

HILLA MATERNITY AND CHILDREN'S
HOSPITAL
HILLA, IRAQ

SIGIR PA-05-016
MARCH 13, 2006

Report Documentation Page

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Special Inspector General for Iraq Reconstruction

SIGIR PA-05-016

March 13, 2006

Hilla Maternity and Children's Hospital

Synopsis

Introduction. The report was previously provided on a limited distribution basis only in Iraq to representatives of the Gulf Region Division of the U.S. Army Corps of Engineers and the Project and Contracting Office. In accordance with the revised policy of the Office of the Special Inspector General for Iraq Reconstruction, all project assessment reports are being issued publicly.

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. This project assessment was conducted 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 results will be consistent with original objectives;
2. Project components were adequately designed prior to construction or installation;
3. Construction or rehabilitation met the standards of the design;
4. Contractor's Quality Control plan and the U.S. Government's Quality Assurance Program were adequate; and
5. Project sustainability and operational effectiveness were addressed.

Conclusions. The assessment determined that:

1. The overall objective of this task order was to rehabilitate the maternity and pediatric hospitals, located throughout South Central Iraq, because "the existing facilities are insufficient in hospital requirements of cleanliness and functionality". This project was adequately scoped and designed to meet the objectives; however, it is too early in the construction phase of the project to determine if it will actually meet those objectives.
2. Except for the elevator systems, the design package appeared to be complete and sufficiently specific to complete rehabilitation of the Hilla Maternity and Children's Hospital. Most aspects of this project, if constructed in accordance with the approved design and specifications, should produce a usable primary health care center. The elevator renovation project did not have a specific enough scope of work or available design specifications to ensure the work was completed as required in the contract. As of 8 October 2005, the Project and

Contracting Office stated that the elevator specifications and an elevator inspection checklist were available.

3. Although only a limited site assessment was conducted, the renovation of the Hilla Maternity and Children's Hospital appeared to meet the standards of the design, except for the renovation of the elevator systems. The elevator work completed was not consistent with contract requirements. As a result, the two elevators, which were scheduled for completion in June 2005, currently do not meet the requirements of the contract. The Project and Contracting Office and Parsons Delaware, Incorporated, are in the process of modifying their elevator repair procedures to ensure that the elevator repairs are within the contracting specifications.
4. The Maternity and Pediatric Hospitals contract specified a requirement for a Contractor Quality Control plan. Parsons Delaware, Incorporated's Subcontractors' Quality Control Plans failed to meet the requirements stated in the Project and Contracting Office Standard Operating Procedure Construction Number-103. The Quality Control plans were generic, and lacked any site or task specific details, test plans, did not contain a subcontractor organizational chart, and lacked subcontractors' job qualifications. The U.S. Army Corps of Engineers Engineering Regulation 1110-1-12 and Project and Contracting Office Standard Operating Procedure Construction Number-100 specified requirements for a Government Quality Assurance program. The U.S. Army Corps of Engineers Quality Assurance program was adequate.
5. Sustainability coverage under the current contract is adequate, at least for 12 months, for the operation of the Hilla Maternity and Children's Hospital. A review showed that the hospital was operational, and shall continue to be operational, in accordance with the contract's specific objective to rehabilitate the hospital.

Recommendations.

The Commander, U.S. Army Corps of Engineers, Gulf Region Division/Project and Contracting Office, should:

1. Direct the contractor to implement elevator procedures sufficient to correct the problems.
2. Require a qualified elevator specialist to perform final quality assurance elevator inspections.

Management Comments.

The Commander, U.S. Army Corps of Engineers, Gulf Region Division and Director, and Project and Contracting Office concurred with our conclusions and recommendations and provided the following comments.

1. "The elevator situation has been an ongoing issue with the Hillah Maternity Hospitals for several months. Through discussions with senior management of U.S. Army Corps of Engineers, Gulf Region Division, Parsons, Project and Contracting Office and the management staff of the Hillah Maternity Hospital, the elevator repairs have been raised to a high priority status. The elevator repairs have also been a regular discussion topic at the Project Delivery Team meetings and the topic of special meetings and inspections dedicated specifically to the

elevators. The final outcome of these meetings has been the formulation of a joint Government-Contractor plan to complete the elevator repairs in a manner that meets the requirements of the contract. The Project and Contracting Office and U.S. Army Corps of Engineers, Gulf Region Division will continue to monitor the elevator repair progress to ensure that the procedures are implemented and all problems corrected. In addition, the U.S. Army Corps of Engineers, Gulf Region Division, will assign an individual who has received training in Elevator Inspection to assist in the performance of the final Quality Assurance elevator inspections.”

2. “The U.S. Army Corps of Engineers, Gulf Region Division Administrative Contracting Officer will issue a letter to Parsons identifying the deficiencies in their Quality Control Plans and request the expedited submittal of revised plans that meet the U.S. Army Corps of Engineers, Engineering Regulation 1110-1-12 and Project and Contracting Office Construction Number-100 and Construction Number-103. The U.S. Army Corps of Engineers, Gulf Region Division will continue to ensure that the contractor adheres to their Quality Control plans through continued Quality Assurance inspections and forwarding of issues to the Parsons Task Manager to expedite resolution as well as participating in the weekly on-site project delivery team meetings.”

Evaluation of Management Comments.

Management comments addressed the issues raised in our conclusions and actions planned and taken should correct the problems.

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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 results will be consistent with original objectives;
2. Project components were adequately designed prior to construction or installation;
3. Construction or rehabilitation met the standards of the design;
4. Contractor's quality control plan and the U.S. Government's quality assurance program were adequate; and
5. Sustainability and operational effectiveness were effectively addressed in the contract or task order for the project.

Pre-Site Assessment Background

Contract, Task Order, and Costs

The Hilla¹ Maternity and Children's Hospital project (Project ID 13607) will be completed under Contract W914NS-04-D-0006, Task Order (TO) BHN 008. Contract W914NS-04-D-0006, dated 12 March 2004, and was a design build, Indefinite Delivery/ Indefinite Quantity contract with a \$500 million ceiling. The contract was between the Coalition Provisional Authority and Parsons Delaware, Incorporated (Parsons). Contract W914NS-04-D-0006 currently contains 12 modifications.

- Modification # P00001, dated 21 April 2004, reflected administrative changes to the contract. No additional funding was added at that time.
- Modification #P00002, dated 25 May 2004, changed the location of the Project and Contracting Office to the Baghdad Contracting office.
- Modification #P00003, dated 2 June 2004, supplemented existing contract language located within the Federal Acquisition Regulation clause 52.216-7, by adding the "Submission of Vouchers."
- Modification #P00004, dated 4 July 2004, changed the issuing office's name from the Coalition Provisional Authority to the Project and Contracting Office (PCO). In addition, Item (2) was deleted from Section 00800, paragraph C Transition of Knowledge, Skills, and Abilities of the contract.
- Modification #P00005, dated 12 October 2004, transferred the administrative responsibility for the contract's task orders issued to the U.S. Army Corps of Engineers (USACE) Gulf Region Division (GRD). However, the Contracting Officer has the authority to modify the delegation for specific task orders.

¹ Due to the various spellings for cities in Iraq, and in an effort to achieve standardization in SIGIR reports, Al Hillah, as noted in project documentation will be referred to as Hilla.

- Modification #P00006, dated 16 November 2004, changed the base period of performance, the option period of performance, and included the option to extend the term and options of the contract, but not to exceed five years.
- Modification #P00007, dated 2 March 2005, clarified the invoicing process, defined a proper invoice for payment purposes, and instructed that invoices be submitted through the Quality Control System Module of the Resident Management System.
- Modification #P00008, dated 3 March 2005, changed the cost reimbursement to include the tapestry compatible transponders.
- Modification #P00009, dated 1 June 2005, rescinded P00007, issued 2 March 2005.
- Modification #P00010, dated 4 August 2005, incorporated the Reports of Government Property in the contract.
- Modification #P00011, dated 8 August 2005, transferred the administrative responsibility for the contract's task orders issued to the USACE GRD, signed 21 July 2005. However, the Contracting Officer has the authority to modify or terminate the delegation for specific task orders.
- Modification #P00012, dated 25 August 2005, amended the Award Fee Plan. The changes were made unilaterally and were effective for the Award Fee Period commencing after 25 September 2005.
- Modification #A00001, dated 8 April 2005, executed a business name change from Parsons Delaware, Inc. to Parsons Global Services, Inc. The obligated amount remained unchanged.

TO BHN 008 was a design build, cost-plus award fee, task order for work associated with buildings, housing, and health projects in Hilla, Iraq. Additionally, TO BHN 008 was for \$21 million with a Limited Notice to Proceed of \$4 million, dated 20 September 2004, which was to perform a site assessment for the Maternity and Pediatric Hospitals in South Central Iraq. The Maternity and Pediatric Hospitals in South Central Iraq include the following Contract Line Item Numbers (CLINS):

- 0001 - Maternity and Children Hospital, Al Diwaniyah, Qadissiya;
- 0002 - 260 Bed Hilla Maternity and Children's Hospital;
- 0003 - Haj Jalal Maternity and Pediatric Hospital; and
- 0004 - Pediatric Hospital, Kerbala.

TO BHN-008 currently contains six modifications.

- Modification # 01, dated 6 October 2004, incorporated a detailed task schedule. In addition, the modification assigned contract administration to the USACE. No additional funding was added at that time.
- Modification #02, dated 17 January 2005, definitized TO CLIN 0003, Haj Jalal Maternity and Pediatric Hospital. In addition, the modification incorporated the Statement of Requirements and Specifications for CLIN 003. No additional funding was added at that time.
- Modification #03, dated 31 January 2005, definitized TO CLIN 0001, Maternity and Children Hospital, Al Diwaniyah, Qadissiya. In addition, the modification incorporated the Statement of Requirements and Specifications for CLIN 001. No additional funding was added at that time.
- Modification #04, dated 31 January 2005, definitized TO CLIN 0004, Pediatric Hospital Kerbala. In addition, the modification incorporated the

Statement of Requirements and Specifications for CLIN 004. No additional funding was added at that time.

- Modification #05, dated 4 February 2005, decreased the obligated amount by \$10,408,993, from \$21,000,000 to the new obligated amount of \$10,591,007.
- Modification #06, dated 10 February 2005, definitized TO CLIN 0002, 260 Bed Hilla Maternity and Children's Hospital. In addition, the modification incorporated the Statement of Requirements and Specifications for CLIN 002. The TO BHN 008 increased the obligated amount by \$2,914,096, from \$10,591,007 to the new obligated amount of \$13,505,103.

Although the final contracting action included the construction of the Maternity and Children's Hospital, Al Diwaniyah, Qadissiya; 260 Bed Hilla Maternity and Children's Hospital; Haj Jalal Maternity and Pediatric Clinic; and Pediatric Hospital Karbala under TO BHN 008, this assessment addresses only the Hilla Maternity and Children's Hospital. The cost for completion of the Hilla Maternity and Children's Hospital, including the base and award fee, is listed as \$7,414,096.

Project Objective

The 20 September 2004 TO Statement of Requirements and Specifications stated the "intent of the project is to rehabilitate the Maternity and Pediatric Hospitals, located throughout South Central Iraq, because the existing facilities are insufficient in hospital requirements of cleanliness and functionality." The specific objectives for the Hilla Maternity and Children's Hospital project were to provide required water, sewer, and plumbing systems; mechanical systems; electrical systems; structural; elevator refurbishment/replacement; security; architectural; cleaning/demolition; Centralized Control and Maintenance System (CCMS); and any recommended building additions.

Description of the Facility (preconstruction)

The description of the facility (preconstruction) is based on information from the initial scope of work (SOW), Parsons' Site Assessment, and the Maternity and Children's Hospital contract file. The site is an existing and operating facility. The Maternity and Children's Hospital is located approximately 100 kilometers south of Baghdad, Iraq, in downtown Hilla.

The hospital consisted of the main building, doctor's residence building, small reception area, and guardhouse building. The hospital was designed for a capacity of 260 beds; however, at the time of the site assessment, the Hilla Maternity and Children's Hospital contained 313 beds. The main hospital building consisted of two floors. The ground floor was for the main reception area, X-ray room, emergency room, laboratory, several wards, and most of the hospital support sections. The first floor consisted of wards and support sections. The doctor's residence building consisted of a one-story building. During its years of operation, the main hospital building and doctor's residence had not received consistent maintenance. The main hospital building appeared structurally sound; however, the doctor's residence had structural damage.

Scope of Work of the Task Order

The initial SOW for the project, dated 20 September 2004, stated the specific objectives for the Maternity and Pediatric Hospitals were to provide required water, sewer, and plumbing systems; mechanical systems; electrical systems; structural; elevator refurbishment/replacement; security; architectural; cleaning/demolition; CCMS; and any recommended building additions. Based on Parsons' Site Assessment and the definitized SOW, the major tasks for the rehabilitation of the Hilla Maternity and Children's Hospital project included the following items:

- Supply and install electrical generator units;
- Supply and install reverse osmosis units;
- Supply and install incinerator units;
- Repair or replace boiler units;
- Repair or replace sewage treatment plant;
- Repair or replace four elevators units;
- Repair main building structural, mechanical, electrical, plumbing, communication, fire alarm, and phone systems; and
- Renovate doctor's residence facility.

Current Project Design and Specifications

The contract's SOW included a requirement for the submittal and approval of all project designs and specifications. The SOW required submission of property assessment survey/conceptual design submittal (10%), Schematic Design Submittal (30%), Design Development (65%), Construction Documents (95%), and Final Design and Construction Documents and Project Manual (100%) for review and approval from the Sector Program Contracting Office. Requirements for all construction and rehabilitation work included the use of the following applicable codes or Standards: International Building Code, International Existing Building Code, International Mechanics Code, and International Plumbing Code, International Electrotechnical Commission, National Fire Protection Association, Sheet Metal and Air Conditioning Contractor's National Association.

Parsons submitted to the PCO 30%, 65%, and 95% design drawings and specifications. The assessment team reviewed the electronic and hard copies of the 95% design and specifications. Design drawings and specifications appeared to be complete and consistent with the requirements of the contract, except for the elevator repair/replacement activities. Specific design drawings and specifications were not complete for the elevator repair/replacement.

Reported Project Work Completed and Pending

We determined the project's status prior to the site visit through discussions with the USACE Resident Engineer and Quality Assurance Representative (QAR), Parsons Senior Task Order Manager, review of the PCO contract file, and review of the Quality Control (QC) and Quality Assurance (QA) daily reports.

Project site work reported completed:

- Supply and install reverse osmosis units; and
- Supply and install incinerator units.

Project site work reported in progress:

- Supply and install electrical generator units;
- Repair or replace boiler units;
- Repair or replace sewage treatment plant;
- Repair or replace four elevators units;
- Repair main building structural, mechanical, electrical, plumbing; communication, fire alarm, and phone systems;
- Repair hospital gas systems; and
- Renovate doctor's residence facility.

Project site work pending:

- All significant tasks are reported complete or in progress.

Site Assessment

On 26 September 2005, the SIGIR assessment team performed an on-site assessment at the Hilla Maternity and Children's Hospital. The team was accompanied by the USACE on-site QAR during the site visit. During the visit, site work was being accomplished by Parsons' subcontractors. The assessment covered work completed (installation of incinerator) as well as a portion of the work in progress (installation of generator units, repair of boiler units, and repair of elevator units). Due to limited time availability on site, the team did not evaluate all work in progress, such as the repair of the main building's structural, mechanical, electrical, plumbing, communication, fire alarm, and phone systems and hospital gas systems; renovation of the doctor's residence facility; and the repair or replacement of the sewage treatment plant.

Work Completed

Work completed included the construction of the incinerator building, installation of the incinerator unit and electrical connections, and installation of the reverse osmosis water treatment unit and associated piping and controls.

Supply and install incinerator units

The contract required the contractor to “design, provide and install or repair [the] existing incinerator and all associated building works and site preparations”. The design required the construction of a 3.24 meter (M) by 6.24 M brick wall with stucco exterior structure on concrete footings and slab foundation. The incinerator requirement was for a 15 kilogram (kg) per hour rating to destroy hospital waste.

Our site assessment verified the exterior structure was complete. At the time of our site visit, the gas powered, electrically controlled incinerator unit was installed and electrical connection completed. The incinerator unit factory name plate listed the following: Company - Muller, Make - Group ATI Incinerator, Type - CP 15, and Rated Capacity - 15 kg/hour. The incinerator and structure appeared consistent with contract and design requirements. Site Photo 1 shows the exterior view of the incinerator building. Site Photo 2 shows the installed incinerator unit and controls.



Site Photo 1. Exterior View of the Incinerator Building



Site Photo 2. Installed Incinerator and Unit Controls

Supply and install reverse osmosis units

The contract required the “installation of a water filtration/purification system to ensure a potable water supply for the building, with relevant standards for supply and control of water to clinical areas such as operating theatres. Assess the need for a reverse osmosis system.” The design required the supply and installation of a 6,400 gallons-per-day reverse osmosis unit. The unit is containerized and designed for expedited deployment. The reverse osmosis unit and associated filtration units were selected to treat water to a potable level. The site visit did not include an inspection of the reverse osmosis unit. Review of the USACE QA daily reports and photographs have confirmed the reverse osmosis unit was installed and the unit appeared to be consistent with design and specifications. Site Photo 3 shows the exterior of the reverse osmosis containerized unit. Site Photo 4 shows the raw water tank and high pressure feed pumps.



Site Photo 3. Exterior Reverse Osmosis Containerized Unit
(Photo courtesy of the USACE QAR)



Site Photo 4. Raw Water Tanks and High Pressure Feed Pumps
(Photo courtesy of the USACE QAR)

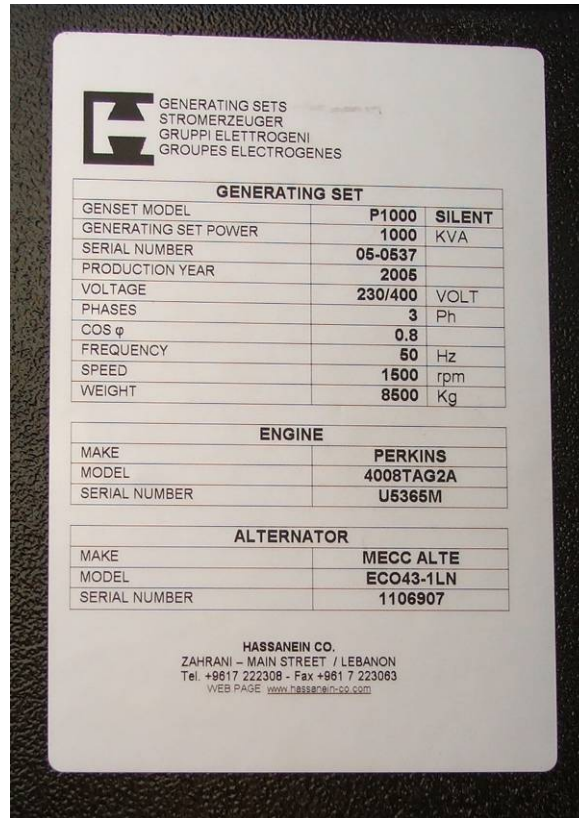
Work in Progress

Supply and install electrical generator units

The contract required the contractor to “repair or replace critical power (generator) back-up power”. The design required, as a component of the back-up power, the supply and installation of a 1,000 kilovolt-amp generator for emergency backup power. Our site assessment verified a containerized generator unit was located on-site, although electrical connections had not been completed. The generator unit factory name plate listed the following: Company – Stromerzeuger; Generating set power – 1,000 kilovolt-amp ; Production Year – 2005; Engine Make – Perkins; Engine Model - 4008TAG2A; Engine Serial Number – U5365M; Alternator Make – MECC ALTE; Alternator Model Number – ECO43-1LN, and Alternator Serial Number – 1106907. The generator unit appeared consistent with the contract and design requirements. Site Photo 5 shows the generator motor and alternator. Site Photo 6 shows the factory nameplate of the generator unit.



Site Photo 5. Generator Motor and Alternator



Site Photo 6. Factory Nameplate of the Generator Unit

Repair or replace boiler units

The contract required the assessment of existing conditions, and, if required, the repair of existing boilers or installation of new boilers. The hospital has three existing boiler units located in a ground floor mechanical room. An assessment of the boiler units is currently underway by the contractor to determine if repair is feasible or whether new units will be required. At the time of our site visit, the boiler units were partially dismantled in order to assess their condition. Currently, the assessment is not complete; therefore, a decision has not been made to either repair or replace the units. Site Photo 7 shows a partially dismantled boiler unit.



Site Photo 7. Partially Dismantled Boiler Unit

Repair or replace four elevators units

The contract required the inspection of all existing elevators in the hospital, and the refurbishment and/or replacement of all elevator components, as required to provide a fully operational elevator system in compliance with all governing codes and standards, as practicable. The hospital had four elevator systems. Requirements stated in the contract to refurbish and/or replace all elevator components to include, but not limited to the following items:

- controls and switches;
- motors, pumps, hydraulic lines, electric lines;
- pits, hydraulic cylinders, buffers, pit sump pumps;
- guide rails, rail supports, passenger cab, doors, threshold;
- fire safety features, smoke detectors, lighting and ventilation systems;
- door sensors, hall lanterns, direction indicators, call buttons;
- door's safety edge, arrival chimes;
- emergency telephone and communications device and lighting;
- automated transfer switch, battery-operated automatic rescue device;
- automatic parking feature, emergency light; and
- fireman's emergency operations switch.

Our site visit verified that rehabilitation of the elevator systems was ongoing. Site Photo 8 shows a newly installed motor for an elevator unit. Site Photo 9 shows the inside of an elevator shaft. The assessment team did not possess the expertise to evaluate the elevator systems. We interviewed the USACE Elevator Specialist for Iraq, and reviewed the elevator QA reports. The USACE Elevator Specialist inspected two elevator systems at the Hilla Maternity and Children's Hospital on 6

June 2005 and 19 July 2005. Based on the interview with the USACE Elevator Specialist and review of the elevator QA reports, the team identified that the renovation of the elevators has had significant safety, quality of material, and quality of workmanship issues.

On 6 June 2005, the Elevator Specialist went to the Hilla Maternity and Children's Hospital to inspect two elevator systems, which were scheduled to begin operation the following week. The USACE elevator QA report identified numerous deficiencies and stated "Parson's should consider bringing in someone with elevator experience to do pre-acceptance inspections". The following discrepancies were noted in the elevator QA report:

- missing manufacture plate on oil type buffers;
- no elevator safety shut off;
- governor not installed;
- ropes and cables not certified;
- insufficient car bottom material and welds completed with copper;
- no emergency lighting and communication system;
- interior of cars and exterior doors require painting;
- poor quality fan installed in car;
- motors which look refurbished and are not new;
- motor plate numbers do not match machinery stamps;
- motor drums have small grooves on the inside and old rust;
- circuit tag markers are paper and are required permanent tags;
- machine rooms have insufficient lighting, ventilation, HVAC, fire protection, communication, and safety items; and
- main shutoff for the elevator is inadequate and requires lock-out/tag-out.

The USACE elevator specialist's QA report for the re-inspection of 19 July 2005 again identified numerous deficiencies and stated "Parsons should spend time on-site ensuring work is completed according to contract with PCO. At this point I would recommend, stopping any payments related to elevator work until systems are brought up to code and SOW." The following discrepancies were noted:

- Pits
 - no sump-drain installed;
 - no load rating or stroke on new care buffers installed;
 - counterweight buffers not replaced;
 - ropes not certified;
 - no emergency shut off switch located in pit;
 - no work light located in pit;
 - alarm poorly installed and covered with grout; and
 - travel cable needs to be adjusted.
- Hall Openings
 - hall openings have gaps between frame and floor.
- Cars
 - inadequate ventilation for car size;
 - inadequate emergency lighting;
 - no back-up battery for ventilation and lighting;

- flooring will not last warranty period;
 - new installed door rollers are poor quality;
 - door closing tension cable too tight;
 - doors do not have proper sensors installed;
 - door closing speed and force needs readjustment;
 - car floor materials are incorrect;
 - welds are copper on galvanized steel;
 - two-way communication not installed in elevator car; and
 - bumpers for cars/counterweights are not installed.
- Car Tops
 - no work lights visible;
 - car top bolts are improperly sized, no bolt locking mechanism;
 - wiring needs to have proper connections and be securely fastened; and
 - door closing unit switch is covered with mortar.
- Machine Rooms
 - no ventilation provided;
 - lighting is not adequate;
 - no emergency lockable disconnect for lockout/tag out;
 - requires guards installed on drive sheaves, ropes, and overhead sheaves;
 - markings need to be permanent for all panels/circuits;
 - smoke detectors need to be updated to meet current requirements;
 - drive sheave and drums need to be marked with minimum groove diameter;
 - fire extinguisher missing and machine room needs to be fire rated;
 - heating, ventilation, and air conditioning (HVAC) capabilities need to be increased to meet the code;
 - control board is showing signs of overheating with little or no use; and
 - improper wiring or faulty control board requiring replacement.

To date, most of the issues have been resolved, but several items are still pending, specifically lock out/tag outs, required equipment guards, and the HVAC upgrade in the mechanical room. Per discussion with the PCO project manager, two elevators have been approved for use, although the elevators have not been officially accepted as complete due to the required additional work.



Site Photo 8. Newly Installed Motor for the Elevator Unit



Site Photo 9. Inside of the Elevator Shaft

Work Pending

All significant tasks are reported complete or in progress.

Project Quality Management

The Hilla Maternity and Children's Hospital contract specified a requirement for a Contractor Quality Control (QC) plan. The QC plan was to be adhered to throughout the duration of the design, construction, installation, testing, and commissioning phases. Parsons developed a Quality Management Plan, which included QC requirements for its subcontractors. Parsons provided a basic QC plan to its subcontractors. Parsons' subcontractors' QC plans failed to meet the requirements stated in the PCO Standard Operating Procedure (SOP) Construction Number-103 - Contractor Construction Quality Control Plan. The QC plans were generic plans that lacked any site or task specific details, test plans, did not contain a subcontractor organizational chart, and lacked subcontractors' job qualifications. Parsons did require the use of a three-phase checklist by its subcontractors and daily QC reports. In an attempt to improve the subcontractors' QC, Parsons instituted a training program for its subcontractors Quality Control Representatives.

The subcontractor provided daily QC reports that presented a brief background on the number of workers, the work activities completed, any tests or inspections performed, and a two-week look ahead, which were accessible through Parsons' website. The Quality Control Representatives monitored field activities and completed daily QC reports and QC deficiency logs. The QC reports did not always include sufficiently complete daily observations of what occurred at the site, problems encountered at the site that required corrective actions, or solutions achieved to correct problems at the site. The QC deficiency logs did not provide sufficient information to ensure that potential construction deficiencies were detected, evaluated, and properly corrected in a timely manner. For example, the contract stated, "[a]ll elevators were to be refurbished or replaced. All elevators were to be inspected and all elevator components are required to provide a fully operational elevator system in compliance with all governing codes and standards as practicable." When the QC plan was reviewed, there was a lack of detailed elevator QC plans, QC reports, and QC deficiency logs. Due to a lack of QC elevator specifications, the QC plan did not ensure that the elevators' deficiencies were detected, evaluated, and properly corrected in a timely manner.

The USACE Engineering Regulation 1110-1-12 and PCO SOP CN-100 specified requirements for a Government QA program. The USACE QA program was adequate; although, the contractor QC reports were not being consistently reviewed. The USACE QARs were on-site during rehabilitation and reconstruction events. The USACE QARs monitored field activities and completed daily QA reports, which were sufficiently complete, accurate, and timely. In addition, the USACE Elevator Specialist performed two elevator inspections at the Hilla Maternity and Children's Hospital that identified elevator deficiencies that the Contractor's QC daily reports and deficiency tracking logs failed to identify. The procedures in place ensured that potential elevator deficiencies were detected and documented.

Project Sustainability and Operational Effectiveness

Project Sustainability

The contract stated that the Contractor shall prepare a preventive maintenance plan that shall identify the manufacturer's information and recommendations for preventive maintenance on all installed equipment in coordination with the Ministry of Health. In addition, the contractor is responsible for providing appropriate training for all operators and technicians to allow the hospital to conduct long-term routine and preventive maintenance. The contractor shall provide a comprehensive training manual, and the equipment manufacturer's representatives or technical experts shall conduct training.

For Operation and Maintenance, the contractor shall provide three copies of legible operation and maintenance manuals for all new equipment, finishes, and fixtures. In addition, the contractor shall provide the Maternity and Pediatric Hospitals with the warranties for all mechanical, electrical, and/or electronic device equipment. The contractor shall certify all operations for 12 months at the Maternity and Pediatric Hospitals. The contractor shall provide an individual price list of spare parts and consumable items that are anticipated to be required during the first five years in the running and/or use of all new equipment.

The generator unit, the reverse osmosis, the incinerator, and the four elevators are significant sustainability issues at the Hilla Maternity and Children's Hospital. Requirements for operation and maintenance manuals, as well as on-site training for the generator unit, reverse osmosis, incinerator, and the elevators were included in the contract. The contract included providing warranties for all the mechanical, electrical, and/or electronic device equipment. The contract did not provide for spare parts for the Maternity and Pediatric Hospitals. Sustainability coverage under the current contract, at least for the first 12 months, is adequate for the operation of the Hilla Maternity and Children's Hospital, located in Hilla, Iraq.

Operational Effectiveness

A review of the contract's SOW showed that this project was properly scoped in order to result in a more fully operational and functional hospital and therefore operational effectiveness should be achieved.

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 results will be consistent with original objectives.

The overall objective of this task order was to rehabilitate the Maternity and Pediatric Hospitals, located throughout South Central Iraq, because “the existing facilities are insufficient in hospital requirements of cleanliness and functionality”. The specific objective for the Hilla Maternity and Children’s Hospital project was to provide required water, sewer, and plumbing systems; mechanical systems, electrical systems, structural, elevator refurbishment/replacement; security; architectural; cleaning/demolition; CCMS; and any recommended building additions. This project has been adequately scoped and designed to meet the objectives; however, it is too early in the construction phase of the project to determine if it will actual meet those objectives.

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

Except for the elevator systems, the design package appears to be complete and sufficiently specific to complete rehabilitation of the Hilla Maternity and Children’s Hospital. The majority of this project was effectively planned and designed in accordance with the contract’s SOW. As a result, most aspects of this project, if constructed in accordance with the approved design and specifications should produce a usable primary health care center. The elevator renovation portion of the project did not have a specific enough SOW after the required assessment or available design specification to complete the work, as required in the contract. As of 8 October 2005, the PCO stated that the elevator specifications and an elevator inspection checklist are available.

3. Determined whether construction or rehabilitation met the standards of the design.

Although only a limited site assessment was conducted, the renovation of the Hilla Maternity and Children’s Hospital appeared to meet the standards of the design except for the renovation of the elevator systems. The elevator work completed was not consistent with contract requirements. This occurred because the contractor’s project and construction managers were not knowledgeable regarding elevator repair requirements and they did not effectively monitor or supervise construction and equipment installation. The USACE Elevator Specialist identified numerous safety and quality related issues concerning the elevator renovation work. As a result, the two elevators which were scheduled for completion in June 2005 did not meet the requirements of the contract at the time of this assessment. During an interview, Parsons senior task order manager stated that they recently employed a USACE recommended individual who will perform the elevator QC inspections. The PCO and Parsons are in the process of modifying their elevator repair procedures to ensure that the elevator repairs are within the contract specifications.

4. Determine whether the Contractor’s Quality Control plan and the Government Quality Assurance Program were adequate.

The Hilla Maternity and Children’s Hospital contract specified a requirement for a Contractor Quality Control (CQC) plan. Parsons’ subcontractors’ QC Plans failed to meet the requirements stated in the PCO SOP CN-103. The QC plans were generic and lacked any site or task specific details, test plans, did not contain a subcontractor organizational chart, and lacked subcontractors’ job qualifications.

The USACE Engineering Regulation 1110-1-12 and the PCO SOP CN-100 specified requirements for a Government QA program. The USACE QA program was adequate. In addition, the USACE Elevator Specialist performed two elevator

inspections at the Hilla Maternity and Children's Hospital that identified elevator deficiencies. The USACE QARs monitored field activities, completed daily QA reports, and maintained deficiency logs. The procedures in place ensured that potential construction deficiencies were detected and evaluated.

5. Determine if project sustainability and operational effectiveness were addressed.

The contract included requirements for preventive maintenance plans, comprehensive training manuals, operation and maintenance manuals, warranties for 12 months, identification of spare parts and consumable items, and on-site training. The contract did not provide for spare parts for the Hilla Maternity and Children's Hospital. Sustainability coverage under the current contract is adequate, at least for 12 months, for the operation of the Hilla Maternity and Children's Hospital.

A review of the contract's SOW showed that this project was properly scoped in order to result in a more fully operational and functional hospital and therefore operational effectiveness should be achieved.

Recommendations.

The Commander, U.S. Army Corps of Engineers, Gulf Region Division and Director, Project and Contracting Office, should:

1. Direct the contractor to implement elevator procedures sufficient to correct the problems.
2. Require a qualified elevator specialist continues to perform final QA elevator inspections.

Management Comments.

The Commander, U.S. Army Corps of Engineers, Gulf Region Division and Director, Project and Contracting Office concurred with our conclusions and recommendations and provided the following comments.

1. "The elevator situation has been an ongoing issue with the Hillah Maternity Hospitals for several months. Through discussions with senior management of USACE GRD, Parsons, PCO and the management staff of the Hillah Maternity Hospital, the elevator repairs have been raised to a high priority status. The elevator repairs have also been a regular discussion topic at the Project Delivery Team meetings and the topic of special meetings and inspections dedicated specifically to the elevators. The final outcome of these meetings has been the formulation of a joint Government-Contractor plan to complete the elevator repairs in a manner that meets the requirements of the contract. PCO and USACE GRD will continue to monitor the elevator repair progress to ensure that the procedures are implemented and all problems corrected." In addition, the U.S. Army Corps of Engineers, Gulf Region Division, will assign an individual who has received training in Elevator Inspection to assist in the performance of the final QA elevator inspections."

2. “The USACE GRD ACO will issue a letter to Parsons identifying the deficiencies in their QC Plans and request the expedited submittal of revised plans that meet the USACE Engineering Regulation 1110-1-12 and PCO CN-100 and CN-103. USACE GRD will continue to ensure that the contractor adheres to their QC plans through continued QA inspections and forwarding of issues to the Parsons Task Manager to expedite resolution as well as participating in the weekly on-site project delivery team meetings.”

Evaluation of Management Comments.

Management comments addressed the issues raised in our conclusions and actions planned and taken should correct the problems.

Appendix A. Scope and Methodology

We performed this project assessment from September through October 2005, 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, including the following: Contract, Contract Modifications, Scope of Work, and Independent Government Estimate for the modification;
- Reviewed the design package (drawings and specifications), Quality Assurance Plan, Quality Control plan, Contractor's daily Quality Control reports, and Quality Assurance reports;
- Interviewed the U.S. Army Corps of Engineers' Area Engineer, Resident Engineer, Elevator Specialist, Project Managers, and Quality Assurance Representatives;
- Interviewed the Project and Contracting Office's Sector Project and Contracting Office Contractor Program Manager;
- Interviewed the Contractor's Senior Task Order Manager, Task Manager, Regional Manager, Project Controls Manager, and Quality Control representative; and
- Conducted an on-site assessment and documented results at Hilla Maternity and Children's Hospital, located in Hilla, Iraq.

Appendix B. Acronyms

CLINS	Contract Line Item Numbers
CCMS	Centralized Control and Maintenance System
CQC	Contractor Quality Control
GRD	Gulf Region Division – U.S. Army Corps of Engineers
HVAC	Heating, Ventilation, and Air Conditioning
M	Meter
PCO	Project and Contracting Office
QA	Quality Assurance
QAR	Quality Assurance Representative
QC	Quality Control
SOP	Standard Operating Procedure
SOW	Scope of Work
TO	Task Order
USACE	U.S. Army Corps of Engineers

Appendix C. 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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