrative Services, Oregon State Payroll System, Application Control Review*.

We reviewed the data files generated by the OSPS and made inquiries of Central Payroll staff, as

well as of IRMD staff associated with the system.

We conducted our audit in accordance with generally accepted government auditing standards.

Audit Results

Unresolved Issues from the Prior Audit

Several conditions remain unresolved from the prior audit relating to system development, data validation and editing, and system security.

System Development

Programming changes should be made following documented systematic procedures to ensure that all business requirements are met and that only authorized changes occur. Controls to manage those changes should be established to minimize the likelihood that disruptions, unauthorized alterations, or errors could be introduced into the system. This approach to making programming changes is called System Development Life Cycle (SDLC) methodology.

SDLC methodology includes change management procedures for ongoing system maintenance as well

as new system development. IRMD has a written SDLC methodology for maintaining OSPS. This methodology requires that certain steps be completed when performing minor projects or system enhancements. IRMD management is responsible for ensuring that programmers working on OSPS follow the methodology. SCD management is ultimately responsible for ensuring that IRMD follows the written methodology.

The following SDLC conditions remain unresolved from our prior report:

- IRMD's documentation of work performed on system design and program testing is inadequate.
- SCD management does not review general and detailed designs of the programming changes to be made.
- SCD management does not ensure that all program changes are tested and does not review the results of the tests that were performed.
- IRMD management does not effectively monitor program changes by reviewing evidence that the programmers complied with the required SDLC methodology and no

unauthorized code was introduced.

The following illustrate problems resulting from inadequate SDLC methodologies:

- A series of OSPS central report routines were not thoroughly tested to ensure their accuracy prior to placing them into production. As a result, some of the reports produced by these routines did not include all of the intended agency data.
- Development of the OSPS on-line time-entry subsystem did not adequately consider audit trails or automated controls over electronic timesheet authorization processes. As a result, the agency using the subsystem cannot determine whether its electronic timesheets have been appropriately reviewed and approved.

These problems occurred because DAS management has not ensured that changes made to the system followed established SDLC methodologies. Thus, there is an increased likelihood that disruptions, unauthorized alterations, or errors could occur.

We recommend that SCD management ensure that changes made to the system follow a comprehensive SDLC methodology. SCD management should take a more active role to ensure that IRMD follows the established methodology. Furthermore, SCD management should ensure that the additional issues noted in this report are corrected.

Agency Response:

We agree and will implement these recommendations as advised. The following actions will be taken.

- *The Oregon State Payroll System and Systems Development and Consulting will partner to assure that a comprehensive SDLC methodology is applied to the performance of all data cleanups, minor projects or*

major system enhancements or modifications.

- *OSPS will add an Application Development Technician and IRMD SD&C will apply additional programming resources to OSPS. These additional resources will assist in preparation of detail design specifications, unit and acceptance test plans. These test plans will provide a tool by which all system changes are thoroughly tested and documented. It will also allow Systems Development to establish a production rotation team to perform peer reviews of program changes prior to moving the program to production. The recruitment process for the additional staff will begin in May 2001. The OSPS Section has primary responsibility for this task*
- *Additional issues: Systems Development and Consulting will report in writing to the OSPS Section the work that was undertaken to correct the reports mentioned. Work has been underway for several months to strengthen the audit trail in the Online Daily Time entry subsystem. That work will be completed in September 2001.*

Data Validation and Editing

Application controls ensure that data remain accurate, valid, and complete during input, processing, output, and storage. These controls include programmed edits to prevent, detect, and correct data errors. These edits should be tested after programming changes to ensure that they remain valid and effective.

The following conditions relating to OSPS data validation and editing routines were unresolved from our prior report:

- IRMD and SCD management were unable to readily identify current system edits.

- System edits were not always reviewed or tested to ensure that they remain effective or valid after programming changes.

During our review we observed the following problems resulting from the above conditions.

- OSPS does not have edits to prevent users from recording more leave taken than was currently accrued. During our testing, we observed instances in which the system allowed employees to generate or carry a negative leave balance.
- OSPS allows users to enter invalid leave codes. For the period including July 1997, through April 2000, OSPS users used invalid leave codes in 41 instances.

The continued lack of documentation and regular review and testing of system edits increases the likelihood that OSPS may accept and process invalid data.

We recommend that IRMD management identify, document, and review system edits to ensure that they are effective. SCD management should periodically review these edits to ensure that they remain appropriate and functioning as intended. SCD management should also ensure that those issues noted in this report are corrected.

Agency Response:

We agree. As Systems Development is performing maintenance to program modules or subsystems, new and existing edits will be documented. In addition, any changes to edits will be documented through preparation of detail design specifications. A complete change control log will be updated every time a change is made so a comprehensive listing of changes by program will be tracked. This log is maintained permanently within the program and can be printed separately for periodic review by the OSPS Section. IRMD Systems

Development and Consulting Section has primary responsibility for this task. This work has already commenced. The OSPS Section will conduct a monthly review of a SD&C report of progress on edit documentation.

Other issues noted related to negative leave balances and invalid leave codes will be resolved by September, 2001. The majority of the negative leave balances are related to one specific agency and work is underway to require that agency to use the system to accrue leave as well as usage.

System Security

SCD management is ultimately responsible for ensuring security for the system by providing appropriate access controls. These controls should ensure that employees who maintain and operate the system have only those access privileges needed to perform their duties.

IRMD programmers assigned to OSPS perform program changes and should not perform any additional system or user functions. Therefore, their access should be restricted to the test region where they perform their work. However, when problems occur during production, programmers may need access to the production region to perform emergency system maintenance. Under these circumstances, their access and work should be closely monitored.

Although DAS management resolved some of the logical access issues identified by our prior audit, the following conditions remain unresolved:

- Programmers have unlimited and unsupervised access to the production region.
- Some Central Payroll employees have update access to various OSPS screens that they do not need to perform their duties.

We recommend that SCD management and IRMD management develop procedures to further limit and monitor programmers' access to production libraries. Additionally, SCD management should further limit DAS employees' access to OSPS.

Agency Response:

We agree. Since July of 2000, IRMD's programmers have had limited access to production databases and files through a unique production RACF. Systems Development uses the D910 transaction to make immediate changes to production databases with the production RACF. In order to track and review these changes, Systems Development and Consulting will modify this transaction to include online logging of any changes made to any segment of the database. A report will be generated from this log file for review by Systems Development and Central Payroll. This will be implemented by January 1, 2002. OSPS Section has primary responsibility for the oversight of this issue, and SD&C Section is responsible for the needed programming.

Central Payroll will make a critical review of payroll staff access to the system to determine the appropriate level of risk vs. customer service tradeoffs. As a compensating control, DAS Internal Audit staff will conduct a statistical quarterly review of transactions of Central Payroll Staff to minimize risk exposures. The OSPS Section will take the lead on this issue and the first audit will be completed by September 1, 2001.

Resolved Prior Audit Issues

DAS took the following actions to substantially implement prior audit findings:

- Responsibility for the management of OSPS backup and offsite storage has been

assigned. SCD management provided direction to IRMD regarding its role, including regular periodic reviews of which data should be stored offsite.

- Check reconciliation duties have been assigned to employees who are independent of the manual check writing process. SCD management now more closely monitors the manual check function.
- DAS has removed all dual access conditions within the Personnel and Payroll systems.
- OSPS no longer prints manual checks at the Central Payroll office.

Other Matters

OSPS to SFMS Interface

Our review of the OSPS to SFMS interface found instances in which the records created from the OSPS did not agree with the corresponding SFMS payroll expenditure documents for several agencies during the period July 1999, to April 2000. The review was conducted using monthly totals by agency. We determined that these differences were the result of agency adjustments, not from errors in the automated interface.

We recommend that the department ensure that agencies reconcile their OSPS reports to SFMS and separate accounting systems.

Agency Response:

We agree with this recommendation and note that a reconciliation of OSPS to SFMS is already occurring. The OSPS Section will prepare a new OSPS policy requiring state agency fiscal managers to complete an agency level reconciliation. This policy will be issued by August 1, 2001.

This report, which is a public record, is intended to promote the best possible management of public resources. Copies may be obtained by mail at Oregon Audits Division, Public Service Building, Salem, Oregon 97310, by phone at 503-986-2255 and 800-336-8218 (hotline), or internet at Audits.Hotline@state.or.us and <http://www.sos.state.or.us/audits/audithp.htm>.

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The courtesies and cooperation extended by the officials and staff of the Department of Administrative Services were commendable and much appreciated.

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