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Office of Inspector General
Office of Audits and Inspections

Audit Report

Office of Secure Transportation Capabilities



Department of Energy

Washington, DC 20585

June 29, 2012

MEMORANDUM FOR THE ASSISTANT DEPUTY ADMINISTRATOR, OFFICE OF SECURE TRANSPORTATION

George W. Collard

FROM: George W. Collard
Assistant Inspector General
for Audits
Office of Inspector General

SUBJECT: INFORMATION: Audit Report on "Office of Secure Transportation
Capabilities"

BACKGROUND

The National Nuclear Security Administration's Office of Secure Transportation (OST) is responsible for safely and securely transporting nuclear weapons, weapon components and special nuclear material for customers such as the Department of Energy, Department of Defense and the Nuclear Regulatory Commission. Specifically, OST shipments support the nuclear weapons stockpile dismantlement and maintenance schedule as well as the consolidation of nuclear material storage. Accordingly, these shipments are highly guarded for the protection of the public and national security. Because of the critical nature of OST's cargo and its role as the sole provider of this unique capability, any interruption of OST's ability to complete its mission would result in an unacceptable impact on national security.

The demand for OST services is expected to increase significantly over the next 7 years as a result of current Presidential initiatives and international nonproliferation efforts. For example, directives that were developed to support the President's Nuclear Weapons Stockpile Plan identify new life extension or refurbishment programs to the W78, B61 and W88 weapon systems. Additionally, as part of the implementation of the Plutonium Management and Disposition Agreement between the United States and Russia, thousands of nuclear weapons pits will be transported by OST from the Pantex Plant to the Savannah River Site. These various initiatives will require OST transportation of both material and weapon components. OST forecasts show an increase in mission demand through 2019. In fact, OST projected that Fiscal Year 2017 mission demand will be 144 percent of FY 2010 levels. Mission demand is calculated as the number of packages requested to be transported by OST.

Due to the importance of its mission to safely and securely transport nuclear weapons, we performed this audit to evaluate the challenges OST faces in meeting future mission requirements.

CONCLUSIONS AND OBSERVATIONS

We found that while OST has successfully met customer shipping requests in the past and expects to have capacity to meet future requirements, it faces several significant challenges.

These challenges include maintaining the reliability of existing equipment; ensuring that future Federal agent overtime levels are consistent with safe operations; and, validating essential resource planning data. Specifically:

- Based on its own criteria, OST's entire fleet of armored tractors (tractors) is beyond its operational life as of December 2011;
- Federal agents are currently incurring overtime at levels approaching those considered not to be sustainable over the long term; and,
- Information provided by mission forecasts may not be sufficiently reliable to accurately estimate and plan for operational needs.

Accordingly, management attention is needed to address these challenges to reduce the risk that OST will be unable to meet its future mission requirements.

Armored Tractors

OST's existing fleet of operational tractors is beyond its operational life and may not be reliable to fulfill future required missions unless planned fleet improvements are successfully implemented. OST's Site Safeguards and Security Plan states that the useful life of a tractor is 10 years or 500,000 miles, whichever occurs first. While the accrued average mileage of all tractors was 352,000 miles as of December 2011, OST's entire operational inventory of 43 tractors is beyond its operational life, with 33 of those tractors in service over 11 years as of December 2010. In June 2011, OST officials completed a cost analysis for an Armored Tractor Life Extension Program (Extension Program) that consists of a more robust proactive vehicle part preventative replacement plan, and approved the Extension Program for one vehicle at an estimated cost of \$60,000. This vehicle was in production and had not been completed as of December 2011. An OST official told us that a decision had been made to expand the Extension Program to 33 vehicles. According to OST management, the vehicle refurbishments are expected to extend useful lives of the tractors up to an additional 3 to 5 years.

Successful implementation of the Extension Program is critical to the future reliability of the tractor fleet because plans to acquire a next generation tractor have been repeatedly delayed and there are currently no firm delivery dates for new tractors. Specifically, OST planned to submit a request for proposal for new tractors in FY 2008; however, the solicitation was not issued until FY 2012. Currently, OST does not expect production of new tractors to begin until 2014 and no date has been established for delivery of the first unit.

OST officials told us that the tractors were not replaced before the end of the useful lives due to competing management priorities and classification issues. Specifically, management placed a higher priority on other initiatives such as replacing part of the aviation fleet and upgrading the existing communications system. As a result of these prioritization decisions, funding that could have been made available for acquisition of next generation tractors was utilized on other projects. Additionally, with the anticipated production of the next generation tractor, OST management had considered increasing the classification of this vehicle to Confidential National Security Information due to the location of ballistic protection (Armor). According to an OST

official, this consideration added as much as six months to the procurement schedule. Management stated that it ultimately determined that the classification of the next generation tractor should not be increased.

While we did not specifically review prioritization decisions and do not assert that these decisions were inappropriate, we do believe that continued management attention is needed to ensure that OST's tractor capability is adequate to meet future mission needs. The longer the current tractors are employed beyond the useful lives, the more likely significant vehicle reliability issues could develop which could impact OST's ability to complete its mission.

Federal Agents

OST agents are working significant amounts of overtime to meet current mission requirements. In 2003, OST issued a *Performance-Based 5-Year Resource Study* (2003 Study) which noted that 800 to 1,000 annual overtime hours per agent was not sustainable for the long term. Our analysis concluded that agents were working overtime hours approaching those levels. Specifically, during FY 2010, despite working 73 percent of their mission week capacity¹, OST agents averaged 712 hours of overtime and 38 percent of the agents averaged 902 hours of overtime. In our view, the overtime levels currently experienced by OST agents raises concerns about their ability to safely and securely meet the expected increases in workload over the next 7 years. Further, the 2003 Study noted that excessive overtime resulted in agent fatigue and associated safety and security concerns.

To address overtime issues, the 2003 Study stated OST could increase the agent workforce which would reduce the overtime for current agents. Subsequent to the 2003 Study, OST increased the number of agents in an attempt to decrease the average number of overtime hours per agent. However, OST's mission demand also increased during this period. Based on our review of future customer shipping requirements, OST's workload is expected to significantly increase through FY 2019. Since OST agents are already incurring significant amounts of overtime to meet current mission requirements, the increased demand could exacerbate potential adverse impacts to safety and security due to agent fatigue.

To help mitigate the impact of overtime required to conduct mission and training workload while addressing quality of life issues associated with extended periods of time on mission status, OST implemented a predictive schedule. According to OST management, the predictive schedule provides agents with an advance schedule which permits rest between mission and training and is an effective tool to improve agent quality of life. However, in our opinion, the ability of agent resources to safely and securely meet the expected increase in demand for OST services requires continued management attention given the significant amount of overtime currently incurred by the agents.

Forecast Validation

OST's mission forecast methods may not permit the development of sufficient resource planning information. Department Order 461.1B *Packaging and Transportation for Offsite Shipment of*

¹ Mission week capacity is the total number of weeks in a year where any given unit is available for a mission. In FY 2010, that amount was 107.

Materials of National Security Interest requires that OST forecasts be sufficient to meet both planning and operational needs. Additionally, the previously discussed 2003 Study pointed out that the lead time necessary to hire, clear and train agents; build equipment; and, update facilities requires OST to accurately forecast customer requirements several years in advance.

OST however, has not consistently validated its mission requirements forecasts that are used to plan for hiring and training agents and acquiring additional equipment. Currently, OST uses the Transportation Resources Integrated Planning Suite (TRIPS) to forecast mission demands and plan for needed resources. However, with the exception of one limited manual validation of mission demands that compared FY 2006 shipping forecasts to actual FY 2006 shipments, OST has not validated the accuracy of its shipping forecasts. The limited validation of FY 2006 shipments indicated that only 85 percent of forecasted shipments were actually shipped. According to an OST official, the manual validation was labor-intensive, time-consuming and subject to human error.

Also, we noted that OST had not integrated TRIPS, its mission and resource forecasting system, with its mission execution system that tracks actual shipments. Specifically, there is not a common field between the forecasting system, TRIPS, and the execution system, Transportation Command and Control System (TCCS). Currently, TRIPS system utilizes a Campaign Identification Number (CID) as a unique identifier. However, TCCS does not contain any fields in common with TRIPS. This lack of a common field between these two systems makes the comparison and validation of information between TCCS and TRIPS significantly more difficult. To integrate the systems, a common field such as the CID could be added. The CID field could be queried to provide output that could then be used to validate the TRIPS forecasts. OST officials indicated that the addition of a common field would provide a means to validate forecasts.

Because OST is not consistently validating mission forecasts, we could not verify that these forecasts were sufficient to meet both planning and operational needs. Accordingly, OST could be making decisions based on potentially invalid information, actions that could ultimately result in insufficient resources to meet mission needs.

RECOMMENDATIONS

To help ensure the future mission requirements are satisfied, we recommend that the Assistant Deputy Administrator, Office of Secure Transportation:

1. Ensure the timely replacement or accelerated refurbishment of the tractor inventory;
2. Evaluate the impact of the agent overtime that will be needed to meet future mission needs safely and securely;
3. Determine whether additional agent resources are needed to meet future mission needs based on the results of the overtime evaluation; and,
4. Integrate TRIPS and TCCS to foster efficient forecast validation.

MANAGEMENT REACTION AND AUDITOR COMMENTS

NNSA management concurred with the report's recommendations and proposed corrective actions. Officials also indicated that planned corrective actions will be used to continue improving NNSA's secure and safe transport of nuclear weapons. Management acknowledged that it faces significant challenges as a result of the existing fiscal environment, including maintaining the reliability of existing equipment; ensuring that future Federal agent overtime levels are consistent with safe operations; and, validating essential resource planning. In response to our recommendations, management stated that OST plans to post a request for proposal for new tractors in June 2012 and continue an aggressive program to refurbish the tractor fleet; is working to improve workload modeling; and, will "right-size" the agent force based on future workload requirements. Regarding forecast validation, management stated that the forecasting and shipping systems could not be integrated because each one resides on a different classified system. However, OST plans to add a field to the TCCS to track the CID for material being transported. This field would provide a common piece of information between the forecasting and execution tools. Additionally, management stated that the TCCS is migrating to a commercial off-the-shelf system that offers opportunities to create additional fields for historical tracking.

Management's proposed actions are responsive to the recommendations. Management's comments are included in Attachment 3.

Attachments

cc: Deputy Secretary
Associate Deputy Secretary
Administrator, National Nuclear Security Administration
Chief of Staff

OBJECTIVE, SCOPE AND METHODOLOGY

OBJECTIVE

The objective of the audit was to evaluate the challenges facing the Office of Secure Transportation (OST) in meeting future requirements.

SCOPE

This audit was performed between September 2010 and May 2012, at the OST Headquarters and Western Command, in Albuquerque, NM; as well as OST's Eastern Command, in Oak Ridge, TN.

METHODOLOGY

To accomplish the audit objective we:

- Analyzed OST shipment transportation capacity, historical mission data and future demand;
- Evaluated resources needed to meet mission requirements;
- Analyzed armored tractor inventory useful life and compared it to time in service;
- Evaluated armored tractor inventory contingency plans;
- Reviewed Federal agent timesheets and overtime records; and,
- Evaluated validation of OST's forecasting and execution systems.

We conducted this performance audit in accordance with generally accepted Government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. The audit included tests of controls and compliance with laws and regulations necessary to satisfy the audit objective. In particular, we assessed the implementation of the *GPRA Modernization Act of 2010* and found that the National Nuclear Security Administration had established performance measures for OST capabilities. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. Finally, our audit relied on computer-processed data. We determined that the data was reliable for the purposes of our audit.

OST management waived an exit conference.

PRIOR AUDIT REPORTS

- Audit Report on *The National Nuclear Security Administration's Secure Transportation Asset (STA) Program* (OAS-L-04-24, September 2004). The audit determined that although STA is able to meet current workload, we are concerned with the significant gap between customer planned shipments and actual performance. Additionally, there is a risk that STA may not meet projected workload requirements. However, there are several factors and processes in place that should help STA mitigate the possibility of not meeting its future customer requirements. Specifically, STA is hiring Federal agents, procuring additional vehicles, and will have the ability to adjust overtime and workload to better accommodate shipping demands.
- Audit Report on *Audit of Controls over Expenditures Within the Office of Secure Transportation (OST)* (OAS-L-04-05, November 2003). The audit determined that OST routinely purchased goods and services that were appropriate to support intelligence, planning, communications, training, logistics and personnel functions. However, the audit disclosed that OST also expended funds for items that were not required or did not significantly contribute to the mission of the organization. Some of the expenditures were made, in part, because OST management wanted to increase professionalism and "esprit de corps" within its organization.

MANAGEMENT COMMENTS



**Department of Energy
National Nuclear Security Administration
Washington, DC 20585**



APR 26 2012

MEMORANDUM FOR GEORGE W. COLLARD
 ASSISTANT INSPECTOR GENERAL
 FOR AUDITS
 OFFICE OF INSPECTOR GENERAL

FROM: CYNTHIA A. LERSTEN
 ASSOCIATE ADMINISTRATOR
 FOR MANAGEMENT AND BUDGET

SUBJECT: NNSA's comments to Inspector General Draft Report on
 Office of Secure Transportation Capabilities; Project No.
 A10YT010/IDRMS No. 2010-02020

The National Nuclear Security Administration (NNSA) appreciates the opportunity to review the Inspector General's (IG) draft report, "*Office of Secure Transportation Capabilities*."

Based on our review, NNSA generally agrees with the IG findings and recommendations and will use them to continue improving NNSA's implementation of securing and safely transporting nuclear weapons. The Office of Secure Transportation (OST) has safely and securely met customers shipping requests in the past and expects to have capacity to meet future requirements. OST faces several significant challenges as a result of the existing fiscal environment. These challenges include maintaining the reliability of existing equipment; ensuring that future Federal agent overtime levels are consistent with safe operations; and, validating essential resource planning.

I have attached our initial response to the recommendations which highlight planned actions and actions in progress.

If you have any questions concerning this response, please contact Dean Childs, Director, Management Control and Assurance, at 301-903-1341.

Attachment

cc: Donald L. Cook, Deputy Administrator, Defense Programs
 Jeffrey P. Harrell, Assistant Deputy Administrator, NA-15

Initial Response to the Recommendations in
IG Draft Audit Report: "Office of Secure Transportation Capabilities."

Recommendation 1

Ensure the timely replacement or accelerated refurbishment of the tractor inventory.

Concur

The Office of Secure Transportation (OST) does agree and concur. OST has been aggressively working a replacement tractor procurement, in fact, recently completed a request for proposals (RFP). Unfortunately, the solicitation associated with the RFP had to be reissued for a technical error. Working closely with Contracts, the OST anticipates posting a new, revised solicitation in June 2012 and will work diligently towards an award by December 2012. The OST is confident that this timeline supports mission needs.

In conjunction, the OST will continue an aggressive program to refurbish more than thirty of the current tractor fleet. This refurbishment process will increase the reliability of the current fleet while new production is on-going, allowing non-refurbished units to be retired as new builds are delivered.

Recommendation 2

Evaluate the impact of the agent overtime that will be needed to meet future mission needs safely and securely.

Concur

The OST Office of Mission Operations (OMO) agrees that OST needs to understand over-the-road mission workload overtime and how it affects the safe and secure conduct of missions. An effort is currently underway to improve workload modeling within the Transportation Resource Integrated Planning System (TRIPS) to predict over-the-road mission workload in order to meet future mission needs safely and securely.

Recommendation 3

Determine whether additional agent resources are needed to meet future mission needs based on the results of the overtime evaluation.

Concur

OMO agrees that once the future workload requirements are established with certainty then the Federal Agent force will be right-sized to meet all demands placed on it, while ensuring safe and secure over-the-road transportation of cargo requiring the Transportation Safeguards System (TSS).

Recommendation 4

Integrate TRIPS and TCCS to foster efficient forecast validation.

Concur in Principle

OMO agrees that work needs to be done to improve the accuracy of workload forecasting conveyed from the TRIPS modeling system. The issue does not appear to be modeling code used to develop the forecast or constraints placed on it by OST's capability and capacity. The challenge for OST is the use of long-range dynamic estimates of shifting workload to develop static estimates of both physical and human capital requirements. In general TRIPS provides a trend of workload but is completely dependent on the input from the requesting program offices. This input is based on Future Years Nuclear Security Program budget planning. Execution is based on congressionally approved budgets. The best outcome for OST may come from capturing valuable historic data if a field was added to the TCCS to track the Campaign Identification Numbers (CID) for material being transported. This field would provide a common piece of information between the forecasting tool, TRIPS, and the execution tool, TCCS. TRIPS and TCCS cannot be integrated because they reside on two different classified systems, with TCCS being a stand-alone system. By having a common field in both databases then the possibility of analogous reports exists providing that the issues currently experienced in management of the TCCS are resolved. OST is accessing TRIPS as a valid tool for planning and programming and the TCCS is migrating to a commercial off the shelf system which offers opportunities to create additional fields for historical tracking.

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