



## INCORPORATED COUNTY OF LOS ALAMOS SERVICES AGREEMENT

This **SERVICES AGREEMENT** ("Agreement") is entered into by and between the **Incorporated County of Los Alamos**, an incorporated county of the State of New Mexico ("County"), and **HPI, LLC**, a Texas limited liability corporation ("Contractor" or "HPI"), to be effective for all purposes December 20, 2017.

**WHEREAS**, the County Purchasing Agent determined in writing that the use of competitive sealed bidding was either not practical or not advantageous to County for procurement of the Services and County issued Request for Proposals No. 18-17 ("RFP") on October 8, 2017, requesting proposals for the Abiquiu Hydroelectric Plant Controls Upgrade, as described in the RFP; and

**WHEREAS**, Contractor timely responded to the RFP by submitting a response and Proposal dated November 14, 2017 ("Contractor's Response"); and

**WHEREAS**, based on the evaluation factors set out in the RFP, Contractor was the successful Offeror for the services listed in the RFP; and

**WHEREAS**, the Department of Public Utilities approved this Agreement at a public meeting held on January 17, 2018, and County Council approved this Agreement at a public meeting held on January 30, 2018; and

**WHEREAS**, Contractor will provide the Services, as described below, to County.

**NOW, THEREFORE**, for and in consideration of the premises and the covenants contained herein, County and Contractor hereby agree as follows:

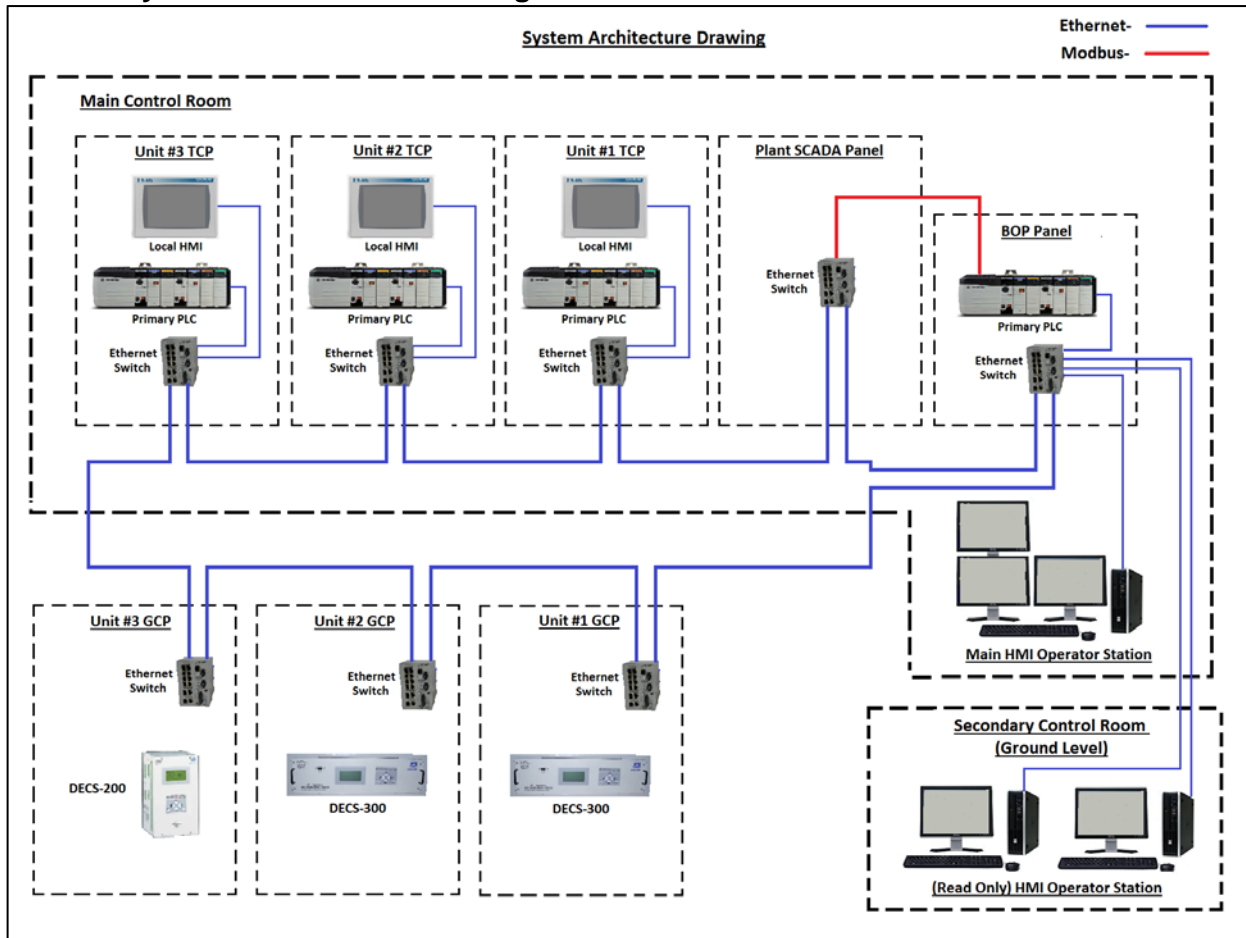
### **SECTION A. SERVICES:**

1. Turnkey Project and Project General Scope. Contractor agrees and understands that the work to be performed is a turnkey project. The work to be performed by Contractor shall be completed in accordance with the RFP (adopted by reference hereto) and proposal to RFP 18-17, HPI Proposal No. 17-4934 adopted and included by reference herein, and Addendum to HPI proposal dated December 2017 adopted and included by reference herein, is based on performing control system upgrades on the two (2) identical 400RPM, 6.9MW, 4.16kV vertical Francis Hydro-Turbines generator units (Units #1 and Unit #2) and the one (1) INDAR 514RPM, 3.1MW, 4.16kV generator driven by an Andritz horizontal Francis turbine (Unit #3) (hereafter "Project" or "Work"). All three (3) units are located at the Abiquiu Hydroelectric Power Plant in Abiquiu, New Mexico ("facility" or "Project Site").
2. Site Visit. Prior to project commencement, Contractor will conduct one (1) to two (2) day detailed site survey to determine what specific work will be performed and to verify and accumulate all necessary site and facility information. At this time, the Contractor will introduce to County the HPI engineering team assigned to the Project. This visit is estimated to last 1-2 days.

### 3. System Architecture.

- a. HPI will implement a ring topology Ethernet communication network between all systems as seen in the Table 1. The ring topology shall allow for the system to function correctly with the failure of one node or a lost connection between two nodes giving the system a redundant communication feature. Table 1 below shows the HPI system architecture for the complete turnkey system network design of the existing layout with the new AB PLC system incorporated.
- b. HPI will use a separate unit dedicated PLC for each Hydro system that all communicate to each other on the same network. If there is a PLC failure in one unit the system(s) will allow the other units will still be able to be started and run.
- c. There will be a total of seven (7) separate work stations for this Project:
  - 1) Unit #1 Panel Mounted HMI will operate all three units
  - 2) Unit #2 Panel Mounted HMI will operate all three units
  - 3) Unit #3 Panel Mounted HMI will operate all three units
  - 4) The Main Operator station will have three monitors to allow the operator to view and have full functionality on all three (3) units HMI operator stations simultaneously. The PLC programming development software will also be accessible on this PC. The HMI development software will also reside on this PC. This computer will also house the data collection and archiving software (Historian) and back that data up to an external harddrive.
  - 5) Read-Only Operator Station #1. This computer will have read-only HMI's for all three (3) units available. The Operator will not have any access to control the systems
  - 6) Read-Only Operator Station #2. This computer will have read-only HMI's for all three (3) units available. The Operator will not have any access to control the systems
  - 7) Remote Laptop computer. This PC will have the PLC programming development software installed to allow the operator to access the PLC Logic locally at any of the units.

**Table 1. System Architecture Drawing.**



4. Manufacture and Design. All design and manufacturing for the new control systems will be done at HPI facilities and will be built and tested by HPI to perform pursuant to this Agreement and in accordance with the RFP. Throughout the design and engineering stages of the Project, the HPI control panel drawings will be delivered to the County's Project Manager for verification and approval. The initial design will be agreed upon before starting the panel manufacturing. All panel drawings will be completed at the HPI Houston facility by the HPI design department using AutoCAD design software. HPI design, fabrication, testing and performance of the system shall be in accordance with all necessary industry standards and codes where applicable, such as IEEE, ANSI, NFPA, IEC, UL, NEMA and NEC.

5. PLC.

- a. HPI will use and install an AB 1756 ControlLogix PLC's for the primary system control on all units and the BOP controls. All field I/O will be brought into the I/O PLC cards through disconnect terminal blocks from the existing field cabling, this allows individual isolation to field instrumentation. All PLC cards will be rack mountable in the AB control chassis. Contractor will reuse, where possible, the existing PLC cards and chassis in the new system. To modernize the control systems HPI will replace all ControlNet communications and replace the system with Ethernet communications modules. Each PLC control system will be unit specific, but it is understood Unit 1 & 2 are identical systems.

- b. HPI will reuse the following items in the system upgrade as they will be supported for a minimum of 10 years from the date of the Project: AB PLC Chassis'; AB 24VDC Redundant Power Supplies; 1756-OB16E Digital Output Modules; 1756-IB16 Digital Input Modules; and 1756-OF4 Analog Output Modules.
- c. The new PLC system will incorporate a minimum of 10% spare channels per I/O type and the PLC racks will incorporate a minimum three (3) spare slot capacity. This will allow for any future growth or development the system.
- d. The replacement PLC will be compatible to communicate with the existing Plant SCADA system. The BOP PLC unit will include a Prosoft Modbus communication module that will be mounted inside the chassis. As provided in the RFP and the Proposal, and herein, updating the existing facility SCADA system and equipment is not part of the scope of work for this Project.
- e. HPI will incorporate an AB 1756HP-TIME module into the new system and will provide and connect a GPS antenna to this module. This will allow for time synchronization across all hardware onsite as requested in the RFP. The 1756HP-TIME module will be the master time of all times throughout the balance of plant.

6. Human Machine Interface (HMI).

- a. HPI will create human machine interfaces ("HMI") for the AB PanelView Plus 7 screens for each unit using FactoryTalk View Machine Edition. HPI will also create identical HMI's in FactoryTalk View Site Edition for the main operator station PC and for the read-only operator PC's. Using Site Edition for the main HMI will give the facility operator the functionality for storing data and First-In-First-Out capabilities as requested in the RFP without having to purchase an Historian Server which will greatly reduce the cost of the system upgrade.
- b. HPI has designed, developed, and will use a high-performance HMI to greatly improve facility HMI functionality, operations, alarm identification, navigation, and operator focus. The high-performance HMI will primarily use grey-scale across its all its screen and only uses colors on alarms/shutdowns and highly important information or if otherwise specified by a customer. The layout of each screen will be also arranged with the most information displayed on the primary screen and less crucial information available in a pop-up like function. See Proposal Section 5.4 for examples of the Contractor's HMI examples.
- c. All HMI screen layout and functionality will be approved by the County during the engineering design phase of the project and will be fully tested during the Functional Acceptance Test ("FAT").

7. Software.

- a. All existing tag names will be reused by Contractor in the new HMI and PLC code. Any new device tags that will need to be added will coincide with the existing format and will be confirmed by County. During the programming stage of the Project, Contractor will work closely with the County project team to ensure the transition from the existing logic to the new logic meets the County's expectations and programming standards.
- b. The new control system to be provided by Contractor will have the most recent versions of the following software licenses:
  - 1) RSLogix 5000 Development License for the remote laptop
  - 2) Rockwell FactoryTalk View Site Edition Display License (QTY-3)
  - 3) Rockwell FactoryTalk HMI Development Software (QTY-3)
  - 4) Historian??
    - a) Main Operator Station

- b) Read-Only Operator Station #1
  - c) Read-Only Operator Station #2
- 5) Rockwell FactoryTalk View Machine Edition Display License (QTY 3)
  - a) Included with the AB PanelView Plus 7 HMI's
- 6) Microsoft Office™ for all new HPI supplied PC's and Laptop
- c. Contractor shall purchase all software and obtain all licenses necessary for use for software. Prior to accepting any software license or terms on behalf of the County, Contractor must receive written authorization to accept the license in the name of the County.
- d. All PLC programming will be ladder logic, tag-based control logic and will be developed and submitted to County for review and approval during the engineering and design phase of the project. Upon completion of each unit, the PLC and HMI programs will be provided to County.

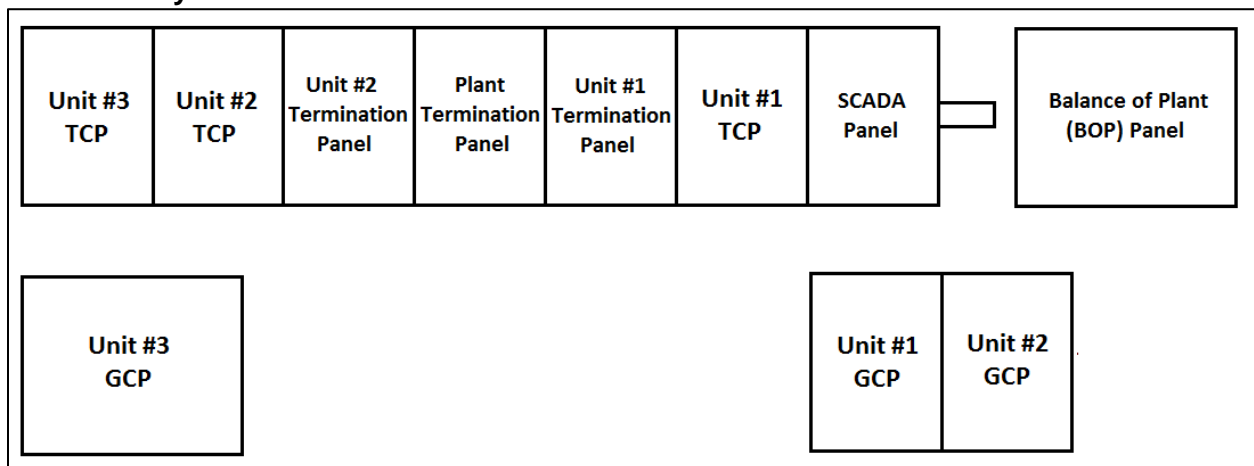
8. Functionality.

- a. The overall process functionality of the new controls system will remain mostly unchanged except for additional features added by the introduction of modern field devices, PLC equipment, and HMI functionality. HPI will also incorporate all the additional following features below and as were outlined in the RFP. HPI will work closely with the County plant operators to ensure the new system meets all County specifications and operational sequence requirements and upgrades.
- b. The Contractor installed controls will be capable of controlling the turbine generator in the following governing modes:
  - 1) Speed Control
  - 2) Gate Position Control
  - 3) Flow Control
  - 4) Power Factor and VAR Control
- c. Contractor installed controls will also be capable of controlling the additional plant valves that are capable of releasing water into the river in the following operator modes:
  - 1) PRV#1 and #2
    - a) Normal Gate Control
    - b) Emergency Flow & Gate Control
  - 2) 18" Bypass Valve
    - a) Normal Gate Control
- d. HPI will also install, address, and implement the following actions as outlined in the RFP.
  - 1) HPI will also include the ability to open the field selectable PRV to required settings immediately upon a trip of Unit #3.
  - 2) HPI will look into the existing code and correct or add the programming to ensure that upon a trip of the last unit online will trip both reactors offline.
  - 3) HPI will address the issue of creating a station trip upon a Basement Flooding alarm.
  - 4) Unit #3 needs to be correctly wired to the existing 86TT bypass switch
  - 5) HPI has investigated the use of the existing Winter Kennedy method for flow calculations and whether a new method should be implemented. There is a new calibration equation for this flow system that HPI will incorporate into the PLC logic update. Upon request HPI can supply more information about the new equation that will be implemented and tested into the new system.

## 9. Control Panels.

- b. HPI will upgrade each of the below listed panels in Table 2 so there is commonality across all panels in the facility. In each panel HPI will replace the interconnections with disconnect terminal blocks, and replace the existing relays and circuit breakers with new improved models. This will allow for easier maintenance and having common spare parts to replace any future faulty components.
- b. The new back-panels will be supplied by HPI and will be fully wired and tested at HPI's Houston facilities, with the minimum number of inter-panel connections, reducing installation time and maximizing the testing carried out during the FAT. The following diagram shows how each panel will be referenced throughout this Agreement and the below will outline the proposed scope of work for each units' Turbine Control Panel ("TCP") which includes the AB PLC racks, and Generator Control Panel ("GCP") which includes the Basler DECS systems.

**Table 2. Facility Control Panels.**



### 9.1. Unit #1 and #2 TCP's.

- a. HPI will supply new HPI manufactured subpanels to replace the existing side panels within the Unit #1 and #2 TCPs. All control and monitoring equipment located on the front of the panels will be reused except the existing panel mounted HMI which will be replaced with an AB PanelView Plus 7 HMI. HPI will replace all obsolete and discontinued PLC equipment with the new AB ControlLogix direct replacement. All new PLC cards will be prewired before being shipped to the facility and will be fully tested during the FAT. HPI will reuse the following PLC equipment:
  - 1) AB Power Supplies
  - 2) AB PLC Chassis
  - 3) AB 1756-OB16E Digital Output Card
  - 4) AB 1756-IB16 Digital Input Cards
  - 5) 1756-OF4 Analog Output Modules
- b. All existing field cables will be reused so HPI will connect all existing field wiring to the new HPI terminal blocks in the same panel arrangement that currently exists. Any wire tags that are missing or difficult to read will be replaced during the installation.

- 9.2 Unit #3 TCP and GCP. The Unit #3 panels as provided in Table 2 are in newer and better condition so HPI does not foresee as much time required in tidying these panels. HPI will replace the AB Interface Modules (“IFM”) shown in the following picture with disconnect terminal blocks in both the Unit #3 panels. HPI will replace these modules for failsafe reasons. If the IFM fails then the entire I/O module will lose communications and shutdown the unit. By separating the individual I/O inputs into terminal blocks the system will have more specific troubleshooting capabilities. This will also separate the primary and secondary alarmed signals, removing the capability of a system shutdown on an IFM fault. HPI will also replace the relays, circuit breakers and existing terminal blocks with the same parts HPI will use throughout the control panel upgrades for system commonality.
- 9.3 SCADA Panel. HPI will not be replacing any equipment in the existing SCADA panel. The new systems will communicate directly with the SCADA data via Ethernet and Modbus communications.
- 9.4 BOP Panel.
- a. HPI will reuse the back subpanel and the majority of the equipment in the BOP panel. HPI will replace all obsolete and discontinued PLC equipment with the new AB ControlLogix direct replacement. All new PLC cards will be prewired before being shipped and fully tested during the FAT. HPI will reuse the following PLC equipment:
    - 1) AB Power Supplies
    - 2) AB PLC Chassis
    - 3) AB 1756-OB16E Digital Output Card
    - 4) AB 1756-IB16 Digital Input Cards
    - 5) 1756-OF4 Analog Output Modules
  - b. HPI will supply a new larger AB Stratix Ethernet switch to replace the existing N-Tron switch. HPI will also replace the terminal block and relays to give commonality on panel equipment across all systems. The HPI installation technician will also tidy all the cable and wiring within the panel to HPI’s high standard of panel manufacturing by installing Panduit where required and looming groups of wire together.
- 9.5 Termination Panels.
- a. HPI will replace the terminal block and relays to give commonality on panel equipment across all systems. The HPI installation technician will also tidy all the cable and wiring within the panels to HPI’s high standard of panel manufacturing by installing Panduit where required and looming groups of wire together.
  - b. The overall majority of equipment located on the front of these cabinets will not be replaced but will be incorporated into the new control system and functionality. The exception to this will be the analog clock which Contractor will replace with a new digital clock (supplied and installed) that will use the Global Clock that will be synchronized across all PLC systems.
- 9.6 Unit #1 and #2 GCP’s. HPI will not make any changes to the Unit #1 and Unit #2 GCP’s. As HPI identified and per the Addendum, the Basler RDP-300 Remote Display Panel RDP-300 is now obsolete and discontinued. HPI will create a screen on the new HMI applications to display the DECS-300 data for each unit. HPI will tidy any cable bundles in these panels if required.
- 9.7. Panel Standards. HPI will pre-assemble the panels at the HPI Houston office facility. All control panel fabrications will be built in accordance to UL508 and UL689 quality programs. HPI will ship the new sub-panels built to HPI’s standards to the Facility. While onsite Contractor will also tidy and improve the overall condition of the existing cabinets and on-site panels.

- a. Wiring, Terminations and Tags. The new HPI control system design will reuse all the field device tag numbers that are in the existing units. HPI will replace any missing or unreadable wire tags with new ones. No more than two 14 AWG wires shall be terminated per side of a terminal block. All terminal blocks will be clearly numbered matching the HPI Panel Layout Drawings.
  - b. Interposing Relays. Due to the inductive nature and current requirements of some field devices, interposing relays will be provided as final drivers. The relays include LED indication and are capable of switching to a maximum of 16A @ 250VAC. These relays will replace the current ones existing on site.
  - c. Overspeed Detection System. To monitor the turbine overspeed protection HPI will use the Dynalco SST-7400D-I Digital Speed Switch. The Speed Probes will wire directly to this new module. The SST-7400D-I includes the following features:
    - 1) PC- Programmable
    - 2) Local Display Included
    - 3) Keypad Programmable
    - 4) Four (4) standard relays with Isolated RPM Input
    - 5) 50 m Sec relay response time
    - 6) 4-20mA Output (Sourced)
    - 7) Din Rail Mountable
  - d. Watchdog Timer. Contractor will ensure that the installed PLC has multiple layers of fault detection, to detect faults both externally within the instrumentation and internally either within the PLC hardware or within the software routines. Should a critical fault be detected the PLC shall generate a trip which will cause the unit to shut down and the ESD loop de-energized. As a back-up to this process, an independent watchdog timer will be mounted within the panel. The watchdog timer is periodically pulsed by the PLC. Should the PLC detect a critical fault or the PLC software should lock-up (very unlikely events) the pulsing of the timer will stop and the timer will time-out, shutting down the unit.
  - e. Field Cabling. All existing field cabling will be reused in the installation of the new system. HPI will run new Ethernet cables where required for the ring topology and new operating stations outlined in the HPI proposed architecture drawing. It is assumed HPI will use existing cable tray and conduit for the new communication cables.
10. Critical Spare Parts. HPI will provide critical spare parts for the new control systems installed by Contractor for 24 months of operation. HPI will supply one (1) of each of the AB PLC cards (including the L71 controller) for immediate replacement upon an unlikely PLC failure. The price for the PLC spare parts is provided in Exhibit #.
11. PID Loop Control. HPI will re-program and tune all PID Loops throughout the entire system for all three (3) Units. HPI will implement the PID functional block provided by AB into our ladder logic programming. This block is widely used and tested control function and allows for simple implementation and smoother tuning on the control loop. It also uses a common block across all systems for simpler commissioning and maintenance. All PID loops will be able to be calibrated and tuned through the new HMI applications if the operator has signed at the correct security level.
12. Obsolete RTD's.
- a. Pursuant to the pre-bid meeting, site walk, and the released RFP Addendums there are only two (2) existing RTD's that have failed and which will be replaced by Contractor. These are:



- 1) Unit 1 Turbine Guide Bearing Temperature
  - 2) Unit 3 Drive End Bearing #2
- b. HPI will supply the new RTD's and install them at the same location. The RTD's will then be brought directly into the new PLC RTD cards. During the testing and commissioning of the systems, the RTD's on all units will be tested for correct performance and scaling.
13. Omega Pressure Transducers. HPI will replace the existing Unit #1 and Unit #2 Omega Pressure Transducers located on the spiral case and draft tubes. After consulting with the supplier HPI have selected the Endress + Hauser PMP21 absolute and gauge pressure transmitter as the replacement part. HPI will install these four (4) new transmitters and use the current field cable to bring the 4-20mA control signal back to PLC's.
  14. Tempsonics Position Feedback Transducer. HPI will replace the existing PRV#1 position feedback transducer with the customer supplied Tempsonics transducer. HPI will install, test and calibrate the new transducer using the existing field cable to bring the signal back into the control system PLC.
  15. Replacement Field Devices. HPI will calibrate all field devices and electrical-based transducers on all units during the testing and commissioning phase of the project. HPI has designed the new control system so all current field devices will continue to work and communicate to the new PLC's. HPI will identify and report that all devices will achieve reliable and industry accepted standards. Any devices that need replacing will be reported to County to discuss further action.
  16. Documentation.
    - a. Within thirty (30) days or earlier, County will submit to Contractor all available plant and facility diagrams, specifications, drawings, etc. Documents will be provided by County to Contractor in AutoCAD format where available.
    - b. As per the Project, HPI will submit four (4) original copies and electronic PDF of the following documentation within sixty (60) days of contract award. Contractor will then supply final versions of this documentation fifteen (15) days prior to the start of the construction phase of the Project including, but not limited to:
      - 1) Logic Drawings
      - 2) FAT Procedure(s)
      - 3) Bill of Material (BOM)
      - 4) Panel Arrangement Drawings; and
      - 5) Preliminary Project Schedule
    - c. Contractor will also provide the following documentation in hard copy and .PDF: 1) Functional Design Specification (FDS); 2) FAT Procedure(s); 3) Commissioning & Installation Procedure; 4) Operations & Maintenance Manuals (Four (4) copies); 5) As Built Panel Drawings; and 6) Spare Parts List.
  17. Factory Acceptance Test (FAT).
    - a. The control systems will be hardware tested by HPI at its Houston facility following completion of the panel and system build. The new control system will be connected to a HPI testing simulator and Factory Acceptance Testing will be carried out to prove the correct operation of the system and software. Following the successful completion of this testing, the County Project Manager or designated representative will be invited to attend a maximum five (5) day witness test of the operation of the system. The County Project Manager will be given two weeks written notice of the date and location the FAT.

- b. The FAT will be carried out by Contractor pursuant to an approved test procedure and will use HPI's state of the art custom made simulator testing equipment. Such testing shall allow HPI to simulate all field devices to a full test of the panels, HMI, and PLC sequencing. At a minimum, the following, at a minimum, shall be performed during the FAT by Contractor and will be outlined in more detail in the HPI FAT Procedure document:
    - 1) Check all hardware to verify that all materials have been supplied and configured per project requirements
    - 2) Point-to-point wire testing
    - 3) Full power test
    - 4) Full I/O simulation test of all analog and digital signals, confirming PLC addresses
    - 5) Simulation of all sequencing
    - 6) Simulation of protection
    - 7) Full HMI test checking graphic displays and functionality. All HMI designs will be preapproved by County during the engineering and design stage of the project.
    - 8) Verify alarms and shutdowns
    - 9) Verify communication network and addressing
    - 10) Simulation of Modbus (SCADA) communications if possible.
  - d. Following completion of the test the equipment will be delivered to site in preparation for installation.
18. Installation and Commissioning. HPI will provide an experienced Installation Engineering Team to perform the installation of the control system at the Project Site. Once installed, the HPI Installation Engineering Team will perform all necessary tests to ensure that the system has been installed correctly. HPI will then provide an experienced Commissioning Engineer to perform the re-commissioning of the system. All installation and commissioning activities will be carried out against an approved procedure as to be agreed upon by Contractor and County prior to final installation. The *Installation and Commissioning Manual* to be supplied by HPI to County will detail the procedures involved.
19. HPI Standard Working Hours. The standard working day for the HPI Personnel will be seven (7) days a week, typically not exceeding eleven (12) hours including one (1) hour for lunch. Public Holidays will NOT be observed by the HPI Personnel. The HPI Engineer will be expecting to work on any statutory holidays and it will be necessary for the customer to: 1) Make arrangements for access to site, and that the necessary personnel are available for work on that day; and 2) Inform the HPI Project Manager if the unit is unavailable, and make arrangements for standby time charges (if necessary).
20. Safety Orientation. All parties involved must be aware of general "industry-standard" safety procedures and any customer specific safety procedures. Prior to starting any work, all parties involved will discuss and decide on all safety responsibilities for site work. HPI personnel performing the site work shall be qualified and capable of conducting the work in a safe manner and with complete knowledge of the hazards involved. If more specific safety training is required then County will be responsible for providing a safety orientation for all HPI employees working on site.
21. County Responsibilities.
- a. The County will be responsible for the following tasks:
    - 1) Preparation of any necessary site work permits.
    - 2) Briefing the HPI personnel on site specific safety regulations to ensure a safe working environment at all times.
    - 3) The work area is unobstructed and access to the control panel will not be impeded by other activities or by other craftsman on site.

- 4) Allocation of a site supervisor to provide liaison between CLA and HPI.
- b. The HPI Installation Engineer will brief the County site supervisor at the end of each day on the intended tasks and permit requirements for the following day and any possible customer manpower requirements. Installation Engineer will also submit a Service Report sheet on a weekly basis for approval signature by the onsite Supervisor. Any additional manpower required for specific tasks, such as disposal of redundant equipment, will be made known on an as required basis at the end of work briefing with the supplied supervisor.
- c. Installation Equipment Required. HPI will supply all necessary installation tooling and materials for running cables, installing instrumentation, tubing and termination of signals to the panels and junction boxes. The installation equipment required as a minimum, shall be as follows:
  - 1) All OSHA mandated safety equipment as outlined in the technical specifications
  - 2) OSHA approved devices for site Lock-Out Tag-Out (LOTO)
  - 3) All necessary hand tools, cutters, cable cutters, power tools, and measurement instruments etc., which will be required to complete the installation
  - 4) Facilities and equipment for the uncrating and transportation within the plant site of the HPI supplied equipment.

Demolition and Installation Procedures. HPI will follow, at minimum, the general listing and demolition and installation steps as provided in its Proposal, Section 11.5.

## 22. Project Schedule.

- a. Following the effective date of the Agreement, defined as the date of the last signature to the Agreement, Contractor shall begin all work and effort to ensure that the Project will be **completed and tested by May 11, 2018**. HPI has evaluated all contingency and related concerns and agrees that it will have no issues meeting this deadline.
- b. Following the Effective Date of the Agreement, Contractor will put together a detailed project schedule to send to the County's Project Manager for approval. HPI will then send the selected installation and engineering team to perform the site survey of the existing systems and have a kick-off meeting with the County as provided above.
- c. HPI estimates that it will send three (3) installation technicians and one (1) installation supervisor to perform the demolition, installation and cold-loop testing of the system following the FAT. HPI may also assign one (1) installation technician and (1) senior control system engineer to perform the hot-loop testing and the commissioning of the systems.

## 23. Training.

- a. HPI will provide a minimum of four (4) days on-site operations and maintenance training course for up to six (6) County employees or representatives. The content of the course will be agreed upon with the County in advance and will be tailored to meet the County's specific requirements.
- b. A course will be held during the commissioning and testing phase and will cover, but not be limited to, the following:

Overview of retrofitted control system

  - 1) Detailed review of all functional differences to the old system
  - 2) Examine the program logic and sequences for new automation.
  - 3) Review of the new HMI screens and functionality
  - 4) Overview of calibration of new equipment, processor, field devices and transmitters
  - 5) Maintenance practices
  - 6) System troubleshooting

- c. As part of the training, HPI will review with County staff all alarms and trips including required actions and reset procedures. The training will also include hands-on training at the facilities control panel(s). Training manuals for all course participants will be provided and will detail all course material and references.
24. Warranty. HPI will provide a one (1) year warranty on all parts, labor, equipment, and systems furnished from the date of acceptance of the work by the County Project Manager. HPI will offer both onsite and telephone assistance to County during the term of the Warranty. The County may, through separate purchase orders or agreements, request additional onsite services and maintenance after the Warranty period.
25. Shipping and Handling. As the products and services to be provided by HPI are unique and specialized, HPI is and will be responsible for the shipping, packing, and handling. If authorized by HPI, the County will sign for receipt of any items at its facility and will store the item or product until installation, however County accepts no responsibility for damages caused during shipping or while stored on County property, except for willful or negligent actions thereof.
26. Deliverables.
- a. Contractor will submit four original copies of the following documentation within 60 days of contract award. Contractor will then supply final versions of this documentation 15 days prior to the start of the construction phase of the project (four (4) hardcopy and in .pdf form):
    - 1) Logic Drawings
    - 2) Schematics
    - 3) Bill of Material
    - 4) Panel Arrangement Drawings
    - 5) Preliminary Project Schedule
  - b. Contractor will also provide the following documentation (four (4) copies and in .pdf form):
    - 1) Functional Design Specifications (30 day after commissioning)
    - 2) Factory Acceptance Test Procedure (14 day prior to testing)
    - 3) Commissioning and Installation Procedure (14 days prior to commissioning)
    - 4) Operations and Maintenance Manuals (30 day after commissioning)
    - 5) As-Built Panel Drawings (30 day after commissioning)
    - 6) As-Built Control Drawings (30 day after commissioning)
    - 7) Spare Parts List (30 day after commissioning)
  - c. Spare parts identified in proposal (30 day after commissioning).

**SECTION B. TERM:** The term of this Agreement shall commence January 30, 2018 and shall continue through May 11, 2018, unless sooner terminated, as provided herein. The parties may by mutual written agreement extend the Agreement for an addition four (4) one-year terms.

**SECTION C. COMPENSATION:**

- 1. **Amount of Compensation.** County shall pay compensation for performance of the Services in an amount not to exceed THREE HUNDRED TWELVE THOUSAND ONE HUNDRED NINETY-FIVE DOLLARS (\$312,195.00), which amount does not include applicable New Mexico gross receipts taxes ("NMGRT"). Compensation shall be paid in accordance with the Compensation Rate Schedule set out in **Exhibit A**, attached hereto and made a part hereof for all purposes.
- 2. **Invoices.** Contractor shall submit itemized invoices to County's Project Manager showing amount of compensation due, amount of any NMGRT, and total amount payable per the project schedule

identified below. Payment of undisputed amounts shall be due and payable thirty (30) days after County's receipt of the invoice.

**3. Payment Schedule:**

Milestone	%
Contract Award	15
Issue of Design	15
Acceptance of BOM	30
Delivery of All Equipment	30
Completion of Commissioning	10

**SECTION D. TAXES:** Contractor shall be solely responsible for timely and correctly billing, collecting and remitting to appropriate State department all NMGRS levied on the amounts payable under this Agreement.

**SECTION E. STATUS OF CONTRACTOR, STAFF, AND PERSONNEL:** This Agreement calls for the performance of services by Contractor as an independent contractor. Contractor is not an agent or employee of County and will not be considered an employee of County for any purpose. Contractor, its agents or employees shall make no representation that they are County employees, nor shall they create the appearance of being employees by using a job or position title on a name plate, business cards, or in any other manner, bearing County's name or logo. Neither Contractor nor any employee of Contractor shall be entitled to any benefits or compensation other than the compensation specified herein. Contractor shall have no authority to bind County to any agreement, contract, duty or obligation. Contractor shall make no representations that are intended to, or create the appearance of, binding County to any agreement, contract, duty, or obligation. Contractor shall have full power to continue any outside employment or business, to employ and discharge its employees or associates as it deems appropriate without interference from County; provided, however, that Contractor shall at all times during the term of this Agreement maintain the ability to perform the obligations in a professional, timely and reliable manner.

**SECTION F. STANDARD OF PERFORMANCE:** Contractor agrees and represents that it has and will maintain the personnel, experience and knowledge necessary to qualify it for the particular duties to be performed under this Agreement. Contractor shall perform the Services described herein in accordance with a standard that meets the industry standard of care for performance of the Services.

**SECTION G. DELIVERABLES AND USE OF DOCUMENTS:** All deliverables required under this Agreement, including material, products, reports, policies, procedures, software improvements, databases, and any other products and processes, whether in written or electronic form, shall remain the exclusive property of and shall inure to the benefit of County as works for hire; Contractor shall not use, sell, disclose, or obtain any other compensation for such works for hire. In addition, Contractor may not, with regard to all work, work product, deliverables or works for hire required by this Agreement, apply for, in its name or otherwise, any copyright, patent or other property right and acknowledges that any such property right created or developed remains the exclusive right of County. Contractor shall not use deliverables in any manner for any other purpose without the express written consent of County.

**SECTION H. EMPLOYEES AND SUB-CONTRACTORS:** Contractor shall be solely responsible for payment of wages, salary or benefits to any and all employees or contractors retained by Contractor in the performance of the Services. Contractor agrees to indemnify, defend and hold harmless County for any and all claims that may arise from Contractor's relationship to its employees and subcontractors.

**SECTION I. INSURANCE:** Contractor shall obtain and maintain insurance of the types and in the amounts set out below throughout the term of this Agreement with an insurer acceptable to County. Contractor shall assure that all subcontractors maintain like insurance. Compliance with the terms and conditions of this Section is a condition precedent to County's obligation to pay compensation for the Services and Contractor shall not provide any Services under this Agreement unless and until Contractor has met the requirements of this Section. County requires Certificates of Insurance or other evidence acceptable to County that Contractor has met its obligation to obtain and maintain insurance and to assure that subcontractors maintain like insurance. Should any of the policies described below be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions. General Liability Insurance and Automobile Liability Insurance shall name County as an additional insured.

1. **General Liability Insurance:** ONE MILLION DOLLARS (\$1,000,000.00) combined single limit per occurrence; TWO MILLION DOLLARS (\$2,000,000.00) aggregate.
2. **Workers' Compensation:** In an amount as may be required by law. County may immediately terminate this Agreement if Contractor fails to comply with the Worker's Compensation Act and applicable rules when required to do so.
3. **Automobile Liability Insurance for Contractor and its Employees:** ONE MILLION DOLLARS (\$1,000,000.00) combined single limit per occurrence; TWO MILLION DOLLARS (\$2,000,000.00) aggregate on any owned, and/or non-owned motor vehicles used in performing Services under this Agreement.

**SECTION J. RECORDS:** Contractor shall maintain, throughout the term of this Agreement and for a period of six (6) years thereafter, records that indicate the date, time, and nature of the services rendered. Contractor shall make available, for inspection by County, all records, books of account, memoranda, and other documents pertaining to County at any reasonable time upon request.

**SECTION K. APPLICABLE LAW:** Contractor shall abide by all applicable federal, state and local laws, regulations, and policies and shall perform the Services in accordance with all applicable laws, regulations, and policies during the term of this Agreement. In any lawsuit or legal dispute arising from the operation of this Agreement, Contractor agrees that the laws of the State of New Mexico shall govern. Venue shall be in the First Judicial District Court of New Mexico in Los Alamos County, New Mexico.

**SECTION L. NON-DISCRIMINATION:** During the term of this Agreement, Contractor shall not discriminate against any employee or applicant for an employment position to be used in the performance of the obligations of Contractor under this Agreement, with regard to race, color, religion, sex, age, ethnicity, national origin, sexual orientation or gender identity, disability or veteran status.

**SECTION M. INDEMNITY:** Contractor shall indemnify, hold harmless and defend County, its Council members, employees, agents and representatives, from and against all liabilities, damages, claims, demands, actions (legal or equitable), and costs and expenses, including without limitation attorneys' fees, of any kind or nature, arising from Contractor's performance hereunder or breach hereof and the performance of Contractor's employees, agents, representatives and subcontractors.

**SECTION N. FORCE MAJEURE:** Neither County nor Contractor shall be liable for any delay in the performance of this Agreement, nor for any other breach, nor for any loss or damage arising from uncontrollable forces such as fire, theft, storm, war, or any other force majeure that could not have been reasonably avoided by exercise of due diligence.

**SECTION O. NON-ASSIGNMENT:** Contractor may not assign this Agreement or any privileges or obligations herein without the prior written consent of County.

**SECTION P. LICENSES:** Contractor shall maintain all required licenses including, without limitation, all necessary professional and business licenses, throughout the term of this Agreement. Contractor shall require and shall assure that all of Contractor's employees and subcontractors maintain all required licenses including, without limitation, all necessary professional and business licenses.

**SECTION Q. PROHIBITED INTERESTS:** Contractor agrees that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services hereunder. Contractor further agrees that it will not employ any person having such an interest to perform services under this Agreement. No County Council member or other elected official of County, or manager or employee of County shall solicit, demand, accept or agree to accept a gratuity or offer of employment contrary to Section 31-282 of the Los Alamos County Code.

**SECTION R. TERMINATION:**

1. **Generally.** County may terminate this Agreement with or without cause upon ten (10) days prior written notice to Contractor. Upon such termination, Contractor shall be paid for Services actually completed to the satisfaction of County at the rate set out in Section C. Contractor shall render a final report of the Services performed to the date of termination and shall turn over to County originals of all materials prepared pursuant to this Agreement.
2. **Funding.** This Agreement shall terminate without further action by County on the first day of any County fiscal year for which funds to pay compensation hereunder are not appropriated by County Council. County shall make reasonable efforts to give Contractor at least ninety (90) days advance notice that funds have not been and are not expected to be appropriated for that purpose.

**SECTION S. NOTICE:** Any notices required under this Agreement shall be made in writing, postage prepaid to the following addresses, and shall be deemed given upon hand delivery, verified delivery by telecopy (followed by copy sent by United States Mail), or three (3) days after deposit in the United States Mail:

County:	Contractor:
Deputy Utility Manager for Engineering	Thomas A. Levitz Executive Vice President
Incorporated County of Los Alamos	HPI, LL
1000 Central Avenue, Suite 130	15503 West Hardy Road
Los Alamos, New Mexico 87544	Houston, Texas 77060

**SECTION T. INVALIDITY OF PRIOR AGREEMENTS:** This Agreement supersedes all prior contracts or agreements, either oral or written, that may exist between the parties with reference to the services described herein and expresses the entire agreement and understanding between the parties with reference to said services. It cannot be modified or changed by any oral promise made by any person, officer, or employee, nor shall any written modification of it be binding on County until approved in writing by both County and Contractor.

**SECTION U. CAMPAIGN CONTRIBUTION DISCLOSURE FORM:** A Campaign Contribution Disclosure Form was submitted as part of the Contractor's Response and is incorporated herein by reference for all purposes. This Section acknowledges compliance with Chapter 81 of the Laws of 2006 of the State of New Mexico.

**IN WITNESS WHEREOF**, the parties have executed this Agreement on the date(s) set forth opposite the signatures of their authorized representatives to be effective for all purposes on the date first written above.

**ATTEST**

**INCORPORATED COUNTY OF LOS ALAMOS**

\_\_\_\_\_  
**NAOMI D. MAESTAS**  
**COUNTY CLERK**

**BY:**\_\_\_\_\_  
**TIMOTHY GLASCO, PE**  
**UTILITIES MANAGER** **DATE**

**Approved as to form:**

\_\_\_\_\_  
**J. ALVIN LEAPHART**  
**COUNTY ATTORNEY**

**HPI, LLC, A TEXAS LIMITED LIABILITY CORPORATION**

**BY:**\_\_\_\_\_  
**THOMAS A. LEVITZ**  
**EXECUTIVE VICE PRESIDENT** **DATE**



**Exhibit A**  
**Compensation Rate Schedule**  
AGR18-17

No.	DESCRIPTION	PRICE USD
1	Control System Upgrades and Improvements for the Hydro-Turbine Units #1, #2, and #3	\$291,600.00
2	Critical Spare Parts	\$12,485.00
3	HMI application to run any of the three units	\$3,510.00
4	Supply and Install Rockwell FactoryTalk View Studio development software for HMIs	\$4,600.00
	<b>TOTAL</b>	<b>\$312,195.00</b>

