

Review of Internal Control Over the Actuarial Projection Process
Report No. 05-04, May 5, 2005

INTRODUCTION

This report presents the results of the Office of Inspector General's (OIG) assessment of controls over the actuarial projection process that serves as the basis for the Railroad Retirement Board's (RRB) statement of social insurance.

Background

The RRB is an independent agency in the executive branch of the Federal government that administers the health and welfare provisions of the Railroad Retirement Act (RRA), funded primarily by payroll taxes and transfers from the trust funds of the Social Security system. During fiscal year (FY) 2004, the Railroad Retirement program paid over \$9 billion in benefits and reported approximately \$30 billion in assets at fiscal year-end.

The RRB submits annual reports on the financial condition of the Railroad Retirement system to the President and Congress. Since FY 2000, the RRB has also been required to publish a statement of social insurance, and certain other disclosures, with its annual financial statements. Effective with FY 2006 financial reporting, the statement of social insurance will be classified as a basic financial statement and will be subject to the more rigorous audit procedures applied to such statements, including tests of internal control.

The RRB established the Management Control Review Committee (MCRC) to provide the Board Members and all RRB stakeholders with reasonable assurance that the RRB is taking systematic and proactive measures to develop and implement results-oriented, cost-effective management controls. The MCRC is also responsible for continually assessing the adequacy of management controls, identifying needed improvements, taking appropriate corrective actions, and reporting annually on management controls. To this end, the MCRC issues guidance, provides advice on control issues referred by all levels of management, encourages and supports coordination of control issues crossing organizational lines and advises senior management on whether reported weaknesses are material. The MCRC helps managers accomplish their management control objectives and obtain ongoing reasonable assurance that the missions of their assessable units are being accomplished and the resources entrusted to them are protected.

The basis for the RRB's annual reports on the financial condition of the Railroad Retirement system and the statement of social insurance is the triennial actuarial valuation of the assets and liabilities of the program. The valuation is updated for reporting during interim periods.

The Bureau of the Actuary is responsible for the preparation of the triennial valuation, interim updates and related required reports, including the statement of social insurance. That organization is assisted by the Actuarial Advisory Committee which provides counsel as to the structure, actuarial methods, actuarial assumptions, and procedures of the valuation, periodic updates, and subsequent reports.

One of the RRB's strategic goals is to serve as responsible stewards for the customers' trust funds and agency resources by ensuring that trust fund assets are projected, collected, recorded, and reported appropriately. This review supports the agency's efforts in meeting that goal.

Objective

The objective of this review was to assess the adequacy of controls over the actuarial projection process that serves as the basis for the RRB's statement of social insurance.

Scope

The scope of this review was internal control over the actuarial projection process including those over the factors, assumptions, data, model, estimates, and the related work processes that combine these elements into actuarial projections and published reports. See Appendix I for definitions of this terminology.

The scope of this audit specifically excluded tests of the accuracy of the projections that result from the process. Risk of inaccurate estimates is a potential effect of inadequate controls.

Methodology

To accomplish our objective, we

- obtained and reviewed documentation supporting the management control review of the actuarial services assessable unit;
- obtained and reviewed documentation related to the operation of internal control including workforce planning and correspondence with the Actuarial Advisory Committee;
- interviewed responsible staff in the Bureau of the Actuary;
- elicited a description of process controls, including quality assurance initiatives, using an internal control questionnaire developed by audit staff; and
- observed the electronic spreadsheet that implements the actuarial model.

We used the Government Accountability Office's (GAO) Standards for Internal Control in the Federal Government as the primary criteria for this assessment.

Our work was performed in accordance with generally accepted government auditing standards as applicable to the objective. Fieldwork was performed at the RRB headquarters in Chicago, Illinois during January through February 2004, and January through February 2005.

RESULTS OF REVIEW

Our review disclosed that the Bureau of the Actuary has not implemented a comprehensive system of internal control for actuarial services, and that the agency's management control review program was not effective in disclosing the system's deficiencies. These deficiencies weaken the RRB's ability to ensure the quality and continuity of its actuarial services. As a result, higher levels of management should limit the reliance that they place on the system of controls for actuarial services when offering assurance on the adequacy of internal control agency-wide.

Effective for FY 2006 reporting, the statement of social insurance will become a basic financial statement. At that time, the lack of a comprehensive system of internal control could adversely impact the auditors' opinion with respect to the effectiveness of internal control in preventing material misstatement.

System of Internal Control Needs Improvement

The Bureau of the Actuary has not developed an adequate program of internal control for its actuarial projections and related reports. Management and staff in the Bureau of the Actuary have described extensive controls over the preparation of projections, estimates and reports; however, they have not formalized their policies and procedures, do not capture evidence of the operation of controls and do not perform periodic evaluations of compliance with internal requirements.

Federal managers are required to develop and maintain effective programs of internal control to provide reasonable assurance that agencies are achieving their objectives with respect to the effectiveness and efficiency of operations, reliability of financial reporting, and compliance with applicable laws and regulations. The Bureau of the Actuary has not fulfilled that requirement because its system of controls for actuarial services lacks key elements.

- The Bureau of the Actuary does not have formal, published policies and procedures for actuarial services. They rely largely on informal communications and institutional knowledge combined with a small, highly trained professional staff with little turnover to ensure a common understanding of management's expectations.
- The bureau does not evidence the processes that comprise key controls over accuracy such as peer-to-peer reviews, analysis and discussion among the professional staff, or review by the Chief Actuary.
- Bureau management relies on the quality of its professional staff to adhere to both organizational and professional requirements but has not formalized a quality assurance program to confirm that those requirements are met.
- Bureau personnel have described an ongoing dialogue with the Actuarial Advisory Committee but very little documentation is available for review. The bureau retains copies of materials sent to the committee but can seldom evidence the committee's response because their meetings and verbal exchanges are infrequently documented.
- The model used for actuarial projections is fully documented only in the electronic spreadsheets that are used to perform the calculations. The relationship between the model and the provisions of law that it implements has not been documented.
- The bureau does not maintain evidence of tests of data inputs or the comparisons and projection results that are generated when projections are first developed or updated.

The deficiencies in the control structure for actuarial services weaken the RRB's ability to ensure the quality and continuity of its actuarial services.

Recommendation #1

We recommend that the Bureau of the Actuary review and revise their internal control program to comply with applicable GAO standards. Such a program would include, but not be limited to:

- formal policies and procedures;
- evidence of the operation of controls;
- a quality assurance program to assess compliance with organizational standards; and
- support for the actuarial model and related data, factors and assumptions as executed.

Management's Response

The Bureau of the Actuary does not agree with the foregoing audit finding stating that “[a]lthough we agree that our documentation of internal controls has not been designed to facilitate an audit, we believe that our current system of internal controls is effective and efficient.” The bureau does not acknowledge that the recommended improvements are required but has agreed “to review our control program for compliance with GAO standards and to make changes if needed.”

In his response, the Chief Actuary describes the controls used to ensure the accuracy and quality of the actuarial projection process and states that “there is no risk that any step in the development of the projections will not be reviewed carefully and in detail...” He also cites the involvement and findings of the Actuarial Advisory Committee as well as the conclusion of an independent actuarial review as evidence of the quality of the projection process. In addition, the Chief Actuary expressed concern that “in assessing our internal control activities, the OIG report does not take into account the professional and technical staffing of the bureau and the nature of its work.”

The full text of the Chief Actuary’s response is included as Appendix II to this report.

OIG’s Comments on Management’s Response

The Chief Actuary has mischaracterized the issue; the OIG’s evaluation criteria did not include whether any aspect of the Bureau of the Actuary’s system of internal controls was “designed to facilitate an audit.” The inability of the Bureau of the Actuary to respond to audit inquiries with concrete evidence of the design and operation of internal control is a symptom of the deficiency not the basis of the audit finding.

The OIG’s finding was that the Bureau of the Actuary’s existing control structure does not include the basic building blocks of an effective system; the primary evaluation criteria were taken from GAO’s Standards for Internal Control in the Federal Government. The GAO was mandated by law to promulgate these standards and the OIG considers them definitive. These standards are sufficiently general that they can be implemented in many ways depending upon organizational mission. The Bureau of the Actuary has not proffered any unique qualities that should exempt, or prevent, their organization from complying with GAO standards.

In their response, as during the audit, the Bureau of the Actuary has tried to redirect the discussion to the experience and professional credentials of its staff and the technical nature of their work. Such subjective evaluations of professionalism will not meet the government-wide requirement for a documented system of controls based on an objective assessment of risk.

More Effective Management Control Review Process Needed

The RRB's management control review process has not been effective in assessing risk, identifying control objectives or developing control techniques for actuarial projections and related work products. As a result, higher levels of agency management do not have an adequate basis for reliance on the management control review for actuarial services when providing assurance on the effectiveness of internal control agency-wide.

Standards for Internal Control in the Federal Government define the minimum level of quality acceptable for internal control in government and provide the basis against which internal control is to be evaluated. The required elements include a risk assessment process, implementation of appropriate control activities, and monitoring to assess the quality of performance over time.

To meet these standards, management must identify all relevant objectives and associated risks for each significant agency activity as part of the risk assessment and analysis process. Management must also identify the actions and control activities needed to address the risks and direct their implementation. The RRB's MCRC provides formal, detailed guidance to managers in performing the assessments and preparing documentation to support the agency's overall assessment of the adequacy of internal control.

The Bureau of the Actuary developed a process flowchart, risk assessment, chart of controls and control techniques for the actuarial services assessable unit as part of the RRB's management control review process. The RRB's MCRC accepted the Bureau of the Actuary's assessment of risk and control effectiveness even though it is insufficiently detailed.

- The identification of risk was limited to the accuracy of tax rates and appropriations.
- The assessment does not reflect the Bureau of the Actuary's role in other arenas such as assessing the impact of proposed legislation or preparation of the statement of social insurance.
- The chart of controls for actuarial services consists of a single, overly broad control objective supported by four control techniques, three of which are workproducts, rather than internal control techniques.

The management control review process was not effective because it did not identify the weaknesses in the control assessment for actuarial services. The process did not provide responsible management with direction and assistance in developing an effective system of internal control. In the absence of feedback to the contrary, the Bureau of the Actuary would have had reason to believe that it had performed an adequate management control review.

Recommendation #2

We recommend that the MCRC work with the Bureau of the Actuary to develop an internal control assessment process for the Actuarial Services Assessable Unit that meets agency and GAO standards for internal control.

Management's Response

The MCRC has agreed to work with the Bureau of the Actuary to document current Actuarial Services controls. The full text of the MCRC's response is included as Appendix III to this report.

Weak Controls Could Adversely Impact Future Financial Audits

The Bureau of the Actuary's existing control structure is inadequate to support an audit of the RRB's statement of social insurance.

Effective with FY 2006 financial reporting, the statement of social insurance, currently included as required supplementary information with the RRB's financial statements, will be classified as a basic financial statement. At that time, internal control over the preparation of that statement will be subject to formal evaluation as part of the annual audit of the agency's financial statements. Internal control is evaluated during a financial statement audit for the purposes of determining the reliance that the auditors may place on management's efforts to ensure that the information presented is free of material misstatement and conforms to applicable requirements.

In a weak control environment, financial auditors typically expand their detailed tests. However, with respect to the statement of social insurance, the American Institute of Certified Public Accountants has stated that "the complexity and subjectivity of the estimates, the volume of data involved, and the importance of controls ordinarily would make performing only substantive tests an ineffective strategy."

Our evaluation of internal control over the preparation of the statement of social insurance disclosed weaknesses that would prevent auditors from relying on management's controls, due primarily to the lack of documentation of the control structure and evidence of the operation of internal control. Auditors cannot test controls of which no evidence has been preserved and cannot rely on controls that have not been tested. If left uncorrected, these deficiencies could rise to the level of material weakness.

Our recommendations for corrective action have been presented in the detailed discussion of internal control issues presented in the preceding sections of this report.

Workforce Planning Could Be Improved

The Bureau of the Actuary's workforce management plan would be enhanced if it were updated annually and revised to include a formal training program. The absence of these elements in the current plan reduces the value of the workforce planning process at the bureau and agency-wide level.

Standards for Internal Control in the Federal Government describe workforce planning as a continuous process that ensures the agency has the right number of people in the right jobs at the right time. Management should ensure that skill needs are continually assessed, and that the organization is able to obtain a workforce that has the skills required to achieve organizational goals.

The Bureau of the Actuary's workforce plan has not been updated since June 2001. Although workforce plans typically cover five years, they should be reviewed periodically to minimize the risks associated with unanticipated changes. In addition, the bureau's workforce plan does not include a professional development training program. The Chief Actuary approves all requests for training paid for by the RRB; however, bureau management does not formally assess training needs or maintain a history of training accomplishments.

Recommendation #3

We recommend that the Bureau of the Actuary revise its workforce plan to include a professional development program and revise the plan at least annually.

Management's Response

The Bureau of the Actuary has agreed to revise its workforce plan to include a professional development program for actuaries. However, they do not agree that it is necessary to revise the plan annually. The full text of the Chief Actuary's response is included as Appendix II to this report.

Definitions
Actuarial Projection Terminology
Relating to the Statement of Social Insurance

Factors

Factors are the elements or variables that affect income or expenditures for a program, and for which data must be gathered and assumptions must be generated, for example the legal, economic, and demographic factors.

An example of a factor is the number of individuals reaching age 65 in a specific year.

Assumptions

Assumptions are expectations about what will happen in the future. An assumption is expressed as a value or direction assigned to a factor.

An example of an assumption is that there will be a 1% increase each year in the next five years in the number of women working outside the home.

Data

Data are organized factual information used for analysis or to make decisions.

An example is census data and classifications of that data, such as the population classified by sex or age. Data may be developed within the entity that prepares the statement of social insurance, or it may come from sources outside the entity.

Model

A model is the method or formula for mathematically expressing how the assumptions and data relate to each other.

For example, a model might predict that a 1% decline in the birth rate in a given year will result in a .2% decrease in social insurance income and benefit payments ten years later. A model is a set of coded instructions, rules, or procedures used to perform a desired sequence of events or to obtain a result. Typically, models are developed by using various computer applications.

Estimates

Estimates are the amounts or valuations that result after processing the factors, data, and assumptions in a model. These estimates will be used in preparing the statement of social insurance.



UNITED STATES GOVERNMENT

MEMORANDUM

FORM G-1151 (1-92)

RAILROAD RETIREMENT BOARD

April 29, 2005

TO: Henrietta B. Shaw
Assistant Inspector General, Audit

FROM: Frank J. Buzzi *Frank J. Buzzi*
Chief Actuary

SUBJECT: Draft Report – Review of Internal Control Over the Actuarial Projection Process

The Bureau of the Actuary appreciates the opportunity to comment on the OIG's report on the review of internal control over the actuarial projection process. Although we agree that our documentation of internal controls has not been designed to facilitate an audit, we believe that our current system of internal controls is effective and efficient.

System of Internal Controls

In making evaluations of the financial soundness of the railroad retirement system, the Bureau of the Actuary recognizes the critical nature of the work being performed and the importance of effective internal controls. Although certain written documentation has not been viewed as necessary in the past, due to our small staff size, we have established procedures which we follow, as well as a series of internal controls. Staff members of the bureau perform many checks throughout the process of producing valuations. There are at least two qualified staff members working independently and then comparing results at every stage of the process. If there are differences in results, we do not go forward until we have reconciled them to our satisfaction. Our policy has always required inputs and results of each stage of the projection process to be reviewed as a matter of course. There are also secondary reviews for reasonableness. Because the work must be done in a certain order, there is no risk that any step in the development of the projections will not be reviewed carefully and in detail before the results are accepted and locked into the next stage of the projection process. As members of the American Academy of Actuaries and the Society of Actuaries, we also review applicable Actuarial Standards of Practice to be certain that our work is in compliance with accepted standards.

Another important factor in making sure that our projections are reasonable and based on sound assumptions is the involvement of the Actuarial Advisory Committee in the process. The Actuarial Advisory Committee reviews the development of the triennial Valuation, from the assumptions used as input through the final projections. Details on the reasons behind the choice of assumptions and the results of the projections are provided to the Committee in a series of written memos as the work progresses. We do not proceed with the next stage in the

projection process until we have received approval from the Actuarial Advisory Committee. The members of the Committee are appointed independently, and the Bureau of the Actuary has no authority over them. As they are required by law to be members of the American Academy of Actuaries, they must meet the Academy's qualification standards in order to issue a statement of actuarial opinion. In its review of the Twenty-Second Actuarial Valuation, the Committee stated:

The Committee believes that the actuarial assumptions are reasonable and that the valuation presents a fair picture of the financial condition of the railroad retirement system.

Also, in an independent actuarial review commissioned by the OIG and issued in November 1997, Watson Wyatt & Company stated:

In general, we found the valuation to be thorough and objective, the methodology to be sound and the assumptions to be reasonable.

For our experienced staff members, the projection model is largely self-documenting. The model fully conveys all the details of the projection process, and a working knowledge of the model is necessary and largely sufficient for staff documentation. We are concerned that, in assessing our internal control activities, the OIG report does not take into account the professional and technical staffing of the bureau and the nature of its work. Guidelines for components with large staffs, more systematized and predictable tasks, and hierarchical structures are not always a good fit for our bureau.

Notwithstanding the above discussion, we agree to review our control program for compliance with GAO standards and to make changes if needed. Our anticipated completion date is July 31, 2006.

Workforce Planning

We agree to revise our workforce plan to include a professional development program for actuaries. However, we do not agree that it is necessary to revise the plan annually, but rather as circumstances change.

cc: John M. Walter, Chairman, Management Control Review Committee



UNITED STATES GOVERNMENT

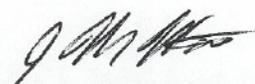
MEMORANDUM

FORM 6-116F (1-92)

RAILROAD RETIREMENT BOARD

TO : Henrietta B. Shaw
Assistant Inspector General, Audit

APR 28 2005

FROM : John M. Walter, Chair 
Management Control Review Committee

SUBJECT: Draft Report – Review of Internal Control Over
the Actuarial Projection Process

Thank you for the opportunity to review and comment on the above draft report dated April 18, 2005. Our comments on the recommendations are as follows:

Recommendation 2: We recommend that the MCRC work with the Bureau of the Actuary to develop an internal control assessment process for the Actuarial Services Assessable Unit that meets agency and GAO standards for internal control.

MCRC Comment: The last management control review for Actuarial Services was completed in 1996. The MCRC and staff will work with the Bureau of the Actuary to document current Actuarial Services controls by the end of July 2006.

We have no comments on the other recommendations in this draft report. If you have any questions concerning our comments, please advise.

cc: Chief Actuary
Chief Financial Officer
Financial Compliance Officer
Management Control Review Committee