Audit of Weighing Services

Audit and Evaluation Services Final Report

Canadian Grain Commission

November 2016



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1. Executive summary

The Weighing Services unit is part of Industry Services at the Canadian Grain Commission. Weighing Services is responsible for carrying out the Canadian Grain Commission's Quantity Assurance Program by verifying and certifying the official weights of grain exported by vessel from Canada's ports. The official weight is reported on the Certificate Final. Weighing Services also tests and certifies scales and conducts process verification audits to ensure licensees are meeting the Canadian Grain Commission's requirements for official weighing.

Audit and Evaluation Services identified the internal audit of Weighing Services as a priority in the 2015 to 2018 risk-based audit plan. The audit was selected due to recent transformative changes in the weighing program and its impact on user fees revenue.

The objectives of this audit were to:

- provide assurance that the weighing oversight program ensures complete oversight coverage of exported grain
- ensure weight certification is accurate, timely and efficient
- assess process verification audits
- assess the training program

Audit and Evaluation Services conducted the internal audit from February to June 2016. The audit included testing of data and transactions from April 2015 to May 2016.

Conclusion

The audit concluded that Weighing Services staff are diligent and accurately validate and certify official weight of exported grain. They work with terminal elevators to ensure reliable weights are reported on the Certificate Final in an efficient manner. Staff receive the training and guidance required to do their jobs. Weighing Services has been successful in developing an audit program to verify that licensed terminal elevators are complying with the Canadian Grain Commission's Vessel Loading Standard for Official Weighing. This audit program is still being implemented.

The audit identified several opportunities for improvement within the weighing oversight program. Most significantly, the objectives for developing weighing oversight to replace the previous on-site program have not been established and approved. We recommend that Canadian Grain Commission management determine the risk tolerance for the weighing function, and that Weighing Services ensure program development aligns with the overall vision for weighing oversight.

Management has committed to creating a comprehensive business case and implementation plan for Weighing Services that will address the recommendations in this report.

Detailed management action plans

Statement of Assurance

In the professional judgment of the Chief Audit Executive, sufficient and appropriate audit procedures have been conducted and evidence gathered to support the accuracy of the opinion provided and contained in this report.

The opinion is based on a comparison of the conditions as they existed at the time, as described in the audit scope, against pre-established audit criteria. The opinion is applicable only to the activity examined. This audit engagement was planned and conducted in accordance with the Government of Canada's internal auditing standards.

2. Introduction

Authority for audit

The mission of the Internal Audit function of Audit and Evaluation Services is to provide independent and objective assurance services. These services are designed to add value and improve the Canadian Grain Commission's operations. Internal Audit helps the Canadian Grain Commission accomplish its objectives by bringing a systematic, disciplined approach to assess and improve the effectiveness of risk management, control and governance processes.

Audit and Evaluation Services included the audit of Weighing Services in its 2015 to 2018 risk-based audit plan. The Departmental Audit Committee recommended approval of the audit to the Chief Commissioner in May 2015.

Background

The Weighing Services unit carries out the Quantity Assurance Program by verifying and certifying the official weights of grain exported by vessel from Canada's ports. The official weight is reported on the Certificate Final, which accompanies the vessel when it leaves Canada. Weighing Services is also responsible for testing and certifying scales at the Canadian Grain Commission and at licensed terminal elevators through a memorandum of understanding with Measurement Canada. Under Measurement Canada's authority, most of the weighing staff are certified inspectors.

With the transition to a weighing oversight model completed in 2013, Weighing Services also performs process verification audits to ensure licensees are meeting the Canadian Grain Commission's requirements for official weighing. Examples of requirements include specifications for weighing devices and systems, documentation, record keeping, and weighing procedures.

The audit of Weighing Services was identified as a high priority in the 2015 to 2018 risk-based audit plan. While certain key functions carried out by Weighing Services have been audited and reviewed, there has not been a comprehensive audit of the program as a whole. The transition from an on-site role to an oversight role, however, brought the need for an audit to light. The oversight role retained the same responsibility for certifying export weights as the on-site role. At the same time, the validated weight became the sole driver for generating the two most significant user fees in the Canadian Grain Commission's full cost recovery environment: outward official inspection and weighing. Given these issues, reviewing the effectiveness of the weighing oversight program was a priority for the Canadian Grain Commission's senior management.

Objectives

The objectives of the audit were to:

1) assess vessel validation and certification activities to determine if controls are sufficient to ensure complete oversight coverage of exported grain

- 2) provide assurance that weight certification is accurate, timely and efficient
- 3) determine if Weighing Services process verification audits provide sufficient assurance that reported weights are reliable
- 4) assess whether Weighing Services personnel have the training and tools to ensure certified weights are reliable

Scope

The scope of the audit included all Weighing Services activities associated with the four audit objectives during the period from April 1, 2015 to December 31, 2015. The audit focused on weighing activities from April 1, 2015 to December 31, 2015, including validation and certification of vessels loaded within the period and training and development activities. The audit also focused on process verification audits carrying on until May 2016.

Recent system changes in the Canadian Grain Commission's Online Shipping Certification and Recording program to incorporate weighing oversight activities were included in the audit as they relate to the objectives being tested. The audit did not include a full assessment of the effectiveness of the Online Shipping Certification and Recording system development because implementation is ongoing and limited data was available for testing.

Approach and methodology

The audit methodology used by Audit and Evaluation Services is based on guidance provided by the Institute of Internal Auditors and the Office of the Comptroller General of Canada. The standards for internal audit are in the Institute of Internal Auditors' International Professional Practices Framework and the Treasury Board of Canada Secretariat's Policy on Internal Audit.

The audit fieldwork was conducted in February and March 2016. Additional testing was conducted from April 2016 to June 2016. The examination phase included:

- interviewing staff and management from Industry Services, including all members of Weighing Services
- selecting a sample of completed vessels
- obtaining source data and access to records in order to test selected samples against the audit criteria, and assessing the results
 - Audit criteria
- reviewing other documentation and comparing observations to the audit criteria

After the examination phase concluded, recommendations for management were developed in areas where opportunities for control improvements were identified. Recommendations in this report have been categorized to reflect their potential impact. The impact is indicated following the text of each recommendation.

- Criteria for determining the impact of audit recommendations
- Management action plans

3. Findings and recommendations

Objective 1: To assess vessel validation and certification activities to determine if controls are sufficient to ensure complete oversight coverage of exported grain

Until July 2012, Canadian Grain Commission weighing staff were on site at all terminal elevators as grain was loaded on vessels. This allowed weighing staff to physically observe the maintenance and daily testing of bulk scales and the movement of grain through the scales and onto vessels. Weighing staff were able to identify leaks, spills or other events that could compromise the accuracy of the final amount of grain listed on the Certificate Final.

The oversight program was piloted in the Eastern Region and was implemented nationally by August 1, 2013. To move to an oversight program, weighing staff no longer work in the terminal elevators. Terminal operators are required to send vessel packages, including scale tapes and other documents, to regional offices for verification and approval by weighing specialists. These desk audits are performed for every vessel which is issued a Certificate Final. Since 2013, the oversight program has matured to include an audit process based on each terminal's work instruction, which is approved by the Canadian Grain Commission. Also, the program now includes the ability to review recorded scale information for all terminals through automated weight recording and playback systems.

In an oversight program, the overseer directs and monitors a third party who performs the activity being regulated. This often involves the overseer taking on some level of risk (compared to having complete control over the process) in exchange for increased efficiency or decreased costs, or both. Since implementing the weighing oversight program, the Canadian Grain Commission must now rely on the terminal operators to appropriately manage the physical aspects of vessel loading. The Canadian Grain Commission continues to verify 100% of the tonnage loaded on the vessel, but in a different way. In effect, the Canadian Grain Commission continues with the previous weighing program, but the work is performed remotely rather than on-site. While this has reduced the number of resources required, the efficiency of the program may not be maximized.

Based on discussions with Industry Services management, the current level of oversight evolved as the program was implemented. The desired level of oversight, however, has not been discussed strategically at the Industry Services or Canadian Grain Commission management level or at the Commission level. Strategies for a weighing oversight program may include, for example, performing risk assessments for individual terminals and only verifying tonnage on a sample basis for terminals deemed low risk. Terminals that meet criteria such as having good audit results, complete documentation and experienced staff could be deemed low risk. This would allow Weighing Services resources to be focused on creating and executing a more robust audit and monitoring process for all elevators.

The objective and desired outcomes of a weighing oversight program have never been developed and approved. Therefore, as the program continues to develop, it's unclear if decisions are consistent with the Canadian Grain Commission's vision for weighing oversight. Without a clear decision on risk tolerance, it will be difficult to determine if the program is ultimately successful.

Recommendation 1: Level of oversight

We recommend that:

- a) Weighing Services create a business case for the weighing oversight program which would include a risk analysis and recommended allowable tolerance for potential errors in the Certificate Final weight. Considerations should include consequences of inaccuracy, level of Canadian Grain Commission resources available or desired to ensure the tolerance can be met, and requirements under the Canada Grain Act and the Canada Grain Regulations. The business case should clearly tie the program to the Canadian Grain Commission's mandate, illustrate the value to Canadians, and include a logic model that clearly states the desired outcomes.
- b) Industry Services management, Canadian Grain Commission management, and the Commission determine the organization's risk tolerance for the Quantity Assurance Program based on the business case before further development of the weighing oversight program.
- c) The Canadian Grain Commission communicate the specific purpose and role of the weighing oversight program to staff and stakeholders via its website and publications such as the Vessel Loading Standard for Official Weighing.

(Impact: High)

Objective 2: To provide assurance that weight certification is accurate, timely and efficient

The core activity of Weighing Services is weight validation and certification for grain exported by vessel from Canada's port facilities. The approval of official weights in the vessel loading process is key to the Canadian Grain Commission, as the majority of the organization's revenue is based on a per tonne inspection and weighing fee. The processes related to validating and certifying weight were previously reviewed by both Audit and Evaluation Services and Finance, and recommendations were made. Based on these recommendations, a significant systems development initiative was recently completed to integrate inspection and weighing processes, improve controls over entry and review of information, and reduce manual re-keying of information.

Audit and Evaluation Services interviewed weighing specialists in Vancouver, Thunder Bay and Montreal, and tested a sample of completed vessels from each location. The process was found to be largely consistent across both regions, and no errors or control deficiencies were found in the sample. The system changes have improved overall controls within the validation and certification process. At the time of this audit, some functionality, particularly reporting, had not been implemented in production mode. Staff were working with the applications development unit to finalize outstanding issues.

Weighing Services also uses information from the automated weight recording and playback system at each terminal to supplement scale tape data if further investigation is required into the accuracy of a specific weight. Management reported that the current network of automated weight recording and playback systems is not always reliable. Industry Services is currently considering options for improving the availability of accurate data.

Recommendation

None

Objective 3: To determine if Weighing Services process verification audits provide sufficient assurance that reported weights are reliable

Approved Canadian Grain Commission weighing techniques are outlined in the Vessel Loading Standard for Official Weighing. To ensure that terminal elevator operators are adhering to the approved weighing techniques, Weighing Services requires a work instruction from each elevator. The work instruction specifies how the elevator meets the standard in each specific location. Weighing specialists review and approve the elevator work instructions. They then conduct various types of audits to ensure the elevator meets the requirements on a continuing basis.

Desk audits are completed for each vessel. Any resulting observations for the elevator are recorded as feedback. Feedback is shared with the elevators in the Western Region each month and as required in the Eastern Region. Feedback records are also considered during full audits of the elevators. Observations of non-conformance identified during desk audits are reported immediately to the elevator on a corrective action request form. The elevator must respond within a specified time frame.

Surveillance audits occur when weighing specialists are on-site at an elevator for non-audit reasons and can observe processes taking place. These audits may or may not be recorded, depending on whether or not the weighing specialists found any issues. Surveillance audits occur more frequently in the Western Region because the elevators are near the regional office.

Full or partial process verification audits are formal audits of the terminal elevators against the approved work instruction. The process verification audit is based on ISO 9001:2008, which is the basis of Industry Services' overall quality management system. Partial audits only cover a specific section of the work instruction, rather than the full document. If there is no approved work instruction, elevators are audited against the Vessel Loading Standard for Official Weighing. Process verification audits are still relatively new. Weighing staff completed their training as ISO auditors in January 2016. An initial audit of all elevators has yet to be completed.

The overall risk tolerance for the weighing oversight program has not been formally defined. We assumed that management expects process verification audits to provide reasonable assurance that the elevators are carrying out procedures as documented. Likewise, we expected the audit process to be nationally coordinated for consistency across regions. We also expected the audit process to be performed independently and objectively to the extent possible. We expected audits to result in a written report and action plans from management. We expected that audits performed after an initial audit will be chosen on a risk basis.

We observed that:

- both regions consistently use standardized forms to plan and record audit work
- corrective action requests are issued to correspond with observations and nonconformances
- action plans are obtained from elevator management when required

There were similarities and differences in the audit process. We saw evidence that weighing specialists followed up on corrective actions, when practical, to confirm completion. We also found that each region was responsible for scheduling and executing its own audits. These audits, however, are performed by the same weighing specialists who interact with the elevators on a daily basis for weight verification. Some specialists were uncertain of their authority. For example, they were unsure of their authority to request or demand access to certain elevator

employees during the audits. Notice of a Canadian Grain Commission visit differs between the regions. In the Western Region, elevators are typically given up to two weeks' notice of an upcoming audit. In the Eastern Region, notice may be less than 24 hours. Since process verification audits are based on observation and the elevators don't need to prepare, minimal notice of the visit would more likely result in the observation of a typical day.

A nationally coordinated audit process would likely involve centralizing the audit function. Management cited logistical challenges, that is, vast distances and unpredictable loading schedules, as the reason it has not implemented central coordination. Centralizing would significantly improve objectivity because staff would not interact daily with audit clients. Consistency in conducting audits would also be improved. A centralized function would ideally utilize a dedicated auditor or team of auditors. However, having an independent audit leader or manager directing the current audit staff (the weighing specialists) may achieve the same objective.

Recommendation 2: Audit process centralization

We recommend that:

a) To maximize independence, objectivity, and effectiveness, Industry Services management assign responsibility for the process verification audit function to a centralized national role for scheduling, planning, and conducting or coordinating audits.

(Impact: Medium)

Recommendation 3: Conduct of process verification audits

We recommend that:

- a) Industry Services management define the weighing specialists' authority with respect to conducting process verification audits and communicate it to staff and licensees.
- b) Weighing Services give minimal notice prior to visiting an elevator for an on-site process verification audit.

(Impact: Medium)

Objective 4: To assess whether Weighing Services personnel have the training and tools to ensure certified weights are reliable

Training for new weighing staff was well established before the weighing oversight program was implemented. Inward weighing, performed when rail cars from primary elevators unload into terminal elevator facilities, provided opportunity for learning and training. Once employees mastered the required skills and obtained any required certifications, they were assigned the more critical work of outward (export) weighing.

When the inward weighing program was eliminated in 2013 due to legislative changes, the conventional training environment no longer existed. Initially, experienced weighing staff were retained to continue outward weighing duties. However, the weighing oversight program now needs to add new staff, some of whom may not have any hands-on weighing experience. Weighing Services has created a training program to guide a new employee through the steps required to meet both Canadian Grain Commission and Measurement Canada qualifications for the level TI-04 weighing specialist position.

The proposed training program is comprehensive and is partially modeled on Inspection Services' successful Grain Inspector Development Program. However, the inspection program

is much larger than the weighing program and has more trainees to sustain it. Inspection also has a dedicated training unit to keep up with the demands of the training program. Weighing Services' proposed program contains nearly 100 modules, including mandatory Canadian Grain Commission and Government of Canada training and Measurement Canada requirements. The proposed program also requires that daily feedback is given to trainees. Given the small number of weighing staff currently at the TI-04 level, the demands of the program for both the trainee and trainers could be significant.

We expected that a training program would be a national initiative. However, at the time of the audit, the program was being developed in the Western Region with limited discussion with Weighing Services staff in the Eastern Region. Eastern Region weighing specialists interviewed by Audit and Evaluation Services were not aware of the details of the program development, and may have different requirements or limitations to be considered.

Recommendation 4: Training program design

We recommend that:

- a) Weighing Services management ensure that there is national input into the development of the training program so that its scale is appropriate for the weighing program.
- b) Industry Services management analyze the possibility of integrating the weighing and inspection training functions. Although their technical training requirements differ, combining the programs may create efficiencies and other benefits.

(Impact: Medium)

4. Acknowledgements and contacts

We express our appreciation to staff and management of the Weighing Services unit for their assistance during this audit.

This audit has been reviewed with:

N. Gerelus, Director, Industry Services

Audit and Evaluation Services contact:

B. Brown, Chief Audit Executive

Appendix A – Summary of recommendations and management action plans

The following is a summary of recommendations contained in this report with management action plans to address each recommendation identified.

• Criteria for determining the impact of audit recommendations

Recommendation

Management Action Plan

High

Recommendation 1: Level of oversight

- a) We recommend that Weighing Services create a business case for the weighing oversight program which would include a risk analysis and recommended allowable tolerance for potential errors in the Certificate Final weight. Considerations should include consequences of inaccuracy, level of resources available or desired to ensure the tolerance can be met, and requirements under the Canada Grain Act and the Canada Grain Regulations. The business case should tie the program to the Canadian Grain Commission's mandate, illustrate the value to Canadians, and include a logic model that clearly states the desired outcomes.
- b) We recommend that Industry Services management, Canadian Grain Commission management, and the Commission determine the organization's risk tolerance for the Quantity Assurance Program based on the business case before further development of the weighing oversight program.
- c) We recommend that the Canadian Grain Commission communicate the specific purpose and role of the weighing oversight program to staff and stakeholders via the Canadian Grain Commission's website and publications such as the Vessel Loading Standard for Official Weighing.

Weighing Services will conduct a comprehensive review of the Canadian Grain Commission's weighing responsibilities, its roles and its weighing program through a business case. The business case will link the strategic needs of the Canadian grain industry with the desired outcomes of the Canadian Grain Commission. The business case will consider the risks to the Canadian Grain Commission in its justification of the recommend option for the future weighing program. The business case will be presented as a decision document to the Executive Management Committee and the Commission. Once an option is approved by the Executive Management Committee and the Commission, an implementation plan will be created. The implementation plan will detail the process, cost and milestones required to successfully implement the approved business case. The implementation plan will include a communications plan.

The projected completion date of the business case is February 28, 2017. The projected completion date of the implementation plan is April 28, 2017. The Chief of Grain Weighing Services for Canada will be responsible for completion of the plans.

Medium

Recommendation 2: Audit process centralization

 a) To maximize independence, objectivity, and effectiveness, we recommend that Industry Services management assign responsibility for the process verification audit function to a centralized national role for scheduling, planning, and conducting or coordinating audits. This recommendation will be addressed in the business case, to be completed by February 28, 2017.

Recommendation

Management Action Plan

Recommendation 3: Conduct of process verification audits

- a) We recommend that Industry Services management define the weighing specialists' authority with respect to conducting process verification audits and communicate it to staff and licensees
- We recommend that Weighing Services give minimal notice prior to visiting an elevator for an on-site process verification audit

A review of weighing specialists' authority will be conducted via a video conference with all Weighing Services' personnel. This will be accomplished by the end of November 2016 by the Chief of Grain Weighing Services for Canada.

Weighing Services has begun giving minimal notice to terminal elevators prior to audits.

Recommendation 4: Training program design

- a) We recommend that Weighing Services management ensure that there is national input into the development of the training program so that its scale is appropriate for the weighing program.
- b) We recommend that Industry Services management analyze the possibility of integrating the weighing and inspection training functions. Although their technical training requirements differ, combining the programs may create efficiencies and other benefits.

The Weighing Services Development Program document was approved by the acting Chief Commissioner; the Chief Operating Officer; the Director, Industry Services; and the Chief of Grain Weighing Services for Canada in May 2016. The Weighing Services Development Program:

- defines the Weighing Services training program
- describes the required courses and qualifications
- details the necessary lesson plans and training oversite to progress from a newly hired weighing specialist (TI -02) to a fully qualified weighing specialist (TI -04)

The Weighing Services Development Program lesson plans are being concurrently developed as the most recently hired weighing specialists progress through the program.

The Weighing Services business case will address the potential opportunity of integrating aspects of the weighing and inspection training functions. The business case will be developed by February 28, 2017.

Appendix B – Audit criteria

Audit Objective #1: To assess vessel validation and certification activities to determine if controls are sufficient to ensure complete oversight coverage of exported grain	Audit Criterion 1.1: All terminal elevators requiring weighing oversight have been identified and a procedure is in place to provide oversight services for these elevators.
	Audit Criterion 1.2: Procedures have been developed such that all factors contributing to an accurate weight are verified and monitored for each terminal elevator.
Audit Objective #2: To provide assurance that weight certification is accurate, timely and efficient	Audit Criterion 2.1: A consistent methodology has been developed and is followed for weight certification.
	Audit Criterion 2.2: Terminal elevators are given regular feedback about the efficiency and effectiveness of their weighing procedures.
	Audit Criterion 2.3: Process verification audits provide Canadian Grain Commission management's desired level of assurance that approved procedures are being followed at each terminal elevator.
Audit Objective #3: To determine if Weighing Services process verification audits provide sufficient assurance that reported weights are reliable	Audit Criterion 3.1: Terminal elevators are provided with guidance to assist them in developing acceptable weighing procedures, and these procedures are evaluated by Weighing Services.
	Audit Criterion 3.2: Terminal elevators are given regular feedback about the efficiency and effectiveness of their weighing procedures.
	Audit Criterion 3.3: Process verification audits provide Canadian Grain Commission management's desired level of assurance that approved procedures are being followed at each terminal elevator.
Audit Objective #4: To assess whether Weighing Services personnel have the training and tools to ensure certified weights are reliable	Audit Criterion 4.1: Staff are provided with initial and ongoing training and development to ensure all elements of the weighing program are properly executed.
	Audit Criterion 4.2: Staff are given feedback on their performance in a timely manner.

Appendix C – Impact of recommendations

The following categories have been applied to each recommendation within this report. Categories are defined as follows:

High

Recommendation:

- 1. will improve management controls or control environment for the overall program, process, area, division, etc.
- 2. may take considerable effort to implement within the operational environment or may involve a significant change
- 3. may have a significant financial impact
- 4. likely results in assumption of a substantial risk if not implemented, for example, decreased efficiency, higher risk of errors, lost cost-savings opportunities

Medium

Recommendation:

- 1. will improve management controls in that area
- 2. will improve efficiency and/or effectiveness of operations in that area
- 3. is not likely to require a significant effort to implement
- 4. may have some financial impact, or could be a less significant item that could accumulate over time to create a larger impact

Low

Recommendation:

- 1) promotes a good management practice
- 2) likely improves day-to-day work experience
- 3) likely requires minimal effort to implement
- 4) will have limited financial or operational impact