

Exhibit J - RAS Commissioning Scope of Work

PURPOSE

- a. Full commissioning of all equipment that comprises or is interfaced for the new RAS operation, Including:
 - i. Existing RAS in the HVDC control system
 - ii. GE N60s and GPG controllers
 - iii. network switches, PTs and CTs, analog and digital inputs and outputs
 - iv. RAS interfaces with new Hitachi CSI inputs and outputs
 - v. also includes but is not limited to all items in the AC Relay House and in Generator 3 and 4 Relay Rooms, alarms, and HMI interfaces
 - vi. Most importantly, the trip circuits, trip relays, test and blocking switches for NGCC generators and renewable generation, including Milford Wind and future renewables
- b. Validate and test the entire RAS system end to end.
- c. Provide data and test reports to IPA and LADWP teams so that a declaration that the system is in-service can be made by LADWP personnel.
- d. Document the process such that it meets compliance requirements.

DESIGN REVIEW

- a. Understand what needs to be accomplished. Make sure the design will work properly with the existing station and power system.
- b. Review the new wiring prints produced by the Design group. Utilize the relay schematic (UREL) diagram and the Point List (Points Assignment chart). Trace the circuitry and verify the wiring design matches the UREL.
- c. Refer to the design standards for control schematics and sync check schematics.
- d. Make corrections as necessary on the wiring prints, cable schedules, etc.
- e. For all design changes, submit changes to design engineer(s) for review and approval.
- f. Submit corrected prints, cable schedules, etc., to the Substation Electrical Construction Foreman. Cable schedule includes fiber optics cable, copper cable, and communication cables from each GE N-60 to and GPS clock and managed switch and RAS controller.

PLANNING THE JOB

- a. Meet with IPSC and IPA designed to discuss the scope of the work and plan out the project from start to finish.
- b. IPSC will be responsible for submitting the bids. Work with IPSC to develop the language of the bid(s).
- c. If the job involves outages on the bulk system, discuss the plans with IPSC and the ECC bulk bid representative. The language and purpose of the outage must be made clear so that the ECC understands the work's scope.
- d. Develop a submit to owner a commissioning plan
- e. Develop and submit to owner a commissioning schedule.
- f. Coordinate with IPSC, TIC, Hitachi for IPP Renewed Remedial Action (RAS) scheme including the possible related Contingency.

CREATING DEMOLITION PRINTS

- a. Identify and cross off equipment and relays that are going to be removed with GREEN highlighter- with IPSC consultation.
- b. Identify and bubble in equipment and relays that are going to be relocated with RED pencil or pen. Clearly indicate and/or write the new location on the print(s).
- c. Station Test and Construction have agreed to use the following highlighter color codes to identify wires and cables that are going to be removed, re-used or remain untouched.
- d. Use GREEN to identify wires and cables that are going to be removed.
- e. Use ORANGE to identify wires and cables that are going to be re-used or relocated. These circuits shall only be handled under the direct supervision of Station Test (for example, circuits that cannot be de-energized or Relay DC).
- f. Use RED/PINK to identify wires and cables that are going to stay, un-disturbed.

ISOLATION AND REMOVAL OF EXISTING EQUIPMENT

- a. Must maintain a set of working drawings indicating the status of the wiring verified as the job progresses.
- b. All corrected drawings utilized by Construction and Station Test shall be reviewed and agreed to prior to the start of the job. Any correction(s) to the drawings shall be clearly marked and drawn with a red pencil or pen. Corrections shall be clouded and dated with detailed notes, as needed. Station Test shall be responsible for maintaining and updating the master set of As-Built prints and with providing Construction with copies of the changes.

- c. Construction, Station Test and Operations shall discuss and agree upon the scope of the work. Construction shall conduct the tailgate meeting and maintain the tailgate document(s). Construction shall also request and obtain the proper work authority.
- d. Construction, Station Test and Operations personnel shall walk the work authority (clearance, OK TO, etc.) together and verify the boundary limits of the work authority and confirm the equipment is isolated.
- e. The field equipment, control board or relay panel that is going to be worked on shall be clearly identified.
- f. Construction and/or Station Test shall define the work area by applying the proper barriers, covers or markings to the surrounding area or adjacent equipment.
- g. The demolition prints shall be used as reference to physically identify wires, cables and equipment that are going to be worked on, relocated or removed. Station Test and Construction have agreed to use the following color codes for identification of wiring and equipment:
- h. Use RED electrical tape to tape off links and/or identify wires and cables that are energized and are not going to be worked on (undisturbed).
- i. Use ORANGE electrical tape to tape off links and/or identify wires and cables that are not to be handled unless Station Test is present. Inform Construction personnel of energized circuits such as Relay DC bus, etc., that cannot be isolated easily and handled with proper procedure. Plan an appropriate time with Construction to execute the final move with these circuits.
- j. Use YELLOW electrical tape to identify wires and cables that will have temporary use (i.e. temporary jumpers, etc.).
- k. Use GREEN electrical tape to identify equipment, wires and cables that are to be permanently removed by Construction. Station Test shall confirm the equipment, wires and cables are disconnected and de-energized.
- l. Use WHITE electrical tape for information purpose only.

In addition, Commissioning Contractor and IPSC shall work together to:

- i. Agree upon what equipment and wiring will be removed, relocated, or stay as is.
- ii. Open all links and identify each wire at both local and remote ends of the circuits prior to disturbing the wires.
- iii. Add marker clips prior to opening any link(s). Remove the marker clips after the link(s) have been closed. Any link(s) that have to be left open overnight shall be recorded in the Link Log. Follow the Link Log Procedures when filling in the Link Log Form.

- iv. Measure potential on all wires, verifying all wires to be removed or relocated as de-energized.
- v. Work closely when relocating or moving critical circuits. Station Test shall provide a detailed step by step procedure in performing the critical work.
- vi. Ensure any wiring that has been lifted off the link be taped with the appropriate color as noted above.

EQUIPMENT TESTING

- a. Ring-out and verify the correctness of the internal wiring of the manufacturer's equipment or panel boards for the Relay and Control House(s). Check for proper insulation (Megger – in the case of field equipment). Mark the prints confirming each wire was checked.
- b. Ring-out and verify the correctness of the station's electrical wiring as installed by Construction personnel. Mark the prints confirming each wire was checked.
- c. Note: If any discrepancies are found, notify Construction personnel to correct.
- d. Power-up the new equipment or relays with the proper voltage (AC or DC).
- e. Verify protection schemes based on the UREL within relay panel (testing and blocking switches, etc.).
- f. Verify equipment (transformer, CB, etc.) controls, protections, instrumentation (temperature gauges, gas gauges and limit switches, etc.).
- g. Complete field interface circuits by closing all appropriate links. Communication link between N-60, GPS and managed switch, and RAS Controller.
- h. Perform system testing – remotely – for all field equipment. Test from the local control board, annunciator, and from the SCADA system, with the ECC verifying control, analog, and alarm signals. Please consult with IPSC if the contingency arming might be considered part of RAS testing.
- i. Perform relay protective function testing:
 - i. Push current to relay from upstream links.
 - ii. Trip test circuit breakers.
 - iii. Verify relay targets, alarms, analog values, and controls to Human Machine Interface (HMI) and to Energy Control Center (ECC) when SCADA system is ready.
 - iv. Perform load check on new relays.
 - v. Support LADWP team on declaring relay (protective functions) “OK for Service”.
- j. Verify Relay panels from point to point.
- k. Testing the software Programming.
- l. Verify Gen 3 &4 Signal Exchange.

- i. Generator 3 Analog Input-System A & System B
- ii. Generator 3 Digital Inputs -System A & System B
- iii. Generator 3 Digital Output-System A & System B
- iv. Generator 4 Analog Input-System A & System B
- v. Generator 4 Digital Inputs -System A & System B
- vi. Generator 4 Digital Output-System A & System B

DECLARING EQUIPMENT AND SYSTEM “OK FOR SERVICE”

- a. Upon satisfactory performance testing and Site Acceptance Testing (SAT), OK equipment or relays (IED function) for service.
- b. Declare old equipment or relays out-of-service.

AS-BUILT DRAWINGS AND RECORDING

- a. Mark-up As-Built drawings.
- b. One complete copy of the CWP with the As-Builts drawings shall be delivered to the station and properly filed.
- c. One complete copy of the CWP with the As-Built drawings shall be shared with LADWP Station Test.
- d. Complete relay records.
- e. File test report and supporting documents.

ATTACHMENTS

- 1. Relay house panels summary:
 - a. Panels 278 through 289 - main RAS relay panels
 - b. Panel 280 - GPS clock and Controller,
 - c. Panel 281 RAS Controller,
 - d. Spare panels: 272, 273, 274, and 275
 - e. Relay Panel 276 and 277 – HVDC tie
 - i. not available until HVDC contractor equip the breaker bay connected to new VG3 & VG4 in 2028
- 2. Panel in Generation Station: Gas Unit 3 & Gas Unit 4 Relay Panel
- 3. Verify GPS and RAS Controller
- 4. RAS network diagram
- 5. RAS sample panel drawing
- 6. RAS sample wiring diagram