



USAID
FROM THE AMERICAN PEOPLE

Closeout Report Kandahar Helmand Power Project (KHPP)

COMPONENT 2 SUBCOMPONENT 2

Procure Equipment for Additional Substations



Submitted by: Black & Veatch Special Projects Corporation (BVSPC)
Federal Services Division
Kandahar Helmand Power Project (KHPP)
USAID Contract Number 306-C-00-11-00506-00

Submitted to: Office of Economic Growth and Infrastructure (OEGI)
U.S. Agency for International Development (USAID)
Great Massoud Road
Kabul, Afghanistan

Submittal Date: 03 March 2014
Revision 1: 01 May 2014
Revision 2: 24 June 2014
Revision 3: 28 July 2014
Revision 4: 12 August 2014
Final Revision: 05 September 2014



Table of Contents

| | | |
|-----------|---|-----------|
| 1 | KANDAHAR HELMAND POWER PROJECT (KHPP) OVERVIEW | 6 |
| 1.1 | KHPP Background..... | 6 |
| 1.2 | KHPP Summary of Scope of Work..... | 7 |
| 1.3 | KHPP Contract Evolution..... | 9 |
| 1.4 | KHPP Contract Coordination and Communication..... | 11 |
| 2 | SUBCOMPONENT 2.2: PROCURE EQUIPMENT FOR ADDITIONAL SUBSTATIONS | 12 |
| 2.1 | Objectives..... | 12 |
| 2.2 | History..... | 12 |
| 2.3 | Subcomponent 2.2 Modifications and Change Order History..... | 18 |
| 2.4 | Deliverables..... | 21 |
| 3 | PROJECT EXECUTION | 22 |
| 3.1 | Organizational Structure and Management Details..... | 22 |
| 3.2 | Implementation of Work..... | 24 |
| 3.3 | Subcontracts and Major Procurements..... | 27 |
| 3.4 | Budget and Expenditures..... | 29 |
| 3.5 | Government Property Summary..... | 30 |
| 3.6 | Final Schedule..... | 30 |
| 4 | PROJECT PHYSICAL COMPLETION..... | 31 |
| 4.1 | Documentation of Completion..... | 31 |
| 4.2 | Photo Album..... | 31 |
| 5 | SUSTAINABILITY | 31 |
| 6 | SECURITY PLANS AND INCIDENT REPORTS..... | 32 |
| 7 | SAFETY AND HEALTH PLANS | 32 |
| 8 | QUALITY CONTROL PROGRAM/PLAN | 32 |
| 9 | ENVIRONMENTAL CONTROL..... | 32 |
| 10 | STATEMENT OF PATENTS, ROYALTIES OR CLASSIFIED MATERIALS | 33 |
| 11 | VALUE ENGINEERING CHANGES (IF APPLICABLE) | 33 |
| 12 | ENHANCING BEST PRACTICES (LESSONS LEARNED) | 33 |
| 13 | WARRANTY..... | 34 |
| 14 | OUTSTANDING ISSUES | 36 |
| 15 | CONCLUSION..... | 36 |
| 16 | DEVELOPMENT EXPERIENCE CLEARINGHOUSE (DEC)..... | 36 |



List of Tables

Table 1: History of Changes in USAID Contract No. 306-C-00-11-00506-00..... 9

Table 2: Power Transformer - Contract vs. Technical Requirement Quantity Comparison 13

Table 3: 110 kV Circuit Breaker - Contract vs. Technical Requirement Quantity Comparison 13

Table 4: Equipment Utilization Locations..... 14

Table 5: Transformer Damage Summary 16

Table 6: Transformer Theft and Loss Summary 17

Table 7: Subcomponent 2.2 – USAID Contract Modification History 18

Table 8: Subcomponent 2.2 – Contract Deliverables Scheduled and Achieved Dates 22

Table 9: Subcomponent 2.2 – Contract Deliverables Status..... 22

Table 10: Transformers to Be Procured 25

Table 11: Circuit Breakers to Be Procured 25

Table 12: Subcontract KHPP.63.3601 Amendments..... 27

Table 13: Subcontract KHPP.63.3807 Amendments..... 28

Table 14: Subcomponent 2.2 – Financial Summary 29

Table 15: Turnover of Material Dates 30

Table 16: Subcomponent 2.2 – Considerations from Implementation..... 33

Table 17: Warranty Effective Dates..... 34

Attachments

| Document # (if applicable) | Description (Note: The Section references below are the BVSPC-USAID Contract sections wherein specific deliverable requirements are located.) | Status | In Closeout Package? |
|-------------------------------|---|----------------|--------------------------|
| a-00 | Closeout Report Attachment File Directory. | Complete | Yes |
| a-01 | Contract Closeout Procedures Manual (CCPM). | Complete | Yes |
| a-02 | Security Plan (Section F.4.B(A)) - Site Specific. | Complete | Yes |
| a-03 | Implementation Plan - Work Plan (Section F.4.B-B). | Complete | Yes |
| a-04 | Health and Safety Plan and Procedures (Section C.4.6; Section F.4.B-C). | Complete | Yes |
| a-05 | Quality Control Plan (Section C.4.5; Section F.4.B-C). | Complete | Yes |
| a-06 | Warranty Administration Plan (Section C.4.11; FAR 52.246.21). | Complete | Yes |
| a-07 | Construction Manual (Section C.4.10). | Not Applicable | N/A |
| a-08 | Construction/Final Schedule (Section C.4.10; Section F.4.B-C) - Component Specific. | Complete | Yes |
| a-09 | Photo Album. | Complete | Yes |
| a-10 | Small Business Utilization Subcontracting Plan (Section H.23; Section J - Attachment 19; FAR 52.219-8). | Complete | Yes |
| a-11 | Operations and Maintenance Manuals (Section C.4.11; Section F.4.B-C). | Complete | See b-01, b-02, and b-03 |
| a-12 | Performance Monitoring and Evaluation Plan - each Component / Subcomponent, as stipulated by Contracting Officer's Representative (COR) (Section C.4.13). | Complete | Yes |
| a-13 | Branding Implementation Plan (Section F.4 B,C; Section D.2). | Complete | Yes |
| a-14 | Environmental Plan (Section H.16). | Complete | Yes |
| a-15 | Environmental Compliance Documentation Schedule (Section H.16). | Complete | Yes |
| a-16 | Environmental Closeout Report (Section H.16) - Site Specific. | Not Applicable | N/A |

| Document # (if applicable) | Description (Note: The Section references below are the BVSPC-USAID Contract sections wherein specific deliverable requirements are located.) | Status | In Closeout Package? |
|---|---|----------------|--------------------------|
| a-17 | Environmental Reports (Section F.4.B-C) - Annual Reports until Mod 10 (16 Feb 2013), and then Quarterly Reports. | Complete | Yes |
| a-18 | Weekly Highlight Report (Section F.4.B-B). | Complete | Yes |
| a-19 | Short Term Report - STTA Trip reports (Section F.4.B-B) - Site Specific. | Not Applicable | N/A |
| a-20 | Design Submittals (Section F.4.B-C) - Site Specific. | Not Applicable | N/A |
| a-21 | Inspection and Equipment Test Reports (Section F.4.B-C) - Site Specific. | Complete | See d-01 |
| a-22 | Concrete Strength tests: Steel reinforcements test reports (Section F.4.B-C) - Site Specific. | Not Applicable | N/A |
| a-23 | Testing and Commissioning Report (Section F.4.B-C) - Site Specific. | Complete | See b-03, b-05, b-06 |
| a-24 | As-Built Construction Drawings (Section C.4.11; Section F.4.B-C) - Site Specific. | Complete | See b-01, b-02, and b-03 |
| a-25 | Training Reports, Component-Specific. | Complete | Yes |
| a-27 | Final Closeout Report (Section C.4.11; Section F.4.B-C). | Complete | Yes |
| Tasks for Subcomponent 2.2 – Procure Equipment for Additional Substations (Section C.3.2) | | | |
| b-01 | The Contractor must procure fourteen (14) 110/20 kV 20 MVA three-phase transformers per Attachment 5 of the prime contract titled, "Transformer Technical Specifications." Unless otherwise directed by the COR, the Contractor must transport and deliver the transformers per Table 5. (Transformer Drawings, Manuals, Repair Reports, Technical Specifications and Transfer Documents) | Complete | Yes |
| b-02 | The Contractor must procure thirty-seven (37) 110 kV SF6 circuit breakers per Attachment 6 of the prime contract titled, "Breaker Technical Specifications." Unless otherwise directed by COR, the Contractor must transport and deliver the circuit breakers per Table 6. (Circuit Breaker Drawings, Technical Specifications, Manuals, and Transfer Documents) | Complete | Yes |
| b-03 | Procure five (5) 20kV metal clad switchgear units. Deliver three (3) units to DABS Kabul and (2) units to DABS Kandahar. (Switchgear Drawings, Technical Specifications, Manuals, Test Reports and Transfer Documents) | Complete | Yes |
| b-04 | The Contractor must be responsible for the care and custody of the procured equipment until the Contractor transfers custody in accordance with disposition instructions provided by USAID. Transfer of custody will not be later than 30 September 2013. (Storage Plan) | Complete | Yes |
| b-05 | The Contractor must conduct factory tests for each transformer in accordance with Section 00755.14.5 of Attachment 5 of the prime contract titled "Transformer Technical Specifications." (Transformer Test Reports) | Complete | Yes |
| b-06 | The Contractor must conduct factory tests for the circuit breakers in accordance with Section 00755.2.7 of Attachment 6 of the prime contract titled "Breaker Technical Specifications." (Circuit Breaker Test Reports) | Complete | Yes |
| Deliverables for Subcomponent 2.2 – Procure Equipment for Additional Substations (Section F.4.A) | | | |
| d-01 | Procurement and Delivery of transformers, circuit breakers and switchgear completed. Verified through witnessing of factory testing requirements and government approved storage plan. (Transfer Documents, Disposition Instructions, and Inspection Reports) | Complete | Yes |
| c-05 | Subcontract/Purchase Order Matrix which Indicates Closeout Status. | Complete | Yes |



| Document # (if applicable) | Description (Note: The Section references below are the BVSPC-USAID Contract sections wherein specific deliverable requirements are located.) | Status | In Closeout Package? |
|-------------------------------|---|-------------------------|--|
| g-06 | USAID Final Disposition Instructions. | Complete | Yes |
| g-07 | Complete and Submit Handover/Disposal documents to USAID. | Complete | Yes, included with Disposition Documentation |
| m-01a | SUBSTANTIAL COMPLETION: 1) Certificate of Substantial Completion with Schedule of Defects (if applicable). | Complete | Yes |
| m-01b | FINAL INSPECTION AND ACCEPTANCE 1) Final Punch list (if applicable) 2) Final Completion and Acceptance Certificate 3) Draft Bilateral Agreement with Supporting Documentation. | Complete | Yes |
| m-01c | WARRANTY PERIOD & FINAL WARRANTY INSPECTION: 1) Warranty Certificate. | Complete | Yes |
| m-02 | Prime Contract original signed copy in files KC. | Complete | Yes |
| m-03 | Copy of all Fully Executed Prime Contract Modifications and Change Orders in electronic folder. | Complete | Yes |
| m-04 | USAID Closing Statement Letter and BV Response Letter. | Not received from USAID | N/A |
| m-05 | Copy of Closeout Documentation - List of documents uploaded/handed over to USAID. | Complete | Yes – All Previous Attachments |

1 KANDAHAR HELMAND POWER PROJECT (KHPP) OVERVIEW

1.1 KHPP Background

The purpose of the Kandahar Helmand Power Project (KHPP) contract, issued by the United States Agency for International Development (USAID) on 9 December 2010, was to increase the supply and reliability of electrical power in the areas in southern Afghanistan served by the South East Power System (SEPS), particularly the City of Kandahar. The contract was to support the SEPS reconstruction and thereby increase the quality of life of the people in Kandahar and Helmand Provinces. The KHPP was conceived as a critical component of the United States' government's Counterinsurgency (COIN) strategy in southern Afghanistan. KHPP is a part of a larger United States (US) government sponsored program involving multiple USAID Implementers, the US Army Corps of Engineers (USACE), and other Donors to improve the SEPS and connect it with other electrical grids in Afghanistan.

A reliable, sustainable electric power generation, transmission, and distribution system in Kandahar and Helmand Provinces is an important objective of the Government of the Islamic Republic of Afghanistan (GIROA). The system is expected to fuel economic growth not currently possible, especially in Kandahar City, the second largest city in Afghanistan and a center for education, health care, manufacturing, and transportation. Kandahar City has an electrical supply shortfall of at least 40 megawatt (MW) for its approximately 850,000 residents.

SEPS as a system is composed of multiple generation islands, an aged transmission system, and multiple distribution systems in southern Afghanistan serving 380,000 of the 1.7 million people residing in the region. Diesel generator sets and the Kajaki Hydroelectric Power Plant (HPP) provide the majority of the electrical power generation in the system. The 222 kilometers (km) SEPS transmission system operates at 110 kilovolts (kV), medium voltage distribution at 20 kV, and low voltage distribution at 400 volts (V). Kandahar City represents the largest power demand node within SEPS.

The Kajaki HPP was the first significant generation source installed in SEPS. Kajaki HPP, supported by the US government, went online in the mid-1970s. Prior to execution of the KHPP contract, its power was delivered to Kandahar City through one aged 25 megavolt amperage (MVA) transformer located at the Kandahar Breshna Kot (BK) Substation. In 2003, USAID began rehabilitation of the Kajaki HPP. At peak production, the Kajaki HPP currently provides 32 MW (during high water periods), with 12 MW of power serving Kandahar City and 20 MW of power transmitted to the remaining distribution nodes served by the SEPS transmission backbone.

To supplement generation for Kandahar City during the Kajaki HPP rehabilitation, USAID facilitated the installation of fourteen (14) KTA-50 diesel generators at the BK Substation in late 2003. Five (5) additional diesel generators owned by Da Afghanistan Breshna Moasessa (now known as Da Afghanistan Breshna Sherkat, or DABS) were installed at BK in 2008. This upgrade was done to increase the short term generation capacity, as the rehabilitation efforts at Kajaki HPP had been prolonged due to continued insurgent

activities and, the Kandahar City power supply was taking on increasing importance in the International Security Assistance Force's (ISAF's) COIN strategy in the area.

As of this report date, the BK Substation diesel generators have a combined generating capacity of 20.5 MW at peak production due to new units either provided by or installed by USAID. These units consist of the 10.5 MW MTU units, 5 MW of aged derated KTA-50 units, and 5 MW provided by aged derated QSK-60 units. The new 10.5 MW MTU units were installed and commissioned by the KHPP.

1.2 KHPP Summary of Scope of Work

The KHPP scope of work initially contained six (6) Components with ten (10) Subcomponents, outlined below, which, integrated with other work on SEPS, were designed with the purpose of increasing and improving the sustainability and reliability of electric supply provided by the SEPS:

Component 1. Improve Kandahar Power Distribution System

Subcomponent 1: Replace the Kandahar Breshna Kot Substation.

Subcomponent 2: Refurbish Kandahar City Medium Voltage (MV) Distribution System.

Subcomponent 3: Construct a new Kandahar East Substation to (1) enhance the reliability of the system serving Kandahar, and (2) serve as a receiving point for an expected link between the SEPS and the North East Power System (NEPS), which is Afghanistan's major source of lower cost, imported power from the Central Asian Republics.

Subcomponent 4: Construct a transmission line between the Kandahar Breshna Kot Substation and the new Kandahar East Substation.

Subcomponent 5: Replacement of Aged Diesel Generators at the Breshna Kot Substation.

Component 2. Build Durai Junction Substation

Subcomponent 1: Build a new Substation at Durai Junction.

Subcomponent 2: Procure equipment for additional Substations.

Component 3. Program Support and Program Management

Component 4. Transportation, Installation, Operation and Maintenance of Kandahar (also known as Shorandam) Industrial Park Diesel Power Plant (also known as SIPD).

Component 5. Rebuild the Kajaki Dam Substation and Local Distribution System

Component 6. Installation and Commission Kajaki Unit 2

Subcomponent 1: Perform inventory assessment of Government Furnished Equipment (GFE).

Subcomponent 2: Repair GFE, and provide missing and additional new equipment for completing Kajaki Unit 2 installation.

Subcomponent 3: Install and commission Kajaki Unit 2.

USAID issued the KHPP contract to Black & Veatch Special Projects Corporation (BVSPC) to provide engineering, procurement, construction, and all material, equipment and/or services necessary to successfully complete each of the Components and Subcomponents in accordance with the requirements of the contract.

BVSPC was tasked with developing appropriate engineering design and construction methodologies, being responsible for procurement, design, construction, quality control, testing, and commissioning. Additionally, BVSPC provided the support services needed to implement those activities (security, life support, ground and air movements, etc.). BVSPC was also responsible for issuing relevant warranties for the equipment and work provided under each Component and Subcomponent. Sustainability of the infrastructure being developed was one of the key deliverables of the KHPP. Drawing from previous Operation and Maintenance (O&M) training programs that BVSPC implemented on behalf of USAID through the Afghanistan Infrastructure Rehabilitation Program (AIRP), BVSPC was required to recommend and, in most instances, implement the training and skills development needed to sustain the efforts undertaken in this contract.

In addition, BVSPC was to provide spare parts' inventory necessary for DABS to perform the required operation and maintenance of installed equipment for each Component and its Subcomponent. These recommendations were, in select instances, to be submitted to USAID prior to initiation of the respective subcomponent, and were to be based on the BVSPC assessment of the capability and intent of the recipient to execute required O&M functions.

As KHPP was implemented, the security situation in the southern region of Afghanistan changed. While Regional Command Southwest and the US Marines achieved substantial success in clearing the Upper Sangin Valley in late 2011, enabling KHPP to execute the first contractor convoy to Kajaki in several years, the region was impacted by significant increases in anti-government activity in 2011 to 2012 as the GIRoA, with ISAF support, increasingly imposed GIRoA control over the region. As a result, companies and organizations willing to work in the region significantly increased their pricing to accommodate the higher risk and security costs by escalating their "risk premium" with their standard pricing. In addition, commodity costs and construction costs within Afghanistan increased more rapidly than expected during 2011. The unexpected cost increases impacted all implementing agencies from KHPP to USACE, and diminished the collective capability of all agencies involved to meet initial objectives.

Recognizing these budgets would not allow delivery of all Components and Subcomponents, USAID, in concert with Regional Command South, reviewed the KHPP program in mid-2011 to determine what adjustments could be made to retain core program objectives aligned with the COIN strategy while cutting projected costs. This review produced the realignment and de-scoping of select project activities. The net result was the de-scoping of Subcomponent 1.3, construction of a new Kandahar East Substation and 1.4,

construction of a transmission line between the Kandahar BK Substation, and the new Kandahar East Substation, with the intent to transfer these activities to USAID’s Power Transmission Expansion and Connectivity (PTEC) program, which was then under development. In addition, the scope of Subcomponent 1.2 was adjusted to eliminate planned additional connections to the Kandahar distribution system, thereby avoiding potential “negative COIN impact” until such time additional sustainable, non-diesel based generation to supply additional customers could be supplied (Kajaki Unit 2 and the NEPS to SEPS connection to provide lower cost imported hydropower).

The elimination of the substation at Kandahar East and the transmission line was accompanied by a realignment of Subcomponent 1.5, the placement of fourteen (14) MTU generators, representing 21MW of installed capacity, at the Kandahar East location. With the implementation of the diesel power “bridging solution” in Kandahar City by US Forces Afghanistan, which added two (2) 10 MW diesel plants in early 2011 operating in separate island modes located at (1) Bagh-e-Pohl and (2) Shorandam Industrial Park; and increasing concern about the sustainability of additional diesel generation within Kandahar City, the installation of the 14 MTU units was suspended until USAID could further assess options to maximize the impact of and use of the diesels. USAID worked with DABS and ISAF on appropriate alternate uses for the units while maintaining overarching program objectives and mitigating sustainability challenges. Implementation Letter 46, issued in August 2012 and agreed to bilaterally by USAID and DABS, allocated the units to various DABS load centers and set forth conditions for installation and sustainment. Refer to the Closeout Report for Subcomponent 1.5 for the ultimate disposition of all MTU diesel generators.

After the adjustment of KHPP scope, all six (6) original Components remained in the contract, but with the original ten (10) Sub-Components reduced to eight (8).

1.3 KHPP Contract Evolution

Table 1 lists a history of the changes which have occurred in the Prime Contract between BVSPC and USAID as the needs and demands were adjusted due to changing ground conditions in order to maximize benefits to the people of Afghanistan.

Table 1: History of Changes in USAID Contract No. 306-C-00-11-00506-00

| Contract | Date | Description |
|--------------------------|-------------|--|
| Initial Contract Award | 09 Dec 2010 | This contract will support US Agency for International Development (USAID), Afghanistan Mission’s Kandahar Power Initiative (KPI). |
| Contract Modification 01 | 01 Feb 2011 | The purpose of this modification was to add the following in Section H, Special Provisions/Special Contract Requirements to the listed contract as follows: <ul style="list-style-type: none"> • Use of Synchronized Pre-deployment and Operational Tracker (SPOT) for Contractors Supporting a Diplomatic or Consular Mission Outside the United States (Supplement to FAR 52.225-19). • Serious Incident Reporting in Afghanistan. • Gender Integration Requirements. |
| Contract Modification 02 | 17 Mar 2011 | The purposes of this modification were to: <ul style="list-style-type: none"> • Revise Section B.5 “Indirect Cost” based on BVSPC latest approved NICRA for FY2010. • Revise Section H.22 “Consent to Subcontracts” to incorporate the approved Subcontracting Plan dated February 28, 2011. • Change the project name from “Kandahar Power Initiative (KPI)” to “Kandahar Helmand Power Project (KHPP).” |

| Contract | Date | Description |
|------------------------------|-------------|---|
| Contract Modification 03 | 27 Jun 2011 | <p>The purposes of this modification were to:</p> <ul style="list-style-type: none"> • Incorporate the following clause: <i>The Contractor shall comply with and adhere to all USAID Afghanistan Implementing Partner Notices. Copies of the notices are provided to implementing partners at the time of issuance. Copies are also available upon request from your Cognizant Contracting Officer.</i> • Remind the Contractor of the recently issued Implementing Partner Notice No. OAA-IP- 2011 – 004 which incorporates Mission Order No. 201.04 entitled, "National Security Screening (Non-US Party vetting)." |
| Contract Modification 04 | 17 Jul 2011 | <p>The purposes of this modification were to:</p> <ul style="list-style-type: none"> • Incorporate no cost changes in Sections C and F. • Incorporate the FAR Clause 52.209-9 under PART II – CONTRACT CLAUSES. SECTION I – CONTRAT CLAUSES |
| Contract Modification 05 | 19 Jul 2011 | <p>The purposes of this modification were to provide funding in the amount of [REDACTED], thereby bringing the total obligated amount to [REDACTED].</p> |
| Partial Suspension of Work | 09 Aug 2011 | <p>Partial suspension of work affecting:</p> <ul style="list-style-type: none"> • Subcomponent 1.3 • Subcomponent 1.4 • Subcomponent 1.5 • Component 4 |
| Change Order – Scope of Work | 08 Sep 2011 | <p>SOW changes affecting:</p> <ul style="list-style-type: none"> • Subcomponent 1.3 • Subcomponent 1.4 • Subcomponent 1.5 • Component 4 |
| Change Order – Amendment 01 | 20 Sep 2011 | <p>Changes affecting:</p> <ul style="list-style-type: none"> • Subcomponent 1.3 |
| Change Order – Amendment 02 | 22 Sep 2011 | <p>Changes affecting:</p> <ul style="list-style-type: none"> • Subcomponent 1.5 - Diesel Generators |
| Change Order – Amendment 03 | 01 Oct 2011 | <p>Changes affecting:</p> <ul style="list-style-type: none"> • Subcomponent 1.5 – Diesel Generators • Extension of the Submission Deadline |
| Change Order – Amendment 04 | 13 Oct 2011 | <p>Changes affecting:</p> <ul style="list-style-type: none"> • Subcomponent 1.5 – Diesel Generators |
| Change Order – Amendment 05 | 16 Oct 2011 | <p>Changes affecting:</p> <ul style="list-style-type: none"> • Subcomponent 1.5 – Diesel Generators |
| Change Order – Amendment 06 | 22 Oct 2011 | <p>Changes affecting:</p> <ul style="list-style-type: none"> • Subcomponent 1.5 – Diesel Generators |
| Contract Modification 06 | 12 Nov 2011 | <p>The purposes of this modification were to:</p> <ul style="list-style-type: none"> • Provide incremental funding in the amount of [REDACTED], thereby increasing the total obligated amount from [REDACTED] to [REDACTED]. • Revise Section B.5 "Indirect Cost" based on BVSPC's approved provisional rates for FY2011. • Revise Sections C, F and J. |
| Change Order – Scope of Work | 06 Feb 2012 | <p>SOW changes affecting:</p> <ul style="list-style-type: none"> • Subcomponent 1.1 • Subcomponent 1.5 |

| Contract | Date | Description |
|----------------------------|-------------|---|
| Contract Modification 07 | 26 Sep 2012 | The purposes of this modification were to: <ul style="list-style-type: none"> • Provide incremental funding in the amount of [REDACTED], thereby increasing the total obligated amount from [REDACTED] to [REDACTED]. • Modify PART I-THE SCHEDULE I. SECTION B-SUPPLIES OR SERVICES AND PRICE/COSTS, paragraph (c). |
| Contract Modification 08 | 29 Sep 2012 | The purposes of this modification were to: <ul style="list-style-type: none"> • Provide incremental funding in the amount of [REDACTED], thereby increasing the total obligated amount from [REDACTED] to [REDACTED]. • Modify PART I-THE SCHEDULE I. SECTION B-SUPPLIES OR SERVICES AND PRICE/COSTS, paragraph (c). |
| Contract Modification 09 | 30 Sep 2012 | The purposes of this modification were to: <ul style="list-style-type: none"> • Correction to Modification 8 to provide incremental funding in the amount of [REDACTED], thereby decreasing the total obligated amount from [REDACTED] to [REDACTED]. • Provide incremental funding in the amount of [REDACTED], thereby increasing the total obligated amount from [REDACTED] to [REDACTED]. |
| Partial Suspension of Work | 28 Jan 2013 | Partial suspension of work affecting: <ul style="list-style-type: none"> • Subcomponent 6.3 |
| Contract Modification 10 | 14 Feb 2013 | The purpose of this modification was to revise Sections B, C, F, H, I, J and contract attachments. |
| Contract Modification 11 | 29 Sep 2013 | The purpose of this modification was to extend the period of performance from 30 September 2013 to 31 December 2013, revise budgets, and to clarify deliverables in multiple sections. |
| Contract Modification 12 | 24 Dec 2013 | The purpose of this modification was to add Subcomponent 6.4, Technical Assistance to USAID on Kajaki Unit 2 on budget implementation until 30 November 2015, and to extend all remaining Subcomponents to 28 February 2014. |
| Contract Modification 13 | 06 Aug 2014 | The purpose of this modification was to finalize agreements on fee, Durai Junction cure cost absorbed by BVSPC, applicable NICRA, and clarify Tasks and Deliverables as needed. |

See **Attachment m-03** for the documentation listed in the table above.

The key to effectiveness throughout the implementation of KHPP has been to maintain flexibility in order to meet new opportunities to enhance program impact as the succession of operations in southern Afghanistan changed. In partnership with USAID, BVSPC maintained significant flexibility and made adjustments as needed and directed to deliver significant benefit to the people served by the SEPS.

1.4 KHPP Contract Coordination and Communication

At the inception of the KHPP, USAID coordinated the relationship with DABS-Kabul to maintain communication and reporting of KHPP activity and progress. BVSPC maintained communication and reporting of KHPP field activity with the DABS-Kandahar Director and his direct reports. BVSPC continued to coordinate and maintain liaison with Kandahar DABS, as well as Regional Command South (RC-S) and Regional Command Southwest (RC-SW) as requested by the COR and the USAID Onsite Managers (OSM). BVSPC worked directly with DABS in Kandahar and Helmand Provinces, throughout the implementation of the KHPP. The COP and the Transmission and Distribution Lead and Generation Lead (“Leads”) coordinated the communications with all stakeholders in Kandahar and Helmand addressing with each issues of concern as needed. The COP and

COR communicated and coordinated all issues of implementation between themselves usually on a daily basis.

In order to establish USAID field presence for the project, and facilitate two-way reporting and communication, USAID designated one OSM for each of the two Regional Commands. The OSMs played a strong role in enhancing communications between all stakeholders in Kandahar and Helmand Provinces. The OSM reported to the COR, while maintaining coordination lines of communication with BVSPC Leads and Managers. The BVSPC Construction Managers and the O&M Managers, meanwhile, worked directly with their counterparts in Kandahar DABS, and also communicated mutual needs and concerns in coordination with Leads. The working relationships between BVSPC staff and the Kandahar DABS Director, senior managers, and DABS staff, in coordination with the COR and OSM, were consistently positive and productive.

2 SUBCOMPONENT 2.2: PROCURE EQUIPMENT FOR ADDITIONAL SUBSTATIONS

2.1 Objectives

The focus of Subcomponent 2.2 involved procuring long lead items (transformers and circuit breakers) to be used in Substations throughout the SEPS and as DABS system spares. This objective would be achieved by performing the tasks (as defined in Modification 11 of the KHPP Contract) in the subsections below.

2.2 History

Electric utilities typically develop medium term long lead and high cost equipment needs plans to then establish strategic procurement relationships with selected suppliers. This relationship with selected suppliers enables the utility to procure spare parts compatible with multiple pieces of equipment, enables staff to become operations and maintenance (O&M) experts on that equipment, and to share the parts and knowledge across a broad service area. BVSPC sought tenders for 110/20 kV 20 MVA transformers and for 110 kV circuit breakers with this objective and on the behalf of USAID through AIRP work for SEPS. This work occurred in 2009 and 2010. For each of these types of equipment, the technical requirements were identified and, through the bid process, technical clarifications and improvements were implemented within procurement technical specifications. For the AIRP bid process, when the shipping terms required the supplier to transport the equipment to Kabul or Kandahar, bidders did not provide pricing for this scope of work or chose not to bid the work at all.

USAID issued the technical specifications developed by AIRP in the KHPP subcontract, as Part III Section J Attachment 5: Transformer Technical Specifications, and Attachment 6: Breaker Technical Specifications. With the award of KHPP, BVSPC utilized these specifications to issue tenders for eight power transformers (task i) and nineteen circuit breakers (task ii). Table A requested six power transformers and Table B requested sixteen circuit breakers. BVSPC utilized the quantities in Task i and Task ii for tendering purposes. Details on the bid process are included in Section 3.3, Subcontracts and Major Procurements and in the Closeout Report for Component 3.

The Request for Consent for power transformers for task i was issued 25 March 2011. As part of the clarification process, BVSPC noted that a separate international transport subcontract was being tendered simultaneously to this work, as bidders were not willing to ship equipment to Kabul or Kandahar. The international transport subcontract is detailed in the Closeout Report for Component 3. Consent to proceed with the procurement of power transformers was received on 31 March 2011. The Request for Consent for the 110 kV circuit breakers for Task ii was issued on 28 April 2011. BVSPC also requested clarification on the number of transformers and circuit breakers to be procured as the scope of work at this time required.

Table 2 lists the power transformer contract vs. technical requirement quantity comparison details, while Table 3 lists the 110 kV circuit breaker contract vs. technical requirement quantity comparisons.

Table 2: Power Transformer - Contract vs. Technical Requirement Quantity Comparison

| Contract Requirement | Quantity | | Technical Requirement | Quantity |
|----------------------|----------|--|--------------------------|----------|
| Task i | 8 | | Breshna Kot Substation | 4 |
| Table A | 6 | | Kandahar East Substation | 3 |
| | | | Kajaki Substation | 1 |
| | | | Table A | 6 |
| Total | 14 | | Total | 14 |

Table 3: 110 kV Circuit Breaker - Contract vs. Technical Requirement Quantity Comparison

| Contract Requirement | Quantity | | Technical Requirement | Quantity |
|----------------------|----------|--|--------------------------|----------|
| Task ii | 19 | | Breshna Kot Substation | 9 |
| Table B | 16 | | Kandahar East Substation | 6 |
| | | | Kajaki Substation | 6 |
| | | | Table B | 16 |
| Total | 35 | | Total | 37 |

USAID issued clarification on the quantity of equipment to be procured and the location of use for each unit in June 2011. With this information, BVSPC obtained pricing from the suppliers for the additional units and submitted Request for Consents for Power Transformers (procure fourteen total) and 110 kV Circuit Breakers (procure 37 total). These updated quantities were reflected in Modification 7.

Modification 11 consolidated the procurement of 20 kV switchgear into this Subcomponent and removed it from Subcomponent 1.1, Subcomponent 2.1, and Component 5.

Technical specifications for 20 kV switchgear equipment were not provided by USAID, and were therefore developed by BVSPC. Three types of units were required:

1. Type A - one main breaker, four feeder breakers, and one tie breaker.
2. Type B - one main breaker, four feeder breakers, and ready to tie with Type A.
3. Type C - one main breaker, four feeder breakers.

Tenders were issued, and BVSPC issued the Request for Consent on 19 June 2011. BVSPC received Consent to Proceed on 04 July 2011.

Table 4 summarizes the initial planned locations for each type of equipment. Scope changes in Modifications 4, 7, 10, and 11 re-focused the locations for installation and/or delivery.

Table 4: Equipment Utilization Locations

| Location | Equipment | Original Quantity | Final Quantity |
|---------------------------------|-------------------------------------|-------------------|-------------------------|
| Kandahar Breshna Kot Substation | Power Transformers | 4 | 3 installed and 1 spare |
| | 110 kV Circuit Breakers | 9 | 6 |
| | 20 kV Switchgear - Type A*** | 2 | 2 |
| | 20 kV Switchgear - Type B*** | 2 | 2 |
| Kandahar East Substation | Power Transformers | 3 | 0 |
| | 110 kV Circuit Breakers | 6 | 0 |
| | 20 kV Switchgear - Type A | 1 | 0 |
| | 20 kV Switchgear - Type B | 1 | 0 |
| | 20 kV Switchgear - Type C | 1 | 0 |
| Kajaki Substation | Power Transformers | 1 | 0 |
| | 110 kV Circuit Breakers | 6 | 0 |
| | 20 kV Switchgear - Type C | 1 | 0 |
| Tangi Substation | 20 kV Switchgear - Type C | 1 | 0 |
| Durai Junction* | 20 kV Switchgear - Type C | 0 | 0 |
| USAID to determine locations | Power Transformers | 6 | 0 |
| | 110 kV Circuit Breakers | 16 | 0 |
| | 20 kV Switchgear (Type A, B, and C) | 0 | 0 |
| DABS - Kabul | Power Transformers | 0 | 6/5** |
| | 110 kV Circuit Breakers | 0 | 6 |
| | 20 kV Switchgear - Type A | 0 | 1 |
| | 20 kV Switchgear - Type B | 0 | 1 |
| | 20 kV Switchgear - Type C | 0 | 1 |
| DABS Jalalabad | Power Transformers | 0 | 4 |
| | 110 kV Circuit Breakers | 0 | 8 |
| DABS Kandahar | 20 kV Switchgear - Type C | 0 | 2 |
| USACE/DABS | 110 kV Circuit Breakers | 0 | 12 |

* Modification 6 required one Type C unit to be installed at Durai Junction. At DABS request and then per Modification 11, the Durai Junction switchgear installation design was completed; however, the unit was to be stored in Kandahar at the DABS Junction 2 storage facility.

** One Kabul bound transformer was damaged in shipment; USAID determined the unit would not be replaced. Total units delivered to DABS was 13.

*** These four switchgear units were procured by Subcomponent 1.1.

BVSPC hired Bureau Veritas (BV) to perform onsite manufacturing inspections, including the packaging for shipment, for quality control purposes. B&V was utilized for each of these procurements, transformers, circuit breakers, and switchgear. B&V also performed the witnessing of the factory acceptance tests for each of these procurements. These reports are included in **Attachment a-21**.

A requirement was within each manufacturer's subcontract to perform factory training for the DABS employees. Training was conducted in India for the transformers and circuit breakers and in Korea for the switchgear. BVSCP, along with the DABS trainees, had at least one expatriate training manager and at least one local national training manager accompany and participate in the training. Based on feedback from the training managers, the transformer training was conducted a second time, as the original training did not focus on the operation and maintenance of the units. Additional information on the training is included in Section 5: Sustainability. Training reports are included in **Attachment a-25**.

BVSPC utilized its international and intra-national transportation Subcontractors for shipping. The equipment was released to BVSPC at either the factory or the nearest port and was then transported by sea to the Port of Quetta. The international transportation Subcontractor then shipped the equipment to Afghanistan.

The transformers and circuit breakers completed manufacturing in India simultaneously as the closure of the Port of Quetta to ISAF/USAID goods. The transformers and circuit breakers were stored at facilities arranged by the manufacturer in controlled conditions, per the requirements of the installation manuals for the respective equipment. USAID was notified of the delays, specifically, an excusable Delay Notification provided to USAID on 06 March 2011. The Port closure started 28 November 2011 and began allowing freight to be released 04 July 2012. Additional details on the port closure are in the Component 3 report.

Several other events also contributed to delays, including: (a) manufacturer changed the packing for shipment, requiring additional containers and thus incurring shipping cost increases, (b) USAID changed the shipping locations from all transformers and equipment being delivered to Kandahar to splitting the deliveries to three locations, Kandahar, Kabul, and Jalalabad (see Table 4), thus increasing shipping costs, and (c) increased shipping changes resulted in the need for additional funding, including Consent from USAID. This 7 month delay resulted in significant and unanticipated storage costs. The storage costs are summarized in Section 3.3: Subcontracts and Major Procurements. The shipping costs are summarized in the Closeout Report for Component 3.

Shipments were held in July 2012 and August 2012 until the backlog at the Port began to clear. This process was slow, as the import documents required refiling with the Ministries and the Ministries were overwhelmed with the backlog of work. All shipments were again delayed due to customs clearing in Kandahar and Kabul as a result of the expiration of the import agreement between USAID and GiRoA. This impact delayed shipments on an average of 3 weeks.

In August 2012, BVSPC issued a Request for Consent for the international transport Subcontractor to increase the value of the subcontract due to the demurrage and detention costs incurred as a result of these delays. Consent was received 13 October 2013, enabling transport to continue. Additional details on the overall impacts on transportation are included in Component 3 report.

During transport of the transformers, eight transformers were vandalized and one transformer was damaged beyond repair as the truck slid off the road en route to Kabul. Table 5: Transformer Damage Summary lists the transformers by serial number and their corresponding condition(s).

Table 5: Transformer Damage Summary

| Transformer Serial Number | Final Location | Nature of Damage |
|---------------------------|----------------|------------------|
| ET9950/1 | Kandahar | Cable Damage |
| ET9950/2 | Kandahar | Cable Damage |
| ET9950/3 | Kandahar | Cable Damage |
| ET9950/4 | Kandahar | Valve Damage |
| ET9950A/1 | Kabul | Cable Damage |
| ET9950A/2 | Kabul | Cable Damage |
| ET9950A/3 | Kabul | No Damage |
| ET9950A/4 | Kabul | No Damage |
| ET9950A/5 | Kabul | Cable Damage |
| ET9950A/6 | Kabul | Total Loss |
| ET9950/5 | Jalalabad | No Damage |
| ET9950/6 | Jalalabad | No Damage |
| ET9950/7 | Jalalabad | No Damage |
| ET9950/8 | Jalalabad | Cable Damage |

BVSPC submitted a claim to the international Subcontractor for the vandalized units and damaged unit. The damaged transformer was declared a total loss per the manufacturer and the insurance carrier. The damaged transformer was not replaced per agreement with USAID. BVSCP subcontracted with the manufacturer to perform an inspection of each transformer for the vandalized transformers. This inspection was performed in June 2013. Replacement components were procured with the inspection report. BVSPC utilized its Subcontractor working at BK to repair four units. In October 2013, BVSPC utilized the manufacturer's representative to train the DABS Kabul and DABS Jalalabad engineering staff to repair three transformers and one transformer, respectively. The manufacturer's representative also inspected the repairs performed on the Kandahar units. At the time of this report, DABS had possession of the repair parts, but had not completed the repairs on the Jalalabad unit.

The summary of the value of the damage and the insurance settlement is listed in Table 6: Transformer Theft and Loss Summary. The Loss, Damage, Destruction or Theft reports for theft/vandalism and damage are included in **Attachment g-07**. The transformer was stored

at the DABS Tarakhil Power Plant in Kabul as of the date of this report. The insurance carrier will take possession of the unit from this location. BVSPC will coordinate with DABS for access.

Table 6: Transformer Theft and Loss Summary

| Description | Value |
|--------------------------------------|----------|
| Vandalism/Theft | ████████ |
| Loss (totalled transformer) Value | ████████ |
| Inspection Costs | ████████ |
| Repair Parts Costs including Freight | ████████ |
| Repair Work Cost | ████████ |
| Insurance Deductible | ████████ |
| Insurance Payout | ████████ |
| Total Loss after Payout | ████████ |

USAID accepted the insurance settlement for the vandalized and damaged transformer claim in March 2014. The insurance settlement costs have been paid to BVSPC. BVSPC issued a credit for a total value of ██████████ ██████████ and ██████████ to USAID on Invoice #95 in April 2014 (refunded under Subcomponent 3.14 – Cargo Insurance).

Oil and transformer repair parts were shipped from Amtex Village to Kabul using the intra-national transportation Subcontractor in October 2013. This shipment used two 40 foot trucks, one of which was hijacked. BVSPC submitted a claim to the intra-national transportation Subcontractor for the loss of oil (24 containers) and spare transformer replacement parts. The value of the loss had a total value of ██████████, including ██████████ for loss of repair parts and ██████████ for loss of oil. The total value of this loss was deducted from the Subcontractor’s final subcontract value. The Loss, Damage, Destruction or Theft report for this hijacking is included in **Attachment g-07**.

Additional details on the settlement of these transportation related claims are included in the Closeout Report for Component 3.13.

All spare parts for the transformers, circuit breakers, and switchgear were delivered to DABS Kandahar (see **Attachment g-07**).

DABS experienced faults from a feeder that caused a potential transformer fuse to operate following energization of the switchgear at the BK Substation. BVSPC ordered spare fuses and investigated the cause of the operation. Recommendations were made for the installation of surge arresters to be installed on the first structure outside the Substation, per Ministry of Energy & Water (MEW)/DABS standards, to clear overvoltage conditions during switching and faults. No further fuse operations were reported.

DABS experienced failures of trip coils and auxiliary relays following energization of the switchgear at the BK Substation. Spare trip coils and auxiliary relays currently are on order. Investigation of the failures was limited due to the unavailability of system condition documentation or work processes being performed at the time of failure. The transformers, circuit breakers, and switchgear, including spare parts, were procured and transferred to DABS per the requirements of this Subcomponent.

As part of Modification 10, the procurement of 20 kV reclosers and bypass switches was moved from Component 5 to Subcomponent 2.2. The work to support the DABS installation of this equipment remained within Component 5.

The Final Completion and Acceptance Notice was received from USAID, signed, and returned on 01 April 2014.

2.3 Subcomponent 2.2 Modifications and Change Order History

Changes/modifications to the Prime Contract impacting Subcomponent 2.2 are listed in Table 7 below:

Table 7: Subcomponent 2.2 – USAID Contract Modification History

| Source & Date | Task | Change & Date | | | | | | | | | | | | | | | | | | | | |
|---|---|---|-------------|-----------|-----|-----------------------|---------------|----------|---|-----------------------|------------|------|---|-----------------------|----------------|------|---|--------------|--|--|-----------|--|
| Original Contract 09 Dec 2010 | Task i: The Contractor shall procure eight (8) 110/20 kV 20 MVA three-phase transformers per Attachment 5: Transformer Technical Specifications. | Task i Deleted and Replaced 17 Jul 2011 | | | | | | | | | | | | | | | | | | | | |
| Contract Modification 04 17 Jul 2011 | Task i: To ensure consistency of equipment for this project, the Contractor shall procure eight (8) 110/20kV 20 MVA three-phase transformers per Attachment 5: Transformer Technical Specifications. These eight transformers will be utilized at Breshna Kot, Kandahar East, and Kajaki Substations. | Revised 29 Feb 2012 | | | | | | | | | | | | | | | | | | | | |
| Request for Proposal-Contract Modification 7 29 Feb 2012 | Task i: The Contractor shall procure fourteen (14) 110/20kV 20 MVA three-phase transformers per Attachment 5: Transformer technical specifications. | Deleted and Replaced 14 Feb 2013 | | | | | | | | | | | | | | | | | | | | |
| Contract Modification 10 14 Feb 2013 | <p>Task i: The Contractor must procure fourteen (14) 110/20 kV 20 MVA three-phase transformers per Attachment 5: Transformer Technical Specifications. Unless otherwise directed by the COR, the Contractor must transport and deliver the transformers per Table 4:</p> <table border="1"> <thead> <tr> <th>Item</th> <th>Destination</th> <th>Recipient</th> <th>QTY</th> </tr> </thead> <tbody> <tr> <td>110/20 kV Transformer</td> <td>Kandahar – BK</td> <td>B&V/DABS</td> <td>4</td> </tr> <tr> <td>110/20 kV Transformer</td> <td>Kabul/DABS</td> <td>DABS</td> <td>6</td> </tr> <tr> <td>110/20 kV Transformer</td> <td>Jalalabad Subs</td> <td>DABS</td> <td>4</td> </tr> <tr> <td>Total</td> <td></td> <td></td> <td>14</td> </tr> </tbody> </table> | Item | Destination | Recipient | QTY | 110/20 kV Transformer | Kandahar – BK | B&V/DABS | 4 | 110/20 kV Transformer | Kabul/DABS | DABS | 6 | 110/20 kV Transformer | Jalalabad Subs | DABS | 4 | Total | | | 14 | |
| Item | Destination | Recipient | QTY | | | | | | | | | | | | | | | | | | | |
| 110/20 kV Transformer | Kandahar – BK | B&V/DABS | 4 | | | | | | | | | | | | | | | | | | | |
| 110/20 kV Transformer | Kabul/DABS | DABS | 6 | | | | | | | | | | | | | | | | | | | |
| 110/20 kV Transformer | Jalalabad Subs | DABS | 4 | | | | | | | | | | | | | | | | | | | |
| Total | | | 14 | | | | | | | | | | | | | | | | | | | |

| Source & Date | Task | Change & Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|-----------|---------------------------|--|-----------|-------------|-----------|----------|------------------------|-------------|----------|---|------------------------|----------------|------------|----|------------------------|------------|---------|----|------------------------|---------------|------|---|--------------|---|----------|-----------|---------|---|---------|---|----------|---|----------|---|--------|---|--------|---|----------|---|----------|----|--|
| Original Contract 09 Dec 2010 | <p>Task ii: The Contractor shall procure nineteen (19) 110 KV SF6 circuit breakers per Attachment 6 titled "Breaker Technical Specifications." Tables A and B directly below show the quantity and final use location of the transformers and the circuit breakers:</p> <table border="1" data-bbox="475 478 1242 856"> <thead> <tr> <th colspan="2">Table A: Transformers</th> <th colspan="2">Table B: Circuit Breakers</th> </tr> <tr> <th>Provinces</th> <th>Quantity</th> <th>Provinces</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>Sangin</td> <td>1</td> <td>Sangin</td> <td>3</td> </tr> <tr> <td>Hyderabad</td> <td>1</td> <td>Hyderabad</td> <td>3</td> </tr> <tr> <td>Lashkar</td> <td>1</td> <td>Lashkar</td> <td>3</td> </tr> <tr> <td>Gah</td> <td></td> <td>Gah</td> <td></td> </tr> <tr> <td>Pushmool</td> <td>1</td> <td>Pushmool</td> <td>3</td> </tr> <tr> <td>Maywand</td> <td>1</td> <td>Maywand</td> <td>3</td> </tr> <tr> <td>Kandahar</td> <td>0</td> <td>Kandahar</td> <td>0</td> </tr> <tr> <td>Spares</td> <td>1</td> <td>Spares</td> <td>1</td> </tr> <tr> <td>Subtotal</td> <td>6</td> <td>Subtotal</td> <td>16</td> </tr> </tbody> </table> | Table A: Transformers | | Table B: Circuit Breakers | | Provinces | Quantity | Provinces | Quantity | Sangin | 1 | Sangin | 3 | Hyderabad | 1 | Hyderabad | 3 | Lashkar | 1 | Lashkar | 3 | Gah | | Gah | | Pushmool | 1 | Pushmool | 3 | Maywand | 1 | Maywand | 3 | Kandahar | 0 | Kandahar | 0 | Spares | 1 | Spares | 1 | Subtotal | 6 | Subtotal | 16 | Task ii Deleted and Replaced 17 Jul 2011 |
| Table A: Transformers | | Table B: Circuit Breakers | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Provinces | Quantity | Provinces | Quantity | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sangin | 1 | Sangin | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hyderabad | 1 | Hyderabad | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lashkar | 1 | Lashkar | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gah | | Gah | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pushmool | 1 | Pushmool | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maywand | 1 | Maywand | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kandahar | 0 | Kandahar | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spares | 1 | Spares | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Subtotal | 6 | Subtotal | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract Modification 04 17 Jul 2011 | Task ii: To ensure consistency of equipment for this Project, the Contractor shall procure twenty-one (21) 110 kV SF6 circuit breakers per Attachment 6: Breaker Technical Specifications. 21 circuit breakers will be utilized at Breshna Kot, Kandahar East, and Kajaki Substations. | Revised 29 Feb 2012 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Request for Proposal-Contract Modification 7 29 Feb 2012 | Task ii: The Contractor shall procure thirty seven (37) 110 KV SF6 circuit breakers per Attachment 6: Breaker Technical Specifications. | Deleted and Replaced 14 Feb 2013 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract Modification 10 14 Feb 2013 | <p>Task ii: The Contractor must procure thirty seven (37) 110 KV SF6 circuit breakers per Attachment 6: Breaker Technical Specifications. Unless otherwise directed by the COR, the Contractor must transport and deliver the circuit breakers per Table 5 below:</p> <table border="1" data-bbox="475 1402 1242 1768"> <thead> <tr> <th colspan="4">Table 5: Circuit Breakers</th> </tr> <tr> <th>Item</th> <th>Destination</th> <th>Recipient</th> <th>QTY</th> </tr> </thead> <tbody> <tr> <td>110 kV Circuit Breaker</td> <td>Kandahar-BK</td> <td>B&V/DABS</td> <td>6</td> </tr> <tr> <td>110 kV Circuit Breaker</td> <td>Kandahar-Amtex</td> <td>USACE/DABS</td> <td>12</td> </tr> <tr> <td>110 kV Circuit Breaker</td> <td>Kabul/DABS</td> <td>DABS</td> <td>11</td> </tr> <tr> <td>110 kV Circuit Breaker</td> <td>Jalalabad Sub</td> <td>DABS</td> <td>8</td> </tr> <tr> <td>Total</td> <td></td> <td></td> <td>37</td> </tr> </tbody> </table> | Table 5: Circuit Breakers | | | | Item | Destination | Recipient | QTY | 110 kV Circuit Breaker | Kandahar-BK | B&V/DABS | 6 | 110 kV Circuit Breaker | Kandahar-Amtex | USACE/DABS | 12 | 110 kV Circuit Breaker | Kabul/DABS | DABS | 11 | 110 kV Circuit Breaker | Jalalabad Sub | DABS | 8 | Total | | | 37 | | | | | | | | | | | | | | | | | |
| Table 5: Circuit Breakers | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Item | Destination | Recipient | QTY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 110 kV Circuit Breaker | Kandahar-BK | B&V/DABS | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 110 kV Circuit Breaker | Kandahar-Amtex | USACE/DABS | 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 110 kV Circuit Breaker | Kabul/DABS | DABS | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 110 kV Circuit Breaker | Jalalabad Sub | DABS | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | | | 37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Original Contract 09 Dec 2010 | Task iii: The Contractor shall be responsible for the care and custody of the procured equipment in Tables A and B, and shall store the transformers and circuit breakers at the Regional Camp (refer to component C.3.1.3 below). USAID will provide disposition instructions before the end of this Contract. | Task iii: Deleted and Replaced 17 Jul 2011 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Source & Date | Task | Change & Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|-------------------------------------|---------------------------|--|-----------|----------|-------------|---|-----------|---|-------------|---|----------|---|---------|---|----------|---|---|-----------|----------|--------|---|-----------|----------|-------------|---|-----------|---|-------------|---|----------|---|---------|---|----------|----|--------|---|----------|----|------------------------|
| Contract Modification 04 17 Jul 2011 | Task iii: In addition to the quantities required above in Tasks i and ii, procure 110/20 kV 20 MVA transformers and 110 kV SF6 circuit breakers per the locations and quantities indicated below in Tables A and B, respectively: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Table A: Transformers</td> <td style="width: 50%; text-align: center;">Table B: Circuit Breakers</td> </tr> <tr> <td style="border: 1px solid black;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Provinces</th> <th style="width: 50%;">Quantity</th> </tr> </thead> <tbody> <tr><td>Sangin</td><td style="text-align: center;">1</td></tr> <tr><td>Hyderabad</td><td style="text-align: center;">1</td></tr> <tr><td>Lashkar Gah</td><td style="text-align: center;">1</td></tr> <tr><td>Pushmool</td><td style="text-align: center;">1</td></tr> <tr><td>Maywand</td><td style="text-align: center;">1</td></tr> <tr><td>Kandahar</td><td style="text-align: center;">0</td></tr> <tr><td>Spares</td><td style="text-align: center;">1</td></tr> <tr><td>Subtotal</td><td style="text-align: center;">6</td></tr> </tbody> </table> </td> <td style="border: 1px solid black;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Provinces</th> <th style="width: 50%;">Quantity</th> </tr> </thead> <tbody> <tr><td>Sangin</td><td style="text-align: center;">3</td></tr> <tr><td>Hyderabad</td><td style="text-align: center;">3</td></tr> <tr><td>Lashkar Gah</td><td style="text-align: center;">3</td></tr> <tr><td>Pushmool</td><td style="text-align: center;">3</td></tr> <tr><td>Maywand</td><td style="text-align: center;">3</td></tr> <tr><td>Kandahar</td><td style="text-align: center;">0</td></tr> <tr><td>Spares</td><td style="text-align: center;">1</td></tr> <tr><td>Subtotal</td><td style="text-align: center;">16</td></tr> </tbody> </table> </td> </tr> </table> | Table A: Transformers | Table B: Circuit Breakers | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Provinces</th> <th style="width: 50%;">Quantity</th> </tr> </thead> <tbody> <tr><td>Sangin</td><td style="text-align: center;">1</td></tr> <tr><td>Hyderabad</td><td style="text-align: center;">1</td></tr> <tr><td>Lashkar Gah</td><td style="text-align: center;">1</td></tr> <tr><td>Pushmool</td><td style="text-align: center;">1</td></tr> <tr><td>Maywand</td><td style="text-align: center;">1</td></tr> <tr><td>Kandahar</td><td style="text-align: center;">0</td></tr> <tr><td>Spares</td><td style="text-align: center;">1</td></tr> <tr><td>Subtotal</td><td style="text-align: center;">6</td></tr> </tbody> </table> | Provinces | Quantity | Sangin | 1 | Hyderabad | 1 | Lashkar Gah | 1 | Pushmool | 1 | Maywand | 1 | Kandahar | 0 | Spares | 1 | Subtotal | 6 | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Provinces</th> <th style="width: 50%;">Quantity</th> </tr> </thead> <tbody> <tr><td>Sangin</td><td style="text-align: center;">3</td></tr> <tr><td>Hyderabad</td><td style="text-align: center;">3</td></tr> <tr><td>Lashkar Gah</td><td style="text-align: center;">3</td></tr> <tr><td>Pushmool</td><td style="text-align: center;">3</td></tr> <tr><td>Maywand</td><td style="text-align: center;">3</td></tr> <tr><td>Kandahar</td><td style="text-align: center;">0</td></tr> <tr><td>Spares</td><td style="text-align: center;">1</td></tr> <tr><td>Subtotal</td><td style="text-align: center;">16</td></tr> </tbody> </table> | Provinces | Quantity | Sangin | 3 | Hyderabad | 3 | Lashkar Gah | 3 | Pushmool | 3 | Maywand | 3 | Kandahar | 0 | Spares | 1 | Subtotal | 16 | Revised 29 Feb 2012 |
| Table A: Transformers | Table B: Circuit Breakers | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Provinces</th> <th style="width: 50%;">Quantity</th> </tr> </thead> <tbody> <tr><td>Sangin</td><td style="text-align: center;">1</td></tr> <tr><td>Hyderabad</td><td style="text-align: center;">1</td></tr> <tr><td>Lashkar Gah</td><td style="text-align: center;">1</td></tr> <tr><td>Pushmool</td><td style="text-align: center;">1</td></tr> <tr><td>Maywand</td><td style="text-align: center;">1</td></tr> <tr><td>Kandahar</td><td style="text-align: center;">0</td></tr> <tr><td>Spares</td><td style="text-align: center;">1</td></tr> <tr><td>Subtotal</td><td style="text-align: center;">6</td></tr> </tbody> </table> | Provinces | Quantity | Sangin | 1 | Hyderabad | 1 | Lashkar Gah | 1 | Pushmool | 1 | Maywand | 1 | Kandahar | 0 | Spares | 1 | Subtotal | 6 | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Provinces</th> <th style="width: 50%;">Quantity</th> </tr> </thead> <tbody> <tr><td>Sangin</td><td style="text-align: center;">3</td></tr> <tr><td>Hyderabad</td><td style="text-align: center;">3</td></tr> <tr><td>Lashkar Gah</td><td style="text-align: center;">3</td></tr> <tr><td>Pushmool</td><td style="text-align: center;">3</td></tr> <tr><td>Maywand</td><td style="text-align: center;">3</td></tr> <tr><td>Kandahar</td><td style="text-align: center;">0</td></tr> <tr><td>Spares</td><td style="text-align: center;">1</td></tr> <tr><td>Subtotal</td><td style="text-align: center;">16</td></tr> </tbody> </table> | Provinces | Quantity | Sangin | 3 | Hyderabad | 3 | Lashkar Gah | 3 | Pushmool | 3 | Maywand | 3 | Kandahar | 0 | Spares | 1 | Subtotal | 16 | | | | | |
| Provinces | Quantity | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sangin | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hyderabad | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lashkar Gah | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pushmool | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maywand | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kandahar | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spares | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Subtotal | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Provinces | Quantity | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sangin | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hyderabad | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lashkar Gah | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pushmool | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maywand | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kandahar | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spares | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Subtotal | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Request for Proposal-Contract Modification 7 29 Feb 2012 | Task iii: The Contractor shall be responsible for the care and custody of the procured equipment in Tables A and B, and shall store the transformers and circuit breakers at the Regional Camp (refer to component C.3.1.3 below). USAID will provide disposition instructions before the end of this Contract. | Deleted and Replaced 14 Feb 2013 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract Modification 10 14 Feb 2013 | Task iii: Procure five (5) 20 kV metal clad switchgear units. Deliver three (3) to DABS Kabul and dispose of the balance in accordance with the Contracting Officer's instructions. | Revised 29 Sep 2013 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract Modification 11 29 Sep 2013 | Task iii: Procure five (5) 20 kV metal clad switchgear units. Deliver three (3) units to DABS Kabul and (2) units to DABS Kandahar. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Original Contract 09 Dec 2010 | Task iv: The Contractor shall conduct factory tests for each transformer in accordance with Section 00755.14.5 of Attachment 5: Transformer Technical Specifications. | Revised 17 Jul 2011 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract Modification 04 17 Jul 2011 | Task iv: The Contractor shall be responsible for the care and custody of the procured equipment in Tables A and B, and shall store the transformers and circuit breakers at the Regional Camp (refer to component C.3.1.3 below). USAID will provide disposition instructions before the end of this Contract. | SOW Change 29 Feb 2012 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Request for Proposal-Contract Modification 7 29 Feb 2012 | Task iv: The Contractor shall conduct factory tests for each transformer in accordance with Section 00755.14.5 of Attachment 5: Transformer Technical Specifications. | Deleted and Replaced 14 Feb 2013 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Source & Date | Task | Change & Date |
|---|--|-------------------------------------|
| Contract Modification 10 14 Feb 2013 | Task iv: The Contractor must be responsible for the care and custody of the procured equipment until the Contractor transfers custody in accordance with disposition instructions provided by USAID. Transfer of custody is anticipated to be prior to 30 September 2013. | |
| Original Contract 09 Dec 2010 | Task v: The Contractor shall conduct factory test for circuit breakers in accordance with Section 00755.2.7 of Attachment 6: Breaker Technical Specifications. | Revised 17 Jul 2011 |
| Contract Modification 04 17 Jul 2011 | Task v: The Contractor shall conduct factory tests for each transformer in accordance with Section 00755.14.5 of Attachment 5: Transformer Technical Specifications. | SOW Change 29 Feb 2012 |
| Request for Proposal- Contract Modification 7 29 Feb 2012 | Task v: The Contractor shall conduct factory test for each circuit breaker in accordance with Section 00755.2.7 of Attachment 6: Breaker Technical Specifications. | Deleted and Replaced 14 Feb 2013 |
| Contract Modification 10 14 Feb 2013 | Task v: The Contractor must conduct factory tests for each transformer in accordance with Section 00755.14.5 of Attachment 5, titled "Transformer Technical Specifications." | |
| Contract Modification 04 17 Jul 2011 | Task vi: The Contractor shall conduct factory test for circuit breakers in accordance with Section 00755.2.7 of Attachment 6, titled "Breaker Technical Specifications." | Deleted and Replaced 14 Feb 2013 |
| Contract Modification 10 14 Feb 2013 | Task vi: The Contractor must conduct factory test for circuit breakers in accordance with Section 00755.2.7 of Attachment 6, titled "Breaker Technical Specifications." | |
| | | |
| Source & Date | Deliverable | Change & Date |
| Original Contract 09 Dec 2010 | Deliverable 1: Procurement and delivery of transformers and circuit breakers to Regional camp is completed. 16 months following NTP | Revised 27 Jul 2011 |
| Contract Modification 04 17 Jul 2011 | Deliverable 1: Procurement and delivery of transformers and circuit breakers to Regional camp is completed. October 2011 | Deleted and Replaced 14 Feb 2013 |
| Contract Modification 10 14 Feb 2013 | Deliverable 1: Procurement and delivery of transformers, circuit breakers and switchgear completed. 01 May 2013 | |

2.4 Deliverables

A listing of major scheduled and achieved dates associated with deliverables for the work required by Subcomponent 2.2 is provided in Table 8:

Table 8: Subcomponent 2.2 – Contract Deliverables Scheduled and Achieved Dates

| Milestone | Original Schedule | Achieved Date |
|--|-------------------|--------------------|
| Deliverable 1: Procurement and Delivery of transformers, circuit breakers, and switchgear completed. | 01 May 2013 | 29 September 2013* |

Milestones taken from Schedule of Deliverables of Contract Modification 11 (**Attachment m-03**).

- BVSPC held spare parts until end of subcontract. Spare parts were delivered 29 September 2013. All other delivery dates are included in Section 3.5.

The status of the contract deliverables are as listed in Table 9:

Table 9: Subcomponent 2.2 – Contract Deliverables Status

| ITEM NO. | DELIVERABLE | METHOD OF VERIFICATION | STATUS | DOCUMENT |
|----------|---|---|----------|----------|
| 1 | Procurement and Delivery of transformers, circuit breakers, and switchgear completed. | Witness of factory testing requirements and government approved storage plan. | Complete | d-01 |

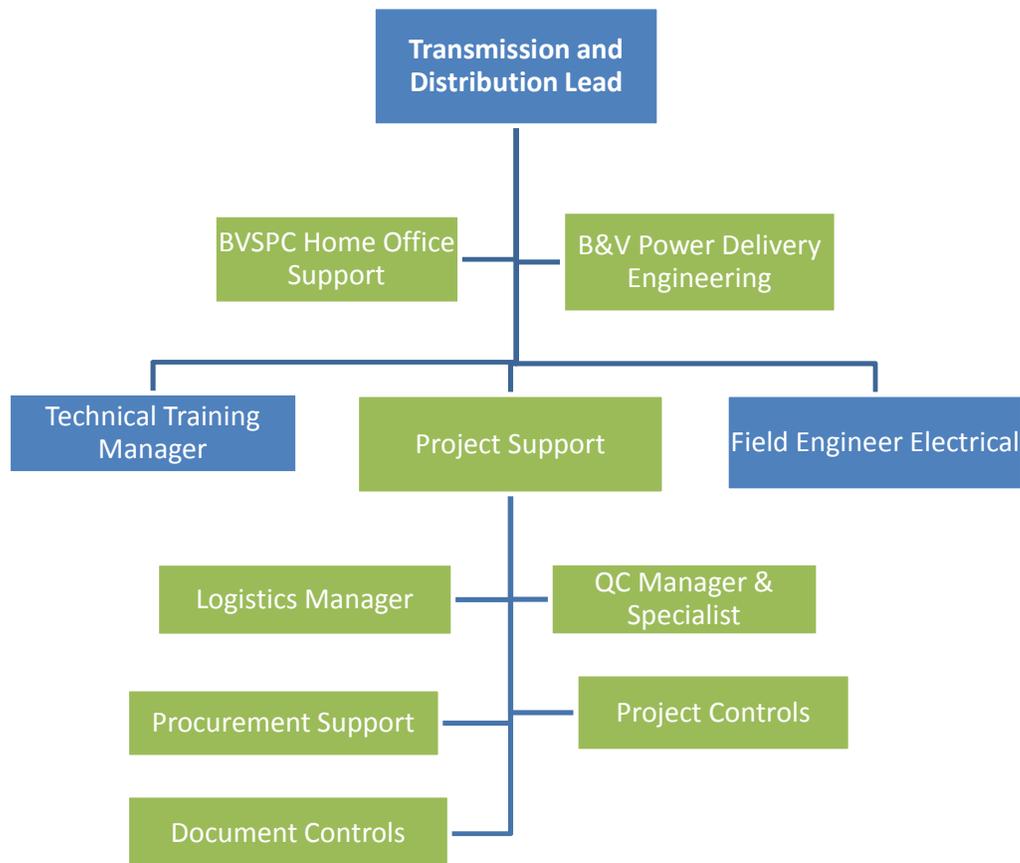
Deliverables as of Contract No. 306-C-00-11-00506-00 Modification 11

Electronic copies of these documents are included on CDs/DVDs submitted with this report.

3 PROJECT EXECUTION

3.1 Organizational Structure and Management Details

The following figure illustrates the organizational structure and management details.



3.1.1 Sector Lead – Transmission & Distribution

The T&D Sector Lead was based at the KHPP Regional Camp located at Amtex Village, Kandahar. The Sector Lead assumed the overall responsibility for Subcomponent 2.1 implementation scope, schedule, and budget, and was responsible for all related subcontract management, client coordination and reporting, correspondence, invoice approval, mobilization of personnel, approval of home office personnel applied to Subcomponent 2.1, and other project management activities in coordination with KHPP Program Management. The primary individual responsible for this position included Lynn Liikala-Seymore.

3.1.2 Field Engineer Electrical

The Field Engineer Electrical reported directly to the Transmission & Distribution lead and was based at the KHPP Regional Camp. The Field Engineer was responsible for the execution of the equipment design, manufacturing, testing, and training. Additional responsibilities included implementation of DABS training for and oversight and assistance in the operation and maintenance of the equipment to completion. The Field Engineer Electrical was also responsible for ensuring daily activities were reported and in accordance with the schedule and the Project Execution Plan, and for the coordination of the work effort with KHPP Program Management resources. The primary individuals responsible for this position included Laurie Reese and Ross Reyes.

3.1.3 Quality Control (QC) Manager

The Quality Control (QC) Manager reported directly to the Construction Operations Manager and was based at the KHPP Regional Camp. The QC Manager was responsible for the execution of the Substation design and construction project scope of work in accordance with the Three-phase QA program of the US Army Corps of Engineers, per Prime Contract requirements. Additional responsibilities included oversight of materials and equipment testing and phased acceptance of completed work as meeting Quality Assurance (QA) Plan requirements. The QC Manager also attended transformer and circuit breaker factory acceptance testing. The QC Manager maintained daily Inspections of the Work Site and ensured daily work activities were in accordance with the KHPP QC Plan while coordinating the work effort with KHPP Program Management as well as USAID onsite inspection resources. The primary individual responsible for this position included Ross Reyes.

3.1.4 Quality Control Manager

One Quality Control Engineer was local national staff. The job description is equivalent to 3.1.10

3.1.5 In-Country Program Management Resources

The In-County Program Management Organization (PMO) resources include: Program Management, Finance, Contracts – Procurement - Compliance, Logistics, Security, Health & Safety, Environmental, Reporting, Quality Control, Project Controls, Document Controls, and Human Resources. The PMO team was located in Kandahar, Afghanistan, and made periodic visits to KHPP sites on an as-needed

basis. The primary responsibilities of the PMO were to provide functional support to all Components in accordance with approved Implementation Plans, KHPP Program, BVSPC Corporate, and USAID established policies and procedures.

3.1.6 Home Office Program Management Resources

The Home Office Management Resources were available to perform project support throughout the duration of the KHPP program. Home Office Management Resources provided back-reach support to field office support personnel in all KHPP program support areas. The field and home office jointly performed accounting, finance, human resources, and procurement and compliance functions. Monthly intensive reviews of the Project were performed at the Black & Veatch Special Projects Corporation, Federal Services Division Headquarters in Overland Park, Kansas, USA.

3.1.7 Home Office Engineering Resources

The Home Office Engineering resources included civil, structural, electrical, and control and protection engineers, as well as drafters and technicians. The primary responsibilities of the Home Office Engineering Resources were to provide design and engineering for the electric distribution system analysis, the new Substation, the new transmission line for connecting to the existing line, and to specify the distribution materials needed for DABS to perform the system expansion and improvement work. This work also included writing the technical requirements to procure materials and construction services necessary to build the Substation and to procure materials for the distribution system expansion and improvements. This work was provided in accordance with approved plans, policies and procedures. The primary individual responsible for this position included Chris Martens and Scott Carpenter.

3.1.8 Technical Training Manager

The Technical Training Manager reported to the Construction Manager. The Technical Training manager was responsible for developing lessons and course content for Substation Operations & Maintenance. Topics also included job management, safety, and MEW standards. The primary individual responsible for this position included Rod Patullo.

3.1.9 Technical Training Manager

One Technical Training Manager was local national staff. The job description is equivalent to 2.1.19.

3.2 Implementation of Work

In December 2010, USAID awarded BVSPC Contract No. 306-C-00-11-00506-00 to perform the Kandahar Power Initiative (later re-named Kandahar Helmand Power Project or KHPP), and began immediately executing activities under Component 2 Subcomponent 2. At the inception of the KHPP, USAID coordinated the relationship with DABS Kabul to maintain communication and reporting of KHPP activity and progress. BVSPC maintained communication and reporting of KHPP field activity with the Kandahar DABS Director. BVSPC continued to coordinate and maintain liaison with Kandahar DABS, as well as

Regional Command - South (RC-S) and Regional Command - Southwest (RC-SW) and the USAID Onsite Managers (OSM) working directly with DABS in Kandahar and Helmand Province. This communication and reporting continued throughout the implementation of KHPP. The OSM reported to the COR. The construction Manager worked directly with their counterparts in Kandahar DABS, and communicated mutual needs and concerns. The working relationships between KHPP staff and the Kandahar DABS Director, senior managers, and staff were consistently positive and productive.

To implement this work, three tenders were issued, one for transformer (Task i), one for circuit breakers (Task ii), and one for switchgear (Task iii). The equipment ownership was transferred at the factory, with BVSCP responsible for transportation to the final destinations. Factory training for DABS was conducted for each of these tasks.

Task i: *The Contractor must procure fourteen (14) 110/20 kV 20 MVA three-phase transformers per Attachment 5 of the prime contract titled, “Transformer Technical Specifications.” Unless otherwise directed by the COR, the Contractor must transport and deliver the transformers per Table 10:*

Table 10: Transformers to Be Procured

| <i>Item</i> | <i>Destination</i> | <i>Recipient</i> | <i>Qty</i> |
|-------------------------------|--|-----------------------|------------|
| <i>110 / 20kV Transformer</i> | <i>Kandahar – Breshna Kot Substation</i> | <i>B&V / DABS</i> | <i>4</i> |
| <i>110 / 20kV Transformer</i> | <i>Kabul / DABS</i> | <i>DABS</i> | <i>6</i> |
| <i>110 / 20kV Transformer</i> | <i>Jalalabad Substation</i> | <i>DABS</i> | <i>4</i> |
| TOTAL | | | 14 |

Status: COMPLETE

In consultation with USAID and DABS, BVSPC procured fourteen (14) 110/20 kV 20 MVA three-phase transformers per Attachment 5: Transformer Technical Specifications. BVSPC transported and delivered the transformers as indicated in Table 10: Transformers to Be Procured. Transformer factory acceptance and inspection reports are included in **Attachment d-01**. Material receiving reports and transfer reports are included in **Attachment b-01**. The transformer repair reports are included in **Attachment b-01**.

Task ii: *The Contractor must procure thirty-seven (37) 110 kV SF6 circuit breakers per Attachment 6 of the Prime Contract titled, “Breaker Technical Specifications.” Unless otherwise directed by COR, the Contractor must transport and deliver the circuit breakers per Table 11 below:*

Table 11: Circuit Breakers to Be Procured

| <i>Item</i> | <i>Destination</i> | <i>Recipient</i> | <i>Qty</i> |
|--------------------------------|--|-----------------------|------------|
| <i>110 kV Circuit Breakers</i> | <i>Kandahar – Breshna Kot Substation</i> | <i>B&V / DABS</i> | <i>6</i> |
| <i>110 kV Circuit Breakers</i> | <i>Kandahar – AMTEX</i> | <i>USACE / DABS</i> | <i>12</i> |
| <i>110 kV Circuit Breakers</i> | <i>Kabul / DABS</i> | <i>DABS</i> | <i>11</i> |

| | | | |
|--------------------------------|-----------------------------|-------------|-----------|
| <i>110 kV Circuit Breakers</i> | <i>Jalalabad Substation</i> | <i>DABS</i> | <i>8</i> |
| TOTAL | | | 37 |

Status: COMPLETE

In consultation with USAID and DABS, BVSPC procured thirty-seven (37) 110 kV SF6 circuit breakers per Attachment 6 titled “Breaker Technical Specifications.” BVSPC transported and delivered the circuit breakers to those entities and locations indicated in Table 11: Circuit Breakers to Be Procured.

Task iii: *Procure five (5) 20 kV metal clad switchgear units. Deliver three (3) units to DABS Kabul and (2) units to DABS Kandahar.* Circuit Breaker factory acceptance and inspection reports are included in **Attachment d-01**. Material receiving reports and transfer reports are included in **Attachment b-02**.

Status: COMPLETE

In consultation with USAID and DABS, BVSPC procured nine (9) 20 kV metal clad switchgear units, four for Subcomponent 1.1 and five for Subcomponent 2.2. Four (4) units were transferred to Subcomponent 1.1 for installation at BK Substation. Three (3) units were delivered to the Tarakhil 105 KV Power Plant on behalf of DABS Kabul. The remaining (2) units were delivered to Junction 2 in Kandahar City on behalf of DABS Kandahar (**Attachment g-07**). Switchgear factory acceptance and inspection reports are included in **Attachment d-01**. Material receiving reports and transfer reports are included in **Attachment b-03**.

Task iv: *The Contractor must be responsible for the care and custody of the procured equipment until the Contractor transfers custody in accordance with disposition instructions provided by USAID. Transfer of custody will be no later than 30 September 2013.*

Status: COMPLETE

BVSPC was responsible for the care and custody of the procured equipment until the point where B&V transferred the equipment to DABS and USAID/USACE as required under the contract. All transfers were completed by 30 September 2013 (**Attachment g-07**).

Task v: *The Contractor must conduct factory tests for each transformer in accordance with Section 00755.14.5 of Attachment 5 of the prime contract titled “Transformer Technical Specifications.”*

Status: COMPLETE

BVSPC conducted factory tests for each transformer in accordance with Section 00755.14.5 of Attachment 5 titled “Transformer Technical Specifications” (**Attachment a-21**).

Task vi: *The Contractor must conduct factory tests for the circuit breakers in accordance with Section 00755.2.7 of Attachment 6 of the prime contract titled “Breaker Technical Specifications.”*

Status: COMPLETE



BVSPC conducted factory tests for the circuit breakers in accordance with Section 00755.2.7 of Attachment 6 titled “Breaker Technical Specifications” (**Attachment a-21**).

3.3 Subcontracts and Major Procurements

- KHPP.63.3601 20 kV Switchgear (9 units)
- KHPP.63.3612 Spare Potential Transformer Fuses for 20 kV Switchgear (6 fuses)
- KHPP.63.6100 110 kV Circuit Breakers (37 breakers)
- KHPP.63.3807 110/20 kV 20 MVA Power Transformers (14 transformers)

As USAID issued scope of work changes, corresponding subcontract amendments were issued, including Requests for Consent as required. The shipping term for each of these subcontracts was FCA factory. BVSPC utilized its international transportation Subcontractor for shipment to the final designation in Afghanistan. A matrix of all procurements for this Subcomponent is included in **Attachment c-05**.

3.3.1 KHPP.63.3601 - 20 kV Switchgear - Hyundai Heavy Industries (HHI)

This firm fixed price contract was awarded to HHI for [REDACTED] to design, manufacture, and test 20 kV switchgear. The manufacturer also provided factory training for five DABS representatives. Amendment 1 was issued to reconfigure payment milestones. The executed amendment resulted in no cost no schedule changes. Amendment 2 was issued to remove tools and materials not provided by the manufacturer. The executed amendment resulted in a subcontract deduction of [REDACTED]. The final subcontract value was [REDACTED].

3.3.2 KHPP.63.3612 - Spare PT Fuses - Siba Fuses

This procurement was awarded to Siba Fuses for [REDACTED] to provide six power fuses. Payment was made by credit card.

3.3.3 KHPP.63.6100 - 110 kV Circuit Breakers - Compton Greaves Limited (CGL)

This firm fixed price contract was awarded to CGL for [REDACTED] to design, manufacture, and test 37 110 kV circuit breakers. The manufacturer also provided factory training for five DABS representatives. A total of eight amendments were issued as follows in Table 12:

Table 12: Subcontract KHPP.63.3601 Amendments

| Number | Purpose of Amendment | Value |
|--------|--|------------|
| 1 | Storage of Units 1 through 21 from 27 December 2011 through 31 January 2012 due to Port of Quetta closure. | [REDACTED] |
| 2 | Storage of Units 1 through 37 from 1 February 2012 through 02 March 2012 due to Port of Quetta closure. | [REDACTED] |
| 3 | Storage of Units 1 through 37 from 2 March 2012 through 31 March 2012 due to Port of Quetta closure. | [REDACTED] |
| 4 | Storage of Units 1 through 37 from 01 April 2012 through 30 April 2012 due to Port of Quetta closure. | [REDACTED] |
| 5 | Storage of Units 1 through 37 from 01 May 2012 through 31 May 2012 due to Port of Quetta closure. | [REDACTED] |
| 6 | Storage of Units 1 through 37 from 01 June 2012 through 30 June 2012 due to Port of Quetta closure. | [REDACTED] |

| | | |
|---|--|------------|
| 7 | Storage of Units 1 through 37 from 1 July 2012 through 31 September 2012 due to manufacturer, USAID, and shipping subcontract changes. | ██████████ |
| 8 | Storage of Units 1 through 37 from 1 October 2012 through 04 December 2012 due to manufacturer, USAID, and shipping subcontract changes. | ██████████ |

The final subcontract value was ██████████.

3.3.4 KHPP.63.3807 - 110/20 kV 20 MVA Power Transformers - Compton Greaves Limited (CGL)

This firm fixed price contract was awarded to CGL for ██████████ to design, manufacture, and test eight 110/20 kV 20 MVA power transformers. The manufacturer also provided factory training for five DABS representatives. A total of 12 amendments were issued as follows in Table 13:

Table 13: Subcontract KHPP.63.3807 Amendments

| Number | Purpose of Amendment | Value |
|--------|---|------------|
| 1 | Add 6 additional transformers. | ██████████ |
| 2 | Handling of 8 transformers to prepare for shipment. | ██████████ |
| 3 | Correct storage as Units 1 through 6 were stored, not 1 through 8 as stated in Amendment 1. Add storage and handling for Units 1 through 8 for 31 January through 29 February. | ██████████ |
| 4 | Storage of Units 1 through 8 from 01 March 2012 through 30 April 2012. and storage and handling of Units 9 through 14 from 01 March 2012 through 30 April 2012. | ██████████ |
| 5 | Storage of Units 1 through 14 from 01 May 2012 through 31 May 2012 due to Port of Quetta closure | ██████████ |
| 6 | Storage of Units 1 through 14 from 01 June 2012 through 30 June 2012 due to Port of Quetta closure. | ██████████ |
| 7 | Storage of Units 1 through 14 from 01 July 2012 through 30 September 2012 due to manufacturer, USAID, and shipping subcontract changes | ██████████ |
| 8 | Storage of Units 1 through 14 from 01 October 2012 through 31 December 2012 due to manufacturer, USAID, and shipping subcontract changes. | ██████████ |
| 9 | Site visit by manufacturer's representative to inspect vandalized and damaged transformers. | ██████████ |
| 10 | Repair parts for Kandahar and Kabul transformers. | ██████████ |
| 11 | Repair parts for Jalalabad transformers and additional spare parts. | ██████████ |
| 12 | Air cell. | ██████████ |
| 13 | Site visit by manufacturer's representative to inspect repaired transformers, add one day to Amendment 09 trip, and remove work not required. Technical assistance during installation. | ██████████ |

The final subcontract value was ██████████.

3.3.5 KHPP.12.2001 - Expediting and Quality Control Inspection Services - Bureau Veritas

The following Task Orders were issued for this Subcomponent:

- TO-01 Transformers 1-2
- TO-02 Transformers 3-4
- TO-03 Circuit Breakers 1-21
- TO-04 Transformers 5-6
- TO-05 Circuit Breakers 22-37
- TO-06 Transformers 7-10
- TO-07 Transformers 11-14

Several of these task orders were amended to perform storage inspections. The storage work may expand beyond the specific equipment identified above. Surveillance and inspection documentation is included in **Attachment d-01**.

3.3.6 KJKI.63.3609 - Procure 20 kV Reclosers

This firm fixed price subcontract was issued to SES Star Trading Establishment (SESCO) to provide five 20 kV reclosers, including control equipment enclosure and potential transformers. This equipment was transferred to DABS as part of Component 5. The final subcontract value was [REDACTED].

3.3.7 KJKI.63.7042 - Procure 20 kV Bypass Switches

This firm fixed price subcontract was issued to M/S Pannickker Switchgear Private Ltd. to provide five 20 kV bypass switches for installation with the 20 kV reclosers. This equipment was transferred to DABS as part of Component 5. The final subcontract value was [REDACTED].

3.3.8 Claims

With the exception of the reimbursement for the hijacked transformer materials, no claims are outstanding. The resolution of this claim is being resolved with Component 3, intra-national transportation.

3.4 Budget and Expenditures

Per the Contract, the estimated cost and fixed fee values are established at the Component 2 level. The final costs of this subcomponent may vary; however, the sum of the final costs of all Component 2 subcomponents is limited to the total value of Component 2. A summary of the Subcomponent 2.2 Estimated Cost (revised as of Contract Modification 13) and costs billed through 25 July 2014 (as reflected in Invoice 105), is provided in Table 14 below.

Table 14: Subcomponent 2.2 – Financial Summary

| Cost Report | Estimated Cost (Modification 13) | Costs Billed thru 25 July 2014 | Remaining Budget |
|-----------------------------------|----------------------------------|--------------------------------|------------------|
| TOTAL COST (Including Fee) | [REDACTED] | [REDACTED] | [REDACTED] |

3.5 Government Property Summary

The equipment in this Subcomponent was delivered to multiple locations. The dates of turnover are listed in Table 15: Turnover of Material Dates. Transformers damaged in transit were either repaired (Kandahar Units) or, the DABS personnel were trained on performing the repairs and provided materials to complete the repairs (Kabul and Jalalabad units). USAID final disposition instructions are included in **Attachment g-07**. Handover and disposal documents are included in **Attachment g-08**.

Table 15: Turnover of Material Dates

| Item | Destination | Recipient | Qty | Date |
|-------------------------|-----------------------------------|--------------|-----------|---------------------------------------|
| 110 / 20 kV Transformer | Kandahar – Breshna Kot Substation | B&V / DABS | 4 | 27 Apr 2013 |
| 110 / 20 kV Transformer | Kabul / DABS | DABS | 6 | 17 Apr 2013 |
| 110 / 20 kV Transformer | Jalalabad Substation | DABS | 4 | 13 Mar 2013 |
| TOTAL | | | 14 | |
| Spare Parts | Kandahar Breshna Kot Substation | DABS | lot | 29 Sep 2013 |
| 110 kV Circuit Breakers | Kandahar – Breshna Kot Substation | B&V / DABS | 6 | 7 Apr 2013 |
| 110 kV Circuit Breakers | Kandahar – AMTEX | USACE / DABS | 12 | 04 to 16 Nov 2013 & 08 to 10 Oct 2013 |
| 110 kV Circuit Breakers | Kabul / DABS | DABS | 11 | 15 Apr 2013 |
| 110 kV Circuit Breakers | Jalalabad Substation | DABS | 8 | 07 March 2013 |
| TOTAL | | | 37 | |
| Spare Parts | Kandahar Breshna Kot Substation | DABS | lot | 29 Sep 2013 |
| 20 kV Switchgear | Kandahar – Breshna Kot Substation | B&V / DABS | 4 | 02 May 2013 |
| 20 kV Switchgear | Kandahar – Junction 2 | DABS | 2 | 01 Sept 2013 & 02 Sep 2013 |
| 20 kV Switchgear | Kabul / DABS | DABS | 3 | 24 Jun 2013 |
| TOTAL | | | 9 | |
| Spare Parts | Kandahar Breshna Kot Substation | DABS | lot | 29 Sep 2013 |

3.6 Final Schedule

All circuit breaker, transformers, and switchgear materials were procured, tested, and delivered as planned. Damaged transformers were repaired. The dates of turnover are noted in Table 15: Turnover of Material Dates. The final schedule is included in **Attachment a-08**.

4 PROJECT PHYSICAL COMPLETION

4.1 Documentation of Completion

The Substantial Completion request has been issued to USAID. USAID is working with DABS to finalize the confirmation of the Jalalabad transformer repairs before issuing both Substantial Completion and Final Acceptance notifications.

The transfer of all materials procured, including their spare parts, was completed as of 16 November 2013.

4.2 Photo Album

The photo album is included as **Attachment a-09**.

5 SUSTAINABILITY

The addition of the Substations, including Substation equipment, to the SEPS system is an infrastructure investment, and required a significant investment in the training of operators. The goal of the training program for this Subcomponent was to enable DABS to effectively install, operate, commission, and maintain the procured equipment. For each equipment subcontract, the equipment manufacturer was responsible for conducting factory based training for five DABS employees.

BVSPC conducted several pre-training sessions in order to prepare for the training. Topics covered included those listed below:

- Safety Training
- Prints and Drawings
- Plant Electrical Systems
- Electrical Protection and Grounds
- Transformers
- Switchgear

Between five and seven people attended these weekly training sessions.

Five DABS operators attended two factory training sessions for the 110/20 kV 20 MVA power transformers. The first training session was deemed determined to be incomplete; therefore, an additional transformer training session was conducted as part of the subsequent circuit breaker training trip. The first session was conducted from 12 November 2011 through 26 November 2011 at the Compton Greaves Limited transformer manufacturing facility in Mumbai, India. In addition to the DABS trainees, three BVSPC employees attended the training: the Training Manager, Quality Control Manager, and Operations Manager. The second training session was conducted 21 May 2012 through 23 May 2012. Training reports for these sessions are included in **Attachment a-25**. Additional transformer training was conducted by the respective Substation Subcontractor at Breshna Kot Substation and at Durai Junction Substation (Subcomponent 1.1 **Attachment a-25** and Subcomponent 2.1 **Attachment a-25**, respectively).

Five DABS operators attended one factory training session for the 110 kV circuit breakers. The session was conducted from 07 May through 17 May 2012 in Nashik, India. In addition to the DABS trainees, three BVSPC employees attended the training: the Training Manager, Quality Control Manager, and Training Manager - Local National. This training session was highly successful, as the trainees had 6 days of equipment hands-on training. Training reports for these sessions are included in **Attachment a-25**. Additional transformer training was conducted by the respective Substation Subcontractor at BK Substation and at Durai Junction Substation (**Subcomponent 1.1 Attachment a-25** and **Subcomponent 2.1 Attachment a-25**, respectively).

Five DABS operators attended one factory training session for the 20 kV switchgear. The session was conducted from 03 September through 05 September in Gimpo-si, Gyeonggi-do, Korea. In addition to the DABS trainees, two BVSPC employees attended the training: the Training Manager, and Training Manager - Local National. This training was conducted on the switch equipment purchased, and included hands-on practice operating and programming the relays. The DABS selected trainees for this session possessed some computer familiarity. Additional switchgear training was conducted by the BK Substation Subcontractor (**Component 1.1 Attachment a-25**).

6 SECURITY PLANS AND INCIDENT REPORTS

BVSPC operated under a program-wide Security Plan (**Attachment a-02**), which was updated annually to reflect the relevant security situation in Afghanistan.

Three Loss, Damage, Destruction, or Theft (LDDT) reports were filed with USAID 24 February 2014 for the vandalized transformers, the damaged/totaled transformer, and the transformer oil and parts that were hijacked, all in transit. Other incidents impacted this work, including the multiple Port of Quetta closures, multiple Afghanistan/Pakistan border closures, and the temporary suspension of customs clearing for all US government identified goods by GiRoA.

The security risk profile at Jalalabad prohibited the manufacturer's representative from traveling to Jalalabad DABS to inspect the vandalized transformer. The repair report relied on photographs taken by local DABS staff. The manufacturer's representative was also prohibited from traveling to Jalalabad DABS to perform training on the repair of the vandalized units.

7 SAFETY AND HEALTH PLANS

BVSPC operated under a program-wide **Health and Safety Plan and Procedures (Attachment a-04)** managed by the BVSPC Health and Safety Manager. No safety incidents were reported throughout the duration of this portion of the project.

8 QUALITY CONTROL PROGRAM/PLAN

BVSPC operated under a project-wide **Quality Control Plan (Attachment a-05)**.

9 ENVIRONMENTAL CONTROL

KHPP's overall **Environmental Plan (Attachment a-14)** governed the activities executed under this contract component. All reasonable environmental protective measures were taken in the procurement and delivery of the requested equipment.

10 STATEMENT OF PATENTS, ROYALTIES OR CLASSIFIED MATERIALS

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

11 VALUE ENGINEERING CHANGES (IF APPLICABLE)

No value engineering changes were identified or implemented during the execution of this Subcomponent.

12 ENHANCING BEST PRACTICES (LESSONS LEARNED)

Table 16: Subcomponent 2.2 – Considerations from Implementation outlines some considerations to enhance best practices resulting from the implementation of Subcomponent 2.2:

Table 16: Subcomponent 2.2 – Considerations from Implementation

| Observation | Lesson | Recommendation |
|---|---|---|
| DABS trainee comprehension and retention levels varied significantly. | Continually be prepared to reinforce or re-teach previous topics. | A dedicated training location should be established to post and store training materials to enable previously used concepts and lessons to be quickly recovered and utilized. |
| | Continually assess knowledge transfer. | Schedule sessions for remedial training. |
| Not all manufacturers understand or have the capability to train entry level equipment operators. | Manufacturer’s training capabilities vary significantly. | Gather training experience references and lesson plans during bidding process. |
| Normal utility grade equipment may not be adequate on systems with a high number of faults and a low rate of maintenance performance. | Fully comprehend operating conditions prior to selecting technology. | Research the operating conditions in depth. Refer to advice from manufacturers. Modify typical equipment specifications based on findings. These recommendations apply to all types of electrical equipment (LV, MV, and HV). |
| Engineering Subcontractors may not fully utilize the selected long lead equipment. | While achieving commonality of equipment is a high priority for the Utility, Subcontractors may not be familiar with the design requirements nor the O&M requirements of the specified equipment. | Encourage EPC Subcontractors to participate in factory training for technical equipment. Frequently and consistently reinforce the functionality and expectations during the design and design review process. |

13 WARRANTY

BVSPC, as required by the Prime Contract, has a project-wide Warranty Plan (**Attachment a-06**). For Subcomponent 2.2, the warranty conditions reflect the Letter of Warranty provided to USAID applicable to this Component.

The warranty is limited to covering the failure of the manufactured materials provided to DABS. The warranty is also limited to coverage of defects due to poorly manufactured equipment, and does not cover the following conditions:

- Damages sustained due to improperly handled, transported, or stored materials.
- Damages sustained due to improperly installed materials.
- Acts of God or acts of war resulting in damages to materials.

These manufactured materials are covered for the period of 1 year, effective the date of the equipment transfer and acceptance by DABS. The transfers of equipment are as indicated in **Attachment d-01**. The effective dates of the warranty are listed in Table 17:

Table 17: Warranty Effective Dates

| Equipment and Serial Number | Location | Commencement Date ¹ | End Date |
|--|---------------------------------|--------------------------------|-------------|
| Transformers | | | |
| ET09950/1 | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| ET09950/1 – Cable repair – Warranty applies to cable repair only | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| ET09950/2 | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| ET09950/2 - Cable repair – Warranty applies to cable repair only | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| ET09950/3 | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| ET09950/3 - Cable repair – Warranty applies to cable repair only | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| ET09950/4 | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| ET09950/4 – Sampling Valve Hand wheel | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| ET09950A/1 | Kabul | 18 Apr 2013 | 17 Apr 2014 |
| ET09950A/1 Cable repair – Extended Warranty applies to cable repair only | Kabul | 30 Oct 2013 | 29 Oct 2014 |
| ET09950A/2 | Kabul | 18 Apr 2013 | 17 Apr 2014 |
| ET09950A/2 Cable repair – Extended Warranty applies to cable repair only | Kabul | 30 Oct 2013 | 29 Oct 2014 |
| ET09950A/3 | Kabul | 18 Apr 2013 | 17 Apr 2014 |
| ET09950A/4 | Kabul | 18 Apr 2013 | 17 Apr 2014 |

¹ If emplaced within a constructed facility per contract, the facility warranty dates apply. If conveyed as equipment, the manufacturer' warranty date applies. All conveyed equipment warranties are subject to proper storage, handling, and installation per manufacturer' recommendation by recipient.



| Equipment and Serial Number | Location | Commencement Date ¹ | End Date |
|--|---------------------------------|--------------------------------|-------------|
| ET09950A/5 | Kabul | 18 Apr 2013 | 17 Apr 2014 |
| ET09950A/5 Cable repair – Extended Warranty applies to cable repair only | Kabul | 30 Oct 2013 | 29 Oct 2014 |
| ET09950A/6 | Kabul (destroyed in transit) | | |
| ET09950/5 | Jalalabad | 04 Dec 2012 | 04 Jun 2014 |
| ET09950/6 | Jalalabad | 04 Dec 2012 | 04 Jun 2014 |
| ET09950/7 | Jalalabad | 04 Dec 2012 | 04 Jun 2014 |
| ET09950/8 | Jalalabad | 4 Dec 2012 | 04 Jun 2014 |
| ETO9950/8 Cable repair – Extended Warranty applies to cable repair only | Jalalabad | 30 Oct 2013 | 29 Oct 2014 |
| Circuit Breakers | | | |
| X304389 | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| X304390 | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| X304391 | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| X304392 | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| X304393 | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| X304394 | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| X304395 | State Corp | 01 Oct 2012 | 01 Apr 2014 |
| X304396 | Perini | 01 Oct 2012 | 01 Apr 2014 |
| X304397 | Perini | 01 Oct 2012 | 01 Apr 2014 |
| X304398 | State Corp | 01 Oct 2012 | 01 Apr 2014 |
| X304399 | Perini | 01 Oct 2012 | 01 Apr 2014 |
| X304400 | Perini | 01 Oct 2012 | 01 Apr 2014 |
| X304401 | State Corp | 01 Oct 2012 | 01 Apr 2014 |
| X304402 | Perini | 01 Oct 2012 | 01 Apr 2014 |
| X304403 | Perini | 01 Oct 2012 | 01 Apr 2014 |
| X304404 | State Corp | 01 Oct 2012 | 01 Apr 2014 |
| X304405 | Perini | 01 Oct 2012 | 01 Apr 2014 |
| X304406 | Perini | 01 Oct 2012 | 01 Apr 2014 |
| X304407 | Jalalabad | 08 Apr 2013 | 07 Apr 2014 |
| X304408 | Jalalabad | 08 Apr 2013 | 07 Apr 2014 |
| X304409 | Jalalabad | 08 Apr 2013 | 07 Apr 2014 |
| X304410 | Kabul | 16 Apr 2013 | 15 Apr 2014 |
| X304411 | Kabul | 16 Apr 2013 | 15 Apr 2014 |
| X304412 | Kabul | 16 Apr 2013 | 15 Apr 2014 |
| X304413 | Kabul | 16 Apr 2013 | 15 Apr 2014 |
| X304414 | Kabul | 16 Apr 2013 | 15 Apr 2014 |
| X304415 | Kabul | 16 Apr 2013 | 15 Apr 2014 |
| X304416 | Kabul | 16 Apr 2013 | 15 Apr 2014 |
| X304417 | Kabul | 16 Apr 2013 | 15 Apr 2014 |
| X304418 | Kabul | 16 Apr 2013 | 15 Apr 2014 |
| X304419 | Kabul | 16 Apr 2013 | 15 Apr 2014 |

| Equipment and Serial Number | Location | Commencement Date ¹ | End Date |
|-----------------------------|---------------------------------|--------------------------------|-------------|
| X304420 | Kabul | 16 Apr 2013 | 15 Apr 2014 |
| X304421 | Jalalabad | 08 Apr 2013 | 07 Apr 2014 |
| X304422 | Jalalabad | 08 Apr 2013 | 07 Apr 2014 |
| X304423 | Jalalabad | 08 Apr 2013 | 07 Apr 2014 |
| X304424 | Jalalabad | 08 Apr 2013 | 07 Apr 2014 |
| X304425 | Jalalabad | 08 Apr 2013 | 07 Apr 2014 |
| Switchgear | | | |
| A1 | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| A2 | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| A3 | Kabul | 25 Jun 2013 | 24 Jun 2014 |
| B1 | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| B2 | Kandahar Breshna Kot Substation | 27 Sep 2013 | 26 Sep 2014 |
| B3 | Kabul | 25 Jun 2013 | 24 Jun 2014 |
| C1 | Kandahar Junction 2 | 03 Sep 2013 | 02 Sep 2014 |
| C2 | Kandahar Junction 2 | 03 Sep 2013 | 02 Sep 2014 |
| C3 | Kabul | 25 Jun 2013 | 24 Jun 2014 |

14 OUTSTANDING ISSUES

No outstanding issues are open related to completing Subcomponent 2.2.

15 CONCLUSION

Subcomponent 2.2 procured and transported long lead time, transmission, and distribution equipment for KHPP. This equipment included power transformers, circuit breakers, and switchgear. Factory training for DABS personnel on this equipment was also provided. This equipment originally was procured to be utilized by DABS primarily in the SEPS system but, due to needs elsewhere in Afghanistan, the equipment will be used in Kabul and Jalalabad.

By procuring sufficient equipment for installation at the KHPP Substations, DABS gained the knowledge of equipment operations and maintenance on an economy of scale basis. The same economy of scale applies to the use of the spare parts and specialized tools.

Eight managers and operators received factory training. An additional five trainees received training on the same equipment at BK Substation. An additional eight operators received training on similar equipment at the Durai Junction Substation. With an expected 30 year life, this equipment has improved the reliability of the SEP system.

16 DEVELOPMENT EXPERIENCE CLEARINGHOUSE (DEC)

This Closeout Report will be submitted to the DEC as required.