

Audit of Environmental Technology Centre Construction and A&ES Contracting

November 2005

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Acronyms used in the report

\$K	Thousand dollars
A&ES	Architectural and Engineering Services
ASEMD	Administrative Services and Environmental Management Directorate
EC	Environment Canada
BTES	Building Technology and Environmental Systems
DG	Director General
ETAD	Environmental Technology Advancement Directorate
ETC	Environmental Technology Centre
FAA	Financial Administration Act
MERX	National electronic bidding and information service
PG	Purchase and Supply
PWGSC	Public Works and Government Services Canada
Q's and A's	Questions and Answers
SOW	Statement of Work
TB	Treasury Board
TLC	Terrasses de la Chaudière
VHF	Vehicle Handling Facility

Acknowledgments

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- The manager and staff at BTES who provided their time during interviews and the audit by providing documentation and answering questions on the design and construction of the Vehicle Handling Facility (VHF) as well as contracting activities related to the project. Their insights and comments were also crucial to this audit.
- The consulting services of John McGill, who has diligently conducted the detailed audit testing and has provided AEB with construction contracting advice throughout the project.

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Executive Summary

Background

As part of the increased capital projects delegation under the Ozone Annex Submission, the Treasury Board (TB) approved the construction of a vehicle/engine handling facility (VHF) and related laboratory equipment upgrades at the Environmental Technology Centre (ETC) located at 335 River Road South, Ottawa, Ontario. It authorized increases to the contracting authority of the Department for related construction contracts and for acquiring architectural and engineering services (A&ES). Total capital investment for the expansion in accommodation requirements at ETC is expected to be \$7.2 million over a period of four years, beginning in 2001-2002. The TB approval was conditional upon the conduct of an internal audit related to the usage of the increased delegation by October 31, 2005.

In order to meet the commitments contained in the Ozone Annex and amendments to the 1991 Canada/US Air Quality Agreement, vehicle testing capacity and quality had to be significantly increased. The Environmental Protection Service (EPS) therefore planned an increasing number of emissions tests during each of the four years of initial funding for the implementation of the Ozone Annex provisions. The number of tests planned during the first year was 150 (current levels were at 5 to 12 vehicles), requiring a new facility in order to provide vehicle receiving, processing, handling and storage. The planned timeframe between initiation of design and processing of vehicles into the main multi-million dollar facility was less than 12 months. The cost breakdown for this project cannot be extracted from the departmental financial system. The BTES team, however, using the departmental financial reporting and project management tracking systems, has indicated they have been successful in meeting its target dates and budget.

The Departmental Audit and Evaluation Committee (DAEC) initially approved the project for the Audit of the ETC Construction Contracts in the 2002-2003 Audit and Evaluation Plan, as prepared by the Audit and Evaluation Branch (AEB). The project was subsequently deferred to the 2003-2004 plan, pending more advanced construction activity.

Objective and Scope

The purpose of the audit is two fold: to examine the usage of the increased delegation of contracting authority granted to the Minister of the Environment with respect to the implementation of the Ozone Annex; and to examine “due diligence” in the contracting processes used by BTES on a broader base.

Assurance

This internal audit was conducted in accordance with both TBS policy on Internal Audit and the Institute of Internal Auditors Standards for the Professional Practice of Internal Auditing. The criteria for the audit testing were developed using the Office of the Auditor General's *Guide for Auditing Capital Asset Projects* and a standard set of criteria used by PWGSC for construction audits. The major policy reference is the Treasury Board Contracting Policy.

Overall Opinion

Although the audit found full compliance in the identification of requirements for the contracts, it also found irregularities that need to be corrected in other areas (bid solicitation, contract award and contract administration). The significance of some of them may put the Department at risk.

Highlights

A design build and fast-track construction process was used to expedite the construction in order to meet the deadline outlined in EC's Treasury Board Submission for funding for the VHF. While the design-build process adopted allowed construction to proceed expeditiously, EC was required to comply with Treasury Board Contracting Policy. For the most part, there appears to have been substantial compliance; however two areas of concern are:

- the issuance of multiple contracts to the same contractor, the total value of which would have exceeded EC's delegated contracting authority; and
- the manner in which the BTES section established and used source lists for contracts over \$100K did not meet the requirements of the Treasury Board Contracting Policy and the Agreement on Internal Trade (AIT).

There were other process irregularities. However, they were relatively minor and do not appear to present a significant risk for the Department.

Recommendation and Management Action Plan

The contracting practices at BTES need attention. Part of the problem appears to be that they have not been taking advantage of the expertise of EC's existing Material and Contract Management Branch. By the time the Material and Contract Management Branch of the Administrative Services and Environmental Management Directorate (ASEMD) receives the necessary information, procurement planning, bid solicitation and contract award have already been finalized and a contract signed, making impossible to use the expertise of the Material and Contract Management Branch. In addition, the present expertise available within the Material and Contract Management Branch needs to be augmented by a professional contracting officer (PG) with appropriate construction experience as described below. Based on the conclusions of this Audit, measures must be implemented to comply with government contracting policies and regulations.

It is therefore recommended that the Director General of ASEMD acquire construction-contracting expertise, for example by negotiating with PWGSC an agreement for the services of a professional to meet BTES needs. The services of this specialist could be provided under a Memorandum of Understanding or assignment from PWGSC for each major construction project.

Management Response

BTES and ACEMD Material Management have over the past months developed a close working relationship with ACEMD now coordinating construction and A&ES contracting activities at ETC. As part of the reorganization of the department, BTES has been moved under the responsibility of ACEMD

ACEMD have initiated training programs to improve in-house contracting capacity within the ACEMD contracting group and have provided training to BTES and program managers to ensure contracting policies are better understood. ACEMD are also looking to acquire professional contracting staff and have initiated an HR staffing plan to achieve these goals by end of fiscal year.

Introduction

As part of the increased capital projects delegation under the Ozone Annex Submission, the Treasury Board (TB) approved the construction of a vehicle/engine handling facility (VHF) and related laboratory equipment upgrades at the Environmental Technology Centre (ETC) located at 335 River Road South, Ottawa, Ontario. It authorized increases to the contracting authority of the Department for related construction contracts and for acquiring architectural and engineering services (A&ES). Total capital investment for the expansion in accommodation requirements at ETC is expected at \$7.2 million over a period of four years, beginning in 2001-2002. The TB approval was to be conditional upon the conduct of an internal audit related to the usage of the increased delegation by September 30, 2005.

The Departmental Audit and Evaluation Committee (DAEC) initially approved the project for the Audit of the ETC Construction Contract in the 2002-2003 Audit and Evaluation Plan, as prepared by the Audit and Evaluation Branch (AEB). The project was subsequently deferred to the 2003-2004 plan, pending more advanced construction activity.

Context

Since 1990, the federal and provincial governments have been working together to address air pollution. The primary focus has been smog, initially ground level ozone and more recently particulate matter. The transboundary flow of air pollutants from the United States into Canada is very significant. It is estimated that 30% to 60% of the pollutants causing ground level ozone in southern Ontario and up to 80% of the pollutants in southern Atlantic Canada come from the United States.

For this reason, the federal government has been for many years working towards a commitment to reduce transboundary sources of air pollution. In 1997, Canada and the United States signed a plan of action to investigate the transboundary smog issue. This led to negotiations towards the development of the Ozone Annex to the 1991 Canada/U.S. Air Quality Agreement. This Annex is part of the broader Clean Air Agenda that the Minister presented in May 2000.

It should be noted that the Ozone Annex and related documents do not specify a calendar for meeting the provisions of the agreement.

Increased Delegation of Authority

The construction of a vehicle/engine handling facility and related laboratory upgrades at the Environmental Technology Centre was part of an original Treasury Board submission for the Ozone Annex. The proposal sought a one-time increase to the department's ministerial contracting authorities to enter into and amend competitive construction and architectural & engineering (A&E) service contracts that would be required for the expanded facilities and services. Refer to the table 1 for existing departmental and approved TB Submission levels. EC is required to solicit the services of Public Works and Government Services Canada (PWGSC) for amounts greater than those specified below.

It should be noted that Treasury Board approval of this project was not granted until October 25, 2001. The increased delegation of authority for entering into A&E contracts therefore was not available for the many contracts that were awarded prior to this date.

Table 1 – Contracting Authorities

Type of contracting	EC'S existing authority *	TB Submission approval 829314
Construction (Schedule 1)	Competitive \$400,000 Amendment \$200,000	Competitive \$1,000,000 Amendment \$300,000 (or 30%)
Architectural & Engineering (Schedule 3)	Competitive \$40,000 Amendment \$20,000	Competitive \$100,000 Amendment \$30,000 (or 30%)

**Treasury Board Contracting Policy, Appendix C - Treasury Board Contracts Directive, June 26, 1987, as amended*

Objectives and Scope

The purpose of the audit is to examine the usage of the increased delegation of contracting authority granted to the Minister of the Environment with respect to the implementation of the Ozone Annex, in accordance with the *Decision of the Treasury Board-Meeting of October 25, 2001*. The audit was expanded to include "due diligence" in the contracting processes used by BTES on a broader base. BTES and the Audit team agreed to this prior to the commencement of the audit.

Methodology and Criteria

The methodology for the audit included multiple lines of inquiry to ensure the integrity of the findings, conclusions and recommendations, and provide assurance to the audit's findings.

These lines of inquiry involved:

- Extensive review of the Ozone Annex and amendments to the 1991 Canada/US Air Quality Agreement, the TB Submission and Approval, TB Contracting Policy, PWGSC standards, International and Internal Trade Agreements, guidelines and templates, other departmental and Central Agency policies, reports and summaries;
- Interviews with the Manager of BTES, the Chief of Engineering and Management Services, the Head Technical Analysis and Development and, the Head of Management Services;
- Review and analysis of management processes, including documentation from corporate and BTES databases of financial and procurement information and reports;
- Testing of contracts against pre-approved criteria.

The following outlines the step by step approach used in selecting the contract files for audit testing.

In order to strictly meet the condition of TB approval #829314 stating that an "internal audit related to the usage of the increased delegations" be conducted, only 2 contracts issued in the context of this \$7.2 million construction project had to be included in the audit universe. However, it was decided that a cursory examination of all contracts for the project needed to be done, in addition, for contextual purposes and further assurance on the management control framework during the construction and upgrades to the VHF. We ultimately selected for our sample 1 of the contracts where the increased delegation was used, plus an additional 23 contracts, for a total of 24 contracts, for the detailed testing.

The methodology for the sample selection consisted of an analysis of financial and contract information from two separate and unlinked databases, the departmental system (*MERLIN*) and BTES' own financial system (*Quicken software*). Although the databases were compared, a reconciliation of the two databases was outside the scope of this audit. Specifically, three major files were consulted:

- 1) an Oracle Discoverer report produced from the *List of Contracts Issued Wide Report workbook* of the corporate procurement/financial database (*MERLIN*),
- 2) a listing of all contracts for the *VHF and test cell upgrades* containing limited information, provided to us by the BTES Manager, and finally,

3) a comprehensive contract log containing detailed data on all ETC contracts managed in BTES for fiscal years 2001-2002 to 2003-2004. The two latter sources of information were derived from BTES' accounting software.

Using a risk-based approach, a report was created of vendors having an agglomerate total for contracting exceeding the regular delegated authority limits for BTES, (i.e. 400K for construction and 40K for A&ES), along with multiple contracts with similar descriptions given to same vendors. A final sample was drawn up from this vendors report, for a non-statistical representation of three different types of contracts: Construction, A&ES and Services (1 Construction and 1 A&ES contract was placed in a third category type 'Services' because of the nature of the contract and the process used.) A detailed audit was conducted on 8 construction, 14 A&ES and 2 services contracts.

The total value of the contracts audited was over \$ 3 million dollars (\$3.06 M).

Table 2 provides a few statistics concerning the final sample. For analyses purposes, the statistics were compiled using the \$ 7.2 M *Project Contract List* (or source #2, hence named *original listing*). Please note that cost recovery was to be credited to BTES for expenditures incurred on a portion of the work shared between different programs. This explains, in part, why the total value for all contracts is over \$ 7.2 million dollars. Some contracts selected for the sample (identified in the table below as 'other'), although not part of the \$7.2 M project, were included as they were for work done in conjunction with the VHF construction.

Table 2 – Sample Selection

	Number	Dollar value (M)
Total contracts in original listing	87	8.34
Number and value of contracts selected for sample from original listing	18	2.61
Number and value of contracts from original listing not considered high risk	69	5.73
Other* contracts selected for sample	6	.449
<i>* source for other contracts are files #1 and #3 mentioned above</i>		
Total number and value of contracts selected	24	3.06 Million

The criteria used for the audit tests were developed from those used for the PWGSC *Compliance Audit of Construction and A&ES Contracting - Atlantic Region*, as well as the 1989 OAG *Audit Guide "Auditing Capital Asset Projects."* The *TBS Contracting Policy* was used as the overall authority. A copy of the detailed audit criteria is listed in Appendix A.

A balanced reporting process was followed as much as possible, not only to identify any vulnerabilities or risks with contracting practices and procedures, but also to recognize any strengths or successes that have already been demonstrated.

Audit Findings

Construction Deadlines

The TB Submission to implement Canada's commitments contained in the Ozone Annex included a very tight schedule for achieving the commitments' goals. The audit considers the proposed timetable unrealistic in light of current government contracting regulations and trade agreements.

Detailed Audit Findings

In this section, the details of the audit testing results are examined. There were four major categories of audit criteria used in this audit. The results are discussed by criteria category, namely:

- **Criteria A:** The need for the contract was identified and justified and funding was committed;
- **Criteria B:** Bids were solicited and contracts awarded in an open, fair and transparent manner in accordance with government policy;
- **Criteria C:** The contract was consistent with the solicitation and was awarded in accordance with the Treasury Board delegation of Authorities (both standard and increased for the VHF);
- **Criteria D:** The administration of the contract was in accordance with government policy.

The 24 sample contracts were tested against 54 sub-criteria (outlined in Appendix A) within the four major audit criteria categories. In the discussion below, where possible, statements are supported by a specific sub-criterion reference. For each major criterion, a summary table outlines the results of the testing by contract type, i.e. construction, A&ES, and Services. Numbers in the NA (non-applicable) or NE (non-evidence¹) are not included in the pass/fail tabulation.

¹ NE – indicates that “no evidence has been found to pass or fail on a given sub-criterion”

Criteria A – Requirements identification criteria

The need for the contract was identified and justified in the current-year work plan and funding was committed.

There were 2 sub-criteria under Criterion A.

Construction (8)				A&ES (14)				Services (2)				Overall Stats for Criteria A	
Pass	Fail	NA	NE	Pass	Fail	NA	NE	Pass	Fail	NA	NE	Pass	Fail
16	0	0	0	26	0	0	2	4	0	0	0	46	0
100%	0%			100%	0%			100%	0%			100%	0%

An internal committee, called the Contract Review Committee (CRC) was formed for each of the 20 sub-projects under the \$7.2 million dollar project. An example of a sub-project is *Test Cell Number 4 Construction*. The contract with the construction company which did the work on this particular sub-project was in our sample, and it was also one of two contracts where the increased delegation was used.

Each sub-project committee was chaired by the Chief, Engineering and Management Services (for A&ES) or the Head Technical Analysis & Development (for construction), and the program staff at the head level played an active role as participant. The CRC ‘approved’ in principle the contract before (or sometimes after) it was signed by the project manager. The *Contract Information Document*, also signed by the project manager, contained tombstone information for commitment of funds and was sent to Material Management for entry into the Merlin Database (corporate accounting system). The contract with an original signature was sent to NCR Operations in Financial Services at TLC.

The results of the audit tests indicate that all 23 out of 24 files had a fully completed *Contract Information Document* form on file and a copy of the contract, signed pursuant to section 34 of the Financial Administration Act. In one case, the A&ES contract file could not be located by BTES, therefore we did not have evidence of documentation on file.

Criteria B – Bid solicitation and contract award

Bids were solicited and contracts were awarded in an open, fair and transparent manner in accordance with government policy.

There were 26 sub-criteria under Criterion B. As several criteria related to either the competitive or non-competitive process, n/a is a valid response in cases where the criteria did not relate to the process used for a particular procurement.

Construction (8)				A&ES (14)				Services (2)				Overall Stats for Criteria B	
Pass	Fail	NA	NE	Pass	Fail	NA	NE	Pass	Fail	NA	NE	Pass	Fail
76	7	120	5	60	38	250	16	7	4	33	8	143	49
92%	8%			61%	39%			64%	36%			74%	26%

Construction Contracts

BTES uses an open tender process for construction contracts. It is the bidders' responsibility to submit a price for the work covered by the tender documents.

For most of the \$ 7.2M project, BTES was acting as general contractor, a decision which was presented to the oversight committee in January 2002. This committee was comprised of the Director General Administration, the Director General Environmental Technology Advancement Directorate, the Director of Audit and Evaluation Branch, and representatives from Treasury Board and Public Works. The rationale for this decision was to speed up program delivery, thus reducing the risk of NOT being able to deliver the project for the commitment under the Ozone layer. It was decided to use the design build approach as well. Having therefore taken on the role of construction manager, EC had to run the competition for contracts and handle the tender packages. A design build approach, in the words of the BTES Manager, entails 'multiple planning, building design and construction tasks and elements underway at the same time with others added in as timely a manner as possible, taking into account project risks and cost, design, construction and program impacts'.

The process used for construction contracts was generally open and transparent. Improvements could be made related to the source lists, as will be described later in this section.

The results of the audit tests indicate that BTES has passed an overwhelming amount of the criteria, or 92%, in regards to the competitive process for the construction contracts.

An adequate number of bidders were invited, and mandatory site visits were clearly stated. Attendance was formally recorded and addendum issued to all bidders attending the bidding conference. Questions & Answers were distributed to all bidders in writing. Contracts were always awarded to the lowest bidder. Solicitation and contract documents were consistently used, and complete (modelled PWGSC

Terms and conditions). The solicitation process was fair, and change orders were well documented and price supported.

BTES confirmed that solicitations were not posted on MERX. There was certainly a time issue, as the competitive process using Merx can take a minimum of 5 weeks with up to 6-7 weeks not uncommon. Given the tight deadlines for this project, it was felt that this was not an option. However, construction requirements valued at \$100 K and above are subject to the Agreement on Internal Trade (AIT) that dictates the tendering process described therein. Seven out of the eight construction contracts in the sample were over 100K, therefore subject to the AIT. (sub-criterion B.5)

According to article 506 of the Agreement, call for tenders shall be made through either electronic tendering (which would include MERX), publication in one or more predetermined daily newspapers, or through the use of source lists. To establish a source list. The intent to establish such a list needs to be publicized as per Article 504 of the AIT, meaning there should not be any pre-determined list of suppliers.

Section 10 of article 506 of the AIT provides that

An entity that uses a source list shall:

- (a) include information in its policies, procedures and practices describing the circumstances and manner in which the source list is used and any qualification criteria that a supplier must meet in order to register on the source list;
- (b) provide written confirmation of registration to any supplier that requests registration on the source list or indicate the qualification criteria that were not met; and
- (c) on request by any Party, provide that Party with the tender notice and the list of suppliers that will be invited to bid on a specific tender.

One effective procedure to achieve the objectives of the AIT when establishing a source list, is to post the qualification criteria on an electronic board such as MERX, or possibly a publication in one or more predetermined daily newspapers that are easily accessible to all Canadian suppliers. When a list is established, all the qualified suppliers/contractors must be invited if the requirements are subject to the AIT (\$100K and above). Also, an invitation to qualify should be published at least annually (ref Article 506.7).

For this project, BTES used source lists when it conducted its call for tenders. However, according to them, these source lists were made up exclusively of supplier names provided by architects, engineers and their own knowledge of local industry. Accordingly, they were not in compliance with article 506 of the AIT.

A&ES and Service Contracts

The process and rationale used for the sole-source A&ES and Services contracts were generally adequate. However, improvements can be made to certain aspects of the competitive process in regards to A&ES contracts.

For ease of reporting, the following discussion rolls up the results for the 14 A&ES and 2 service contracts together. In the corporate and BTES databases, contracts are either labelled *limited tendering* (sole source) or *selective tendering* (competitive). Out of the 16 A&ES and service contracts in the sample, 9 were identified sole source and 7 competitive.

Competitive contracts: Three out of the 7 A&ES competitive contracts audited were competed in a traditional manner, and bid selection was fair and impartial. However, the results of the audit tests indicate that the process was not as strictly adhered to for other competitions resulting in 4 A&ES contracts let to 2 different firms (sub-criterion B.3). According to section 10.7 of the TB Contracting Policy, three or more companies should be invited to bid for each requirement. In one case (2 contracts) only 2 bidders were invited, and in the other case (another 2 contracts), the unsuccessful bidder was not provided with the RFP (sub-criterion B.6).

Solicitation documents must clearly identify all factors that will be taken into account in evaluating the bids and selecting a winner. There were no rated criteria or point ratings stated in the RFP for 5 out of 7 contracts (sub-criterion B.10) audited. As well, the same files did not contain a summary of the mandatory requirements and whether or not each bidder met them (sub-criterion B.11). More than one individual should evaluate the bids and a consensus should be reached among the evaluators. An evaluation record signed by all members should be kept on file. The scores should also be supported by narrative. In 6 out of 7 cases, there was no signed bid evaluation score sheet on file (sub-criterion B.19). In all cases there was no narrative support for bid evaluation scoring (sub-criterion B.20). It should be noted that BTES management has stated that it was not necessary to rate the proposals as all bidders were considered acceptable, and thus the contract was awarded to the lowest bidder.

Sole-source contracts: Eight out of the 9 contracts had a sole source rationale which was fully documented on file (sub-criterion B.1). A sole source rationale could not be located for one of the files.

Criteria C – Contract Award sub-criterion

The contract agreement was consistent with the solicitation and was awarded in accordance with T.B. delegated authorities.

There were 9 sub-criteria under Criterion C.

Construction (8)				A&ES (14)				Services (2)				Overall Stats for Criteria C	
Pass	Fail	NA	NE	Pass	Fail	NA	NE	Pass	Fail	NA	NE	Pass	Fail
58	6	8	0	66	21	38	1	12	0	5	1	136	27
91%	9%			76%	24%			100%	0%			83%	17%

Construction Contracts

ETC had been given a special increased delegation for construction contracts from \$400K to 1 million for the VHF project.

The construction contract agreements were for the most part consistent with the solicitation and were awarded in accordance with TB delegated authorities. For example, in all documented cases there was a duly signed copy of the contract on the file. Where applicable, there were signed copies of change orders on file, the changes were appropriate and the price justified.

However, the audit found that six out of 8, or 75% of the construction contracts examined, were divided into phases at the tendering stage according to trade, therefore failing criterion C.1, 'not more than one contract for similar work'. (See *Table 3*) It is worth noting that:

- Vendor X had 3 contracts which totalled \$ 295K;
- Vendor Y had 3 contracts which totalled \$ 487 K;
- Vendor Z had 2 contracts which totalled \$ 477 K.

The project manager described this approach as necessary in order to avoid unacceptable delays that would arise if a requirement were delayed until all its individual components were defined (or funding made available). This approach enabled the progressive issuance of contracts as details were finalized.

Table 3 – Sample Construction Contracts in Violation of Criteria C.1

Name of contractor	Contract number	Contract Start Date	Original Contract Amounts	Trade and area of work in VHF
Vendor X	K2620-1-0077	18 mar 02	91,205.00	Electric –Phase III
	K2620-1-0073	18 mar 02	98,670.00	Electric- Phase II
	K2620-1-0079	18 mar 02	105,525.00	Electric- Phase 1V
Total			295,400.00	
Vendor Y	K2620-1-0070	18 Mar 02	279,239.00	Interior Phase II
	K2620-1-0078	18 Mar 02	106,286.00	Interior Phase III
	K2620-1-0081	18 Mar 02	101,217.00	Interior II, III and 1V
Total			486,742.00	
Vendor Z	K2620-1-0072	5 Mar 02	290,920.00	Mechanical–II, III and 1V
	K2620-1-0076	5 Mar 02	186,270.00	Mechanical–II, III and 1V
Total			477,190.00	

Contracts not from the sample appear in Bold.

A detailed review of these files suggests that a phased approach to contracting was not appropriate for the following reasons:

- The request for tender for each project required that the bidder provide a price for the total project as well as separate prices for each of three phases; the work was sufficiently well defined to enable the companies to submit a firm price for each phase.
- Individual contracts were awarded for each of the phases to the same contractor and at the same time. Invoicing and payments commenced simultaneously on all contracts.
- The total value of contracts with Vendor Y and Vendor Z were >\$400K which was in excess of the manager’s approval authority, and against Article 10.6.16 of the TB Contracting Policy.

Given the circumstances, a single contract for all phases should have been issued and approved by the DG of ETAD who had the increased authority delegated by Treasury Board for this project.

Architectural and Engineering Services Contracts

ETC had been given a special increased delegation for A&ES contracts from \$ 40K to \$ 100 K for the VHF project.

As in the case of the construction contracts, the audit found that multiple A&ES contracts were issued to each vendor: 10 contracts between 3 firms for the architectural, structural and mechanical/electrical designs of the VHF. The contracts were split within the same type professional A&ES work required therefore failing sub-criterion C.1, ‘more than one contract for similar work’.

As well, if we consider the ‘bundled’ amounts to each vendor, \$79.5K, \$150.6K and \$79K, it is apparent that BTES did not yet have the increased delegation for issuing contracts over 40 K. (See Table 4) The contracts listed below were either awarded, or included payments for work prior to the 25 October 2001 date of the TB *Record of Decision*, giving BTES increased delegated authority. This would therefore appear to be contrary to article 11.2.7 of the TB Contracting Policy and could be perceived as constituting contract splitting in order to avoid going to PWGSC. These same 10 files appear to have failed audit sub-criterion C.5 ‘contract approval authority was in accordance with Treasury Board delegated authorities’.

A detailed review of these files suggests that the approach used was not appropriate for the following reasons:

- Contracts were awarded on or near the same date.
- Given that the majority of the work was carried out in parallel, it is felt that a single contract for each of the design requirements would have been more appropriate.
- Owing to the cumulative contract values issued to each firm, three single contracts would have required Public Works and Government Services processing.

Table 4 – Sample A&ES Contracts in Violation of Criteria C

Firm	Contract number	Award Date	Initial Contract Amount	Services for the VHF
Firm X	K2620-1-0007	9 Apr 01	26,300	Structural Design
	K2620-1-0008	9 Apr 01	32,300	Structural Design
	K2620-1-0011	18 Apr 01	20,900	Structural Design
Total			79,500	
Firm Y	K2620-1-0003	28 Mar 01	36,800	Architectural Design
	K2620-1-0004	05 Apr 01	39,800	Architectural Design
	K2620-1-0044*	01 Aug 01	39,000	Architectural Design
	K2620-1-0061*	15 Jan 02	35,000	Architectural Design
Total			150,600	
Firm Z	K2620-1-0006	9 Apr 01	28,000	Mechanical Design
	K2620-1-0009	9 Apr 01	29,000	Mechanical Design
	K2620-1-0013	2 may 01	22,000	Mechanical Design
Total			79,000	

*contracts were being billed simultaneously

Criteria D – Contract Administration

The administration of the contract reflected established principles of organization, budgeting, scheduling, financial control and reporting, in accordance with TB policies.

There were 17 sub-criteria under Criterion D. Five out of the 17 sub-criteria were only applicable to Construction Contracts. One sub-criterion applied only to A&ES contracts.

Construction (8)				A&ES (14)				Services (2)				Overall Stats for Criteria D	
Pass	Fail	NA	NE	Pass	Fail	NA	NE	Pass	Fail	NA	NE	Pass	Fail
58	26	52	0	92	15	119	12	13	2	19	0	163	43
69%	31%			86%	14%			87%	13%			79%	21%

All Contracts

Payment administration of the contracts was generally effective. The vast majority of change orders or amendments were approved using the appropriate TB delegated purchase authority level. The documentation was on file and properly signed pursuant to section 34 of the FAA. Change orders or amendments were appropriate in that additional work was not included in the contract Statement of Work (sub-criteria D.1, D.3 and D.4). Invoices were checked for arithmetical accuracy and were also signed pursuant to section 34 of the FAA (sub-criteria D.7 and D.8).

Government policy requires that precautions be taken to ensure that contractors are not paid in excess of the value of the work accomplished. This includes both progress payments and total payments (*reference PWGSC Supply Policy Manual*). It is preferable to provide for the identification of work milestones and associated costs prior to or shortly after entry into contract. This measure allows monitoring of contracts according to government regulations; it ensures that the work is completed quickly, and that the contractor is not paid for uncompleted work.

In the files audited, the contractors were not paid predetermined costs for completion of specific work but a percentage of total costs determined “after the fact” by the contractor. This could result in reducing the incentive for vendor performance, and the increasing the risk of overpayment (sub-criterion D.6). In a typical contract and associated invoices, work was defined very generally and there were no cost estimates associated with them. Billing was a percentage of cost.

Construction Contracts

In five of the seven contract files reviewed, Statutory Performance Declarations were present, but none of the files had Interim or Final Certificates of Completion, which could have consequences on contract sureties (sub-criteria D.12, D.13 and D.15).

The Declarations are a requirement of the contract and ensure that the contractor has carried out its obligation with regards to suppliers and subcontractors.

The payment provisions require the provision of interim and final certifications of completion. The Interim Certification of Completion lists all work that the contractor has not performed or that requires rework. This permits payment for work satisfactorily completed and records outstanding work and remaining cost 'for the record'. Failure to keep track of this could lead to overpayment of funds or unsatisfactory completion of the work.

The Crown has to pay the cost of the Material and Labour Payment and Performance Bonds required under the contract. It is possible to close or at least reduce the insurers' obligation if interim and final certifications of completion are used. These certifications also provide a means to return an appropriate amount of the security deposit should the contractor chose this method of providing security in lieu of bonds.

Payment provisions in the *General Conditions* section of the contracts are very complex and difficult to apply. As a consequence, BTES did not follow all detailed provisions in their payment administration. Some effort should be made to simplify the *General Conditions* to ensure that payment administration is in accordance with them.

Payment of Invoices

A sample of 19 payments related to 6 contracts was tested. Although all the payment processing times were reasonable, there were payments toward 5 contracts (3 different A&ES contracts and 2 different construction contracts) for which invoices could not be located, at Finance (sub-criterion D.10). All contracts were 'fixed time rate' contracts, and the amount of labour was verified prior to payment in all cases (sub-criterion D.17).

As well, reconciliation between payments and invoices related to 2 A&ES files showed that invoices for 5 payments were missing both at BTES and at finance.

Conclusions

Treasury Board, in TB Decision # 829314, authorized increases to the contracting authority of the Minister of the Environment with respect to the implementation of the Ozone Annex. The TB Decision which became effective on the 25th of October 2001, increased departmental authority for competitive contracts and amendments as follows: construction from \$400 K to 1 million (amend to \$300K), and architectural and engineering services, from 40K to 100K (amend to \$30K).

This audit has found that the department used the increased delegation for two construction contracts valued between \$800 and \$900K. One of the contracts was included in our audit sample for detailed testing and met the vast majority of the sub-criteria.

The methodology used for the design and construction of the VHF and upgrades was 'construction management', a methodology rarely used in government, and whereby the BTES Manager took on the role of construction manager. This methodology allowed the Manager control over the tender packages, and this ultimately resulted in cost and time savings. In addition, every effort was made to meet all Health and Safety requirements. However, the Manager, in assuming the role of construction manager, assumed the liability of the project, thus exposing the staff and the Crown to liability.

The audit tested 24 sample contracts against 54 sub-criteria within four major audit criteria categories. The table below provides a numerical representation of summary results of the testing, by type of contract.

Table 5 – Summary Results

Criteria Category	Title and description	% of files which have met the criteria – does not include NA or NE results		
		Construction	A&ES	Services
Criteria A	Requirements Identification – the need for the contract was identified and justified in the then current-year work plan and funding was committed.	100%	100%	100%
Criteria B	Bid Solicitation – bids were solicited and contracts were awarded in an open, fair and transparent manner, and in accordance with government policy.	92%	61%	64%
Criteria C	Contract Award – the contract agreement was consistent with the solicitation and was awarded in accordance with T.B. delegated authorities.	91%	76%	100%
Criteria D	Contract Administration – the administration of the contract reflected established principles of organization, budgeting, scheduling, financial control and reporting, in accordance with TB contracting policies.	69%	86%	87%

Criteria A – Requirements Identification

The sub-criteria in this category looked at whether the need for the contract was identified and justified. *The ETC Vehicle Handling Facility Upgrade and Expansion* project was originally part of ETC's 10 Year Multi-Year Space Optimization and Modernization Plan, and has subsequently been approved by TB Submission 829314 related to the Ozone Annex. A committee was formed and a planning document was developed for each of the 20 sub-projects under the umbrella project. The signatures in the Contract Information Document and signed contracts for the sample contracts adequately justified the need for the contract, and provided a commitment of funding at the appropriate level.

The audit found, however, a number of opportunities for BTES to further improve the competitive process, especially in respect to bid solicitation for A&ES and Services contracting (Refer to Criteria B in Table 5).

Criteria B – Bid Solicitation

The audit found the construction contracts fared well for Criteria B. In fact the sample files met all of the sub-criteria except that contracts over 100K failed to meet the requirement under the Agreement on Internal Trade. There are no provisions in any of the Trade agreements or in the Treasury Board Contracting Guidelines that would permit waiving the bid solicitation process solely on the basis of a self imposed "time constraint" as appears to have been done in this case.

The bidding process for A&ES contracts at BTES needs to be more transparent. "Transparent" means that, depending on dollar value, A&ES contractors across Canada were aware of each of the BTES requirements for which proposals were being sought or a formal sourcing system open to A&ES contractors (sourcing system publicly advertised) was used. Transparent also means that all of the requirements of the project, and the criteria that would be used to evaluate the proposals and select a winner were clearly stated in the RFP. Except for the first contract awarded to the architect, the remaining contracts for the architectural, structural and mechanical designs of the VHF did not involve the formal issuance of an RFP or the proper evaluation of bids. As a consequence, the process did not meet the transparency criteria.

The bidding process for A&ES contracts at BTES also needs to be more open. 'Open' means any of the contractors could have obtained the Request for Proposal and submitted a bid. In the case of the sole source contracts, the justifications for sole source were on file, although they were mostly based on the premise that a competition had been run for the initial contract. This type of justification does not meet the openness criteria.

Criteria C – Contract Award

Using a design-build/construction management approach, BTES severed the award of same-vendor contracts into three, one for each phase. For example, where only one contract would be required to a vendor for the mechanical design of the VHF, three contracts would be issued. The approach was used for both the A&ES and Construction contracts. The audit found this approach might be viewed as inappropriate for reasons stated in the *Audit Findings* section of this report. The main issue is the appearance of contract splitting. Appendix A of the TB contracting policy defines contract splitting as “the practice of unnecessarily dividing an aggregate requirement into a number of smaller contracts”. It should be noted, however, that the Department did have the authority for the aggregate amounts to the vendor in the case of the construction contracts, but did not yet have the authority for the aggregate amounts in the case of A&ES contracts.

Since the Government policy requires, in part, that precautions be taken to ensure that contractors are not paid in excess of the value of the work accomplished, it is preferable to provide for the identification of work milestones and associated costs prior to or shortly after entry into contract as a means to achieve this. In the files audited, the contractors were not paid predetermined costs for completion of specific work but a percentage of total costs determined ‘after the fact’ by the contractor.

Criteria D – Contract Administration

Government policy requires that the payment provisions for construction contract include the provision of interim and final certifications of completion. The Interim Certification of Completion lists all work that the contractor has not performed or that requires rework. This permits payment for work satisfactorily completed and records outstanding work “ (and remaining cost) for the record”. Failure to keep track of this could lead to overpayment of funds or unsatisfactory completion of the work. In 71% of the payment files reviewed, Statutory Performance Declarations were present, but none of the files had Interim or Final Certificates of Completion, which could have consequences on contract sureties. The Crown has to pay the cost of the Material and Labour Payment and Performance Bonds required under the contract. By use of the interim and final certifications of completion, closing or at least reduction of the insurers’ obligation can be affected. These certifications also provide a means to return an appropriate amount of the security deposit.

Recommendation and Management Action Plan

The contracting practices at BTES need attention. Part of the problem appears to be that they have not been making appropriate use of the expertise of EC's existing Material and Contract Management Branch. By the time the Material and Contract Management Branch of the Administrative Services and Environmental Management Directorate (ASEMD) receives the necessary information, procurement planning, bid solicitation and contract award have already been finalized and a contract signed, making impossible to take advantage of the expertise of the Material and Contract Management Branch. In addition, the present expertise available within the Material and Contract Management Branch needs to be augmented by a professional contracting officer (PG) with appropriate construction experience as described below. Based on the conclusions of this Audit, measures must be implemented to comply with government contracting policies and regulations.

It is therefore recommended that the Director General of ASEMD builds construction-contracting expertise, for example by entering into negotiation with PWGSC to develop an agreement for the services of a professional to meet BTES needs. The services of this specialist could be provided under a Memorandum of Understanding or assignment from PWGSC for each major construction project.

Management Response

BTES and ACEMD Material Management have over the past months developed a close working relationship with ACEMD now coordinating construction and A&ES contracting activities at ETC. As part of the reorganization of the department, BTES has been moved under the responsibility of ACEMD

ACEMD have initiated training programs to improve in-house contracting capacity within the ACEMD contracting group and have provided training to BTES and program managers to ensure contracting policies are better understood. ACEMD are also looking to acquire professional contracting staff and have initiated an HR staffing plan to achieve these goals by end of fiscal year.

Appendix A: Detailed Audit Criteria

	Criteria	Sub-criteria
A	The need for the contract was identified and justified in the then current year work plan and funding was committed.	
A.1		Was there a fully completed Contract Information Document on file?
A.2		Was a copy of the contract, signed pursuant to section 34 of the Financial Administration Act, on file?
B	Bids were solicited and contracts awarded in an open, fair and transparent manner in accordance with government policy.	
B.1		Sole source rationale was in accordance with Government Contract Regulations and was fully documented on file (Art. 10.1)
B.2		In the case of a sole source service contract, the requirement did not create an employer/employee relationship (Art. 16.3)
B.3		In the case of requirements competed in a traditional manner, bidders were selected in a fair and impartial manner. (Art. 10.7)
B.4		Was the requirement competed on Merx? If yes, were all policies and procedures followed? (Trade Agreements and Article 2)
B.5		Solicitation document provided in bilingual format, if requested?
B.6		Were specifications unduly restrictive so as to limit competition? 4.1.2
B.7		Was the bid period reasonable i.e. no less than 15 days? SPM para 7.B.211
B.8		Were bid and contract security requirements specified in the tender document?
B.9		Were mandatory requirements clearly stated in the RFP? 10.7.24 - 10.7.27
B.10		Were rated criteria and point ratings clearly stated in the RFP? 10.7.24-10.7.27
B.11		Was there a minimum pass mark for the rated criteria? 10.7.24-10.7.27
B.12		Was the selection method clearly stated in the RFP? 10.7.24-10.7.27
B.13		If there was a Bidders' Conference/Briefing Session or Mandatory Site Visit, were Q's and A's distributed to all potential bidders? SM 7C.260
B.14		If the project manager sought clarification of a bid or there was a modification made to it, this did not give any bidder an advantage over the others and did not alter the price quoted or any substantive element of the bid.
B.15		A summary of mandatory requirements and whether or not each bidder met them was on the contract file. SM 7D.360
B.16		Was a bid not meeting a mandatory requirement rejected as being non-responsive, If no, explain. 10.8.6 and 10.8.7
B.17		If there was an unusually low bid, the bidder was given the opportunity to confirm it in writing or withdraw it. If the bidder was permitted to change its price, provide a full explanation. 10.8.14
B.18		Bids were evaluated exclusive of GST and HST SM 7D.397
B.19		Was there a signed bid evaluation score sheet on file?
B.20		Was there narrative support for bid evaluation scoring?
B.21		Was the contract awarded to the bidder who was determined to be the successful bidder in accordance with the bid evaluation and contractor selection criteria in the RFP?
B.22		If not, appropriate rationale was on file explaining why the successful bidder was by passed and the contract approved at the non-competitive level. SM 7D.455

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B.23		Notification Letters were sent to all unsuccessful bidders.
B.24		Unsuccessful bidders were debriefed on their proposals, if requested.
B.25		Was bid security returned to bidders?
B.26		If there was a sole source situation or If only one responsive bid was received the project manager determined that it represented fair value by requesting and examining price support from the bidder or comparing its bid to previous contracts for similar work and "a most favoured customer certification" was obtained 10.8.8 and 10.8.9
C	The contract was consistent with the solicitation and was awarded in accordance with T.B. delegated authorities	
C.1		There was not more than one contract for similar work or a portion of another contract contained same work. (Contract Splitting) (Art. 10.6.16)
C.2		Was there a contract amendment for work that similar or identical to original contract (Contract Splitting)(Art. 10.6.16)
C.3		Contract approval level was determined by using the total contract price including any allowances for anticipated changes or amendments.
C.4		The technical requirement and all terms and conditions of the contract matched those of the solicitation document.
C.5		Contract approval authority was in accordance with Treasury Board delegated authorities. Appendix "C" to TB Cont Policy
C.6		Was there a contract on file signed pursuant to Section 34 of the FAA by the correct authority and the contractor?
C.7		Was an advance payment made to the contractor prior to work being commenced?
C.8		If so, was it made in accordance with Treasury Board policy? If not, explain.
C.9		Were performance and Material and Labour bonds and other insurance requirements obtained per tender?
D	The administration of the contract reflected established principles of organization, budgeting, scheduling, financial control and reporting in accordance with T.B contracting Policies.	
D.1		Any change orders were approved using the appropriate T.B. delegated purchase authority level Appendix "C" to TB Contracting Policy
D.2		If a change orders increases risk to Crown without corresponding consideration, approval was obtained from Treasury Board?
D.3		There was a copy of change order(s) on file signed pursuant to section 34 of the FAA.
D.4		The change order was appropriate I.e. The additional work was not included in the contract SOW, etc.
D.5		Price justification/cost breakdown was on the contracting file for the change order. Note - if "no" was there any evidence that the project manager reviewed the price justification/cost breakdown? If so, indicate in the "comments" section.
D.6		The progress payment/milestone schedule clearly identified the deliverables that were required before payment would be made.
D.7		There was evidence on the file that the invoice was checked for arithmetical accuracy.
D.8		The project manager signed the invoice pursuant to section 34 of the FAA.
D.9		Request for a payment (33) signed authority other than section 34 signee.

D.10		Was payment to the contractor made promptly?
D.11		Was there an instance of a complaint by the contractor, and was there an indication that the issue was attended to promptly?
D.12		A Performance Statutory Declaration was on the Project Manager's file.
D.13		An interim certificate of completion was on file with a costed list of deficiencies.
D.14		The total deficiencies were subtracted from the holdback and only the remainder paid to contractor.
D.15		A final certificate of completion was issued when all work was completed and was on file.
D.16		Final holdback was released at final certification stage.
D.17		In the case of fixed time rate contracts, the amount of labour was verified prior to payment.