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# FINAL CLOSEOUT REPORT

TO 2 – KAJAKAI DAM AUXILIARY INFRASTRUCTURE AND SUPPORTING SERVICES

AFGHANISTAN INFRASTRUCTURE REHABILITATION PROGRAM (AIRP)

CONTRACT NUMBER 306-I-00-06-00517-00



PHOTO: TO02 TEAM, 23 JAN 07

**Before**

**After**

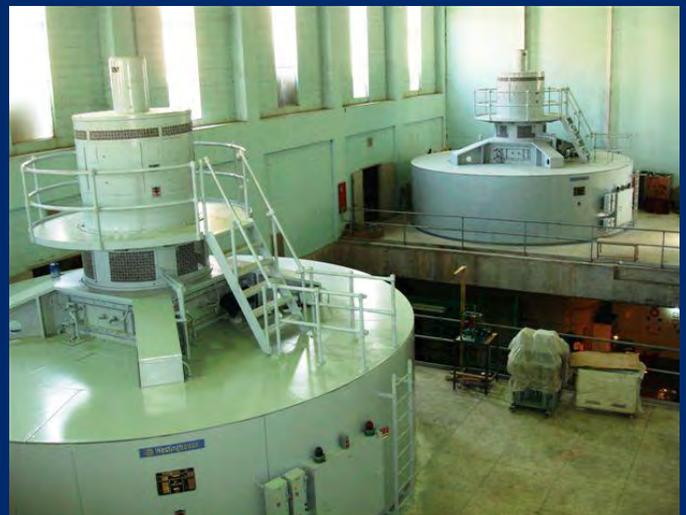


PHOTO: TO02 TEAM, 18 OCT 09

TO02: Kajakai Dam Powerhouse.

Project Start Date: 09 February 2007

Project Finish Date: 31 October 2009

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## FINAL REPORT TASK ORDER 2

### I TASK ORDER OVERVIEW

#### 1.1 Background and Summary of Scope of Work

Built with US government funding in 1953, Kajakai dam and Hydro Power Plant (HPP) was intended to impound water for downstream irrigation in the Helmand River Valley. In the mid-1970s, a USAID-funded hydro power plant with two 16.5 megawatt (MW) generating units was installed at the foot of the dam. The two hydro turbine-generators, called Units 1 and 3, had space between them for a planned third generator, Unit 2. Normal wear-and-tear, lack of maintenance and spare parts, harsh weather conditions, and years of conflict seriously deteriorated the two units since the Kajakai HPP was first dedicated in November 1975.

In December 2003, when USAID contracted The Louis Berger Group under the Rehabilitation of Economic Facilities and Services (REFS) Program to perform the rehabilitation of the powerhouse, only Unit 1 was in operation, and its output had been reduced to less than 3 MW with Unit 3 operating at approximately 10MW. In August 2004, Voith-Siemens Hydro (VSH), a major supplier of hydroelectric equipment, was hired to rehabilitate Units 1 and 3. In September 2005, Voith-Siemens successfully completed the refurbishment and re-commissioning of Unit 1, which continues to operate at full capacity since this date.



Aerial View of Kajakai Hydro Power Plant: Powerhouse, Clay-core Earthen Dam, Switchyard, Irrigation Outflow

In January 2005, USAID directed and approved the award of a sole-source contract to China Machine-Building International Corp (CMIC), a state-owned Chinese company, for the manufacturing and erection of a new Unit 2. At USAID's direction, the original VSH contract was terminated for convenience, deleting Unit 3 scope and in turn, the CMIC contract was later modified to include the refurbishment of Unit 3 and to provide equipment for the Tangi Substation. However, attacks, coinciding with the rebirth of the Taliban insurgency in May 2006 cut off all ground re-supply to the site and forced the evacuation by the British Military of all LBG engineers from Kajakai on 2 June 2006. This effectively suspended the works putting the project's future and completion in jeopardy.

USAID awarded Task Order 2: Kajakai Auxiliary Infrastructure and Support Services (TO2) to The Louis Berger Group/Black & Veatch Joint Venture (LBG/B&V) in January 2007 in “delay” status due to inability to access the Kajakai site via both ground and air. The initial objective of TO2 was to provide the following support Subtasks; 1) Camp Support Services (security and operation & maintenance), 2) Camp Expansion and Fortifications, 3) Survey and Assessment of the Low Level Outlet Work, and 4) Survey and Assessment of the Low Level Intake Structure. In an attempt to restart the works, LBG/B&V staff return to Kajakai in late January 2007 but were quickly evacuated after receiving sustained rocket attacks in early February 2007.

Upon the completion of REFS in June 2007, USAID awarded TO 2: Subtask 5 transferring the REFS legacy work, essentially the residual subcontracts and budget for the completion of Unit 2 and refurbishment of Unit 3 and thus expanding the Kajakai scope of work under AIRP. LBG/B&V staff re-mobilized to the Kajakai site in October 2007 after a 16-month hiatus, to re-commence site operations, but ground support was still not available due to the prevailing security conditions. Thus to ensure the long term viability of the site and to re-start operations, USAID modified TO2 in December 2007 adding Subtask 6 to the scope of work which provided dedicated rotary wing air services to safely transport materials, supplies, equipment and workforce to/from the Kajakai Dam Site.



Head Cover Reassembly – April 2009

Task Order 6: Kajakai to Ring Road served as a parallel support project to the Kajakai Dam’s completion by providing the staging facility for all Unit 2 equipment while the Kajakai to Ring Road was constructed, providing ground access to the site. In November 2007, Task Order 6 was terminated due to the non-permissive security environment in the Sangin Valley/611 Road corridor. LBG/B&V completed the construction of the Durai Junction Camp (DJC), but was instructed to stop all road construction activities and transfer the operation and maintenance of the DJC to TO2. USAID formally modified the TO2 scope of work in February 2008 by adding Subtask 7: Durai Junction Camp. DJC was critical to the completion of TO 2 as it served as the key hub and forward staging base for the airlift and helo operations in and out of Kajakai under Subtask 6. This subtask also included options for the design and construction of a fixed wing landing strip and spillway dry crossing at Kajakai to support both current and future operations.

## 1.2 Task Order Objectives and Deliverables

The original objective of this task order was to provide auxiliary infrastructure and supporting services for the rehabilitation of the Kajakai HPP and eventually the construction of a new transmission system serving nearly 1.7 million residents of Kajakai, Lashkar Gah, and Kandahar in the Helmand and Kandahar Provinces as part of a USAID-funded Southeast Power System (SEPS). The TO2 scope was later modified due to the non-permissive security environment in these provinces delaying the overall SEPS development and implementation. The Task Order had seven primary objectives (i.e. Subtasks) as follows;

- Subtask 1 – Camp Support Services
  - Overall camp management to include; maintenance of living and storage facilities, electricity, perimeter/fence maintenance, water and waste disposal, etc.
  - Catering, laundry and domestic services for all LBG/B&V and subcontractor staff
  - Communications and IT support to include; internet, satellite phone, security and living quarters communication
  - Close in-security for the entire site and all assigned personnel
- Subtask 2 – Lower Camp Expansion
  - Construction of two 40-man bunkhouses for subcontract personnel
  - Kitchen/mess hall rehabilitation to accommodate additional subcontractor personnel
  - Site work to include; preparation of the lay down area, utility work, etc.
  - Security upgrades and fortification of existing outposts, expat house and new lower camp construction
- Subtask 3 – Low Level Outlet Work (Later de-scoped)
  - Inspection of entire Low Level Outlet System to identify scope of work required to restore operability to the Low Water Outlet System to include; specifications of components for repair/replacement, estimated cost, work plan and schedule.
- Subtask 4 – Low Level Intake Structure (Later de-scoped)
  - Evaluation/study of Low Level Intake Structure to identify scope of work required to enable the entire system to be functional to include; engineering calculations, sketches, drawings, cost estimates and schedule.
- Subtask 5 – Completion of Rehabilitation Works of Unit 2 and Unit 3
  - Construction, installation and commissioning of new Unit 2 Turbine/Generator (Later de-scoped)
  - Refurbishment of Unit 3 Turbine/Generator
  - Adjustment of Unit 1 Turbine/Generator
  - Addition of power circuit breaker for the supply of power to Tangi Village Sub-station located across the river from Kajakai power station (Later de-scoped)
  - Addition of fully automated turbine inlet bypass valves, cooling water valves, controls, and programmable logic control (Later de-scoped)



Unit 2 Components Loaded Onto AN-124 – Aug 2008



- Subtask 6 – Airlift Requirement
  - Short-term and long-term sustainment of airlift support services to maintain all site operations utilizing Mi8 and Mi26 rotary wing, and IL-76 and AN-124 fixed wing
  - Move CMIC tools, equipment and materials that were in temporary storage in Shorab Camp, Kandahar and Kabul to Kajakai
  
- Subtask 7 – Durai Junction Camp
  - Provide the operation and maintenance of the DJC to include administrative, management, logistics and security
  - The Durai Junction Airstrip for fixed-wing aircraft support (Later de-scoped)
  - Kajakai Dam Spillway Bridge to replace existing decrepit Helmand River Bridge connecting Kajakai and the Tangi Village (Later de-scoped)

Deliverables include the following:

- Safety Plan
- Security Plan
- QA/QC Plan
- Reports
- Camp Operation & Maintenance (Kajakai and Durai Junction)
- Site Assessment Report
- Construction of Camp Expansion Facilities
- Site Plan
- Rehabilitation of Unit 3
- Airlift Services for Equipment Movement

Electronic copies of these documents are provided electronically to supplement this report. Also included are miscellaneous reports/documentation which may be useful for USAID's future implementation of work at Kajakai.



### 1.3 Milestones

The period of performance for this task order was approximately 34 months (1 Jan 2007 through 31 Oct 2009). The following is a listing of major milestones scheduled and achieved for the work required by this task order:

Milestone	Original Schedule	Achieved Date
<i>Subtask 1 - Camp Support Services</i>		
Issue bids documents	January-07	July-07
Receive bids	February-07	August-07
Award of subcontracts	February-07	November-07
Evaluate for annual renewal	December-07	December-07
<i>Subtask 2 - Camp Expansion</i>		
Issue design-build tender documents	January-07	August-07
Receive bids for construction	February-07	March-08
Award NTP construction subcontract	February-07	April-08
Substantial completion	April-07	March-09
Final acceptance	April-07	April-09
Release from Defects Liability Period	March-08	April-10
<i>Subtask 3 - Kajakai Dam Low Level Outlet Work</i>		
Finalize RFQ for engineering services	January-07	De-scoped
Award engineering services	February-07	De-scoped
Issue assessment report	March-07	De-scoped
USAID Approval of assessment report	March-07	De-scoped
Issue NTP to construction subcontractor(s)	April-07	De-scoped
Issue release for material purchases	April-07	De-scoped
Substantial Completion	September-07	De-scoped
Final acceptance	October-07	De-scoped
Release from Defects Liability Period	October-08	De-scoped
<i>Subtask 4 - Low Level Intake Structure</i>		
Finalize RFQ for engineering services	January-07	De-scoped
Award engineering services	February-07	De-scoped
Issue assessment report	March-07	De-scoped
USAID Approval of assessment report	March-07	De-scoped
Finalize RFQ for engineering services	January-07	De-scoped
Award engineering services	February-07	De-scoped
Issue assessment report	March-07	De-scoped
<i>Subtask 5 – Completion of Rehabilitation Works of Unit 2 and Unit 3</i>		
Construction Installation of Unit 2	June-08	De-scoped
Refurbishment of Unit 3	June-08	October-09
Adjustment of Unit 1	As needed	As needed
Power Circuit Breaker Tangi Village	June-08	De-scoped
Finalize RFQ for engineering services	January-07	De-scoped
Addition of Valves and Program Controls	June-08	De-scoped
<i>Subtask 6 – Airlift Requirements</i>		
Transportation of all Unit 2 Equipment/Materials	October-08	April-09
Transportation of personnel and supplies	Recurring	Recurring
<i>Subtask 7 – Durai Junction Camp</i>		
Camp operation and maintenance	Recurring	Recurring
Durai Junction Airstrip	October-08	De-scoped
Kajakai Dam Spillway Bridge	October-08	De-scoped



#### 1.4 Task Order Modification History

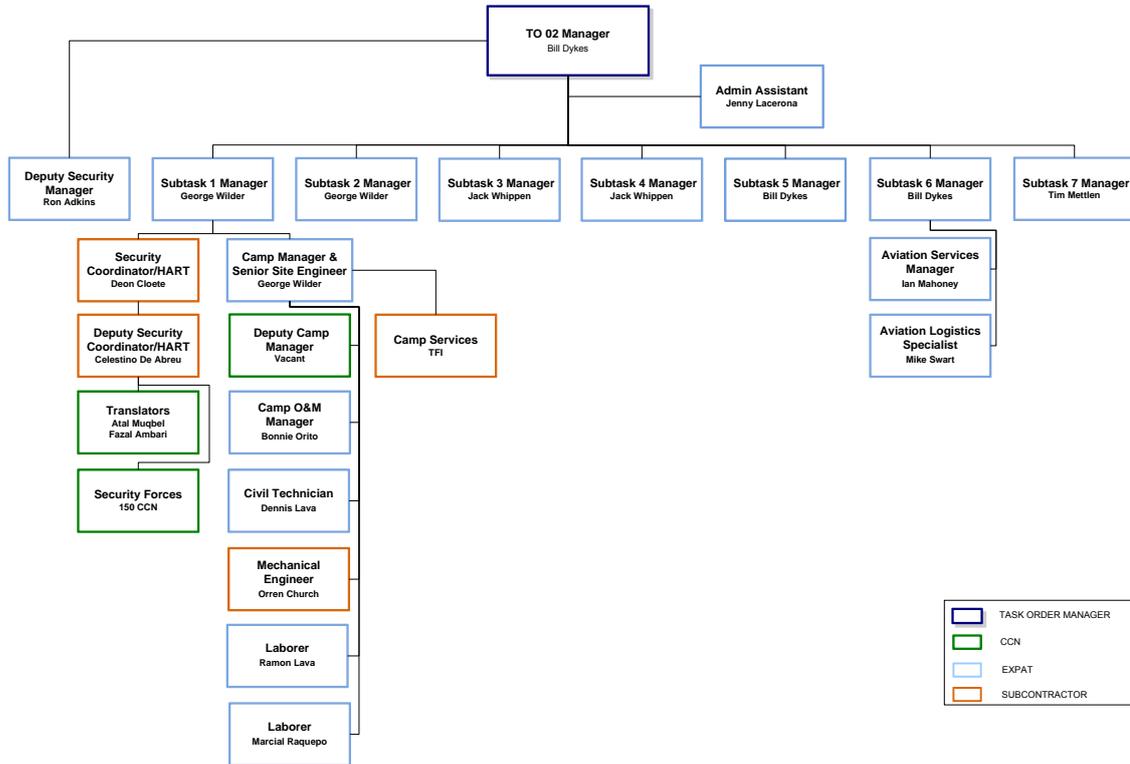
TO 2 was originally awarded with a 12 month period of performance from January to December 2007 and was later modified to revise the scope of work and extend the task order to October 31, 2009. The task order was modified nine (9) times since the original award on January 1, 2007. The table below summarizes these modifications. LBG/B&V anticipates one (1) final modification to reflect the final cost and work performed.

TO Modification Number	Date Issued	Reason
Original	1-Jan-07	Original Task Order award for Kajakai Dam Auxiliary Infrastructure Support and Services. Established ceiling price at \$8,572,697
1	5-Jul-07	Added Subtask 5 to the scope for the Unit 3 Rehabilitation and Unit 2 Construction. Increase ceiling price to \$15,966,823. Provide Incremental funding in the amount of \$5,000,000
2	17-Dec-07	Added Subtask 6 to the scope for Airlift Requirements. Increase the ceiling price to \$28,159,170. To increase the sub-obligated amount by \$12,500,000.
3	13-Feb-08	Added Subtask 7 to the scope for Durai Junction Camp. Increase the ceiling price to \$43,627,149. To increase the sub-obligated amount by \$9,000,000.
4	17-Dec-08	Extend period of performance to March 31, 2009 at no additional cost.
5	25-Mar-09	Extend period of performance to June 30, 2009 at no additional cost.
6	31-Mar-09	Extend period of performance to October 31, 2009 at no additional cost. To increase the sub-obligated amount by \$13,507,149.
7	29-Aug-09	Increase ceiling price to \$47,948,724 and increase the sub-obligated amount by \$4,321,575, fully obligating the task order. Revise scope of work to remove specific deliverables.
8	14-Oct-09	Summarize property disposition of Durai Junction Camp.
9	10-Apr-10	Transfer property to TO21.4.

## 2 TASK ORDER EXECUTION

### 2.1 Task Order Organizational Structure and Management Details

An organizational chart of LBG/B&V staff for this Task Order is provided below:



#### 2.1.1 Management

IQC Manager and Chief of Party responsibilities remained per other Task Orders. Primary management supervision for this Task Order was the responsibility of the Task Order Manager.

#### 2.1.2 Task Order Manager

The Task Order Manager was the overall authority for this task order implementation and was responsible for all related contract management, client coordination, correspondence, invoicing, mobilization of personnel and other project management activities in coordination with the Site Construction Manager. He served as the project manager for all phases of implementation and the Contractor's key point of contact for the Employer and Engineer on all contractual, administrative and technical matters related specifically to this task order. Accordingly, he was split based between Kabul and the site to provide immediate and full-time access to the Employer and subcontractors.

The Task Order Manager's time (TO Manager) was split based between Kabul and the Kajakai site, with full-time support of the Administrative Assistant in Kabul. When LBG/B&V began self-performing rehabilitation operations the TO Manager transferred to the site to oversee the completion of the work. The Site Construction Manager and support team was based at the Kajakai site. Our subcontract MWH served as the FIDIC "Engineer" for Units 2 and 3 primarily supporting the project from their corporate offices in Chicago, Illinois. In February 2009, MWH sent Oren Church, QA Engineer to the site to oversee the rehabilitation of Unit 3.

### 2.1.3 Site Construction Manager

The Site Construction Manager was the primary point-of-contact for the day-to-day execution of this task order at the site and had onsite supervisory responsibility to implement and enforce the technical requirements of subcontract(s) including adherence to the quality performance standards specified in the design, plans and specifications. He was located full-time at the Kajakai site to coordinate construction supervision, quality assurance, subcontractor oversight and documentation. The Site Construction Manager reported directly to the Task Order Manager.

### 2.1.4 Home Office Resources

The IQC Manager and contractual support staff was based in the Louis Berger Group Washington, DC Headquarters. The preparation of invoices and cost reporting functions for the Task Order was also performed by staff at the Louis Berger Group offices in Washington, DC and Morristown, NJ.

Other home office support included technical reviews and guidance, coordination of specialized technical expertise, engineering support and proposal/modification development.

## 2.2 Execution of Work

### 2.2.1 Project Location

The Contractor's primary project office was located in Kabul, Wazir Akbar Khan with a supporting site office at the Kajakai Dam HPP. All project management and administrative support was provided from the Kabul project office with construction management and oversight activities provided from the Kajakai site office.

The project location is shown in Figure 1 below.

A map of the Kajakai Dam HPP/Camp and Durai Junction Camp is below.

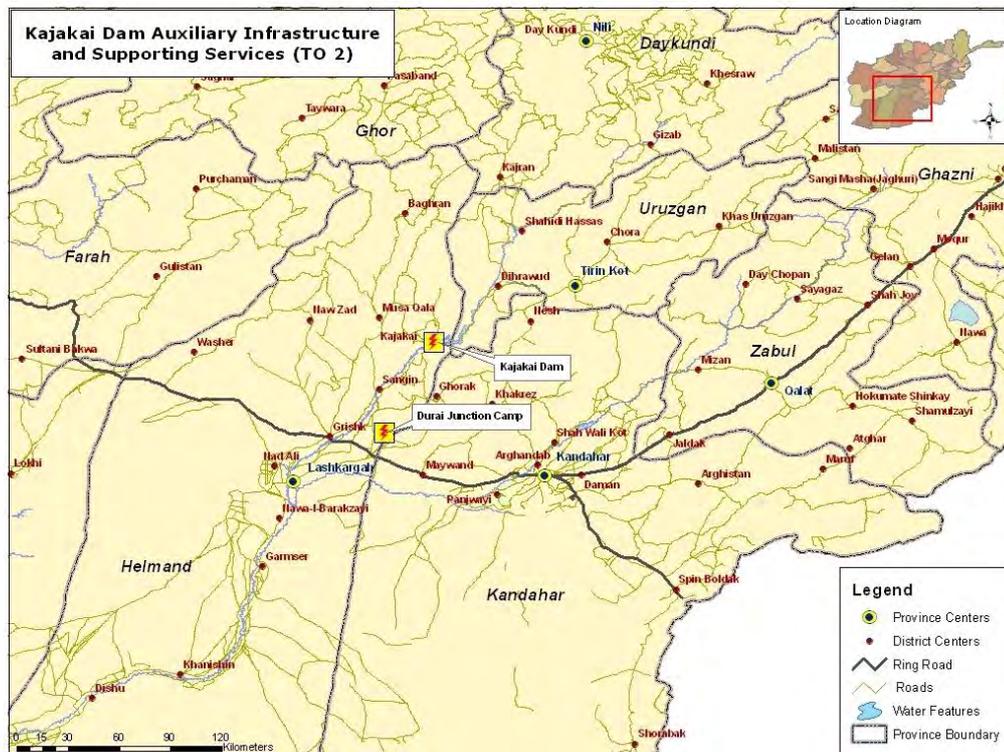


Figure 1 – Location

### 2.2.2 Planning

Planning activities were largely completed under the REFS program and were adjusted to address the security environment and LBG/B&V's ability to access the site.

### 2.2.3 Design

Design and manufacturing activities were completed under the REFS program and transferred to LBG/B&V under IRP.

### 2.2.4 Demining Technical Survey

LBG/B&V completed de-mining activities and clearance of approximately 1,400 m<sup>2</sup> at the Kajakai lower camp site and lay down yard. De-mining was executed through a subcontract agreement with RONCO.

### 2.2.5 Security

Security services were originally provided by LBG/B&V's Southwest Region Security subcontractor, United States Protection and Investigation (USPI), and were later assumed by LBG/B&V's Northern Region Security subcontractor, HART Security. See Section 3 below for a full description of services.



Aerial View of Durai Junction Camp – Mar 2008

## 2.3 Subcontracts and Major Procurements

LBG/B&V subcontracted the following work elements for this Task Order:

### Engineering Services

LBG/B&V subcontracted Montgomery Watson Harza International, Inc. (MWH) under the REFS Program to serve as LBG's FIDIC "Engineer" for the construction of Unit 2 and rehabilitation of Unit 3. MWH's subcontract was transferred from REFS to IRP in July 2007 in "delay" status due to security and because REFS was ending. MWH provided engineering services including review of drawings, shop inspections, invoice certification and technical assistance in dispute resolution.

### Construction - Unit 2 Manufacturing & Erection, and Rehabilitation of Unit 3

Per the direction of USAID, LBG issued a sole source subcontract to Beijing-based China Machine-Building International Corp (CMIC), a state-owned Chinese company, to furnish and erect a new Unit 2 Turbine/Generator under the REFS Program. CMIC's subcontract was transferred from REFS to IRP in July 2007 in "delay" status due to security and the completion of REFS on 30 June 2007.

LBG issued CMIC a Notice to Proceed in July 2005 to begin manufacturing a "new" Unit 2 Turbine/Generator and ship all tools, equipment, and components directly to the site for installation. The subcontract was modified in April 2006 to include the rehabilitation of Unit 3 and electrical equipment for the Tangi substation.

With the ground route to the site cut off and in the face of massing Anti-Government Elements (AGE) in the Kajakai vicinity and under sustained rocket attack (that lasted all summer and into the fall of 2006), LBG was evacuated from Kajakai by the British Military on 2 June 2006 and was unable to permanently return to until October 2007<sup>1</sup>. During this 16-month hiatus, LBG security forces remained viable and onsite, but in dwindling numbers, receiving only occasional resupply by air. A British Military unit arrived on site in August 2006, establishing a permanent operating base in the upper camp area providing "outer" security and coordinating close air support to counter AGE forces in the Kajakai vicinity.

<sup>1</sup> LBG attempted to return to Kajakai in January 2007, but was evacuated within three weeks as the result of sustained rocket attacks. Our security provider also attempted to conduct a reconnaissance in force in February 2007 from the Ring Road to Kajakai but was attacked and stopped suffering 2KIA and 1WIA.

CMIC material shipments started arriving in Afghanistan in July 2006 with the Unit 2 embedded parts, but had to be initially staged at the Shorab, K-H Road Camp because the Kajakai site was inaccessible by ground. All other CMIC manufactured components were shipped during 2006-07 and stored primarily in warehouse facilities in Kabul.

CMIC mobilized a start-up team to Kajakai in October 2007 to begin planning for erection of Unit 2 and rehabilitation of Unit 3, but was unable to begin work for a variety of reasons that included (1) not having a contract modification in place to resume work--pending consent with USAID, and (2) not having the Unit 2 components on site due to continued non-permissive security and total reliance on rotary wing air support to access the site.<sup>2</sup> Work on Unit 3 rehabilitation commenced officially in March 2008, but was negatively impacted later in the spring by the Sichuan earthquake in May 2008 since a number of CMIC's onsite staff had family members in China located near the epicenter.

CMIC demobilized from the Kajakai site on 4 November 2008 by direction of the Chinese Government. This action was based on alleged Taliban kidnapping threats obtained by Chinese intelligence in October 2008 that were directed against Chinese engineers.<sup>3</sup> CMIC expressed the intent to return to the site in early 2009, but despite LBG's and USAID's best efforts which included the US Ambassador engaging the Chinese Ambassador in Kabul, ultimately CMIC was not allowed to return. In response to the CMIC departure LBG: (1) immediately assumed all work on Unit 3 and began self-performing, (2) brought in prospective bidders during the winter of 2009 to provide quotes for the civil works and installation of Unit 2, (3) completed the heavy airlift of all Unit 2 components into Kajakai in April 2009, and (4) provided USAID with a comprehensive decision analysis (to include rough cost and risk analysis) in June 2009 for the erection of Unit 2.<sup>4</sup>



Unit 3 Hydro-turbine Shaft Assembly. Shaft Getting Lowered into Pit – Apr 2009

<sup>2</sup> The original contract period of performance with CMIC expired earlier in July 2007 and standby and escalation costs were negotiated in August 2007 for the redemption of work onsite once the security conditions permitted. USAID consent for this modification was received in February 2008.

<sup>3</sup> The kidnapping threat was purportedly corroborated by the British Military operating in the Helmand area.

<sup>4</sup> LBG/B&V's proposal required direct Chinese involvement, both on site and in the background in a technical capacity, in order to complete the successful installation and commissioning of Unit 2. This Chinese involvement was integral to LBG/B&V's plan and available at that time. Since all Unit 2 components were on site, the main cost driver was the security cost over time. The continued storage time was also a major detractor as the specialized electro-mechanical components would continue to deteriorate in their current state and without the cover of adequate warehouse facilities.

USAID formally de-scoped Unit 2 erection from Task Order 2 in modification 7 in August 2009. LBG completed Unit 3 commissioning in October 2009 when Unit 3 was brought on line for full commercial operation in tandem with Unit 1. When TO2 officially ended on 30 Oct 09, the Unit 2 components now on site, became effectively mothballed and stored in the open or under canvas tarpaulins in either original containers or crating, or nude. No warehouse facilities exist at Kajakai for long or short term storage.

### Construction - Lower Camp Expansion

LBG/B&V issued a design-build subcontract to Afghan Bena for the manufacturing and construction of the Lower Camp Expansion at the Kajakai Dam. Afghan Bena is an Afghan-owned and operated company with experience in camp construction, facility manufacturing, facility design, etc. LBG/B&V issued the subcontract to Afghan Bena in April 2008. All work was substantially completed 12 months later in March 2009 with final inspection and acceptance in April 2009. There were no warranty issues during the 12 month warranty period which expired in April 2010.

The subcontract included eight (8) major components as follows;

- Part 1: Site Work.
- Part 2: Accommodation Modules and Utilities (water, electrical, internet and sanitation hook ups).
- Part 3: Dining Facility Module (DFAC).
- Part 4: Toilet Block.
- Part 5: Water Distribution System including one 20 horse power submersible pump.
- Part 6: Sanitation, Existing Septic Tanks, New Septic Tank
- Part 7: Fortification, hardening of guard posts, protective fighting positions (PFP), HESCO installation, additional bunkers, new gate, and security fencing. It should be noted that the HESCO fortification in the vicinity of accommodation modules will be performed last so an obstruction is not created for the arrival and placement of accommodation modules.
- Part 8: The purchase and installation of two 160 KVA generators and all required cabling and switches for distribution hook up.



Additional Billeting for 80 Personnel and New Dining Facility

### Camp Operation & Maintenance

Under TO2, LBG/B&V was responsible for operation and maintenance (O&M) of two project sites, Kajakai Dam Camp and DJC, to include; facility maintenance & repair, power supply, water, perimeter security, catering/domestic services, and communications & IT support (internet & phone). LBG/B&V subcontracted TFI, International to provide these O&M services at both camp locations. In fall 2009, TFI became financially insolvent and defaulted on both subcontracts. As a result, LBG/B&V was forced to self-perform O&M services for the safety of LBG/B&V personnel and to continue construction operations.

### Security

Security services were provided under an Indefinite Quantity Subcontract (IQC) with our Southwest Region security provider, United States Protection and Investigation, LLC (USPI). USAID notified LBG/B&V that USPI was suspended from performing future work for the US Government in early 2009. LBG/B&V quickly reacted by terminating USPI and mobilizing our Northern Region security provider,

HART Security, in 60 days to sustain construction operations without interruption. HART Security provided security at both project sites until the completion of TO2.

### Transportation Services – Aviation Support

LBG/B&V procured a variety of aviation support under TO2 to transport the mass quantities of material and equipment manufactured by CMIC for the erection of Unit 2. LBG/B&V subcontracted the following transportation services;

- Skylink Aviation – Long-term Mi-8 MTV helicopter to provide sustainable air support for routine re-supply and personnel movement out of the Kajakai and Durai Junction from December 2007 to October 2009.
- Air Company Vertical-T – Short-term Mi-26 to provide heavy lift helicopter support for large equipment and sling loads from Kandahar Air Force Base (KAF) and Durai Junction to Kajakai. LBG/B&V and Vertical-T completed 188 missions moving 1,375 tons of Unit 2 equipment.
- Agility International, Inc./Red Orange, LLC – Combined to provide two of the world’s largest cargo airplanes for transportation of turbine/generator equipment from Kabul to KAF. LBG/B&V, Agility and Red Orange complete 15 total Ilyushin Il-76 (IL-76)/Antonov An-124 (AN-124) to support the British Military convoy movement detailed below.



Mi-26 Airlift of Unit 2 Components – Mar 2009

### Transportation Services – Ground Movement

The total weight of the Unit 2 materials and equipment transported from Kabul to Kandahar was roughly 1,500-tons. Once the equipment arrived at KAF it had to be transported to Kajakai via ground because there is no airstrip at Kajakai to land an IL-76 or AN-124 and the equipment was either too large or too heavy to transport via helicopter. The primary land route from Kandahar to Kajakai goes through the Sangin Valley, an active warzone in one of the most heavily conflicted locales in Afghanistan, which saw LBG’s last safe ground movement without military support in May 2006.<sup>5</sup>

Thus, the only feasible way to transport the remaining Unit 2 equipment was with the support of the military. From 29 August through 2 September 2008 and coordinated by LBG and USAID, the British Military/ISAF performed “the largest British Military ground movement since World War II” with more than 4,000 troops through the 100 mile route to



British Military/ISAF Convoy of Unit Components

<sup>5</sup> The Sangin Valley land route remains impassable to date, requiring dedicated aviation support to sustain a presence at Kajakai.



Kajakai. The cargo convoy, which included 100 vehicles and carried the turbine in seven containers weighing up to 30 tons each, took five days to successfully deliver the equipment at the site. To support the convoy, LBG/B&V procured a variety of equipment and services from multiple suppliers to include; Joint Force Support, Red Sun, Abdul Qavi Brothers, New Aitmad Construction, Mia Abdul Hakim and Paktia Construction Company, Global Arya Construction Company, and GACC & KDH Joint Co.



Unit 2 Components Arrive at Kajakai Dam – Sep 2008

### **De-mining**

LBG/B&V subcontracted RONCO for de-mining activities and clearance of approximately 1,400 m<sup>2</sup> at the Kajakai lower camp site and lay down yard.

### **Unit 3 Electrical Testing**

LBG/B&V subcontracted Power Test Asia, Pvt., Ltd. from India to conduct a Digital Electromagnetic Core Imperfection Detection (Digital ELCID) Test on 20.625 MVA, 13.8 kV, Unit 3 Hydro Generator—all pursuant to re-commissioning.<sup>6</sup> The testing was performed in June 2009 and resulted in the identification of repairs required to the stator windings of the generator.

### **Internet Services**

LBG/B&V subcontracted ASIX Communications (formerly QUICKLINK Communications) and RANA Technologies to provide VSAT internet services at the Kajakai Dam Camp and DJC respectively.



TO Manager - Bill Dykes, Plant Supervisor - Engineer Rasoul, and Powerhouse Workers Inspect Stator Windings – June 2009

<sup>6</sup> Power test Asia successfully performed the same test on the previously rehabilitated Kajakai Unit 1.



## 2.4 Task Order Budget and Expenditures

The Task Order budget, actual costs billed to USAID through Invoice number 63, and remaining budget amount are summarized in Table 1 below.

Contract Line Item	Budget Approved in Mod 7	Billed thru Invoice # 63	Remaining Budget Amount
<b>Sub-Task 1 - Camp Support Services</b>	\$ 12,169,605.00	\$ 13,366,208.08	\$ (1,196,603.08)
<b>Sub-Task 2 - Camp Expansion</b>	\$ 1,772,482.00	\$ 1,197,106.48	\$ 575,375.52
<b>Sub-Task 3 - Low Level Outlet Work</b>	\$ 24,056.00	\$ 24,056.16	\$ (0.16)
<b>Sub-Task 4 - Low Level Intake Structure</b>	\$ -	\$ -	\$ -
<b>Sub-Task 5 - Completion Rehab Units</b>	\$ 4,840,061.00	\$ 4,337,329.36	\$ 502,731.64
<b>Sub-Task 6 - Airlift Requirement</b>	\$ 19,454,616.00	\$ 19,210,349.48	\$ 244,266.52
<b>Sub-Task 7 - Durai Junction Camp</b>	\$ 8,009,935.00	\$ 7,814,146.42	\$ 195,788.58
<b>SUBTOTAL COSTS</b>	<b>\$ 46,270,755.00</b>	<b>\$ 45,949,195.98</b>	<b>\$ 321,559.02</b>
Fixed Fee 4%	\$ 1,677,969.00	\$ 1,677,969.00	\$ -
<b>TOTAL COST-PLUS-FIXED-FEE</b>	<b>\$ 47,948,724.00</b>	<b>\$ 47,627,164.98</b>	<b>\$ 321,559.02</b>

*\*The amount billed thru invoice number 63 represents LBG/B&V's estimate at completion. This does not reflect the final cost of the task order to include; adjustments for final indirect rates, subcontractor claims and program support costs.*

## 2.5 Government Property Summary

Two separate property disposition plans were submitted under Task Order 2. These disposition plans focused on separate types of equipment: plant equipment and residual property. The first disposition plan covered equipment that is associated with the construction, installation, and commissioning of Unit #2 at Kajaki Hydro-Power Plant. This equipment was received as Government Furnished Property by LBG/B&V JV via transfer from a previous USAID project (REFS). All equipment included here were in an "as is, where is" condition. USAID issued disposition instructions in April, 2010 which transferred all equipment included in the plan to IRP Task Order 21.04. A second disposition plan covering camp equipment associated with Task Order 2 was submitted in September, 2010 and was revised and resubmitted in January 2011. USAID issued disposition instructions in March 2011. IRP implemented both disposition plans and records are available on file as required.

## 3 SECURITY

Security was the single-most challenging aspect impeding implementation of the works at the Kajakai Dam, ultimately resulting in project delays that required transferring the project from the REFS Program (2003-2007) to the IRP Program (2007-2009). The Kajakai Dam is located in an isolated area of Northern Helmand Province fully surrounded by Anti-Government Elements (AGE). The "outer" security perimeter is protected by approximately 250 soldiers from ISAF (presently US Marines, originally in August 2006 British Military) and the "inner" camp security is protected by two Expat Security Coordinators and 150 CCN guards from our Southwest Security provider (HART Security, formerly USPI).



Overall the security within the military perimeter remains quiet/stable but has seen several significant security events impacting the project schedule. A few examples of the notable security events are as follows:

- June 2006 (REFS) - the Kajakai site was under the threat of imminent attack and all LBG personnel were withdrawn by British Military forces putting the project into a “~~delay~~” status.
- Summer/Fall 2006 (REFS) – Sustained rocket and mortar attacks on the Kajakai camp causing the British Military and Afghan National Army (ANA) to establish a presence at the Kajakai upper camp
- January/February 2007 – LBG/B&V is awarded TO2 in a “~~delay~~” status and returns to the site in late January in an attempt to restart the work. In early February, LBG/B&V security team was attacked on the Sangin road killing two (2) and wounding (1). LBG/B&V was withdrawn again from the Kajakai site after sustained rocket attacks on February 13
- October 2007 – LBG/B&V staff returns to Kajakai after security appears to have returned to stable.
- November 2007 – Task Order 6 for the construction of the Sangin Road (Kajakai to Ring Road) was terminated due to the security situation. The DJC O&M is transferred to TO2.
- August/September 2008 - Successful ISAF Military ground movement to Kajakai of oversize components.
- November 2008 – CMIC departs Kajakai site as directed by Chinese Government based on alleged kidnapping threats.
- October 2009 – Security management and operations are transferred to TO21 at the completion of TO 2.

The Tactical Operations Center (TOC) was the central command center for the management and control for all southwest region security operations including Kandahar, Durai Junction, Lashkar Gah and Kajakai Damn. The TOC provided all incident reporting, liaison with ISAF, ANA and ANP, and monitoring of all road and air missions.

LBG/B&V also provided static security at DJC consisting of physical security of the camp facilities and perimeter, and personal security detail (PSD) escorts off the project site as required. LBG/B&V stopped providing security at DJC in September 2009.

#### **4 SAFETY PROGRAMS/PLANS**

LBG/B&V was operating under an infrastructure program-wide general safety program. A site-specific plan was developed for the construction phase of the work. The implementation of a safety program at this site was the responsibility of the construction subcontractor (Afghan Bena) with oversight and guidance provided by qualified LBG/B&V professionals.

#### **5 QUALITY CONTROL PROGRAM/PLAN**

LBG/B&V was operating under an IRP-wide general quality assurance/quality control program. A site-specific plan was developed for the construction phase of the work. The implementation of a QC program at this site was the responsibility of the construction subcontractor (CMIC) with oversight and guidance provided by qualified LBG/B&V professionals. LBG/B&V JV provided a QA program with on site personnel supported by MWH and our central lab in Kabul (as required).

#### **6 STATEMENT OF NO PATENTS, ROYALTIES OR CLASSIFIED MATERIALS**

There were no patents, royalties or classified materials obtained or generated under the activities of this task order.

## 7 LESSONS LEARNED

Issue	Lesson	Recommendations
Coordination with Military	Ground transportation was not possible without USAID and Military coordination.	Improve coordination between Contractor, USAID and Military to identify more areas/opportunities for USAID and Military coordination to achieve common mission objectives.
Access to Site	Ground access to site was not available requiring sustained aviation services to sustain life support operations. Air services efficiently provide this support but are very expensive.	Implement a flight operations plan to efficiently support camp O&M activities. Coordinate aviation support with other implementers (e.g. USAID partners, military, etc.) to maximize efficiency and eliminate duplicate efforts/spending.
Ability to hire/retain qualified subcontractors	Very few subcontractors willing and capable of performing construction work in this remote region of the county.	Build capacity of subcontractors within local market to provide construction services. Increase fee incentives (e.g. early completion bonus, etc.) for subcontractors to take high risk work in remote regions.
Task Order Administration/Modification	Basic Task Order support subtask was not modified when the task order scope of work changed and/or the task order was extended	Contractor and USAID should modify overall support functions (e.g. security, catering, O&M, etc.) in conjunction with modifications that increase the scope of work and/or extend the period of performance.
Unavailability of local labor	Skilled labor is not available in Kajakai or surrounding areas and skilled labor from other regions of the country (e.g. Kabul) unwilling to go to this region. This requires Expat/TCN to complete work that could normally be done by CCN staff.	Overcame local labor issue by coordinating local assistance through DABS and Engineer Rasoul. Also hired TCN skilled labor when unavailable locally. Offer incentives (e.g. danger pay, salary increase, promotion, etc.) for skilled CCN staff to leave their families to travel to remote/dangerous areas of the country.
TO 1 Overhead Funding	Some costs not forecasted for either TO1 or TO2 were charged to the TO 2 at USAID direction without budget adjustments to TO2. This was done in an attempt to more accurately capture the costs associated with the task order.	For future programs that use a central supporting Task Order, ensure that the funding division between the central TO and project Task Orders are fully defined and accounted for in budget projections.

## 8 OUTSTANDING ISSUES

### 8.1 LBG/B&V Claims

TO2 was modified in August 2009 to increase the budget to reflect a revised scope of work and extension of the task order to October 2009. The modification was issued after the task order expired and the budget increase did not reflect the fee LBG/B&V proposed to complete the work. However, LBG/B&V signed the modification, reserving our right to claim fee, as not to disrupt the work and to protect our risk with respect to costs incurred. LBG/B&V has not received a Contracting Officer's final decision on our request for this fee and intends to submit a claim.

## 9 CONCLUSION

TO2 was one of LBG's most complex projects in Afghanistan and the accomplishments under TO2 are examples of what very hard work, close management, adaptation and unwavering perseverance will bear despite very difficult and unexpected conditions. The project lasted more than six (6) years spanning across two programs, REFS and IRP, during which time there were subcontractors terminated, multiple staff evacuations due to threat conditions and indirect fire attacks, a subcontractor withdrawn out by their owning government, and the largest British Military ground movement since World War II. Despite the numerous challenges and high-profile political nature of the project, LBG/B&V and USAID



worked closely together to resolve nearly all outstanding issues and successfully maintain a presence at the Kajakai site. Together we successfully completed the rehabilitation of Units 1 and 3, construction of the lower camp expansion and fortifications, and transportation of all materials and equipment for Unit 2 to Kajakai. The end result is more power being produced at Kajakai, 30MW at peak load, now being produced for the people of southwestern Afghanistan and the cities of Kandahar Lashkar Gah.<sup>7</sup> Even with the failure to successfully install Unit 2, the existing 110kV transmission line is currently operating at peak capacity and was never designed nor capable of carrying full generated power from the installed Units 1, 2, and 3. However, the decision to mothball the Unit 2 components on site in August 2009 will now make re-start and successful installation exceptionally difficult and much more costly. Also in hindsight, never would a subcontract to manufacture and install a new Unit 2 have been in signed in 2005, if the eventual prevailing security conditions and total reliance on air support, would have been known or even anticipated.

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<sup>7</sup> Triple the pre-existing output at the beginning of the project in 2004 under REFS.