OFFICE OF THE SPECIAL INSPECTOR GENERAL FOR IRAQ RECONSTRUCTION

BAGHDAD RAILWAY STATION REHABILITATION BAGHDAD, IRAQ

SIGIR PA-06-057
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SPECIAL INSPECTOR GENERAL FOR IRAQ RECONSTRUCTION

July 25, 2006

MEMORANDUM FOR COMMANDING GENERAL, MULTI-NATIONAL FORCES - IRAQ
COMMANDER, GULF REGION DIVISION-PROJECT AND CONTRACTING OFFICE, U.S. ARMY CORPS OF ENGINEERS
DIRECTOR, IRAQ RECONSTRUCTION MANAGEMENT OFFICE

SUBJECT: Report on Project Assessment of the Baghdad Railway Station Rehabilitation, Baghdad, Iraq (Report Number SIGIR-PA-06-057)

We are providing this project assessment report for your information and use. We assessed the in-process construction work being performed for the Baghdad Railway Station Rehabilitation project to determine its status and whether intended objectives will be achieved. This assessment was made to provide you and other interested parties with real-time information on a relief and reconstruction project underway and in order to enable appropriate action to be taken, if warranted. The assessment team included an engineer and an auditor.

The comments received from the Commander, Gulf Region Division-Project and Contracting Office, U.S. Army Corps of Engineers, in response to a draft of this report addressed the issues raised and the actions taken and planned should correct the issues we identified. As a result, comments on this final report are not required.

We appreciate the courtesies extended to our staff. This letter does not require a formal response. If you have any questions please contact Mr. Brian Flynn at (703) 604-0969 or brian.flynn@sigir.mil or Mr. Andrew Griffith, P.E., at (703) 343-9149 or andrew.griffith@iraq.centcom.mil.

Stuart W. Bowen, Jr.
Inspector General

Special Inspector General for Iraq Reconstruction

SIGIR PA-06-057 **July 25, 2006**

Baghdad Railway Station Rehabilitation, Baghdad, Iraq

Synopsis

Introduction. This project assessment was initiated as part of our continuing assessments of selected sector reconstruction activities for Facilities and Transportation. The overall objectives were to determine whether selected sector reconstruction contractors were complying with the terms of their contracts or task orders and to evaluate the effectiveness of the monitoring and controls exercised by administrative quality assurance and contract officers. We conducted this project assessment in accordance with the Quality Standards for Inspections issued by the President's Council on Integrity and Efficiency. The assessment team included a professional engineer and an auditor.

Project Assessment Objectives. The objective of this project assessment was to provide real-time relief and reconstruction project information to interested parties in order to enable appropriate action, when warranted. Specifically, we determined whether:

1. Project components were adequately designed prior to construction or installation;
2. Construction or rehabilitation met the standards of the design;
3. The Contractor's Quality Control plan and the U.S. Government's Quality Assurance program were adequate;
4. Project results were consistent with original objectives; and
5. Project sustainability was addressed.

Conclusions. The assessment determined that:

1. Most of the project components were adequately designed prior to construction. The design package contained site, architectural, plumbing, mechanical, and electrical design drawings. Specifications were provided to the assessment team for the electrical distribution system and the heating, ventilation and air conditioning system. The assessment team did not find a landscape plan, a drainage plan for the passenger platform, or utility drawings for the basement. Additionally, there was no record of approval of the design in the records provided to the assessment team. Regarding the submittal review process, it was not clear who had review and submittal responsibility. The U.S. Army Corps of Engineers Deputy Resident Engineer indicated the responsibility for submittal approval was with the Iraq Republic Railroad. Alternatively, the Facilities and Transportation sector staff indicated the responsibility for submittal review and approval lies with the construction agent, i.e., the U.S. Army Corps of Engineers Gulf Region Division's International Zone Resident Office. Thus, there are divergent views with the staff at the Project and Contracting Office and at the Resident Office regarding the submittal process and functional responsibilities for review and approval.

2. The observed work met the standards of the design. However, because the design was not complete, there were some areas of the renovation that we could not fully assess. There are also outstanding punch list items and other facility issues raised by the Iraq Republic Railway that are being addressed by representatives of the U.S. Army Corps of Engineers International Zone Resident Office through meetings with the appropriate staff of the Gulf Region Division/Project and Contracting Office and Iraq Reconstruction Management Office.

3. The contractor's Quality Control plan was sufficiently detailed to effectively guide the contractor's quality management program. The contractor submitted a QC plan that was approved by U.S. Army Corps of Engineers, which based on our review, met the standards addressed in Engineering Regulation 1180-1-6 (*Construction Quality Management*). The contractor submitted QC reports on a daily basis, which were reviewed by the U.S. Army Corps of Engineers Deputy Resident Engineer. The contractor also maintained deficiency logs to document problems noted with construction/renovation activities.

   The Government Quality Assurance program was effective in monitoring the contractor's quality control program. The U.S. Army Corps of Engineers Local National Quality Assurance Representative maintained daily Quality Assurance reports that documented any deficiencies noted at the site. Based on our review, we found the QAR's reports to be sufficiently complete, accurate, and timely. In addition to containing project specific information to document construction progress and highlight deficiencies, the Quality Assurance Representative also supplemented them with detailed photographs that reinforced the narrative information provided in the reports. The Quality Assurance Representative did maintain a Quality Assurance deficiency log, and the Deputy Resident Engineer and the Quality Assurance Representative ensured deficiencies cited during Quality Assurance inspections were corrected.

4. The Baghdad Railway Station Renovation project results were consistent with the original contract objectives. As a result of the renovation, the Iraq Republic Railway has work spaces that offer a much safer and healthier environment for its employees and visitors. Further, the station's structures and utility systems have been modernized to basic levels to support the Iraq Republic Railway services and operations.

5. Sustainability was addressed in the contract requirements. The contract scope of work required a one-year warranty on all materials and workmanship for the buildings and facilities rehabilitated in this project. The contract scope of work also required spare parts lists, preventive maintenance plans, and operations and maintenance manuals for major equipment components. Commissioning, including training, has been provided to the Iraq Republic Railway personnel on the major utility systems including boilers, chillers, and generators.

Recommendations. If additional work is added to the project through a subsequent modification to the contract, appropriate staff from the Gulf Region Division's International Zone Resident Office and the Gulf Region Division/Project and Contracting Office, Facilities and Transportation Sector should meet to:

- Clarify roles and responsibilities with regard to the submittal review and approval process; and
- Ensure that final authority for submittal approval is with the U.S. Government.

Management Comments. The Gulf Region Division concurred with the conclusions and recommendations contained in the report and provided additional information regarding the discussion in Conclusion # 1 above to explain the recent coordination efforts to understand roles and responsibilities with regard to the submittal review process.

Evaluation of Management Comments. Management comments addressed the issues raised in the report. The actions taken were responsive to the recommendations and should correct the issue identified.

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Introduction

Objective of the Project Assessment

The objective of this project assessment was to provide real-time relief and reconstruction project information to interested parties in order to enable appropriate action, when warranted. Specifically, we determined whether:

1. Project components were adequately designed prior to construction or installation;
2. Construction or rehabilitation met the standards of the design;
3. The Contractor's Quality Control plan and the U.S. Government's Quality Assurance program were adequate;
4. Project results were consistent with original objectives; and
5. Project sustainability was addressed.

Pre-Site Assessment Background

Contract, Task Order and Costs

The Baghdad Railway Station Rehabilitation project[1] was originally to be completed under Contract W914NS-04-D-004, dated 23 March 2004. Task Order (TO) TR-031 of Contract W914NS-04-D-004 was originally a design/build type contract; however, the contract was to be re-negotiated to a fixed-price contract after the completion of the initial 30% design. The Coalition Provisional Authority (CPA) awarded the contract to Contrack/AICI/Orascom/Arhirodon (CAOA), a joint venture of four international companies. There were three modifications to the initial contract.

- Modification #01, issued 1 April 2004, covered the administration of the award fee provision for the contract.
- Modification #02[2], issued 7 July 2004, directed the contractor to acquire and exclusively use AutoCAD.
- Modification #03[3], issued 2 February 2005, was for administrative purposes with no change in contract funding.

On 30 November 2004, the Project and Contracting Office (PCO), the successor to the CPA, novated its contract with the prime contractor, CAOA, and awarded on the same day Contract W914NS-05-C-0016, a firm fixed price contract, to the CAOA's subcontractor, the Al Munshed Group. The Baghdad Railway Station Rehabilitation project is being completed under Contract W914NS-05-C-0016, in the amount of $5,000,000.

[1] The contract identified this project as the "Baghdad Central Train Station Rehabilitation" project; however, the Task Order and the PCO Construction Database refer to it as the "Baghdad Railway Station Rehabilitation" project. For the purposes of this assessment, we will refer to it as the "Baghdad Railway Station Rehabilitation" project.

[2] The contracting officer incorrectly identified this modification as Modification #01 instead of Modification #02.

[3] The contracting officer incorrectly identified this modification as Modification #02 instead of Modification #03.

There were 8 modifications to Contract W914NS-05-C-0016.

- Modification #01, issued 4 December 2004, delegated the Federal Acquisition Regulation (FAR) duties to the Administrative Contracting Officer (ACO) assigned with the U.S. Army Corps of Engineers (USACE).
- Modification #02, issued 12 December 2004, changed the Purchase Request and Commitment (PR&C) number and the accounting and appropriation data. The rationale for this modification was to shift funds between projects in the wake of the CAOA Joint Venture demobilization and the creation of this contract from a previous CAOA Joint Venture subcontract.
- Modification #03, issued 23 February 2005, changed the Government contracting office's name from the PCO to the Joint Contracting Command – Iraq (JCC-I). In addition, this modification documented that the previous prime contractor, CAOA Joint Venture, paid the current contractor the amount of $524,258.85; therefore, the price of this contract was reduced to $4,475,741.15.
- Modification #04, issued 5 September 2005, provided a notice to proceed, extended the period of performance by 38 days to 5 December 2005, added funding of $1,000,000 to $6,000,050.44, and provided clarification of work to be completed.
- Modification #05, issued 15 September 2005, increased the SOW to remodel a wing into a control department, added obligations of $435,000 to $5,890,241.15, and provided clarification of work to be completed.
- Modification #06, issued 18 September 2005, corrected the contract prices for Modifications #04 and #05. The total costs of Modifications #04 and #05 were amended to $5,475,741.15 and $5,910,741.15, respectively.
- Modification #07, issued 5 December 2005, extended the period of performance by 115 days to 31 March 2006.
- Modification #08, issued 31 March 2006, extended the period of performance by 90 days to 30 June 2006.

Project Objective

The objective was to rehabilitate the Baghdad Railway Station to restore the sanitary, and other utility systems at the station for health, safety, operations, and public convenience. The Baghdad Railway Station is the principal station for all rail service in Iraq. It also contains the offices of the Ministry of Transportation (MoT) and the Iraq Republic Railway (IRR). Site Photo 1 shows the entrance to the Baghdad Railway Station flanked by station's tow clock towers. The station, constructed over 50 years ago, is also considered an important and architecturally historic building to the Iraqi people. Throughout Iraq's railway history, the station has remained a focal point for rail service. For example, the original locomotive used in Iraq is prominently displayed outside the train station (Site Photo 2) as an important link to its past.

All train movements (passenger and freight) are monitored, controlled, and coordinated from the Baghdad Railway Station as are all administrative functions pertaining to the national railroad system. Thus, at the time the rehabilitation project was planned, a critical need existed to restore the station architecturally and to modernize the station's electrical, mechanical, and communications systems to support the daily operations of the IRR.

The Baghdad Railway Station plays an important role in the mobility of the population and economic revitalization of the country. Although the station

renovation project will enhance station operations, rail infrastructure throughout Iraq is currently underutilized. According to the Iraq Reconstruction Management Office's (IRMO) Senior Rail Consultant, service into and out of Baghdad has been hampered because of the security situation. There are no passenger trains or freight trains operating between Baghdad and southern cities because of continual insurgent activity along a 10 kilometer (km) segment of track south of Baghdad and north of the city of Hilla. Approximately 95% of the insurgent attacks on the southern railway between Baghdad and the Port of Umm Qasr have been in this 10 km section. As a result, there is no service to the south from Baghdad, and southern rail service only operates between Hilla and the Port of Umm Qasr.

In addition, freight trains between Baghdad and western cities (Ramadi, Falluja, etc.) in the Al Anbar Governorate have not operated because of the security situation. There is also very limited passenger train service from the Baghdad Railway Station to the northern city of Mosul, with only one train per week. Limited numbers of freight trains also operate from Baghdad to the north.

IRMO estimates a loss of $17.5 million per week to the Iraq economy because of the inability to transport goods by rail. Further, the inability to move bulk goods produced in Iraq by rail (oil, grain, cement, and fertilizer) is significantly impacting Iraq's ability to produce and export these goods to global markets.

Site Photo 1. View of outside of Baghdad Railway Station (Photo provided by USACE)

Site Photo 2. View of original railway car displayed in front of Baghdad Railway Station

Description of the Facility (preconstruction)

The description of the facility (preconstruction) was based on information obtained from the contract scope of work and the USACE project file. The Baghdad Central Railway Station was constructed between 1948 and 1953. The three story brick structure is located in downtown Baghdad, west of the Tigris River. The "H" shaped station building featured a main entrance, which opened into a central rotunda, with four interconnecting wings (labeled A, B, C, and D) containing passenger service facilities, as well as administrative and office spaces for the IRR and the Iraqi MoT. The building also included a basement which contained electrical distribution boards, piping for the heating, ventilation and air conditioning (HVAC) systems, electrical cables, and sewage piping.

The station did not experience any significant damage during Operation Iraqi Freedom. However, it suffered from years of neglect, deferred maintenance, vandalism and looting, particularly in the last thirty years when funds were diverted by the former regime to other priorities. Consequently, the station, while structurally sound, required significant rehabilitation to restore the plumbing, electrical, HVAC, architectural, and communications systems. The existing plumbing was in a serious state of disrepair. Pipes in the walls, ceilings, and under the floors had ruptured or leaked causing serious interior water damage. Most of the bathroom fixtures were vandalized or looted, and what remained did not function properly. The pumps for pumping sewage into the municipal collection system did not function. As a result, raw sewage had backed up through most of the basement to a height of four feet, which seriously damaged building components and equipment. The electrical system was in a state of disrepair, with inoperable lights, outdated distribution system panels, and temporary wiring hanging loosely in public areas. The HVAC system was nonfunctional with many critical components missing. The architectural components of the building (roof, windows, doors, and exterior walls) leaked, and

required substantial renovation work to waterproof and restore them to their original conditions.

Scope of Work of the Contract

Based on the project SOW, the major tasks for the renovation of the Baghdad Central Railway Station included the reconstruction of the:

- Sanitary and storm sewer systems
- A water supply system
- A complete HVAC system
- Electrical distribution and lighting systems with emergency backup generators
- Communication systems (telephone, fire alarm, and passenger information)

In addition the scope of work required significant architectural renovation including the repair or replacement of all existing doors and windows, as well as the elevators. Other required architectural work included:

- Replacement of interior walls and suspended acoustical ceilings in office areas
- Repair or replacement of floor tiles in all areas
- Renovation of all the station's bathrooms

The scope of work also required the following site work:

- Repair of the roof
- Repair of the exterior fence
- Replacement of stone pavers at the station entrance and on the train platforms
- Installation of new exterior lighting poles and fixtures

Current Project Design and Specifications

The SOW included requirements for project design and specification submittals and approval. The SOW required submission of concept, 30%, 60%, and 90% design drawings and specifications for review and approval to the government. The assessment team could not locate any record of approval of the design submittals based on inquiries to the USACE Resident Office and PCO.

The USACE Deputy Resident Engineer provided the assessment team with a set of the 90% design drawings. We reviewed the 90% design submittal, which included approximately 133 architectural, electrical, mechanical, sanitary, and repair work drawings.

The design drawings contained:

- Site plans
- Elevations
- Architectural plans
- HVAC plans
- Plumbing plans
- Repair plans
- Electrical plans and electrical single line diagram

The design package also included the mechanical design featuring flow diagrams, system layouts, specifications for the chillers and boilers, the electrical distribution system design including flow diagrams, system layouts, and specifications for the station's electrical substation and electrical generators.

The assessment team did not find in the design package provided to us typical details and section drawings of features of work such as the suspended acoustical ceiling

installation or the concrete paver installation on the rail platform and in front of the station. The design package also did not include a landscape plan or a drainage plan for the rail platform. In addition, the plumbing drawings included plan sheets for each floor but not for the basement. Also, the basement contains heat exchangers that were renovated, but they were not shown on any of the provided drawings. The water supply drawings for each floor show hot water lines, but there was no source shown for the hot water.

The SOW required specifications in Construction Specifications Institute (CSI) format. The specifications provided to the assessment team contained information for the electrical distribution system and the HVAC, but no other building systems. These specifications were not in CSI format and contained only general descriptions of the components for each of these systems.

The SOW required the submission of catalog cuts of all major equipment items to be submitted to the "SPMO[4]" for review and approval. Further, the SOW stated:

"*At the time of negotiations, the Contractor and SPMO will determine the number of submittals and number and type of copies required to be submitted.*"

The assessment team discussed the submittal review and approval responsibilities with PCO staff from the Facilities and Transportation (F & T) Sector. Unfortunately, the F & T Sector project engineer responsible for the Baghdad Railway Station project had recently and unexpectedly resigned from the position. Thus, the staff could not answer specific questions regarding submittal review and approval on the railway station. We were told however, that on this project, the approval responsibility for submittals rested with the construction agent, i.e., the USACE International Zone Resident Office through the Gulf Region Central District. However, in separate discussions with USACE, their Deputy Resident Engineer (DRE) responsible for the project indicated that the IRR approved submittals for the railway station project.

Based on our review of the design submittal, it appeared to be satisfactory for most of the renovation work. However, the design package did not have some of the information needed for clarity and intent as noted above. Further, there are inconsistent views with the staff at PCO and at the Resident Office regarding the submittal process and functional responsibilities for review and approval. Further, if the IRR did have approval authority for submittals, there remains uncertainty regarding the U.S. Government's role in the process.

Site Assessment

On 16 May 2006, 18 May 2006, and 1 June 2006, we performed on-site assessments of the Baghdad Railway Station Rehabilitation project. Prior to the site visits, the assessment team reviewed selected project documentation provided by the USACE. The assessment team discussed the project status and management processes with the USACE DRE. At the time of the assessment, the project was 99% complete and was currently in use by the IRR. The PCO database, dated 3 March 2006, identified the project number as

[4] SPMO is the Sector Project Management Office, which preceded the establishment of PCO. After PCO was established, the functions of SPMO were shifted to PCO sectors, i.e., Sector Project & Contracting Office (SPOC).

21278. The database listed this project with a value of $6,384,539, approximately 95% complete, and with a completion date of 31 October 2006.

Work Completed

Site Work

The contract's SOW broke down the site work into the following 5 categories: demolition and clean up, sidewalks, parking, fencing, and lighting. According to the USACE DRE, the task of evaluating the condition of existing parking lots and potentially paving the parking area was de-scoped in order to cover the repair cost of the two tower clocks.

The Bill of Quantities (BOQ) identified somewhat differently the tasks to be completed for site work. The significant activities included the following:

- Analyze the condition of the basement and treat the water leakage; repair walls, partitions, and ceilings
- Remove and replace the interlocking concrete pavers for the passenger waiting platform
- Repair and paint damaged parts of the fence and gates
- Remove and replace damaged concrete roof tiles

Basement

According to the USACE and IRR personnel, prior to the rehabilitation project, the basement was full of raw sewage and ground water to a height of four feet (Site Photo 3). The basement had been flooded for about 10 years. The sewage contaminated water had to be drained prior to any rehabilitation to the basement. After draining the sewage, the BOQ required the contractor to clean the basement and water proof the basement flooring, joints, walls, windows. The BOQ also required the repair and painting of existing steel windows and partitions including all hardware and accessories.

After draining the basement, the contractor then removed the utility piping, valves, fittings and pumps from the basement as well as the electrical distribution boards, conduits and cables. The contractor waterproofed the basement walls, ceiling, and floor. The contractor repaired or replaced windows, doors, and partitions, and painted the walls, ceiling, doors, window frames, and ductwork (Site Photo 4). The assessment team walked through the basement and observed the completed repairs. The required repairs as described in the SOW and BOQ appeared to be complete. However, according to IRR personnel, the basement leaked (after repairs were completed) during the past winter's rainy season. We brought this point to the attention of the USACE personnel, and were told the issue, if true, would be dealt with as a warranty item.

Site Photo 3. View of basement prior to rehabilitation and drainage of sewage (Photo courtesy of the USACE)

Site Photo 4. View of basement after drainage, waterproofing, and painting

Passenger Waiting Platform

The design drawings and BOQ required the removal and replacement of the existing stone pavers with interlocking concrete block pavers for the passenger waiting platform. The USACE personnel provided photographs of platform work in progress (Site Photo 5). The assessment team observed the completed platform as shown in Site Photo 6. The team did not observe any noticeable defects in the concrete pavers. They appeared to be level and evenly joined and placed in the areas required by the design.

Site Photo 5. Work in progress on passenger waiting platform (Photo courtesy of the USACE)

Site Photo 6. Completed concrete pavers on the platform

Fencing and Gates

The BOQ and design required the contractor to repair and paint the existing fences and gates. The BOQ listed 785 linear meters (lm) of steel fencing to be repaired and 1,850 lm of brick fencing to be installed. The steel fence was actually a composite fence consisting of a plastered brick base and support columns and a steel lattice and rails between the columns. The assessment team did not verify quantities nor inspect the entire fence. The completed fencing in the areas we inspected did not have any noticeable defects, although we did observe some chipped paint on the base of the steel fence adjacent to the east side garden area as shown in Site Photo 7. The final punch list did not contain any items relating to the fence, so we informed the DRE about the chipped paint on the fence. The DRE directed the on-site USACE Quality Assurance Representative to inspect the entire length of the perimeter fence and document any defects in order to provide them to the contractor for corrective action.

Site Photo 7. Fence on east side of station near garden area

The fence design drawing provided to the assessment team showed 10 gates, although we did not verify the quantity nor did we inspect them.

Gardens

The contract BOQ included a line item for "redecorating and painting the gardens around the building" at a lump sum cost of $150,000. The design only showed a general location of the gardens on the site plan. It did not provide information on earthwork requirements, types of plants, their specific location and the contractor's responsibility for maintenance after the trees and shrubbery were planted.

During the on-site assessment, we walked through the gardens in the front of the railway station opposite the main entrance and at the northeast side of the station. We found the gardens inadequately maintained as shown in Site Photo 8. According to the DRE, the gardens were not being maintained by the contractor because the contractor believed they were the IRR's responsibility. However, the IRR believed the on-going maintenance of the gardens remained a contractor responsibility. At the time of the assessment, the issue had not been resolved, but the DRE, PCO, and representatives of IRMO were meeting to address punch list items, the pending modification work, and the responsibility for garden maintenance.

Site Photo 8. Garden area on east side of the railway station

Demolition and Clean-up

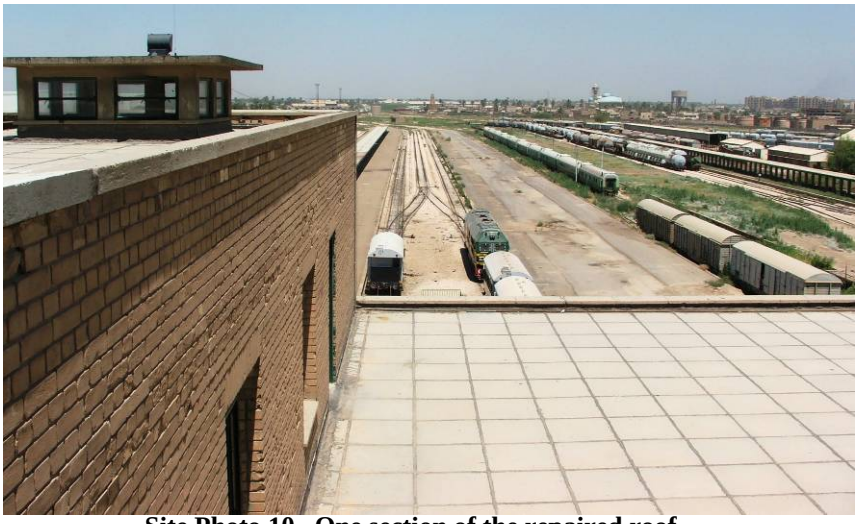
The demolition and clean-up portion of the contract was de-scoped. During our site visit, we identified old parts and miscellaneous equipment that were removed from the basement (e.g., valves and electrical cable) and stored on site adjacent to the east side garden area. According to the USACE DRE, the IRR wants to retain the equipment to resell it for revenue at a future auction. Site Photo 9 shows the excess material.

Site Photo 9. View of old parts located on site

Roof Repairs

The existing roof prior to construction had been neglected and not properly maintained. The USACE DRE indicated that parts of the roof had been used by the previous regime for anti-aircraft batteries. The BOQ and design requirements included removal of the mastic joint between tiles, supply and installation of new mastic, removal and replacement of damaged concrete tiles and concrete covers with new ones, and the repair of damaged expansion joints on the 8,850 square meter (m^2) roof. Based on our observations and a review of the project progress photos

provided by the USACE DRE, we did not see any problems associated with the workmanship or final product. Site Photo 10 shows the roof after repairs.



Site Photo 10. One section of the repaired roof

Architectural Work

Windows and Doors

The BOQ required the removal of existing windows and replacement with 1,600 m^2 of aluminum frame, double glazed windows. During our site assessment, the contractor displayed one of the double glazed windows to the assessment team. We also checked windows at random locations to verify the double glazing. We found no discrepancies. The windows appeared to meet the BOQ requirements. The BOQ also required:

- Removal of damaged exterior doors and replacement with new steel doors to match the existing (quantity - 150 m^2)
- Repair of steel doors to match existing doors (quantity - 75 m^2)
- Removal of damaged exterior doors and replacement with new aluminum doors with tinted glass (quantity - 130 m^2)
- Removal of existing interior doors and replacement with painted wooden doors with frames to match existing doors complete with accessories (quantity - 1,100 m^2)
- Removal of existing interior doors and replacement with teak wooden doors with frames to match existing doors complete with accessories (quantity - 100 m^2)

The design included a door schedule showing the type of door cross-referenced in the architectural floor plans showing location. We randomly checked doors and found them to meet the design requirements.

Aluminum Partitions

The BOQ required the removal of existing damaged interior partitions with 4,100 m^2 of aluminum frame partitions comprised of panels with reinforced glass and panels of medium density fiber board (MDF). The design incorporated a schedule showing 28 different configurations and sizes of aluminum partitions (e.g., some with louvers, some with doors, etc.). To better understand the interior conditions prior to renovation and those after, the USACE provided photographs of existing station corridors prior to rehabilitation (Site Photo 11) and those after (Site Photo 12). During the site assessment, we verified the removal and replacement of the existing

interior partitions with aluminum partitions consisting of MDF and reinforced glass. The observed partitions appeared to meet the standards of the design.

Site Photo 11. View of existing interior partitions (Photo courtesy of USACE)

Site Photo 12. View of new interior partitions

Existing Masonry Walls, Ceiling, and Flooring

The BOQ and design required the repair of masonry walls and exposed concrete ceilings. In addition, the BOQ listed a requirement for the painting of masonry walls and ceilings with a primer coat and two finish coats. The design originally required suspended acoustical ceiling in the main corridors of the rail station. However, the acoustical ceiling in the corridors was eliminated from the design requirements. Suspended acoustical ceilings were installed in the bathrooms and in the main conference room (Site Photo 13) on the first floor of the building. In the corridors, the contractor repaired (as needed) and repainted the existing gypsum suspended ceiling and in the offices, the contractor repaired (as needed) and painted the existing concrete ceiling.

Site Photo 13. Conference room with suspended acoustical ceiling

During the first site visit, we observed water damage (blistered and peeling paint as seen in Site Photo 14) on the concrete ceiling in one of the ground floor offices. The DRE informed the assessment team that the water damage occurred because the floor

above contained a restaurant (Site Photo 15) that had been looted prior to the project and was exposed to the elements. Thus, rainwater trapped in the old restaurant leaked into the room below. The renovation scope of this project did not include the restaurant.

Site Photo 14. Water damage to ceiling caused by rainwater leakage from above

Site Photo 15. Old restaurant exposed to weather resulting in leaks below

The areas containing suspended acoustical ceilings that we observed appeared to be installed correctly. We did not find any noticeable defects, except in one bathroom where water leakage from the bathroom on the floor above resulted in damaged ceiling tiles. The leakage in the bathrooms will be discussed later in the report.

The BOQ required the contractor to remove damaged floor tile and replace with similar tile throughout the station. The BOQ also required new ceramic tile in the bathrooms. The BOQ required 12,000 m^2 new plastic tile (i.e. vinyl flooring) for the corridors and the offices. According to the DRE, the plastic flooring was installed over the existing tiled floor surface. The mosaic tile in other areas of the railway station not receiving new plastic or ceramic tile were repaired as required in the contract. In the areas that the assessment team observed, the installation of the ceramic tile appeared adequate. The plastic tile also appeared to be installed correctly. We observed a smooth surface, with no bumps, or tearing of the tile. We did notice some cigarette burns in the tile where people had dropped their lighted cigarettes and put them out on the floor.

Plumbing Work (Water Supply and Sanitary)

Water Supply

The railway station receives water from the city of Baghdad through a pipeline. To provide continuous water distribution for the station, the design consisted of a series of storage tanks (2 m^3 capacity) located on the ground, lift pumps, a series of roof top storage tanks (2 m^3 capacity), and galvanized steel pipe to distribute cold water between the ground tanks and the roof top tanks, and from the roof tanks down into the bathrooms on each wing. The BOQ required the installation of 13 new, 2 m^3 capacity polyethylene tanks. The BOQ also listed a requirement for the rehabilitation of seven existing 2 m^3 capacity, galvanized steel tanks. The assessment team did not verify the number of tanks installed, but observed the installation of several of the tanks and pumps on the ground and the new and rehabilitated roof top tanks (Site Photos 16 and 17). We did not notice any leaking of the tanks or exposed piping and valves, and the system appeared to be serviceable.

Site Photo 16. Roof top polyethylene water tanks

Site Photo 17. Roof top galvanized water tank

The design showed hot water being supplied to the bathrooms from the basement. However, the design did not show the source of the hot water in the basement, nor hot water piping from the source to the bathrooms. While inspecting the basement, the contractor's representative did show us two heat exchangers, which according to the contractor supplied hot water for the bathrooms.

For drinking water, the contractor installed drinking water dispensers in every floor in each wing. To treat the drinking water, the contractor installed a reverse osmosis (RO) purification system in a utility room on the ground floor. The BOQ included a requirement for one RO purification system for drinking water. However, the design did not show the RO system location or piping diagrams from the system to the drinking dispensers. Site Photo 18 shows one part of the RO system, the pressure vessels containing the thin film membrane elements.

Site Photo 18. Pressure vessels containing filtration units on the RO system

Sanitary System

The SOW required a complete renovation of the sanitary system that included sewage and storm water, with new sumps and lift station pumps, piping, fittings, drains, vents, and fixtures.

The design required two new sewage station pumps (flow (Q) = 20 m^3/hr at 6 m head) in each of the two lift stations. However, the BOQ listed a requirement for sewage pumps with a capacity of 12 m^3/hr. We inspected one of the two sewage pump houses (Site Photo 19) and verified two electrical sewage pumps were in place and operating (Site Photo 20). Discussions with the DRE, and a review of catalog cut information indicated the pump capacity at Q= 17 m^3/hr at 10 m head.

The IRR has issues with the pumps as noted in a letter to the contractor dated 14 June 2006, indicating the pumps (item 2) need to be heavy duty. The contractor responded that the pumps comply with the submittal requirements that had been approved by the IRR.

At the time of the assessment, the issue had not been resolved, but the DRE, PCO, and representatives of IRMO were meeting to address punch list items, pending modification work, and the issues raised in the contractor's letter.

Site Photo 19. One of the two sewage pump houses

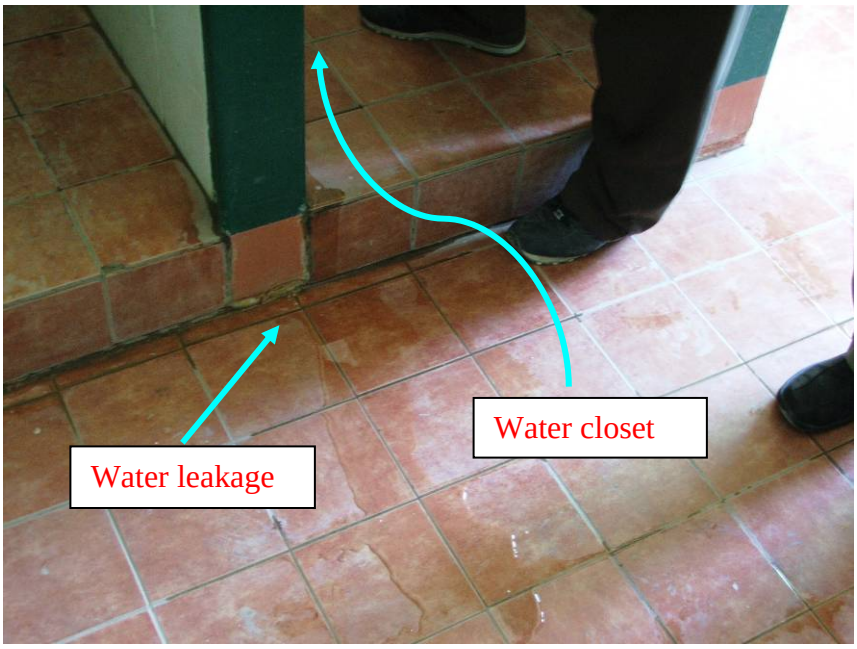
Site Photo 20. One of two electrical sewage pumps in the pump house

The SOW included the renovation of the bathrooms at the railway station. The design and BOQ required replacement of all bathroom plumbing and fixtures, ceramic tile wall and floor tile, electrical lights and outlets in all bathrooms. According to the design drawings the renovation scope included approximately 31 bathrooms in the railway station. The bathrooms ranged in size from those with two eastern toilets and two wash basins to larger bathrooms with four eastern toilets and four wash basins.

Within the station building, each of the three floors (ground, first, and second) of wings A, B, and C contain two bathrooms, the first at the entrance of the wing near the rotunda and the second at the end of the wing. Wing D has one bathroom on each floor. Also, four bathrooms are located in the corridors between wings, close to the rotunda, two on the ground floor and two on the first floor. From floor to floor, the bathrooms were in the same location within each wing. For example in Wing C, the second floor bathrooms were located directly above the first floor bathrooms, and the first floor bathrooms were directly above those on the ground floor.

Bathrooms included a floor drain near the middle of the floor. On some of the bathrooms, water faucets were adjacent to the toilets to facilitate cleaning. The bathrooms were renovated according to the design. However, based on information provided to us by the USACE DRE, in three of the bathrooms, because of space constraints, the floor's slope was not enough to adequately drain the water to the

floor drain and to the toilets within the water closets. Thus, water continually ponds and has eventually permeated along the interface between the bathroom floor and the step into the water closet as shown in Site Photo 21.



Site Photo 21. Standing water in one of the station's bathrooms

As a result, water has leaked into the bathroom on the floor below, causing damage to the suspended acoustical ceiling. Site Photo 22 shows some of the damage that occurred in the bathroom below.

At the time of the assessment, the USACE DRE and contractor were working to develop a solution that would eliminate the standing water while satisfying the requirements of the IRR.

Site Photo 22. Water damage to the suspended ceiling

Heating, Ventilation, and Air Condition

The design specifications required two packaged 500 ton centrifugal liquid chillers for air conditioning. The DRE provided the assessment team with the chiller submittal containing the factory information for Trane® 500 ton chillers. According to the DRE, one chiller could meet the air conditioning demands of the entire rail station. The second chiller served as a back-up. The assessment team verified during its inspection the installation of two, 500 ton, Trane® chillers as shown in Site Photo 23. On our first site visit, neither chiller was operating, because of a power outage. On the assessment team's second and third visit, the chillers were operating.

The design also required two chilled water pumps (flow = 252 m^3/hr) for pumping chilled water from the chillers to the air handling units in the railway station and two condensing water pumps (flow = 364 m^3/hr) for pumping condensing water from the chillers to the cooling towers. During the site visits, the pumps were in place and operating. We did not observe any deficiencies associated with the pumps, piping, and valves, including any evidence of leaks or loose connections.

Site Photo 23. Two, 500 ton chiller units

In addition to air conditioning, the design required the installation of two packaged hot water boilers for heating in the winter time, each with a heating capacity of 1,000 kilowatts (kW). The BOQ listed a requirement for two, hot water boilers (950 – 1000 KW) capacity, western source, diesel fuel with accessories for operating with a water softener. The contractor installed two York-Shipley boilers, each with a listed capacity (based on the York-Shipley submittal) of 981 KW, as shown in Site Photo 24.

Site Photo 24. York Shipley hot water boilers

The assessment team verified their installation as well as the required water softener, and hot water circulation pumps. We did not notice any apparent defects with the boilers or the supporting equipment, including evidence of prior leaks. The insulation on the hot water pipes also appeared adequate, with no noticeable defects.

Electrical

The railway station included a powerhouse facility, which contained the main electrical distribution boards, switchgear, transformers and generators. The design showed one incoming 11 kilovolt (kV) feeder from the city grid connected to a 630Amp bus bar inside the high voltage distribution board. Three, 1000 kilovolt amp (KVA) transformers, connected to the main bus bar stepped down the 11 kV incoming power to 400 volts (V). Feeders from the transformers powered main circuit breakers inside the low voltage distribution board.

In the time on site, the assessment team did not see the transformers; the room was locked and the key was not readily available. The contractor's electrical engineer opened a low voltage distribution board and showed us the main 1600 amp circuit breaker and circuit breakers for the chillers, cooling tower, chilled water pumps, and condensing water pumps. We did not observe any noticeable defects. The enclosures were properly labeled and there was no excess cable outside the circuit breakers within the cabinet.

Electrical Generators and Distribution
The design required two 1,250 KVA generators. The BOQ lists a requirement for one generator, although the DRE indicated an identical second generator was government furnished by PCO. While on site, the assessment team verified the contractor installed two 1,250 KVA Perkins generators in the powerhouse location shown on the design. Site Photo 25 shows one of the two Perkins generators.

Site Photo 25. One of two Perkins 1,250 KVA generators

We did not observe the generators operating on either of the two site visits when we toured the powerhouse. However, power from the city grid is not reliable, and the generators have operated on a routine basis since their installation. The final punch list does not list deficiencies associated with the generators themselves, although there remain some issues associated with how they are operated.

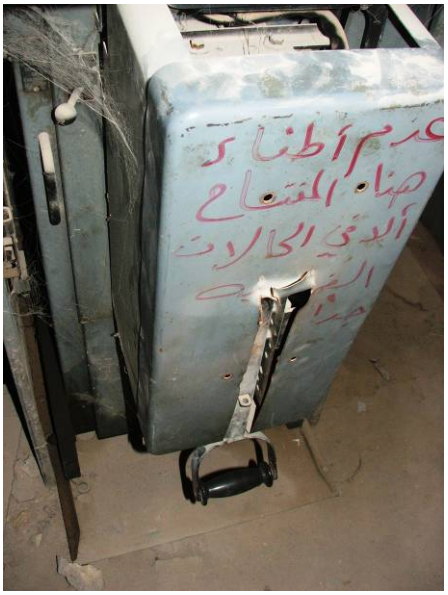
According to the DRE, the original concept of operations called for one generator to work as the primary generator and the other to function as a standby. The generators were not designed to operate together. Further, the generator was designed to power only the lights, computers, small AC units and sliding glass entrance doors. In order to provide back-up generator power to run a chiller and the station's other requirements (lights, outlets, etc.), two generators are needed to operate together. To operate two generators simultaneously to meet the station's electrical demand, including cooling, an inter connection device (i.e., a pass coupler) must be installed to enable the generators to operate in a synchronous mode. The pending modification to add a second feeder from the city grid will also incorporate the necessary interconnection hardware to enable synchronous operation.

Also regarding the proposed modification, a new second feeder is required because the railway station currently relies on manual switching at an existing substation on the west side of the station to connect the second feeder from the city grid to the railway station. The two existing feeders to the station are on opposite sides of the station and are in different electrical grid sectors, so if one sector loses power, the other sector could have power depending on the load shedding scheme exercised by the Iraqi Ministry of Electricity.

Although not part of the contract work, the assessment team toured the substation to gain a better understanding of how the railway station currently switches over to the existing second feeder. The existing substation building and facility switchgear appeared to be in substandard condition. Site Photo 26 provides an interior view of one of the two rooms in the substation.

When the primary feeder to the station's powerhouse goes down, the railway station utilizes the second feeder. To connect the second feeder to the railway station, one of the station's employees operates a switch manually. Site Photo 27 shows the manual throw switch shown in the open position. A new second feeder (in the pending modification) would bypass the old substation all together and be routed from the west side of the station, through the utility tunnels into the powerhouse on the east side of the station.

Site Photo 26. Substation building on east side of rail station



Site Photo 27. Manual electrical switch

Elevators

The Baghdad Railway Station had three existing elevators – two passenger elevators and one freight elevator. Although not included in the design drawings, the BOQ contained a requirement for installation of two "Alberto Sassi" elevators to replace the existing passenger elevators. The DRE stated the IRR hired a licensed individual to inspect the elevators after their replacement. During the site assessment, we identified the two new passenger elevators which appeared to operate normally based on our observations and actual usage.

Work in Progress

At the time of our site visit, the project was 99% complete. Major work items were substantially complete. The contractor's work crews were focusing on correction of punch list items.

Work Pending

There is a pending modification to add the following: a Reverse Osmosis water purification unit for the chillers; install a canopy in the rear of the station (Site Photo 28); install drainage piping for the passenger platform area; demolish two damaged cafeterias; and install an incoming 11 kV feeder from the Iraq National Grid to serve as a redundant feeder. In addition, as mentioned earlier, discussions are still ongoing between the Resident Office, IRMO and GRD/PCO officials regarding the new sewage station pumps, maintenance of the gardens, and other items that the IRR

wants to have done. At the time of the assessment, these issues have not been resolved, but the parties have been meeting to resolve them.

Site Photo 28. Rear view of railway station – site of future canopy

Project Quality Management

Contractor's Quality Control Program

The TO required the contractor to perform all quality control throughout the duration of design, construction, installation, testing, and commissioning. The contractor's Quality Control (QC) plan was required within one month after mobilization.

The contractor submitted a QC plan that was approved by USACE. The plan addresses the QC organization, inspections, nonconforming items, testing and test plans, submittal procedures, reports and records, material handling and storage. We determined the contractor's QC plan met the standards addressed in Engineering Regulation 1180-1-6 (*Construction Quality Management*) or PCO Standard Operating Procedure CN-103 (*Contractor Construction Quality Control Plan*).

The contractor submitted QC reports on a daily basis, which were reviewed by the USACE DRE. These reports contained information such as work accomplished each day with the location, activity and by whom, test results, deficiencies and corrective actions, labor distribution, equipment utilized, and material received on site. The contractor also maintained deficiency logs to document problems noted with construction/renovation activities.

Government Quality Assurance

The USACE local national (LN) quality assurance representative (QAR) maintained daily QA reports that documented deficiencies noted at the site. Based on our review, we found the QAR's reports to be sufficiently complete, accurate, and timely. In addition to containing project specific information to document construction progress and highlight deficiencies, the QAR also supplemented them with detailed photographs that reinforced the narrative information provided in the reports. The USACE QAR did maintain a QA deficiency log, and the DRE and the QAR ensured that deficiencies cited during QA inspections were corrected.

The USACE LN QAR was on site daily in managing this project. The LN QARs spent a significant amount of their time at project sites interacting with the contractor and observing construction activities. Further, the LN QAR ensured that potential construction deficiencies were detected, evaluated, and properly corrected, in a timely manner.

The Government Quality Assurance program was effective in monitoring the contractor's QC program for the Baghdad Railway Station rehabilitation project. In addition, QA activities were sufficiently and accurately documented. This condition occurred because of the efforts of the USACE's DRE and LN QAR during the course of the project.

Project Sustainability

Commissioning

The SOW stated that the contractor shall prepare a commissioning plan for the review and approval of the SPMO and the regional construction program manager.

Based on discussions with the USACE DRE, the boilers, chillers and generators have been commissioned utilizing manufacturer's representatives to assist in the commissioning process. The contractor also arranged training for IRR personnel on these systems as part of the commissioning process.

The Taking-Over-Certificate signed by the SPMO and a representative of the Ministry will be issued to the contractor after all of the following tasks have been completed:

- Final inspection of the project by the SPMO
- Resolution and completion of the final punch list items
- Delivery and acceptance of the final as-built drawings

According to the DRE a taking over certificate for the entire facility has not been issued. There are remaining punch list items and the contractor is preparing final as-built drawings.

Warranties

The SOW required that the contractor provide and certify warranties in the name of the MoT, all equipment, including any mechanical, electrical and/or electronic devices, and all operations for 12 months after issuance of the Taking-Over-Certificate. The contractor was also required to provide any other commonly offered extended warranties for equipment and machinery purchased.

Based on information provided to the assessment team by the Resident Office, final inspections were carried out on work completed. Currently, the contractor is providing warranty service on equipment and devices for a 12-month period.

In addition, the contractor is required to provide the following:

- Catalog cuts of major equipment items
- Operation and maintenance manuals
- Preventative maintenance plans
- Approved spare parts lists
- Illustrated parts guide of all installed building or system components

According to the DRE, the contractor provided catalog cuts of the major equipment items to the IRR. The assessment team also verified the presence of catalog cut sheets maintained by the contractor in their office at the railway station. Also, at the time of the assessment, the contractor was finalizing operations and maintenance manuals that include preventive maintenance plans and parts information.

Conclusions

Based upon the results of our site visit, we reached the following conclusions for assessment objectives 1, 2, 3, 4, and 5. Appendix A provides details pertaining to Scope and Methodology.

1. Determine whether project components were adequately designed prior to construction or installation.

   Most of the project components were adequately designed prior to construction. The design package contained site, architectural, plumbing, mechanical, and electrical design drawings. Specifications were provided to the assessment team for the electrical distribution system and the heating, ventilation and air conditioning system. The design package did not include a landscape plan, a drainage plan for the passenger platform, or utility drawings for the basement. Additionally, there was no record of approval of the design in the records provided to the assessment team. Regarding the submittal review process, it was not clear who had review and submittal responsibility. The U.S. Army Corps of Engineers Deputy Resident Engineer indicated the responsibility for submittal approval was with the Iraq Republic Railroad. Alternatively, the Facilities and Transportation Sector staff indicated the responsibility for submittal review and approval lies with the construction agent, i.e., the U.S. Army Corps of Engineers Gulf Region Division's International Zone Resident Office. Thus, there are divergent views with the staff at the Project and Contracting Office and at the Resident Office regarding the submittal process and functional responsibilities for review and approval.

2. Determine whether construction met the standards of the design.

   The observed work met the standards of the design. However, because the design was not complete, there were some areas of the renovation we could not fully assess. There are also outstanding punch list items and other facility issues raised by the Iraq Republic Railway being addressed by representatives of the U.S. Army Corps of Engineers International Zone Resident Office through meetings with the appropriate staff of the Gulf Region Division/Project and Contracting Office and Iraq Reconstruction Management Office.

3. Determine whether the Contractor's Quality Control plan and the Government Quality Assurance Program were adequate.

   The contractor's Quality Control plan was sufficiently detailed to effectively guide the contractor's quality management program. The contractor submitted a QC plan that was approved by U.S. Army Corps of Engineers, which based on our review, met the standards addressed in Engineering Regulation 1180-1-6 (*Construction Quality Management*). The contractor submitted QC reports on a daily basis, which were reviewed by the U.S. Army Corps of Engineers Deputy Resident Engineer. The contractor also maintained deficiency logs to document problems noted with construction/renovation activities.

The Government Quality Assurance program was effective in monitoring the contractor's quality control program. The U.S. Army Corps of Engineers Local National Quality Assurance Representative maintained daily Quality Assurance reports that documented any deficiencies noted at the site. Based on our review, we found the QAR's reports to be sufficiently complete, accurate, and timely. In addition to containing project specific information to document construction progress and highlight deficiencies, the QAR also supplemented them with detailed photographs that reinforced the narrative information provided in the reports. The Quality Assurance Representative did maintain a Quality Assurance deficiency log and the Deputy Resident Engineer and the Quality Assurance Representative ensured deficiencies cited during Quality Assurance inspections were corrected.

4. Determine whether project results were consistent with original objectives.
   The Baghdad Railway Station Renovation project results were consistent with the original contract objectives. As a result of the renovation, the Iraq Republic Railway has work spaces that offer a much safer and healthier environment for its employees and visitors. Further, the station's structures and utility systems have been modernized to basic levels to support the Iraq Republic Railway services and operations.

5. Determine if project sustainability was addressed.

   Sustainability was addressed in the contract requirements. The contract scope of work required a one-year warranty on all materials and workmanship for the buildings and facilities rehabilitated in this project. The contract scope of work also required spare parts lists, preventive maintenance plans, and operations and maintenance manuals for major equipment components. Commissioning, including training has been provided to the Iraq Republic Railway personnel on the major utility systems including boilers, chillers and generators.

Recommendations

If additional work is added to the project through a subsequent modification to the contract, appropriate staff from the Gulf Region Division's International Zone Resident Office and the Gulf Region Division/Project and Contracting Office, Facilities and Transportation Sector should meet to:

- Clarify roles and responsibilities with regard to the submittal review and approval process; and
- Ensure that final authority for submittal approval is with the U.S. Government.

Management Comments

The Gulf Region Division concurred with the conclusions and recommendations contained in the draft report and provided additional information that is listed below.

Evaluation of Management Comments

1. **Draft Report.** (**Page i. Conclusions.)** Regarding the submittal review process, it was not clear who had review and submittal responsibility. The U.S. Army Corps of Engineers Deputy Resident Engineer indicated the responsibility for submittal approval was with the Iraq Republic Railroad. Alternatively, the Facilities and Transportation Sector staff indicated the responsibility for submittal review and approval lies with the construction

agent, i.e., the U.S. Army Corps of Engineers Gulf Region Division's International Zone Resident Office. Thus, there are divergent views with the staff at the Project and Contracting Office and at the Resident Office regarding the submittal process and functional responsibilities for review and approval.

GRD-PCO Comments. The novation of the contract from the prime contractor to the subcontractor in the initial project phases created some complications concerning the design review and acceptance, and the subsequent submittal approval processes. Follow-on coordination with the program manager and resident engineer office established clear roles and responsibilities for this project and future projects.

SIGIR Response. Management comments addressed the issues raised in the report. The action taken was responsive and should correct the issue identified.

2. Recommendation and Command Comments

Recommendation. If additional work is added to the project through a subsequent modification to the contract, appropriate staff from the Gulf Region Division's International Zone Resident Office and the Gulf Region Division/Project and Contracting Office, Facilities and Transportation Sector should meet to:

- Clarify roles and responsibilities with regard to the submittal review and approval process; and
- Ensure that final authority for submittal approval is with the U.S. Government.

Actions Taken. Concur. GRD-PCO coordinated roles and responsibilities concerning the submittal review and approval process with the GRC International Zone Resident Office. GRD-PCO will continue to coordinate roles and responsibilities with the program manager and resident engineer office on future projects. These actions will ensure that final authority for submittal approval is with the U.S. Government.

SIGIR Response. The actions taken were responsive to the recommendations and should correct the issue identified.

Appendix A. Scope and Methodology

We performed this project assessment from May through July 2006 in accordance with the Quality Standards for Inspections issued by the President's Council on Integrity and Efficiency. The assessment team included a professional engineer and an auditor.

In performing this Project Assessment we:

- Reviewed contract documentation to include the following: Contract, Contract modifications, Bill of Quantities, Contract documentation, and Scope of Work;
- Reviewed the design package (drawings and electrical and mechanical specifications), Quality Control Plan, Contractor's Quality Control Reports, USACE Quality Assurance Reports, Construction Progress Photos, Punch Lists, and Turnover Letters;
- Interviewed the U.S. Army Corps of Engineers Deputy Resident Engineer; and Project and Contracting Office Facilities and Transportation Sector staff; and
- Conducted an on-site assessment and documented results at the Baghdad Railway Station Rehabilitation Project in Baghdad, Iraq.

Appendix B. Acronyms

CAOA	Contrack/AICI/Orascom/Arhirodon
CPA	Coalition Provisional Authority
CSI	Construction Specifications Institute
DRE	Deputy Resident Engineer
FAR	Federal Acquisition Regulations
GRC	Gulf Region Central
GRD	Gulf Region Division
HVAC	Heating, Ventilation and Air Conditioning
IRMO	Iraq Reconstruction Management Office
IRR	Iraq Republic Railway
KVA	Kilo-Volt-Amp
km	Kilometer
KV	Kilovolt
KW	Kilowatt
LN	Local National
m	Meter
m^2	Meters Squared
m^3	Meters Cubed
MDF	Medium Density Fiber
MoT	Ministry of Transportation
PCO	Project and Contracting Office
PR&C	Purchase Request and Commitment
QA	Quality Assurance
QAR	Quality Assurance Representative
QC	Quality Control
RE	Resident Engineer
RO	Reverse Osmosis
SOW	Scope of Work
SPCO	Sector Project and Contracting Office
SPMO	Sector Project Management Office
TO	Task Order
USACE	United States Army Corps of Engineers
V	Volt

Appendix C. Report Distribution

Department of State

Secretary of State
    Senior Advisor to the Secretary and Coordinator for Iraq
U.S. Ambassador to Iraq
    Director, Iraq Reconstruction Management Office
Inspector General, Department of State

Department of Defense

Secretary of Defense
Deputy Secretary of Defense
    Director, Defense Reconstruction Support Office
Under Secretary of Defense (Comptroller)/Chief Financial Officer
    Deputy Chief Financial Officer
    Deputy Comptroller (Program/Budget)
Inspector General, Department of Defense

Department of the Army

Assistant Secretary of the Army for Acquisition, Logistics, and Technology
    Principal Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology
    Deputy Assistant Secretary of the Army (Policy and Procurement)
Assistant Secretary of the Army for Financial Management and Comptroller
Chief of Engineers and Commander, U.S. Army Corps of Engineers
    Commanding General, Gulf Region Division
Auditor General of the Army

U.S. Central Command

Commanding General, Multi-National Force - Iraq
    Commanding General, Joint Contracting Command – Iraq/Afghanistan
    Commanding General, Multi-National Corps – Iraq
    Commanding General, Multi-National Security Transition Command – Iraq
    Commander, Joint Area Support Group – Central

Other Defense Organizations

Director, Defense Contract Audit Agency

Other Federal Government Organizations

Director, Office of Management and Budget
Comptroller General of the United States
Inspector General, Department of the Treasury
Inspector General, Department of Commerce
Inspector General, Health and Human Services
Inspector General, U.S. Agency for International Development
Mission Director – Iraq, U.S. Agency for International Development

Congressional Committees and Subcommittees, Chairman and Ranking Minority Member

U.S. Senate

Senate Committee on Appropriations
- Subcommittee on Defense
- Subcommittee on State, Foreign Operations and Related Programs

Senate Committee on Armed Services
Senate Committee on Foreign Relations
- Subcommittee on International Operations and Terrorism
- Subcommittee on Near Eastern and South Asian Affairs

Senate Committee on Homeland Security and Governmental Affairs
- Subcommittee on Federal Financial Management, Government Information and International Security
- Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia

U.S. House of Representatives

House Committee on Appropriations
- Subcommittee on Defense
- Subcommittee on Foreign Operations, Export Financing and Related Programs
- Subcommittee on Science, State, Justice and Commerce and Related Agencies

House Committee on Armed Services
House Committee on Government Reform
- Subcommittee on Management, Finance and Accountability
- Subcommittee on National Security, Emerging Threats and International Relations

House Committee on International Relations
- Subcommittee on Middle East and Central Asia

Appendix D. Project Assessment Team Members

The Office of the Assistant Inspector General for Inspections, Office of the Special Inspector General for Iraq Reconstruction, prepared this report. The principal staff members who contributed to the report were:

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