



INSTALLATION REPORT OF AUDIT

F2010-0010-FDN000

**American Recovery and Reinvestment
Act of 2009 Requirements
Air National Guard Military
Construction
177th Fighter Wing
Atlantic City International Airport NJ**

Northeast Area Audit Office

1 December 2009

INTRODUCTION

On 17 February 2009, the President signed into law the American Recovery and Reinvestment Act of 2009. The goal of the Recovery Act is to provide an infusion of money within specific guidelines that will result in a jump start to the United States economy. In March 2009, the 177th Fighter Wing (177 FW) received \$4.3 million in Recovery Act funds to construct F-16 Arm and Disarm Aprons at the Atlantic City International Airport.

OBJECTIVES

The Department of Defense Inspector General requested this centrally-directed audit to determine whether 177 FW personnel properly managed Recovery Act military construction requirements. Specifically, we determined whether wing personnel:

- Properly justified the Recovery Act project.
- Conducted environmental studies for the project.
- Properly scoped and supported primary and supporting facility costs identified on the Department of Defense Form 1391, *Military Construction Project Data*.
- Prepared an economic analysis or obtained a certificate of exception.
- Reported contract information so it was transparent to the public.
- Included all new Federal Acquisition Regulation clauses in Recovery Act contracts and associated documents.
- Met the goals of the Recovery Act by fostering competition, expeditiously awarding the contract, and creating or retaining jobs.

CONCLUSIONS

The 177 FW personnel effectively managed the first two Recovery Act requirement areas reviewed. However, we were unable to review the last three sub-objective areas because the solicitation for the apron's construction was not created and the available Military Construction Cooperative Agreement requires Consolidated Federal Regulation (CFR) subparts versus Federal Acquisition Regulation (FAR) clauses when using Recovery Act funds. In addition, the 177 FW personnel can improve

management of the two remaining Recovery Act requirements. Specifically, wing personnel:

- Properly justified the Recovery Act project and conducted environmental studies for the project. Fully justified projects support that government funds are not wasted on frivolous projects. Completing environmental assessments ensures leadership considers environmental factors prior to commitment of resources to prevent environmental damage. (Tab A, page 1)
- Could not support the cost estimate portion of the \$4.3 million Recovery Act funded apron construction projects. As a result, we could not determine if \$4.3 million in estimated costs for the Recovery Act funded project were accurate or valid. (Tab B, page 3)
- Did not prepare an Economic Analysis or apply for a Certificate of Exception. Completing an economic analysis ensures leadership has information available to make construction decisions that are in the best interest of the Air Force before construction projects are programmed and contracts are awarded. (Tab C, page 5)

RECOMMENDATIONS

We made two recommendations to improve the overall effectiveness of Recovery Act projects. (Reference the individual tabs for specific recommendations.)

MANAGEMENT'S RESPONSE

Management officials agreed with the audit results and recommendations in this report. Corrective actions planned are responsive to the issues and recommendations included in this report. Therefore, this report does not contain disagreements requiring elevation for resolution.



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BACKGROUND

While the purpose of the American Recovery and Reinvestment Act of 2009 is to quickly infuse money into the United States economy, civil engineers must ensure military construction projects are fully justified and follow environmental guidelines. During the planning stage, the civil engineer programmer justifies the need for the project by completing a Department of Defense (DD) Form 1391, *Military Construction Project Data*. The justification data on the form includes information about the project such as mission impact, people and productivity, and the effect if the project is not accomplished. Additionally, during the planning stage of a military construction project, an environmental assessment must be completed to document the construction's impact on the environment. It also identifies additional costs due to environmental factors.

AUDIT RESULTS 1 – PROJECT VALIDITY

Condition. Civil engineer personnel properly justified the Construct Arm and Disarm Aprons project at the Atlantic City International Airport. In particular, personnel:

- Provided justification for properly sized and configured pavement surfaces at each end of the runway to support the arming and disarming of fighter aircraft. These aprons are required for final check and inspection of aircraft before takeoff and to ensure weapons safety after returning to the base.
- Described the current situation including the Fighter Wing's location on a commercial airport and the wing's impact to commercial airport operations. Specifically, arm/disarm aprons currently do not exist at either end of the runway. The lack of such areas requires arming/disarming fighter aircraft on the parallel taxiways, which blocks the taxiway and creates a hazardous condition for commercial airlines. The alternative is to taxi munitions-loaded aircraft down the taxiway exposing military and commercial aircraft, airport facilities, and military and civilian personnel to a potential hazard. An arm/disarm apron on each end of the runway will eliminate the need to taxi armed aircraft with the use of a unidirectional landing restriction.
- The justification explained that if the arm/disarm aprons are not constructed; operations cannot be performed in compliance with prescribed safety regulations and procedures. Further, the wing commander must currently accept the risk of a potential mishap causing harm or injury to civilian personnel and facilities with extreme liability for the Air Force.

Cause. This positive condition occurred mainly because wing civil engineer personnel properly identified and documented the current situation and the impact if construction was not provided on the DD Form 1391.

Impact. Fully justified projects support the government funds are not wasted on frivolous projects. Further, constructing this project should result in continued commercial airport operations while fighter wing personnel arm and disarm munitions in a safer and more effective manner.

AUDIT RESULTS 2 – ENVIRONMENTAL CONSIDERATIONS

Condition. Civil engineer personnel accurately identified environmental requirements for the Arm and Disarm Aprons military construction project at the Atlantic City International Airport. Specifically, reviews of the Environmental Assessment and Environmental Impact Study documents disclosed that all required environmental analyses were accomplished.

Cause. This positive condition occurred because wing environmental personnel properly identified all state and local studies conducted and maintained evidence of completed analyses to evaluate the resource commitment and prevention of environmental damage.

Impact. Accomplishing the environmental analyses ensures that Air National Guard decision-makers consider environmental factors prior to commitment of resources and prevents environmental damage.

BACKGROUND

Civil engineer programmers plan or “scope” military construction projects. Part of scoping a project requires the programmer to develop space and infrastructure requirements, cost estimates, and record the data on the DD Form 1391. Cost estimates are categorized into primary (price per space unit, anti-terrorist protection, and environmental conservation design costs) and supporting facility costs (utilities, pavements, communications, site improvements and other special requirements). Cost estimates are developed by using Department of Defense and Air Force guidance or other fully justifiable cost data. The DD Form 1391 must be closely scrutinized, first by the installation civil engineer, and then by the major command military construction programmer, to validate cost estimates are in-line with guidance and are fully justified with historical and supporting cost data. Then, Air Force Instruction 32-1021, *Planning and Programming Military Construction Projects*, paragraph 1.3.6, requires Major Command Military Construction program managers to validate costs listed on the DD Form 1391 provided by the installation and ensure each line item is supported with *Parametric Cost Estimating System* (PACES), Unified Facilities Criteria, and/or the Historical Air Force Construction Cost Handbook, or fully justified with other acceptable cost data. The DD Form 1391 is documented in the *Automated Civil Engineer System – Project Management Module* (ACES-PM) and is used to explain and justify the project to all levels of the Air Force, Office of Secretary of Defense, Office of Management and Budget, and Congress.

AUDIT RESULTS 3 – SCOPE AND SUPPORT

Condition. The 177th Civil Engineer personnel could not support the cost estimate portion of the \$4.3 million Recovery Act funded apron construction projects.

Cause.

- Wing civil engineer personnel did not document the specific source of every line item recorded on the original DD Forms 1391 and identify how the costs were derived in order for the major command military construction programmer to validate cost estimates were in-line with guidance and were fully justified with historical and supporting cost data.
- Additionally, when National Guard Bureau (NGB) personnel selected the project for Recovery Act funding in 2009, they combined two originally planned apron construction projects into a single construction project for Recovery Act funding and did not properly update the DD Form 1391 with revised cost estimates.

Impact. As a result, we could not determine if cost estimates for the \$4.3 million Recovery Act funded project were accurate or valid. Further, during construction execution, wing civil engineer personnel will not have accurate construction material quantity or cost data to enable proper contract quality assurance reviews.

Audit Comment. The NGB cause identified in this tab cannot be corrected at the wing level; therefore, we will forward this issue to the Audit Control Point for review and possible inclusion in an Air Force-wide report of audit.

Recommendations. The 177th Civil Engineer Squadron Commander should:

- Recommendation B.1. Direct civil engineer programmers to document the specific source of each cost estimate recorded on the DD Form 1391 and identify how the cost was derived.
- Recommendation B.2. Direct civil engineer programmers to report the specific sources of cost estimates and supporting derivative information to the major command military construction programmer.

Management Comments. The Commander, 177th Fighter Wing, concurred with the audit results and recommendations, and stated:

- Recommendation B.1. “The 177th Civil Engineer Squadron Commander will direct civil engineer programmers to document the specific source of each cost estimate recorded on the DD Form 1391 and identify how the cost was derived. Estimated Completion Date: 31 December 2009. (**OPEN**)
- Recommendation B.2. “The 177th Civil Engineer Squadron Commander will direct civil engineer programmers to report the specific sources of cost estimates and supporting derivative information to the major command military construction programmer. Estimated Completion Date: 31 December 2009. (**OPEN**)”

Evaluation of Management Comments. Management comments addressed the issues raised in the report and management actions planned should correct the problem. Therefore; this tab does not contain any disagreements requiring elevation for resolution.

BACKGROUND

Air Force Instruction (AFI) 65-501, *Economic Analysis*, paragraph 1.3, states the Economic Analysis (EA) is a systematic approach to evaluate situations where more than one alternative exists. It is designed to confirm which alternative is in the best interest of the Air Force, such as whether to maintain, renovate, repair or construct facilities and infrastructure. The comptroller is the Office of Primary Responsibility for EAs and also responsible for preparing waiver requests (Certificates of Exception) from EAs (paragraph 1.6.2). An EA waiver must be requested if the costs of conducting the analysis clearly outweigh the potential informational benefits (paragraph 1.2.2.1), the Office of the Secretary of Defense or higher authority directs a new or modified program and specifies how to accomplish program goals, or legislation specifically exempts a project from an EA. The MILCON program has additional requirements for waiver documentation which are the responsibility of engineering offices.

Air Force Instruction 32-1021, *Planning and Programming Military Construction Projects*, paragraph 3.3.3, states Headquarters Air Force, Major Commands, and installations shall validate each construction project by verifying the requirement creating the need for the proposed project, and confirming the project is the most cost effective means of satisfying the requirement. Projects justified on an economic basis, and all projects costing over \$2 million, require an EA.

AUDIT RESULTS 4 – ECONOMIC ANALYSIS

Condition. The Arm and Disarm Aprons project was not supported by an economic analysis.

Cause. This condition existed because:

- Initially, the Construct Arm and Disarm Aprons project was two separate projects, each under the \$2 million dollar threshold for EA requirement; therefore an EA was not required at the projects' conception. However, NGB civil engineer personnel did not obtain an EA or apply for a Certificate of Exception when they combined the projects and selected them for Recovery Act funding, totaling \$4.3 million.
- The quick turnaround imposed on Recovery Act funded projects impeded the completion of the EA or obtaining a waiver.

Impact. Completing an economic analysis ensures leadership has information available to make construction decisions that are in the best interest of the Air Force before construction projects are programmed and contracts are awarded.

Audit Comment. This condition cannot be corrected at the wing level; therefore, it will be forwarded to the Audit Control Point for review and possible inclusion in an Air National Guard report of audit.

Recommendations. No recommendations were required at the installation level.

Management Comments. The Commander, 177th Fighter Wing, concurred with the audit results.

Evaluation of Management Comments. No recommendations were required at the installation level. Management concurred with the audit results, therefore; this tab contains no disagreements requiring elevation for resolution.

Glossary of Acronyms

ACRONYM	DESCRIPTION	PAGE INTRODUCED
AFI	Air Force Instruction	9
DD	Department of Defense	1
EA	Economic Analysis	9
FAR	Federal Acquisition Regulation	6
FPDS	Federal Procurement Data System	12
MCCA	Military Construction Cooperative Agreement	6
MILCON	Military Construction	9
NGB	National Guard Bureau	3
PACES	Parametric Cost Estimating System	3
SJTA	South Jersey Transportation Authority	6
TAS	Treasury Account Symbol	12
UFC	Unified Facilities Criteria	11
USPFO	Unites States Property and Fiscal Officer	6

AUDIT SCOPE

Audit Coverage. To determine whether 177 FW personnel properly managed Recovery Act military construction requirements, we reviewed military construction documentation dated from February 1997 to August 2009. We performed audit field work from August 2009 to September and issued a draft report to management on 16 November 2009.

- Project Planning. To determine whether wing personnel properly justified the Arm/Disarm Aprons construction project, we discussed this project with installation and National Guard Bureau civil engineer personnel. We reviewed both the original project DD Form 1391 from 2003 and the combined/updated DD Form 1391 created in 2009. We also reviewed the 177 FW 5-Year Plan and Facility Board meeting minutes, the Military Construction Cooperative Agreement (MCCA), MCCA Technical Appendix, Unified Facilities Criteria (UFC) 3-260-01 on *Airfield and Heliport Design*, the US Department of Transportation Circular on Airport Design, and other project documentation.
- Environmental Considerations. To determine whether civil engineer personnel conducted environmental analyses for the project, we obtained and reviewed the environmental impact study and environmental assessment report. We compared assessed areas (air installation compatible zone/land use, air quality, water resources, safety and occupational health, hazardous materials/waste, biological resources, cultural resources, geology and soils and socioeconomic) to guidance and determined if appropriate areas were reviewed.
- Scope and Support. To determine whether civil engineer programmers properly scoped and supported primary and supporting facility costs, we compared square meter space requirements, unit costs, anti-terrorist protection, environmental conservation design, utilities, pavements, communications, site improvements, contingency, design, and supervision, inspection and overhead costs estimates listed on the DD Form 1391 against guidance requirements, such as UFC 3-260-01 on *Airfield and Heliport Design*, the US Department of Transportation Circular on Airport Design, and other relevant guidance. Additionally, we determined if personnel used appropriate size adjustment factors, area cost factors, escalation rates, and other calculation factors when preparing project cost estimates. We also discussed design and cost estimate development with installation and major command civil engineer personnel.
- Federal Acquisition Regulations. We were unable to determine whether contracting personnel included all new Federal Acquisition Regulation (FAR) clauses in Recovery Act contracts because a contract was not awarded and the available Military Construction Cooperative Agreement (MCCA) required CFR subparts versus FAR clauses.

- Economic Analysis. To determine whether wing personnel prepared an economic analysis or certificate of exception, we requested a copy of the completed documentation, reviewed AFI 65-501, and discussed requirements with installation and National Guard Bureau civil engineer and comptroller personnel.
- Transparency and Goal Attainment. We were unable to determine whether personnel reported the contract data transparently to the public or met the goals of the Act by fostering competition, expeditiously awarding the contract, and creating or retaining jobs because South Jersey Transportation Authority contracting personnel have not completed award of the aprons construction contract.

Sampling Methodology. We used the following sampling concepts and Computer-Assisted Auditing Tools and Techniques (CAATTs) to complete this audit:

- Sampling. The Department of Defense Inspector General developed an American Recovery and Reinvestment Act military construction sample based on predictive analysis of critical risk factors (a form of judgmental sampling). The Air Force Audit Agency received a sample of 13 military construction projects at Air Force bases from the Inspector General. The Arm/Disarm Aprons project was one of the 13 projects.
- Computer Assisted Auditing Tools and Techniques. We used computer-assisted auditing tools and techniques to interpret, analyze, and summarize our audit results. Specifically we downloaded the Treasury Account Symbol (TAS) report dated 5 August 2009 from the Federal Procurement Data System (FPDS). We used the *Microsoft Excel*® 'Filter' function to determine the number of Recovery Act contract items. Specifically, in the *Microsoft Excel*® version of the report, we then filtered the report data by Contracting Agency Name and searched for the Department of the Air Force. We then further filtered the report by the TAS Major Program, and selected 3830 Air National Guard Military Construction appropriation. We also performed the same steps for the Department of the Army, as United States Property and Fiscal Officer contracts are reported under the Army. We did not identify any appropriation 3830 contracting actions in FPDS for the 177 FW.

Data Reliability. We did not use or rely on computer-generated data to support conclusions in this audit. Square meter space and cost estimates listed on the DD Form 1391 were not developed from Parametric Cost Estimating System, but rather manually generated by the installation (for original estimates) or major command (for revised estimates) civil engineer programmer. Data on the DD 1391 is entered into Automated Civil Engineer System – Program Management;¹ however we were unable to validate the cost data on the DD Form 1391 because

¹ The Automated Civil Engineer System – Program Management is a system that houses data about military construction projects. The system utilizes distributive processing, with information entered at local desktop computers to generate daily updated project data for worldwide availability.

there was no documentation to support the estimates. Additionally, no other documentation or information reviewed during the audit was system generated.

Auditing Standards. We accomplished this audit in accordance with generally accepted government auditing standards and, accordingly, included tests of management controls over construction cost estimate documentation, document retention, and construction project and contract management oversight.

Discussion with Responsible Officials. We discussed or coordinated this report with the 177th Fighter Wing, Mission Support Group, Civil Engineer Squadron, and Financial Management (Comptroller) Commanders, and other interested officials. We advised management that this audit was part of an Air Force-wide evaluation on American Recovery and Reinvestment military construction projects (Project F2009-FD1000-0659.000). Therefore, selected data not reflected in this report, as well as data contained herein, may be included in a related Air Force or Air National Guard report of audit. Management's formal comments were received on 30 November 2009 and are included in this report.

PRIOR AUDIT COVERAGE

A review of audit files and contact with installation officials disclosed no other audit reports issued to the 177 FW by the Department of Defense or Air Force Inspectors General, the Government Accountability Office, or any audit agency within the past 5 years that related to our specific audit objectives.

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PROJECT NUMBER

We accomplished this audit under project number F2009-FD1000-0659.001.

FREEDOM OF INFORMATION ACT

The disclosure/denial authority prescribed in AFPD 65-3 will make all decisions relative to the release of this report to the public.