

AL RASHEED BRIGADE SET
BAGHDAD, IRAQ

SUSTAINMENT ASSESSMENT

SIGIR PA-07-098
JULY 17, 2007



SPECIAL INSPECTOR GENERAL FOR IRAQ RECONSTRUCTION

July 17, 2007

MEMORANDUM FOR DIRECTOR, IRAQ TRANSITION ASSISTANCE OFFICE
COMMANDING GENERAL, MULTI NATIONAL
SECURITY TRANSITION COMMAND-IRAQ

SUBJECT: Report on Sustainment Assessment of the Al Rasheed Brigade Set
Baghdad, Iraq (Report Number SIGIR PA-07-098)

The Office of the Special Inspector General for Iraq Reconstruction is conducting a series of assessments to evaluate the current condition of completed projects subsequent to their transition to the Government of Iraq to determine whether the projects are likely to remain operational.

This report was provided for your information and use. It addresses the current status of the Al Rasheed Brigade Set Baghdad, Iraq, and the likelihood of whether the brigade base will remain operational. This assessment was made to provide you and other interested parties with real-time information on relief and reconstruction projects to enable appropriate action to be taken, if warranted.

The comments received from the Director, Iraq Transition Assistance Office in response to a draft of this report addressed the recommendation, and the actions planned should address the issues we identified. As a result, comments to this final report are not required.

We appreciate the courtesies extended to our staff. If you have any questions please contact Mr. Brian Flynn at brian.flynn@sigir.mil or at 914-360-0607. For public or congressional queries concerning this report, please contact SIGIR Congressional and Public Affairs at publicaffairs@sigir.mil or at 703-428-1100.

Stuart W. Bowen, Jr.
Inspector General

Special Inspector General for Iraq Reconstruction

SIGIR PA-07-098

July 17, 2007

Al Rasheed Brigade Set, Baghdad, Iraq

Synopsis

Introduction. SIGIR initiated this project assessment as part of our continuing assessments of selected Multi-National Security Transition Command-Iraq reconstruction activities. The overall objective was to determine whether projects are operating at the capacity stated in the original contract or task order. We conducted this limited scope assessment in accordance with the Quality Standards for Inspections issued by the President's Council on Integrity and Efficiency. The assessment team included an engineer/inspector and an auditor/inspector.

According to the contract, the objective established by the Multi-National Security Transition Command-Iraq was to plan and construct brigade facilities to support the Iraqi National Guard. The contract's Statement of Work included specific requirements and stated that work should adhere to the applicable International or Iraqi Code.

Project Assessment Objectives. This project assessment provides real-time relief and reconstruction project information to interested parties to enable appropriate action to be taken, when warranted. Specifically, we determined whether the project was operating at the capacity stated in the original contract. To accomplish the objective, we determined if the project was at full capability or capacity when accepted by the United States government, when transferred to Iraqi operators, and during our site inspection on 6 June 2007.

Conclusions. The task order required the contractor to plan and construct the Al Rasheed Brigade facilities to support the Iraqi National Guard, and the objective of the task order was met. During our site visit, the Al Rasheed Brigade facilities appeared to operate as a fully functioning brigade facility, which housed Iraqi and American military personnel. This occurred because the project was adequately designed before construction, and the quality management oversight by the contractor and the United States government was adequate, which enforced the contractor's Statement of Work in terms of construction quality and completeness.

In addition, post turnover equipment and building operations and maintenance practices by the Al Rasheed base personnel appeared effective. Consequently, if the Al Rasheed base personnel continue to properly use and effectively maintain the equipment and the facility, sustained full capacity operations over the long term will likely result.

However, during our site visit, the Al Rasheed Brigade facilities were not receiving electrical power from the city grid and were operating using the contract-furnished generators. We observed that not all electrical generation equipment could be used because there was insufficient fuel supplied by the Iraqi life support contractor. A Multi-National Brigade — Baghdad representative told us that the inability to operate electrical generators has resulted in health problems caused by inadequate food refrigeration and wastewater not being properly processed. The representative also told us that, in one of

the more dramatic instances, 300 Iraqi soldiers were hospitalized for intestinal illness after eating spoiled food.

Without fuel, the Al Rasheed base's support equipment is not being used to its full potential, which will affect the equipment's performance and life expectancy.

Recommendations. We recommend that the Director, Iraq Transition Assistance Office, coordinate with officials from the Iraqi Ministry of Oil and Ministry of Finance to impress on them the need to provide the Ministry of Defense with a sufficient and continuous fuel supply, and the impact of the lack of sufficient fuel on the health of Iraqi soldiers and the long-term sustainment of equipment and facilities at the Al Rasheed Brigade base.

Management Comments. The Director, Iraq Transition Assistance Office, concurred with the intent of the recommendation; therefore, no further comments are required. See Appendix D for the complete text of the comments.

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Introduction

Objective of the Project Assessment

This project assessment is being made to provide real-time relief and reconstruction project information to interested parties to enable appropriate action to be taken, when warranted. Specifically, we determined whether the completed project was operating at the capacity stated in the original contract or task order objective. To accomplish this, we determined if the project was at full capacity when accepted by the U.S. government, when transferred to Iraqi operators, and during our site inspection. In addition, we determined if sustainability for full capacity operations was adequately planned and is likely to continue.

Pre-Site Assessment Background

Contract, Costs, and Payments

The Multi-National Security Transition Command-Iraq (MNSTC-I) awarded contract FA8903-04-D-8677, Task Order (TO) 0026, dated 17 December 2004, to Tetra Tech, Inc., to plan and construct brigade facilities in support of the Iraqi National Guard. Contract FA8903-04-D-8677, TO 0026 was a cost-plus-fixed-fee, which totaled \$35,470,192.

TO 0026 had nine modifications, of which two were administrative in nature, which brought the project total to \$64,008,857. Based on information provided in the TO modifications, the project started in December 2004 and was completed in July 2006. By reference, Federal Acquisition Regulations (FAR) 52.246-21, Warranty of Construction clause, was incorporated into the contract and the standard one year from date of acceptance by the government construction warranty was applicable. The coverage period will expire in July 2007.

Statement of Work

The most updated version of the Statement of Work (SOW), which included the nine TO modifications, was dated 14 July 2006. The SOW requirements for the Al Rasheed Brigade base included the construction of numerous facilities, such as the following:

- Operations Center Building - 1
- Brigade Headquarter Building - 1
- Battalion Headquarters Building - 3
- Company Headquarters Building - 20
- Enlisted Barracks - 16
- Officer Barracks - 7
- Warehouses - 7
- Maintenance Buildings - 4
- Maintenance Shops - 4
- Dining Facility (DFAC) - 1
- Jail - 1
- Fire Station - 1
- Laundry - 1
- Clinic - 1

- Bakery - 1
- Classroom - 1
- Mosque - 1
- Guard towers - 17

Project Objective and Pre-Construction Description

The objective of this project was to plan and construct the Al Rasheed Brigade facilities to support the Iraqi National Guard. Figure 1 provides the planned layout for the new construction to house the Iraqi National Guard. The contract's SOW required the contractor to identify and comply with all applicable Iraqi statutes, as well as the International Building Code (IBC).

The Al Rasheed Brigade is located in Baghdad, Iraq to the southeast of the International Zone (IZ). According to the contractor, before construction started, the area had to be cleared of unexploded ordnance. Prior to construction, the site consisted of rubble.

During our site assessment, the Al Rasheed Brigade facility was occupied by the Iraqi military and the American military.

Project Design

The designs provided to the assessment team by the MNSTC-I contained the following drawings for the Al Rasheed Brigade facilities:

- Architectural
- Structural
- Mechanical (heating, ventilation, and air conditioning [HVAC])
- Electrical (electric, lighting, fire alarm, closed circuit television [CCTV], telephone)
- Sanitary (water supply and sanitary)
- Civil

The civil engineering drawings for the Al Rasheed Brigade facilities included details showing the utility distribution systems (above-and under-ground) for the site. Also, the civil engineering drawings showed storm water collection and disposal through the concrete lined open channels, and the internal major and minor paved road network. The design package also included the mechanical design drawings featuring air handling units, duct network, air flow diagrams, and system layouts. The electrical design drawings included power production plant, one-line diagram for bulk distribution system, control panels, automatic transfer switches, as well as a detailed design for each building and floor.

Based on our review, the design submittals appeared to be satisfactory for the new construction work. In addition, it appeared that the construction project was well planned and designed.

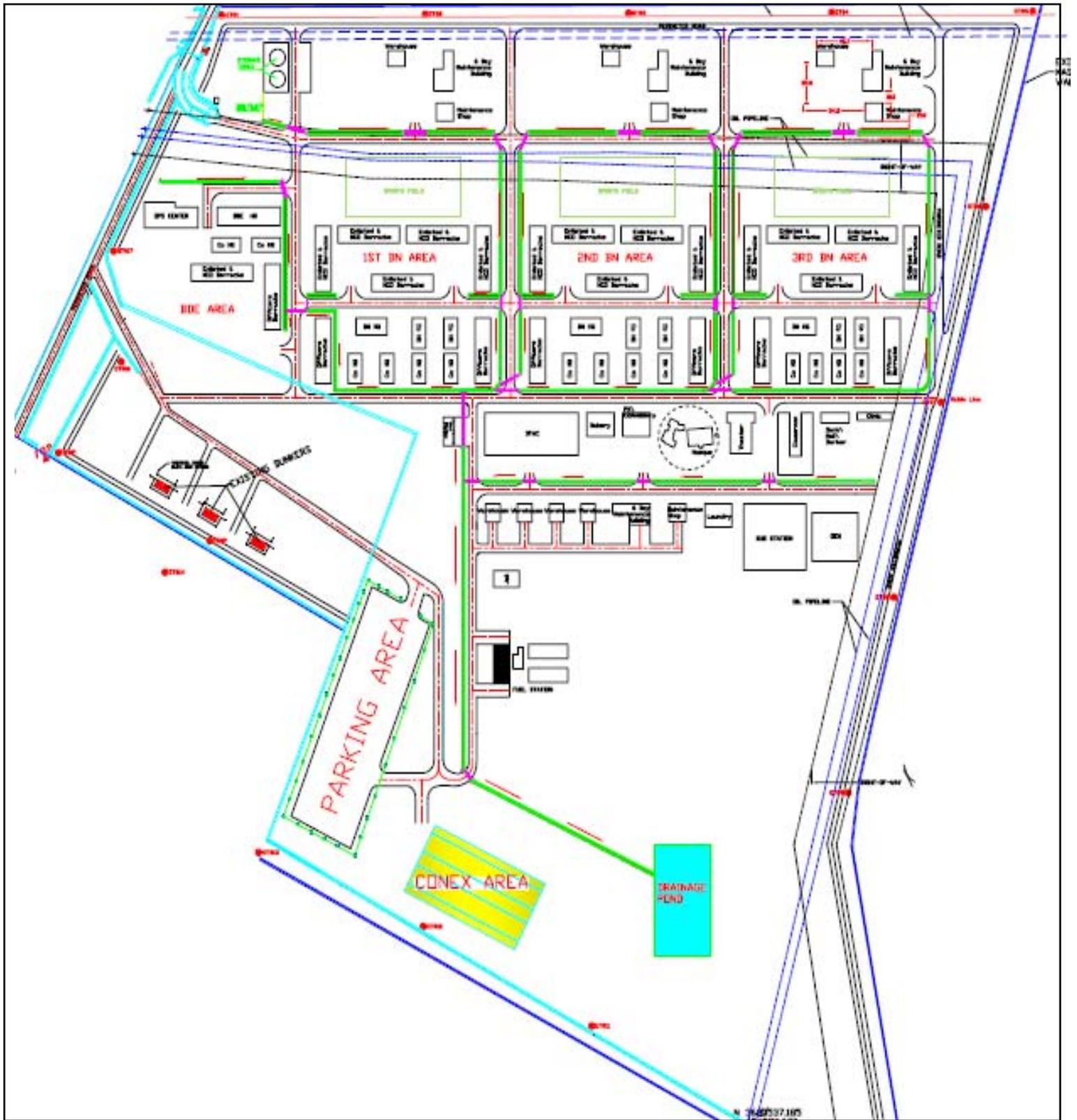


Figure 1. Site layout for the Al Rasheed Brigade base

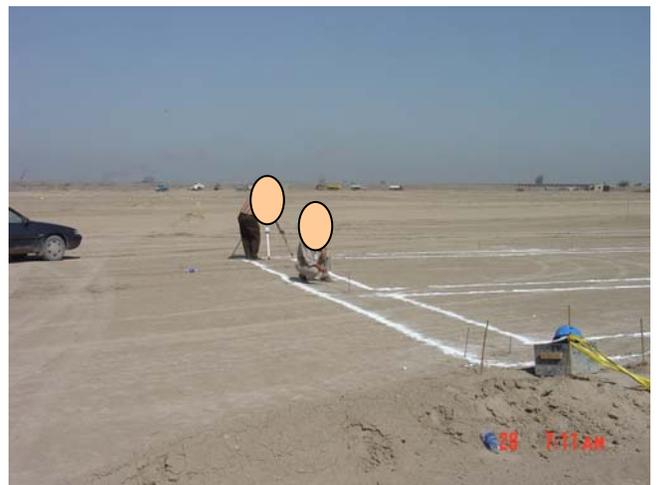
Site Progress During Construction

Throughout the construction of the Al Rasheed Brigade project, the contractor provided numerous progress photographs. We reviewed and subsequently relied on selected contractor photographs to document examples of construction performance completed in accordance with SOW requirements before the project was turned over to the Iraqi military in July 2006.

Site Photos 1-2 document the contractor clearing the land for construction in order to commence construction work at Al Rasheed. Site Photos 3-4 show the contractor's concrete roof slab pour and brick masonry work for the enlisted barracks and Site Photo 5 shows the installation of the HVAC duct work in the DFAC. Finally, the installation of fuel tanks for the generator and the generator placement are seen in Site Photos 6 and 7.



Site Photo 1. Contractor clearing land for construction (Photo provided by Tetra Tech)



Site Photo 2. Contractor surveying land (Photo provided by Tetra Tech)



Site Photo 3. Contractor pouring and vibrating concrete for the enlisted barracks (Photo provided by Tetra Tech)



Site Photo 4. Contractor laying brick for the enlisted barracks (Photo provided by Tetra Tech)



Site Photo 5. Contractor installing duct work in the DFAC (Photo provided by Tetra Tech)



Site Photo 6. Contractor installing fuel tanks for generators (Photo provided by Tetra Tech)



Site Photo 7. Contractor installing generators for the Al Rasheed Brigade base (Photo provided by Tetra Tech)

Site Assessment

On 6 June 2007, we performed an on-site assessment of the Al Rasheed Brigade facilities project. We were accompanied by the MNSTC-I Management Analyst, two Tetra Tech representatives, the Multi National Brigade – Baghdad (MNB-B) representative for Al Rasheed, and the Iraqi Brigadier General/Chief of Staff for the 9th Division of the Iraqi Army. During our site visit, we observed the Al Rasheed Brigade personnel conducting day to day business on the facility.

General Observations

All work completed appeared to meet the SOW requirements and the facility was able to operate at full capacity.

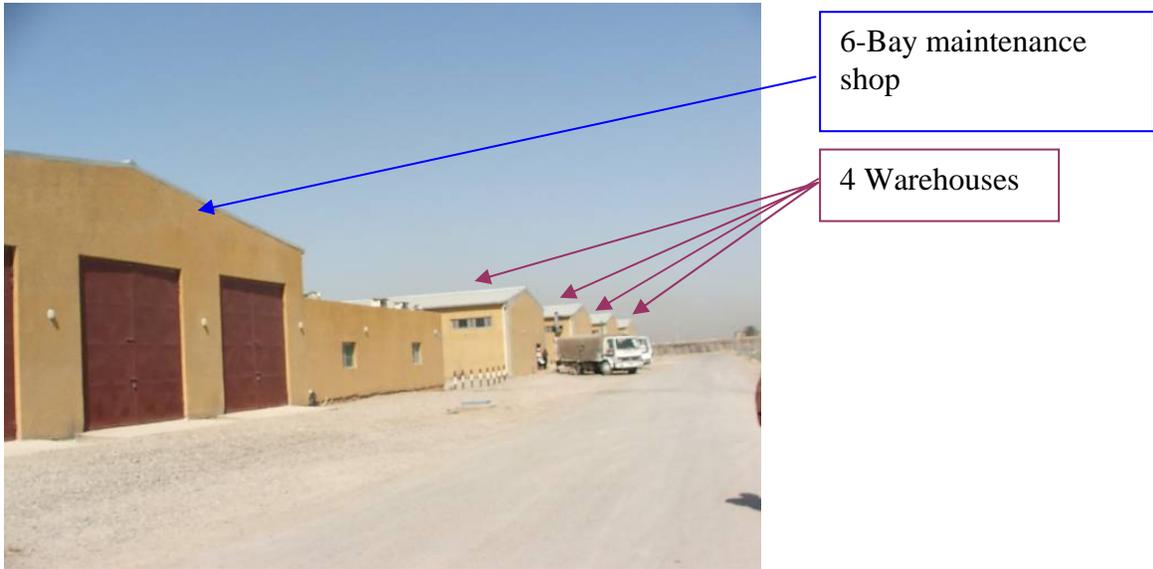
During our site assessment, we observed that the following elements of the SOW requirements were functional and/or completed:

- All rubble and debris had been cleared and removed.
- The required buildings were constructed (operations center building - 1, brigade headquarter building - 1, battalion headquarters building - 3, company headquarters building - 20, enlisted barracks - 16, officer barracks - 7, warehouses - 7, maintenance buildings - 4, maintenance shops - 4, DFAC - 1, jail - 1, fire station - 1, laundry - 1, clinic - 1, bakery - 1, classroom - 1, mosque - 1, and guard towers – 17).
- Cooling units had been installed throughout the buildings on the facility.
- The facility was wired to operate from the generators with transfer switches provided.
- Water storage tanks were provided for the facility.
- The sewer collection system had been installed.

During the site visit, we inspected the following buildings' exteriors: warehouses, maintenance buildings, maintenance shops, jail, laundry, bakery, classroom, theater, mosque, and guard towers (Site Photos 8-13). The building exteriors appeared to be well constructed with no signs of cracking. Due to time constraints, we were unable to view the buildings' interiors.



Site Photo 8. Exterior view of completed laundry and maintenance shop buildings



Site Photo 9. Exterior view of completed 6-bay maintenance shop and 4 warehouse buildings



Site Photo 10. Exterior view of operating fuel station



Site Photo 11. Exterior view of mosque and ablution building



Site Photo 12. Exterior view of theater



Site Photo 13. Guard tower

We were able to inspect the interior of the following buildings: DFAC, fire station, clinic, enlisted barracks, officer barracks, and the 6-bay maintenance shop. The wiring throughout the buildings appeared compliant with the SOW requirements. In addition, we tested several toilets and sinks to verify that they were fully operational (Site Photos 14- 21).



Site Photo 14. DFAC exterior view



Site Photo 15. Fire station



Site Photo 16. Clinic



Site Photo 17. Enlisted barracks



Site Photo 18. Officer barracks



Site Photo 19. 6-Bay maintenance shop



Site Photo 20. Restroom sink



Site Photo 21. Western toilet

We inspected the Al Rasheed base's major support systems, such as lighting, data and voice communication, HVAC, water pumps (Site Photo 22), and sewage, which appeared to be functioning adequately.



Site Photo 22. Water tanks

The primary source of all Al Rasheed building power is the Baghdad power grid; however, the Al Rasheed base is also supported by five 2-Megawatt (MW) generators (Site Photo 23). The contract required the purchase and installation of generators with automated controls and transfer switches (Site Photo 24). At the time of our visit, the Al Rasheed base was operating with the installed generators on a limited basis.



Site Photo 23. Generators and cable trays running to electrical room



Site Photo 24. Electrical room

Operations and Warranties

TO 0026 required the contractor provide operator training for all control systems. According to training records, the contractor provided generator training for hands-on safe operations and control of the generation sets, which included startup, shutdown, and load sharing. In addition, the Al Rasheed base was under a one-year warranty from the date of final acceptance of the work by the Iraqi government. The Al Rasheed base was accepted by the Government of Iraq in December 2006 and the warranty will expire December 2007.

Maintenance Sustainability

TO 0026's original SOW required that the contractor provide the power connection into the existing Iraqi national local substation. The power connection was to be installed in combination with and through an automatic transfer switch to the electrical power generation plant. The contractor's plan was to provide for continuous power through an underground electrical distribution system, complete with all required transformers (400

volt (V) to 11 kilovolt (kV) step-up, high voltage cable, with local step-down transformers low voltage cable), manholes, junction boxes, connectors, conductors, switches, fuses, and overloads.

As required by the SOW, the contractor supplied and installed five generators of 2-MW production output for the Al Rasheed base. In addition, the contractor provided and installed the required fuel tanks, transformers, cables, cable trays, and control room for the transfer switches and other related equipment to make the Al Rasheed base power plant function and produce the required power. We also observed several lesser capacity generators supporting several other buildings and related operations on the Al Rasheed base.

After reviewing the design documents and visiting the site, it appears that the total power production at the power plant is sufficient to support all of the operations. The continuous flow of power is essential for many basic functions, such as the water supply pump station, as well as critical life support, such as the medical clinic and fire suppression system.

During the site visit, the MNB-B representative informed us that all of the generator sets were not being utilized due to a limited allocation of fuel. The Al Rasheed base's modern power plant that supports the base's basic functions is not being utilized to its full potential. For example, the automatic load transfer switches cannot be used because there are not enough loads present for its intended function. During our site inspection, we were told that fuel tanks, transformers, switches, and breakers remain idle because the Iraqi life support contractor responsible for fuel supply does not supply sufficient fuel to operate many of the generator sets.

As this valuable equipment remains unused, the equipment's condition will deteriorate. In order to rotate the use of the generators, the Al Rasheed base operators have to turn the generators off and on as a fuel saving exercise. As a result, the diesel generators are receiving avoidable and undesirable start-up stress, which will eventually affect the generators' performance and life expectancy. Without the required continuous supply of fuel, equipment required for base operations receive a limited amount of power daily.

During our site visit, we observed the wastewater lift station did not have the required power to lift and pump waste water resulting in an unsanitary condition existing behind the Al Rasheed DFAC, which serves approximately 3,000 individuals per day. A MNB-B representative stated that insufficient refrigeration previously caused food spoilage that resulted in stomach related illnesses for 300 Iraqi troops. In addition, emergency medical care is severely affected by insufficient power.

Finally, to compensate for the lack of electricity, the base has jury-rigged portable generators (Site Photos 25 and 26) to individual buildings. These jury-rigged generators are potential fire hazards.



Site Photo 25. Electrical panel in enlisted barracks



Site Photo 26. Portable generator, which has been jury-rigged

Conclusions

The task order required the contractor to plan and construct the Al Rasheed Brigade facilities to support the Iraqi National Guard and the objective of the task order was met. During our site visit, the Al Rasheed Brigade facilities appeared to operate as a fully

functioning facility, which housed Iraqi and American military personnel. This occurred because the project was adequately designed prior to construction and due to the adequate quality management oversight by the contractor and the U.S. government, which enforced the contractor's Statement of Work in terms of construction quality and completeness.

In addition, post turnover equipment and building operations and maintenance practices by the Al Rasheed base personnel appeared effective. Consequently, if the Al Rasheed base personnel continue to properly use and effectively maintain the equipment and the facility, sustained full capacity operations over the long term will likely result.

However, during our site visit, the Al Rasheed Brigade facilities were not receiving electrical power from the city grid and were operating on the contract-furnished generators. We observed that not all electrical generation could be used because fuel supplied by the Iraqi life support contractor was grossly insufficient. We were told that the inability to operate electrical generators has resulted in health problems caused by food refrigeration equipment and wastewater lift pumps not operating. It was reported to us that in one of the more dramatic instances 300 Iraqi soldiers were hospitalized for intestinal illness after eating spoiled food.

Without fuel, the Al Rasheed base's functions are not being utilized to their full potential; the underutilization of the equipment at the Al Rasheed base will affect the equipment's performance and life expectancy.

Recommendations

We recommend that the Director, Iraq Transition Assistance Office coordinate with officials from the Iraqi Ministry of Oil and Ministry of Finance to impress on them the need to provide the Ministry of Defense with a sufficient and continuous fuel supply, and the impact of the lack of sufficient fuel on the health of Iraqi soldiers and the long-term sustainment of equipment and facilities at the Al Rasheed Brigade base.

Management Comments

The Director, Iraq Transition Assistance Office, concurred with the intent of the recommendation; therefore, no further comments are required. See Appendix D for the complete text of the comments.

Appendix A. Scope and Methodology

We performed this project assessment from January through July 2007 in accordance with the Quality Standards for Inspections issued by the President's Council on Integrity and Efficiency. The assessment team included an engineer/inspector and an auditor/inspector.

In performing this Project Assessment we:

- Reviewed the task order and task order modifications;
- Reviewed the Multi-National Security Transition Command-Iraq quality assurance reports and related pre-construction and during construction photos taken by the contractor;
- Conducted field level discussions with the Multi-National Security Transition Command-Iraq point of contact on the Al Rasheed base, Lieutenant Colonel Bill Acheson; and Brigadier General Kareem, Chief of Staff for the 9th Division of the Iraqi Army;
- Conducted an on-site assessment on 6 June 2007; and
- Briefed the results of the fieldwork and our conclusions with the Multi-National Security Transition Command-Iraq Chief of Staff.

Appendix B. Acronyms

CCTV	Closed Circuit Television
DFAC	Dining Facility
FAR	Federal Acquisition Regulation
IBC	International Building Code
HVAC	Heating, Ventilation, and Air Conditioning
IZ	International Zone
kV	Kilovolt
MNB-B	Multi-National Brigade – Baghdad
MNSTC-I	Multi-National Security Transition Command-Iraq
MW	Megawatt
SOW	Statement of Work
TO	Task Order
V	Volt

Appendix C. Report Distribution

Department of State

Secretary of State

Senior Advisor to the Secretary and Coordinator for Iraq

Director of U.S. Foreign Assistance/Administrator, U.S. Agency for
International Development

Director, Office of Iraq Reconstruction

Assistant Secretary for Resource Management/Chief Financial Officer,
Bureau of Resource Management

U.S. Ambassador to Iraq

Director, Iraq Transition Assistance Office

Coordinator, Office of Provincial Affairs

Mission Director-Iraq, U.S. Agency for International Development

Inspector General, Department of State

Inspector General, U.S. Agency for International Development

Regional Inspector General-Iraq, U.S. Agency for International Development

Department of Defense

Secretary of Defense

Deputy Secretary of Defense

Under Secretary of Defense (Comptroller)/Chief Financial Officer

Deputy Chief Financial Officer

Deputy Comptroller (Program/Budget)

Deputy Assistant Secretary of Defense-Middle East, Office of Policy/International
Security Affairs

Inspector General, Department of Defense

Director, Defense Contract Audit Agency

Director, Defense Finance and Accounting Service

Director, Defense Contract Management Agency

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)

Commanding General, Joint Contracting Command-Iraq/Afghanistan

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

Chief Financial Officer, U.S. Army Corps of Engineers

Auditor General of the Army

U.S. Central Command

Commanding General, Multi-National Force-Iraq

Commanding General, Multi-National Corps-Iraq

Commanding General, Multi-National Security Transition Command-Iraq

Commander, Joint Area Support Group-Central

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, Department of Health and Human Services
President, Overseas Private Investment Corporation
President, U.S. Institute for Peace

Congressional Committees and Subcommittees, Chairman and Ranking Minority Member

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 Development and Foreign Assistance, Economic Affairs, and International Environmental Protection
 Subcommittee on International Operations and Organizations, Democracy and Human Rights
 Subcommittee on Near Eastern and South and Central Asian Affairs
Senate Committee on Homeland Security and Governmental Affairs
 Subcommittee on Federal Financial Management, Government Information, Federal Services, and International Security
 Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia
 Permanent Subcommittee on Investigations

U.S. House of Representatives

House Committee on Appropriations
 Subcommittee on Defense
 Subcommittee on State, Foreign Operations, and Related Programs
House Committee on Armed Services
House Committee on Oversight and Government Reform
 Subcommittee on Government Management, Organization, and Procurement
 Subcommittee on National Security and Foreign Affairs
House Committee on Foreign Affairs
 Subcommittee on International Organizations, Human Rights, and Oversight
 Subcommittee on the Middle East and South Asia

Appendix D. Management Comments



Embassy of the United States of America
Baghdad, Iraq

July 3, 2007

Mr. Stuart Bowen
Inspector General
Special Inspector General for Iraq Reconstruction
400 Army Navy Drive
Arlington, VA 22202-4704

Dear Mr. Bowen:

Thank you for the opportunity to review the draft report PA-07-098 assessing the Al Rasheed Brigade Set. This project was completed and turned over the Iraqi Government in 2006. We are pleased that the assessment found the facility to be fully functioning, and determined that there was adequate design, quality management oversight, post turnover, construction quality and completeness.

The major area of concern appears to be the adequacy of commercial power and fuel for back-up generators, both of which are under the control of the Iraqi government. ITAO has been working with the Deputy Minister Council of National Security on this issue.

We will refer this report to the appropriate USG senior consultants to share with their counterparts in the Ministries of Oil and Finance as a specific example of the damaging impact resulting from lack of adequate power and fuel resources.

Regards,

A handwritten signature in black ink, appearing to read "Mark A. Tokola".

Mark A. Tokola
Director
Iraq Transition Assistance Office

Appendix F. 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:

Angelina Johnston

Kevin O'Connor

Yogin Rawal, P.E.