

MEMORANDUM

TO: MAYOR JENSEN AND BOROUGH ASSEMBLY
FROM: KARL HAGERMAN, UTILITY DIRECTOR 
SUBJECT: CONTRACT INCREASE FOR BLIND SLOUGH HYDRO – PROJECT MANAGEMENT, INSPECTION, COMMISSIONING AND CLOSE OUT
DATE: 11/27/2023
CC: STEVE GIESBRECHT, BOROUGH MANAGER

As stated in the supplemental budget request memo, dated November 12, 2023, the Blind Slough Hydro project is in contention to receive a large Dept of Energy grant, however a supplemental budget transfer is being requested to see the project to completion.

A portion of the requested transfer is meant to cover an increase to the engineering contract with McMillen Corporation (formerly McMillen Jacobs and Associates). Per the attached proposal submitted by McMillen, there are many issues that have caused the existing budget with McMillen to be insufficient. Although there have been minor overruns in various tasks, most of the reasoning comes from project delays that have extended the need for onsite project inspection. Initial estimates were made that required an onsite resident engineer to be on the project for 3 months where we saw that this service was needed for about 5 ½ months.

The McMillen proposal lays out their remaining work items to take the project through commissioning/startup and close out of all contracts for construction and equipment supply. Additionally, ensuring that FERC is apprised of the project's outcome and is satisfied that the work was accomplished as planned is very important and it is reassuring that the McMillen staff has been through this process many times before.

It is important to note that McMillen's proposal calls for a larger dollar amount (\$205,000) than PMPL is recommending as a contract increase. The project manager did not factor in the remaining contractual budget at the time of submission of the proposal, which was approximately \$100,000. It was easy to see that this amount would be expended prior to the close out of the project, hence the need to seek clarity on what additional funds would be needed to complete the project.

PMPL is recommending that the McMillen contract be amended to increase the overall contract amount by \$105,000.00. This expense will be spread out among the final tasks as detailed in the engineer's proposal and, when combined with the remaining budget of \$100,000.00, should be sufficient to get to project completion.

Please let me know if there are any questions. Thank you for your consideration.

October 16, 2023

Mr. Karl Hagerman
Utility Director
Petersburg Borough
khagerman@petersburgak.gov

Subject: Proposal For Engineering Services

Dear Mr. Hagerman:

McMillen, Inc. (McMillen) appreciates the opportunity to work with the Petersburg Municipal Light & Power (PMP&L) on the Blind Slough Hydro Project Refurbishment (Project). We have developed a detailed scope of work (SOW) and budget for your review for the construction management assistance, startup/commissioning assistance and project completion activities at the Project.

PROJECT UNDERSTANDING

McMillen (formerly McMillen Jacobs and Associates) has been working on the Blind Slough Hydro Project Refurbishment since early 2018. Early work involved a condition assessment; alternatives development and evaluation; capital improvement plan and preliminary engineering. Subsequently McMillen entered a contract with PMP&L for final design; procurement of Owner-furnished equipment; bidding for the general construction contract; preparation of a FERC amendment and FERC approval to begin construction; and construction management/startup assistance. An equipment procurement contract was awarded in May of 2021 for the supply of the turbine and generator equipment. Final design was completed in 2022 following a delay due to COVID. A general construction contract was awarded and a notice to proceed with construction was issued in January 2023. An Amendment to the FERC license was issued March 2023 and approval to begin construction was issued by the FERC in March 2023. The General Contractor started work in June 2023 but has struggled with the schedule (the project was scheduled for completion in the fall of 2023). The turbine-generator equipment was delivered to site June 2023 (turbine-generator equipment) and August 2023 for the controls and electrical equipment.

The original engineering contract awarded to McMillen will be exceeded before the end of the year. The budgeted amount was exceeded due to the following:

- Extra effort with the equipment procurement bidding (due to COVID delay),
- Extra effort required for the FERC license amendment,
- Extra effort was required to purchase Owner furnished long lead items (three valves and a penstock flow meter),
- Extra effort to attend factory acceptance testing in Bend, OR for the controls and electrical equipment, independent inspection of Owner furnished equipment in England and Italy and general contractor fabricated components,
- Extra effort during general construction contract bidding (numerous addenda),
- Extensive resubmittals have been and continue to be made by the general contractor.
- Extra effort has been required to coordinate with EPS for temporary dam monitoring during the outage. McMillen is also helping to coordinate with EPS for modifications to the Owner's SCADA system.
- Greg Clark, P.E. has stepped in to take over the project's civil engineering following the passing of Matt Moughamian. This transition has also had an impact on the budget.
- Additional McMillen geotechnical support has been provided to determine the extent of rock excavation for thrust block and penstock excavation. Depending on findings there may be additional impact on project budget. Contractor has provided notice of differing conditions that will need resolution.
- The Contractor's claim for differing conditions is also expected to require additional effort. To date the claim is unresolved.
- Significant engineering effort was expended on revising the design/drawings due to differing conditions with the rock for the thrust blocks.
- It is now expected that the resident engineer will be on site for two months longer than originally budgeted (the original budget was for three months).
- The original construction schedule (submitted by the general contractor in their bid) anticipated that they would start mobilizing May 1, 2023 and achieve substantial completion by October 26, 2023. The latest schedule shows substantial completion achieved December 14, 2023. This means construction has been extended by nearly two months.

- The original McMillen budget for final design and construction management (Amendment 2) was executed in January 2022. McMillen labor costs have subsequently increased.
- The general contractor has struggled with submittals and maintaining the construction schedule.

PROJECT GENERAL ASSUMPTIONS

Based on our Project Understanding as identified above, the following assumptions have been made in the development of this SOW. These assumptions impact the overall Project and budget. However, McMillen will gladly entertain any discussion on these assumptions to ensure they align with PMP&L goals. At this point the primary assumption is that the general contractor will achieve substantial completion by December 14 as indicated on their recent construction schedule (submittal 013215-3.8). This schedule means that the resident engineer will likely need to be on site through October 2023 and possibly into November 2023. We expect that completion work from McMillen will extend the duration of work through January 2024.

PROJECT APPROACH

McMillen's Project approach is identified in the following tasks and activities. The Tasks will be completed in the order described, excluding Project Management, which is included for the duration of the Project.

- Task 1 – Project Management
- Task 2 – Construction Management
- Task 3 – Start-up & Commissioning
- Task 4 – Contract Close Outs, As-builts, DDR and O&M manuals

Within each of these tasks are several subtasks to be completed. Each task described below provides the anticipated deliverables and the assumptions used for each task.

TASK 1: PROJECT MANAGEMENT

Don Jarrett, P.E. will serve as the Project Manager for the duration of the Project and will provide management and oversight of all in-house team members. Don has been the Project manager since 2018 and is thoroughly familiar with all aspects of the Project, the design and construction. Don's responsibilities will include contracting, monitoring budgets and schedules, and ensuring the work performed is within the contract scope, schedule, and budget. Don will also perform required general project management tasks such as meeting coordination,

meeting minutes, quality control, and reporting. McMillen will set up a reoccurring meeting every weeks to coordinate McMillen support during Project construction, provide updates on schedule, identify any field support, etc. A SharePoint site will continue to be provided for data sharing and Project submittals.

Clear and concise communication is imperative to accomplishing a smooth and efficient Project delivery. Throughout the Project completion, we will continue to maintain a strong and integrated team that includes key individuals from PMP&L and McMillen, along with our Project Manager, Don Jarrett. This core Project Team will provide valuable input and support to guide the Project to successful completion. Close communication within this team will provide the foundation for the successful completion of the Blind Slough Hydro Project.

All documents will be reviewed internally, and comments will be incorporated before submitting to PMP&L. Review by the QA/QC team will be required for all technical documents such as detailed reports, technical memorandums, drawings, and construction cost estimates. As part of the overall quality control process, our Project Manager will identify those team members who are qualified and available to complete reviews of each of the identified products. Comments on these documents will be provided to Don Jarrett on our QA/QC Comment/Response Form. Don Jarrett will compile all the comments and provide them to the design team, and they will review and add their responses to the same form. The responses will be reviewed by the QA/QC team. All comments/responses will be reconciled within the internal team before submission to PMP&L. Once the modifications have been made, Don Jarrett will review the deliverable documents to ensure that all comments have been incorporated. Don Jarrett will then complete the Comment Form documenting the quality control process.

In addition to Don Jarrett, the same project team will continue to complete this Project. The core team consists of Matt Lawson (Senior Electrical Engineer), Joe Carson (Senior Mechanical engineer), Wes Brown (Resident Engineer) and Greg Clark (Senior Civil Engineer). All are registered Professional Engineers in the State of Alaska.

DELIVERABLES

Monthly progress reports and invoicing will be required through January 2024. Coordination meetings with the general contractor and equipment supplier will also likely be required through January to complete and close out those contracts. Coordination with PMP&L and the project team will also continue through January.

ASSUMPTIONS

See above for schedule assumptions.

TASK 2: CONSTRUCTION MANAGEMENT

With the new construction schedule from the general contractor, major civil construction management will continue through October and into November 2023 to get construction completed enough to begin startup and commissioning. It is now expected that the Project will be able to provide power to PMP&L on December 14, 2023. The resident engineer will need to be onsite through the period of time major construction is being performed, in accordance with the FERC approved QCIP. The resident engineer will continue to manage the FERC Quality Control and Inspection Plan (QCIP). The resident engineer will continue to coordinate the independent testing required under the approved QCIP. The resident engineer will need to coordinate with the home office engineering team and PMP&L.

DELIVERABLES

The deliverables during the construction period will be as follows:

- The resident engineer will continue to be present on-site until startup and commissioning can begin.
- The resident engineer will continue the FERC approved QCIP required reporting, including daily reports, construction photos, non-conformance reports, the FERC monthly progress report and daily reports.
- The resident engineer will continue to coordinate any changes with the project team and run the weekly construction coordination meeting.
- The McMillen home office team will continue to support the resident engineer. Changes to contract drawings, if needed, will be performed by the McMillen discipline engineers in consultation with PMP&L. The McMillen home office will continue to review submittals.
- McMillen home office coordination is anticipated in assisting PMP&L with coordinating with the hatchery to assure required flows are maintained, respond to contractor RFIs, submittals as required by the specifications, contractor requests for information, Change orders, payment request applications and construction coordination meetings.

ASSUMPTIONS

The main assumption during construction management is that the current construction schedule will continue to be maintained. Presently it is assumed that the resident engineer will need to be on site through late October and early November 2023; note that our original estimate was to have the resident engineer on site for 3 months and leaving site at the end of August. This will mean that McMillen home office support will continue at current levels through October and possibly longer. Based on recent home office support (which has significantly exceeded our expectations) we are anticipating a level of support (hours expended) similar to recent months. Our labor costs have increased in the last few years and our budget will reflect our new rate structure.

TASK 3: STARTUP AND COMMISSIONING

Based on the new construction schedule, startup and commissioning will commence in early November 2023. Recently, the general contractor has committed to being ready for startup November 9th. The final testing (10-day run) will begin in December with substantial completion expected December 12. We anticipate that Matt Lawson and Don Jarrett will be present during key phases of commissioning and startup. Their presence will support the turbine-generator equipment contractor (Gilkes and subcontractor OS Engineering) and PMP&L.

DELIVERABLES

McMillen Startup & Commissioning crew will produce a report documenting the work performed during this phase of the work. Prior to starting startup and commissioning McMillen will review submittals from the general contractor and Gilkes and provide comments for the procedures and forms to be used. While on site McMillen crew will verify that all work is completed and documented for the startup and commissioning.

ASSUMPTIONS

The main assumption for startup & commissioning assistance is that the current construction schedule will continue to be maintained. This means that pre-commissioning (testing all instrumentation before unit operation) and commissioning (check of all equipment and protective relays during initial operations) will be performed before there is no-load testing (mechanical checkouts), synchronization and online operational testing (startup). Testing will include manual mode testing, local automatic and remote automatic checkout/operations. Presently it is assumed that Matt Lawson will spend two weeks on site during commissioning and Don Jarrett will spend one week on site during startup (with some overlap).

TASK 4: CONTRACT CLOSE OUTS, AS-BUILTS, DDR AND O&M MANUALS

Following the Startup and Commissioning it is expected that PMP&L will need assistance with the following:

- Equipment Procurement Contract and General Construction Contract close out. It is expected that that the general construction contract will have a significant “punch list” of work required to allow final contract close out. McMillen will make recommendations for contract close outs for both contractors. Don Jarrett will spend a week on-site following start-up to perform testing to confirm that the Gilkes equipment has satisfied its guarantees.
- As-built drawings. The resident engineer is working with the general contractor to redline construction contract drawings such that as-built drawings (technically called “record” drawings) can be produced and turned over to PMP&L. Additionally, FERC as-built exhibits will be developed for filing with the FERC.
- Design Documentation Report (DDR). McMillen will produce the final DDR which will document the design as constructed.
- Operation and Maintenance (O&M) Manuals. McMillen will assemble a complete set of O&M manuals based on the submittals from the equipment supplier (Gilkes), the Owner furnished equipment (Bailey Poly-jet pressure reducing inserts, the penstock flow meter, and the Orton butterfly valves) and the submittals from the general contractor.

DELIVERABLES

- Contract close out assistance and recommendations. Don Jarrett will review Gilkes turbine-generator performance and submit a report on his findings. During that trip Don will review punch list items have been completed for both contracts.
- As-built drawings and FERC Exhibit as-builts. McMillen will update the general construction contract drawings to reflect the “as-built” Project and revise FERC exhibits to reflect the as-built Project.
- Final Design Documentation Report (DDR). McMillen design team will update the DDR to reflect the as-built Project.
- O&M manuals will be assembled from both the equipment supplier (Gilkes) and the general contractor into a single document.

ASSUMPTIONS

It has been assumed that Don Jarrett Petersburg will travel to Petersburg to perform turbine-generator testing to confirm Gilkes guarantees have been satisfied.

SCHEDULE

Table 1 presents the proposed schedule for this SOW. The schedule is dependent on the general contractor's schedule.

Table 1. Project Schedule: Milestone Timeframe

Milestone	Timeframe
Project Management	October 2023 thru January 2024
Construction Management	October 2023 thru early November 2023
Startup and Commissioning	November 2023 through December 2023
Contract Closeout	January 2024

BUDGET

Table 2 presents the proposed budget for the completion of the Blid Slough Hydro Project.

Table 2. Proposed Project Budget

Task	Description	Budget
1	Project Management	\$10,000
2	Construction Management	\$58,000
3	Startup & Commissioning	\$83,000
4	Contract Close out, as-builts, DDR and O&M manuals	\$54,000
	Project Total	\$205,000

CONCLUSION

We appreciate the opportunity to provide you with a detailed SOW, lump sum cost breakdown and schedule for completion of the Blind Slough Hydro Project. If you have any questions or need additional information, please contact Don Jarrett, P.E. We look forward to serving PMP&L on this Project.

Sincerely,



Marcus Emmons
Director of Operations

Cc: Don Jarrett, P.E.