SIGAR | Office of the Special Inspector General for Afghanistan Reconstruction

August 07, 2015

Donald L. "Larry" Sampler
Assistant Administrator for Afghanistan and Pakistan Affairs
U.S. Agency for International Development

Dear Mr. Sampler:

Thank you for your response to my letter of June 19, 2015, concerning the U.S. Agency for International Development's (USAID) role in the operation of the Tarakhil Power Plant (see enclosure I). This letter provides the results of our analysis of the information provided by your office in response to our questions. Unfortunately, despite apparently being a "vital component" of the electrical grid serving Kabul, it appears that that this $335 million power plant continues to be severely underutilized.

In particular, data provided by your office and by Da Afghanistan Breshna Sherkat (DABS) show that the Tarakhil Power Plant continues to operate at only a fraction of its power production capacity.[1] As you recall, the USAID Office of Inspector General (OIG) found previously that between July 2010 and December 2013, the plant only produced about 63,000 megawatt hours of power, just 2.2 percent of its production capacity during that period.[2] Our analysis of the more recent data provided by your office shows that the rate of power production has actually declined over time. Specifically, from February 2014 through April 2015, the plant exported just 8,846 megawatt hours of power to the Kabul grid, which is less than one percent of Tarakhil's production capacity during that period.[3] Table 1 shows the amount of power Tarakhil Power Plant exported to the Kabul grid compared to the plant's base-load production.[4]

Photo 1 – Tarakhil Power Plant in Kabul, Afghanistan

Source: Black & Veatch

[1] DABS is Afghanistan's national power utility. According to its Chief Operating Officer, DABS has submitted a proposal to Afghanistan's Office of the President to increase operations at Tarakhil by running the plant continuously to supply power to Kabul's Afghan National Defense and Security Force bases and industrial parks on a cost recovery basis. However, the Chief Operating Officer stated that the DABS proposal remains in negotiations.

[2] USAID OIG, *Review of Sustainability of Operations at Afghanistan's Tarakhil Power Plant,* Report No. F-306-14-002-S, June 19, 2014.

[3] USAID OIG reported that the base-load production at Tarakhil is 68,985 megawatt hours per month. We used this same base-load production in our calculations.

[4] Base-load production refers to electric generation resources that operate continuously and are available 24 hours a day.

Table 1 - Tarakhil Power Plant Megawatt Hour Output

Date[a]	Electricity Exported to the Grid (MWh)	Percentage of Base-Load Production Capacity
22-Feb-14	530	**0.77%**
21-Mar-14	988	**1.43%**
21-Apr-14	0	**0.00%**
22-May-14	34	**0.05%**
22-Jun-14	65	**0.09%**
23-Jul-14	118	**0.17%**
23-Aug-14	98	**0.14%**
23-Sep-14	125	**0.18%**
23-Oct-14	506	**0.73%**
22-Nov-14	152	**0.22%**
22-Dec-14	31	**0.04%**
21-Jan-15	47	**0.07%**
20-Feb-15	6033	**8.75%**
21-Mar-15	486	**0.70%**
21-Apr-15	164	**0.24%**
Total	**9376**	**0.91%**

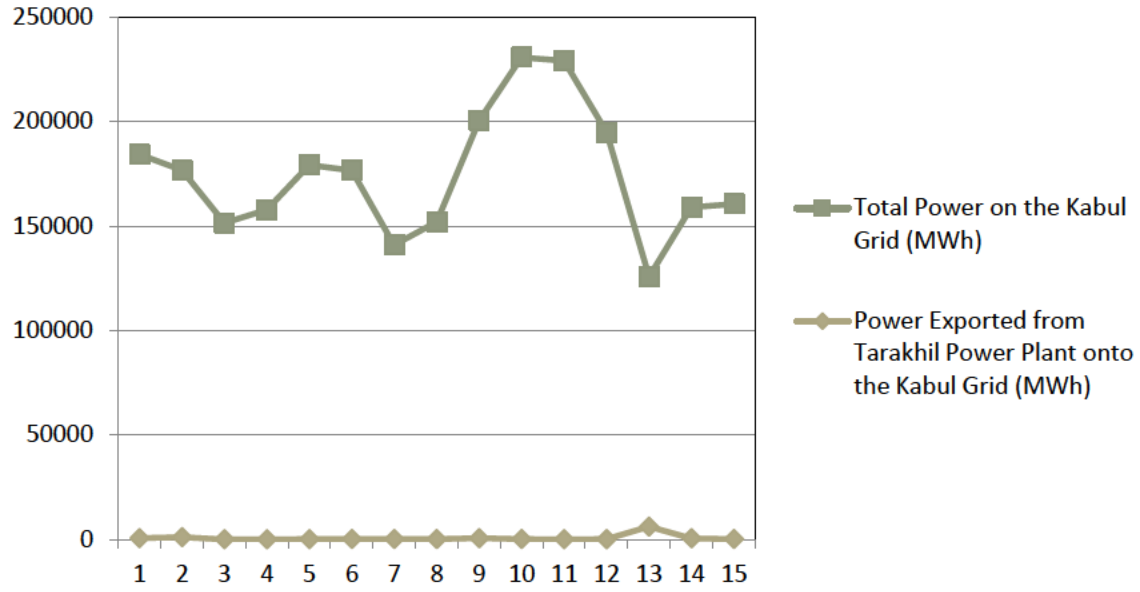
Source: SIGAR analysis of USAID and DABS data

Note: [a] This is the date Tarakhil Power Plant reported the data and covers the one month (using the Afghan solar calendar) period prior to the reporting date.

In addition to running far below its full capacity, the plant contributes a relatively small amount of electricity to the power grid serving Kabul. From February 2014 through April 2015, the Tarakhil Power Plant produced only 0.34 percent of the total power on the Kabul grid. Figure 1 shows the percentage of power on the Kabul grid derived from the Tarakhil power plant compared to the total amount of power on the grid from all sources.[5]

[5] Our analysis of the DABS data found that the Kabul grid received nearly all its power from February 2014 through April 2015 (99 percent) by importing it from other countries and hydroelectric generation.

Figure 1 - Tarakhil Power Plant Output Compared to the Total Power on the Kabul Grid (5-month period from February 2014 through April 2015)



Source: SIGAR analysis of USAID and DABS data

Your response characterized the plant as a "means of providing insurance against disruption of power supplies from Central Asia and as backup during peak demand." However, that characterization is contradicted by other information obtained by my office. For instance, the USAID contractor hired to evaluate alternative fuel supplies for the power plant stated that "the TPP [Tarakhil Power Plant] was designed as a base load plant, operating 24 hours/day, 7 days/week, but was being operated to support peak loading only."[6] USAID OIG also noted that "the plant was also not used regularly...and therefore was not increasing Kabul's power supply to help reduce its energy deficit...as intended," and, "the plant is not regularly contributing additional electricity to increase the power supply in the Kabul area as envisioned."[7] These statements strongly suggest that, rather than "providing insurance against disruption," the Tarakhil Power Plant was originally intended to provide electrical power to Kabul on a continuous basis.

In fact, according to USAID OIG, the use of the Tarakhil Power Plant on only an intermittent basis caused damage to the plant. USAID OIG observed that "operating on an intermittent—rather than a continuous—basis has resulted in more frequent starts and stops, which place greater wear and tear on the engines and electrical components."[8] This underutilization of the plant has apparently already resulted in the premature failure of equipment, which was expected to raise already high operation and maintenance costs, and could result in "catastrophic failure." This information also supports the conclusion that the Tarakhil Power Plant was originally intended to operate on a continuous basis.

[6] Tetra Tech, Inc. (USAID contract number EDH-I-00-08-00027-00), *Tarakhil Power Plant Alternative Fuels Evaluation*, February 26, 2015.

[7] USAID OIG, June 19, 2014.

[8] USAID OIG, June 19, 2014.

While USAID agreed to, and has taken, some actions in response to the concerns raised by USAID OIG, those actions have not yet resulted in the increased use of the Tarakhil Power Plant.[9] For example, USAID completed an evaluation of alternate fuel options for the plant as USAID OIG recommended.[10] The evaluation considered several fuel options, including diesel oil, heavy fuel oil, and compressed natural gas, using two time horizons—an operational life of 7 years and an operational life of 21 years. Unfortunately, the evaluation failed to identify a more economical fuel supply that would allow the Tarakhil Power Plant to increase its operations on a continuous basis. Ultimately, the evaluation recommended the continued use of diesel—pending either a large capital project to support the construction of necessary compressed natural gas infrastructure or completion of heavy fuel oil system commissioning and operator training. In the absence of an affordable alternative to the status quo, this apparently "vital component" of the Kabul power grid continues to run far below full capacity and plant productivity has actually declined in recent months.

Affordable and reliable electricity is critical to the economic growth and stability of Afghanistan. However, the construction of a $335 million diesel-fueled power plant outside of Kabul does not seem to have contributed significantly to this important goal since it was handed over to the Afghan government more than five years ago. SIGAR will continue to monitor developments at the Tarakhil Power Plant to see if over time the Afghan government is able to better utilize this significant expenditure of U.S. taxpayer funds.

This review was prepared by SIGAR's Office of Special Projects under the authority of Public Law No. 110-181, as amended, and the Inspector General Act of 1978, as amended. Should you or your staff have any questions about this request, please contact Mr. Jack Mitchell, Director of Special Projects, at [redacted]

Sincerely,

John F. Sopko
Special Inspector General
for Afghanistan Reconstruction

Enclosure(s): I – USAID Response to SIGAR 15-65-SP, dated June 26, 2015.
II –SIGAR Inquiry letter 15-65-SP, dated June 19, 2015

cc:

The Honorable Alfonso E. Lenhardt
Acting Administrator, U.S. Agency for International Development

Mr. William Hammink
USAID Mission Director for Afghanistan

[9] In response to the USAID OIG report and the accompanying recommendations to help correct the issues it identified, USAID stated that it had either already initiated, or would initiate, remedial measures to assist the Afghan government and DABS to operate the power plant on a more regular basis, as intended. In its response to the USAID OIG report, USAID stated that all corrective measures would be implemented no later than December 31, 2014.

[10] USAID issued a Task Order under an existing contract with Tetra Tech, Inc. for its Engineering Support Program (contract number EDH-I-00-08-00027-00) to complete the evaluation. Tetra Tech completed its evaluation on February 26, 2015.

USAID
FROM THE AMERICAN PEOPLE

MEMORANDUM

June 26, 2015

TO: John F. Sopko
Special Inspector General for
Afghanistan Reconstruction (SIGAR)

FROM: Donald L. "Larry" Sampler
Assistant Administrator for
Afghanistan and Pakistan Affairs (OAPA) /s/

SUBJECT: Response to the Inquiry Letter on Tarakhil Power Plant
(SIGAR Inquiry Letter-15-65-SP)

REF: SIGAR-15-65-SP Inquiry letter on Tarakhil Power Plant dated
June 19, 2015

Thank you for your letter of June 19, 2015 regarding the Government of Afghanistan's operation of the Tarakhil Power Plant in Kabul, Afghanistan. We welcome the opportunity to respond to the specific questions in your letter, as detailed below.

The Tarakhil Power Plant has proven to be a vital component of the North East Power System (NEPS). We have no indication that the Afghan power utility, Da Afghanistan Breshna Sherkat (DABS), failed to operate Tarakhil as was alleged in your letter. On the contrary, the plant has provided Kabul with a power source during winter months when additional power has been needed or during emergencies when imported power to Kabul has been interrupted, including this past February when an avalanche disrupted power lines from Central Asia. During the disruption, DABS mobilized several assets including Tarakhil to provide electricity to Kabul during peak hours. Tarakhil provided over 6,000 MWH of during February 2015. Moving forward, DABS will continue to operate Tarakhil power to meet peak demand.

In 2007, USAID and Embassy Kabul decided to support the Government of Afghanistan's plan to increase access to electricity in Kabul through the construction of the Tarakhil Power Plant. The plant was envisioned as a means of providing insurance against disruption of power supplies from Central Asia and as backup during peak demand. In December 2009, toward the end of the Tarakhil Power Plant's construction, the installation of a transmission line bringing power to Kabul from neighboring Uzbekistan and Tajikistan provided imported power at a relatively low cost ($0.06 per kilowatt-hour) compared to the cost of Tarakhil's power ($0.33 per kilowatt-hour). This further strengthened the decision to use Tarakhil for peak loads and as an emergency back-up source. Diversifying power sources is a common practice worldwide.

In return for U S. assistance to Tarakhil, the Afghan government committed to making DABS an independent, para-statal entity. USAID has worked closely with DABS to improve its capacity to manage the country's electrical system, and in June 2010, the management of Tarakhil Power Plant was handed over to DABS. The USAID Office of the Inspector General's (OIG) June 2014 review of Tarakhil power plant provided an opportunity for USAID to bolster its efforts to improve DABS managerial and technical capacity to better operate the plant. USAID concurred with OIG's five recommendations and took corrective action to address them.

Please find a full response to each of SIGAR's questions below.

1. How much diesel (liters and cost) has USAID provided to the Afghan government specifically for the operation of Tarakhil Power Plant since January 1, 2013?

Since January 1, 2013, USAID has not provided fuel for the operation of Tarakhil Power Plant.

2. What was the monthly megawatt output of the Tarakhil Power Plant for November-May 2015?

Total energy generated by Tarakhil Power Plant for this period is 7,418.4 MWh (Attachments 2 and 3).

Breakdown of energy generated per month starting October 23, 2014 is:

October 2014: 506.2 MWh

November 2014: 151.9 MWh
December 2014: 30.9 MWh
January 2015: 46.5 MWh
February 2015: 6,032.8 MWh
March 2015: 485.9 MWh
April 2015: 164.2 MWh
May 2015: 0.0 MWh

a. How much diesel did the power plant consume during each of those months and at what cost?

The amount of fuel consumed during this period starting October 23, 2014, for generation of the above mentioned amount of electrical energy is 1,754,782 liters at the cost of $1.13 per liter (Attachments 2 and 3).

Breakdown of fuel consumption per month:

October 2014: 120,304
November 2014: 36,281
December 2014: 7,840
January 2015: 11,344
February 2015: 1,422,777
March 2015: 116,270
April 2015: 39,966
May 2015:0.00

b. Did the Afghan government, USAID, or another donor supply the diesel required for the output during this period?

All diesel fuel for this period was supplied by DABS.

3. Did USAID provide the Afghan government with any support specifically to help address the power shortages that resulted from the late February 2015 avalanches in northern Afghanistan?

DABS conducted all of the repair work, without financial or even direct technical assistance from USAID, which was necessary to restore transmission lines knocked out by avalanches over the winter. The ability of DABS to conduct all of the repair work is another demonstration of the progress it has made toward self-sufficiency.

4. Did USAID complete the USAID OIG-recommended analysis identifying a more economical and affordable fuel supply that could allow the Afghan government to operate Tarakhil Power Plant as intended—on a regular, sustainable basis?

Yes, the Mission's Afghanistan Engineering Support Program (AESP) commissioned an analysis to identify a more economical and affordable fuel supply for Tarakhil Power Plant. The completed report (Attachment 1) reviewed and provided a financial analysis for three alternative fuel sources to identify a preferred fuel for Tarakhil Power Plant.

a. If so, did USAID consult with appropriate Afghan government entities throughout the course of the analysis; did USAID brief appropriate Afghan government entities on the outcome of the analysis; and, has the Afghan government taken any clear action as a result of the analysis?

USAID and the Implementing Partner consulted with DABS senior management group throughout the course of the analysis.

USAID briefed DABS senior management group on the outcome of the analysis. The report was made available on the shared document storage portal at the Implementing Partner, to which DABS and USAID both have access. A private sector company has submitted a proposal to DABS to use heavy fuel oil (HFO) for power generation, and also to provide operations and management support as result of the completed analysis.

ATTACHMENTS:

1 – Alternative Fuel Evaluation Report
2 - Generation, Fuel Consumption and Storage Report of Tarakhil Power Plant for Year 2014–2015
3 - Generation, Fuel Consumption and Storage Report of Tarakhil Power Plant for Year 2015–2016

cc:

Alfonso E. Lenhardt
Acting Administrator, U.S. Agency for International Development

William Hammink
Mission Director, U.S. Agency for International Development/Afghanistan

SIGAR | Office of the Special Inspector General for Afghanistan Reconstruction

June 19, 2015

The Honorable Alfonso E. Lenhardt
Acting Administrator, U.S. Agency for International Development

Mr. William Hammink
USAID Mission Director for Afghanistan

Dear Gentlemen:

My office has long been concerned with the ability of the Afghan government to provide its people and businesses with electricity. Several SIGAR audits have addressed wide-ranging and longstanding problems with U.S. government efforts to build and maintain major infrastructure projects aimed at bolstering power availability throughout Afghanistan.[1] Sustainability within the energy sector represents a high-risk area that must be prioritized within reconstruction efforts if the U.S. mission is to preserve fragile gains and bolster the weak Afghan economy.[2]

Given the criticality of building reliable power systems in Afghanistan, I am writing to inquire about the use of Tarakhil Power Plant to supply back-up power to Kabul, Afghanistan. The late February 2015 avalanches across several of Afghanistan's Northern provinces destroyed key parts of the existing Northern Electrical Power System (NEPS), which distributes imported power from Uzbekistan and Tajikistan and is the primary power source for Afghanistan's capital region. For several weeks following the avalanches, the U.S. and Afghan governments as well as multiple media outlets reported that the natural disaster killed hundreds and created electrical shortages throughout several provinces, including Kabul, during one of the coldest months of the year—when demand for power is at its peak. I am concerned that this incident may have demonstrated that the Afghan government is still unwilling or unable to fully operate the Tarakhil Power Plant even during emergency situations in response to critical, short-term needs, and that the $335 million U.S. Agency for International Development Office (USAID) investment remains in danger of being wasted or severely underused.[3]

USAID entered into a contract with Louis Berger Group/Black & Veatch Joint Venture to build the 105 megawatt[4] Tarakhil Power Plant on the outskirts of Kabul in July 2007 for several reasons, including to help mitigate concerns about potential shortfalls in available power resulting from natural disasters or neighboring country decisions to reduce power exports.[5] The power plant was intended to significantly bolster the power available on Afghanistan's national power grid through the continuous operation of 18 diesel engines generating power. Although the project was plagued by

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[1] See, SIGAR-Audit 13-7, *Afghanistan's National Power Utility: Commercialization Efforts Challenged by Expiring Subsidy and Poor USFOR-A and USAID Project Management*, April 18, 2013; SIGAR-Audit 13-2, *Afghanistan's National Power Utility: $12.8 Million in DoD-Purchased Equipment Sits Unused, and USAID Paid a Contractor for Work Not Done*, December 18, 2012; SIGAR-Audit 12-12, *Fiscal Year 2011 Afghanistan Infrastructure Fund Projects Are behind Schedule and Lack Adequate Sustainment Plans*, June 29, 2012; SIGAR-Audit 10-04, *Afghanistan Energy Supply has Increased but an Updated Master Plan is Needed and Delays and Sustainability Concerns Remain*, January 15, 2010.

[2] SIGAR, *High-Risk List*, December 2014.

[3] Following several modifications, USAID's final cost to build the plant was approximately $307 million, more than $126 million more than originally budgeted. Upon completion, the agency committed at least $27.7 million in additional funding for operation and maintenance support through June 30, 2012, and has since provided sporadic support to assist with specific tasks and repairs.

[4] A megawatt is a unit of electrical power equal to one million watts.

[5] The construction and commission of Tarakhil Power Plant was completed as a as a cost-plus-fixed-fee contract completion task order under the $1.4 billion indefinite quantity contract for the Afghanistan Infrastructure and Rehabilitation Program.

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cost overruns, poor contractor performance, and delays, the power plant was ultimately handed over to the Afghan government in June 2010, and Da Afghanistan Breshna Sherkat (DABS)—Afghanistan's national power utility—assumed responsibility for the operation and maintenance of the facility.[5]

In June 2014, more than eight months before the devastating avalanches, USAID OIG completed a review assessing the status and sustainability of operations at Tarakhil Power Plant.[7] The results of the OIG review were alarming. For example, USAID OIG found that since the handover in June 2010, the power plant has been severely underused and operated at just 2.2 percent of installed power production capacity. According to USAID OIG, DABS had limited operations since accepting responsibility for the facility because it couldn't afford to operate the plant—the fuel alone required to operate the plant as intended was estimated to cost approximately $245 million per year. As a result of the high cost to operate the plant, the USAID OIG reported that the Afghan government has only used it "as an emergency power source, standing ready to generate electricity for the grid in critical situations, such as interruptions in the availability of imported power to Kabul due to damaged transmission lines."[8]

In response to the OIG report and the accompanying recommendations to help correct the issues it identified, USAID stated that it had either already initiated, or would initiate, remedial measures to assist the Afghan government and DABS to operate the power plant on a more regular basis, as intended. In its response to the OIG report, USAID stated that all corrective measures would be implemented no later than December 31, 2014, approximately two months before the tragic avalanches of late February 2015. While I commend USAID on its commitment to take corrective action to address the OIG findings, the blackouts and lack of power throughout Kabul resulting from the avalanches raises questions regarding the efficacy of those actions and the commitment and ability of the Afghan government to operate the Tarakhil Power Plant as needed or when absolutely necessary.

To help SIGAR understand the output of Tarakhil Power Plant following the February 2015 avalanche and the actions taken by USAID to help ensure the sustainable operation and maintenance of Tarakhil Power Plant, please provide responses to the following questions, with supporting documentation:

1. How much diesel (liters and cost) has USAID provided to the Afghan government specifically for the operation of Tarakhil Power Plant since January 1, 2013?

2. What was the monthly megawatt output of the Tarakhil Power Plant for November-May 2015?

    a. How much diesel did the power plant consume during each of those months and at what cost?

    b. Did the Afghan government, USAID, or another donor supply the diesel required for the output during this period?

[5] SIGAR and USAID OIG have both issued reports detailing the multitude of issues that plagued construction of the facility. See, SIGAR-Audit 10-06, *Contract Delays Led to Cost Overruns for the Kabul Power Plant and Sustainability Remains a Key Challenge*, January 20, 2010; and, USAID OIG Audit 5-306-10-002-P, *Audit of USAID/Afghanistan's Power Sector Activities Under its Afghanistan Infrastructure Rehabilitation Program*, November 10, 2009.

[7] USAID OIG Review F-306-14-002-S, *Review of Sustainability of Operations at Afghanistan's Tarakhil Power Plant*, June 14, 2014.

[8] USAID OIG, June 14, 2014.

3. Did USAID provide the Afghan government with any support specifically to help address the power shortages that resulted from the late February 2015 avalanches in northern Afghanistan?

4. Did USAID complete the USAID OIG-recommended analysis identifying a more economical and affordable fuel supply that could allow the Afghan government to operate Tarakhil Power Plant as intended—on a regular, sustainable basis?

    a. If so, did USAID consult with appropriate Afghan government entities throughout the course of the analysis; did USAID brief appropriate Afghan government entities on the outcome of the analysis; and, has the Afghan government taken any clear action as a result of the analysis?

I am submitting this request pursuant to my authority under Public Law No. 110-181, as amended, and the Inspector General Act of 1978, as amended. Please provide the requested information by July 8, 2015. Should you or your staff have any questions about this request, please contact Mr. Jack Mitchell, Director of Special Projects, at [redacted]

Sincerely,

John F. Sopko
Special Inspector General
for Afghanistan Reconstruction