

**Solicitation NNK10316035R, Revitalize KSC High & Medium Voltage Electrical
Distribution Systems**

A.

Question #A1 – The specifications call for us to call Progressive Growth Electrically (phone (925) 455-6227) is an available source to perform this work. for this work. The phone Number is at a residence and we find no listing for this company on the Internet. Can you provide better contact information.

Reference - Section 79K38549 section 16124, para. 3.2.8 jammed Cable Removal Procedure

Answer #A1 - Contact numbers for U.S. Superconductor, Inc. (Formerly Progressive Growth Electrically):

*James E. McKenna
3556 Edinburgh Dr.
Livermore Ca. 94551-1760
TEL: 925-784-4370 (Cell)
925-455-6221 (Alt)
925-455-6475 (FAX)
Email: ruthandjim@aol.com*

Question #A2 - Specification states we are to replace the radiators, fans & hardware on existing Transformers T-9 & T-10. This paragraph also refers us to Contract Drawing 79K38551, Sheet 37 (E35). On this drawing there are 11 notes and several items marked with an asterisk by them. Our question is, we know that we are to replace the radiators and the fans, but what do you mean by hardware? Are we suppose to replace everything in the 11 notes? Are we to replace what has an asterisk by it? Please let us know exactly what we are to replace on these two transformers. Also on the items list down between items 57 & 58 something has been stamped over the other information, which we can't

Reference – In Specification 79K38613, page 81, Section 16310, paragraph 2.9 “Power Transformer Radiator Replacements”

Answer #A2:

- a) The Kuhlman transformer shop drawing was superimposed on a NASA/KSC title block to reflect the existing transformer equipment supplied in 1994 that needs radiators replaced. The drawing is provided as a reference only. Items to be replaced on T9 & T10 are stipulated in paragraph 2.9, section 16310, 79K38613 and are clarified as follows:*

*Radiators
Fans & associated power cables
Hardware such as nuts, bolts, clamps, etc*

- b) Text between items 57 & 58 is a reference to item 59 (radiator cross-bracing)*

Question #A3 – There is suppose to be a suggested sequence of construction, which is not there. Is this information located somewhere else and if not could you provide us with that information?

Reference – Drawing 79K38551, Sheet 36 (E34)

Answer #A3

C5 SUBSTATION MODIFICATIONS SEQUENCE OF CONSTRUCTION IS AS FOLLOWS:

- a. General:
 - 1. The Contractor must submit an outage request to take any equipment at the C5 Substation out of service.
 - 2. A minimum of two transformers shall remain in service Monday-Friday and during launch or hazardous operations. Single transformer operation is limited to Saturday, Sunday and/or holidays periods when launch and hazardous operations are not scheduled.
 - 3. Work at the C5 Substation involving 115 kV circuit modifications cannot be performed until April 1, 2011. Other work at the C5 Substation can be performed on a non-interference basis upon approval of the required outage request.
- b. Transformers (T9, T10) can be de-energized individually, one at a time, to perform radiator replacements prior to ring-bus modifications.
- c. Florida Power and Light (FPL) will be performing modifications at their substation. The Contractor and FPL must coordinate all C5 Substation work with each other and with NASA.
- d. Ring Bus Modifications – North to South Work Sequence: - South to North work sequence is similar and can be used if necessary to improve Contractor/FPL coordination or work flow conditions.
 - 1. NASA to transfer all load to T10.
 - 2. NASA to de-energize T9 and T8.
 - 3. FPL to de-energize FPL North feed.
 - 4. Remove LBPT5 and 115 kV bus back to Bay H15 (TP9).
 - 5. NASA to re-energize T9 and transfer loads; T9 and T10 operating on FPL South feed. T8 de-energized.
- 6. Install:
 - a. North structure modifications, demolition and new.
 - b. T8 area work including associated protective relaying/control modifications.

- c. Install HBT2 and associated protective relaying/control modifications. NASA to implement Contractor required outages on T9 (one transformer operation on T10) as required for clearance issues and to connect HBT2 to bay H15.
 - d. FPL:
 - i.) Rework North feed including pole and line.
 - ii.) North FPL substation side modifications.
 - e. Coordinate with FPL to establish required C5 115 kV bus protection prior to energizing FPL North feed.
7. FPL to energize FPL North feed.
8. NASA to energize T8.
9. NASA to transfer load to T8 and T10; de-energize T9.
10. Install:
- a. T9 area work including associated protective relaying/control modifications.
 - b. Coordinate with FPL to establish required C5 115 kV bus protection prior to energizing T9.
11. NASA to transfer all load to T8; de-energize T9 and T10.
12. FPL to de-energize FPL South feed.
13. Remove PT6 and 115 kV bus back to Bay H15 (TP9).
14. NASA to re-energize T9 and transfer load; T8 and T9 operating on North FPL feed. T10 de-energized.
15. Install:
- a. T10 area work including associated protective relaying/control modifications.
 - b. Install HBT1 and associated protective relaying and control modifications. NASA to implement Contractor required temporary outages on T9 (one transformer operation on T8) as required for clearance issues and to connect HBT1 to bay H15.
 - c. FPL:
 - i.) Rework South feed including pole-line and metering.
 - ii.) South FPL substation side modifications
16. Joint Contractor/FPL controls and protective relaying activation/validation to final design configuration.

End of Answer #A3

B.

Question #B4 – Specs call for TR22 post insulators—these are cap & pin replacements—I believe that standard station post insulators can be used on these switches these would be TR-288

Reference – Specification 79K38613 Section 16310 Part 2—2.2

Answer #B4 - *A TR-288 post insulator is the correct equipment for installation on the disconnect switches.*

C.

Question #C5-The specifications indicate that the contractor has to perform a hazard analysis before entering manhole and take measure to mitigate Hazards. The drawings indicate that the 15KV cables in the manholes must remain energized while work is in progress in the manholes. It is not practical to attempt to pull cables and or make splices and termination in manholes wearing arc/flash suits, however, we see no way around this if we cannot get outages on manholes while work inside is in progress. Does KSC already have some procedure that you have worked out on previous projects that would allow work to progress while still meeting the requirements of the safety plan?

Reference – Specification 7KNPR 8715.7, section 3.6.3.e, Drawing 79K385550 – E1 note 9.

Answer #C5 – *KSC has a procedure that allows work to progress while still meeting the requirements of the safety plan. Where feasible and properly planned, KSC will de-energize all circuits possible prior to work. In addition KSC will set all protective devices to trip without delay (instantaneous trip) to minimize arc flash energy at locations worked on the project. An interpretation by the National Electrical Safety Code Committee has concluded that energized insulated conductors and overhead plant energized facilities fall under the phrase “on or near energized parts or equipment”; therefore, KSC requires appropriate personal protective equipment (PPE) for electrical work that could expose an employee to arc-flash or shock hazards as assessed by the Contractor. Where PPE is specifically stipulated by national recognized codes and standards such as NFPA 70E for certain work (cable inspections, voltage checks, etc.), the use of the appropriate PPE is required. All assessed hazards and PPE must be documented in the Contractor’s Site Specific Safety Plan and Job Hazard Analysis. The general process for electrical manhole work is as follows:*

A. **Generate Site Specific Safety Plan Documentation:**

1. **Government:** Request the KSC Institutional Services Contractor develop an Engineering Order required to set C5 Substation, Orsino Substation, or other downstream substation protective device instantaneous settings for medium voltage electrical system work.
2. **Contractor:** Request the Government provide available short circuit and clearing time values for relevant equipment.
3. **Government:** Tabulate short circuit values and device clearing times for manhole and equipment affected by the project, and transmit to the Contractor.
4. **Contractor:** Based on Government provided short circuit levels and clearing times, Contractor’s safety professional to calculate incident energy and arc-flash/shock

prevention boundaries in accordance with NFPA 70E or other recognized method for incorporation into electrical work JHA's, energized work permits, and site specific safety plan as appropriate.

5. **Contractor:** Complete confined space hazard assessment forms (KSC Form 28-750NS) in accordance with KNPR 1840.19 for each confined spaces to be entered. Return form(s) to the COTR.
6. **Government:** Schedule job site inspection with Contractor, KSC Environmental Health, and KSC Safety personnel after Contractor's confined space hazard assessment form(s) are received.
7. **Contractor:** Submit site specific safety plans including but not limited to the following elements:
 - a. Confined Space Entry Plan. The Entry Plan will describe the contractors approach to compliance with 29 CFR 1910.146 and or CFR 1910.268(o) as required. Where the contractor will act as a controlling employer with operational control over the permit space during multiple employer entry, the Contractors Confined Space Entry plan shall incorporate procedures to coordinate entry operations (for example, hazardous operations, required PPE, employee training, rescue, emergency services, and all other aspects of the entry) with each entrant's employer.
 - b. Electrical JHA's including but not limited to the following:
 - i.) Voltage check.
 - ii.) Manhole and cable inspections.
 - iii.) Cable cutting.
 - iv.) Cable demolition and installation.
 - v.) Cable splicing.
 - c. Calculations supporting electrical JHA issues including arc-flash and shock protection.
8. **Government:** Provide the Contractor with a confined space hazard assessments for the confined spaces to be entered. The Contractor shall not authorize entry permits for the space until the Government's confined space hazard assessment is returned to the Contractor by the COTR.
9. **Government:** Approve the Contractor's site specific safety plan.
10. **Contractor:** If required, modify JHA's and Site Specific Safety Plan based on the Government's confined space hazard assessments and comments.

B. Implement Instantaneous Protective Relay Settings:

1. **Contractor:** Request Government install instantaneous relay settings on feeders handled by the project or scheduled work. Generally this will be all feeders at the applicable supplying substation.

2. **Government:** Implement the Engineering Order for the required relay settings. Provide work permit to the Contractors.
3. **Contractor:** Sign work permit for relay settings. All medium voltage work in manholes or at energized equipment to be performed under this permit.
4. **Government:** Advise Contractor when relay settings must be restored to normal configuration due to launch operations.
5. **Contractor:** Return work permit to Government at completion of work or when requested by the Government due to launch operations. All work involving manholes or energized equipment must cease until a new permit is issued.

C. De-energizing Power Switching:

1. **Contractor:** Request the outage in writing through the applicable contract personnel.
2. **Government:** Submit the outage for approval. Write and execute switching order. Insure Contractor is available to install his lockout/tag-out locks and accept work permit at time of switching
3. **Contractor:**
 - a. Install lockout / tag-out locks and tags during the Government switching process, and sign for the work permit. Complete location of locks and tags installed on the work permit form.
 - b. Establish group lockout / tag-out. All keys for switching devices locked out during the switching process shall be locked in a group lock box which shall be kept on the job site. The Contractor's employee-in-charge personal lock shall be attached to secure the keys in the box.
4. **Contractor:** At the start of the first standard work shift after de-energizing switching and initial lockout / tag-out the circuit shall be verified de-energized using appropriate arc-flash PPE, voltage insulating PPE, and properly rated voltage test equipment as indicated in the approved JHA's. Equipment shall be subsequently grounded where applicable. Notate on the work permit the location of any grounds placed.
5. **Contractor:** All subsequent employees working the job shall attach their individual lockout/tag-out to the group lock box at any time they are working on the applicable equipment or circuit.

D. Manhole Entries:

1. **Contractor:** Verify all equipment required in the Government provided confined space hazard assessment and Contractor's JHA is present and on site.
2. **Contractor:** Request the confined space entry permit and prepare the hole for entry (pump out water, establish ventilation, set-up safety equipment, etc). **NOTE:** The contractor may perform atmospheric testing or use the government-provided support for the testing of atmospheres in confined spaces. To request government-provided

atmospheric testing for confined space entry, a minimum 24 hr advance scheduling is required through the Environmental Health work control desk at 867-2400.

3. **Government:** Perform atmospheric check, if requested, and provide the confined space entry permit.
4. **Contractor:** Complete and sign-off on the confined space entry permit. Hold pre-task briefing prior to the manhole entry and notate on the confined space permit.
5. **Contractor:** For each individual manhole, perform initial and, if required, subsequent manhole entries to inspect the manhole and cables using appropriate PPE (including arc-flash and shock prevention PPE) and safety equipment as indicated in the approved JHA. Inspection is to determine any apparent hazards and or issues associated with subsequent work to remove, install, and splice medium voltage cables. Issues include but are not limited to:
 - a. Unusual sounds.
 - b. Cables not properly racked.
 - c. Damage to manhole, cables, or racks.
 - d. Other physical hazards.
 - e. Energized cables in close proximity to manhole modifications (core drilling, installation, racking etc.)
6. **Contractor:** After initial inspection is complete, perform subsequent manhole entries to perform work with appropriate PPE and safety equipment as indicated in the approved JHA.

E. Cable Cutting:

1. **Contractor:** Coordinate with the Government for witness of identifying cable(s) to be cut. This is a mandatory inspection point by the Government.
2. **Government:** Witness Contractor cable identification and cutting of the cable(s).
3. **Contractor:** Approved medium voltage cable splicers are to positively identify cable(s) to be cut using electronic means, and permanently mark the cable(s) to be removed in the presence of Government personnel. With Government oversight, cut cable(s) using remote equipment (highly preferred) or appropriate arc-flash and voltage insulating PPE.

End of Answer to Question C5.

D.

Question #D6 – In order to perform a proper hazard analysis on the manholes and other electrical equipment on site, a detailed (an expensive) study would need to be performed. The specifications indicate that you already have this information on file. Can the Government provide the study and level

of PPE requirement for the manhole and other electrical equipment on site, or will the contractor need to hire an engineering consultant to perform these studies.

Reference – Specification 7KNPR 8715.7, section 3.6.3.e.

Answer #D6 – The Contractor must hire an engineering consultant to perform these studies and determine PPE requirements. After contract award, KSC will provide available existing system information required to complete these studies including source short circuit levels and circuit fault clearing time. Maximum values at the C5 Substation 13.8 kV bus are approximately 12 kA phase fault and 11kA ground fault with a 0.1 second clearing time. Phase and ground fault levels for downstream manholes and equipment are less.

Solicitation Attachment J-1, Article J-C-1 will be revised to add paragraph (b) (2), Electrical Hazard Analysis as follows:

(2) Electrical Hazard Analysis:

Arc-flash and shock prevention personal protective equipment (PPE) is required for all energized electrical work and where energized or exposed live parts may not be present, but a potential hazard exists including: manhole or cable vault/tray insulated cable inspections, circuit breaker or switch operation, and de-energized voltage checks to electrically safe equipment.

The Contractor shall provide a qualified electrical safety professional to perform an arc-flash and shock hazard analysis in accordance with NFPA 70E for all such electrical work. The analysis shall be submitted with the Contractor's Site Specific Safety Plan (SSSP) and referenced in any applicable Job Hazard Analysis (JHA). The safety professional shall perform and review a power system analysis using computer software specifically designed for the purpose to determine short circuit levels and arc flash hazard incident energy at all locations to be worked on by the Contractor. Table 130.7(C)(9) in NFPA 70E may be used in lieu of calculations when all applicable general notes for the table apply. The Government will provide source short circuit levels and clearing times for Government operated electrical source equipment as well as any applicable design information. The analysis shall include a table summarizing the results of the analysis with the following information for each location or piece of equipment:

- i.) Protective Device Name
- ii.) Protective Device Clearing Time
- iii.) Maximum Voltage
- iv.) Calculated Bolted Three Phase Fault Level.
- v.) Calculated Bolted Ground Fault Level
- vi.) Calculated Minimum Arcing Fault Level
- vii.) Arc-Distance if applicable for the calculation.

- viii.) Employee Working Distance
- ix.) Calculated Arc-Flash Boundary
- x.) Calculated Maximum Arc-Flash Incident Energy.
- xi.) Arc-Flash PPE Category
- xii.) Shock Prevention PPE Insulating Class
- xiii.) Limited Approach Boundary
- xiv.) Restricted Approach Boundary
- xv.) Prohibited Approach Boundary

End of Answer to Question D6

E.

Question #E7 – On the right side of the page, there appears to be a battery system (Battery and charger). We cannot find a specification for these. Can you supply this information?

Reference – Drawing E12

Answer #E7 – *Section 16361 of Specification 79K38549 is modified to include the specification of the station battery system as follows:*

On Page 151, Insert the following into SD-02 (Shop Drawings) of Paragraph 1.3 (Submittals):

“Station Battery System”

On Page 151, Insert the following into SD-03 (Product Data) of Paragraph 1.3 (Submittals):

“Station Battery System”

On Page 152, Insert the following into SD-06 (Test Reports) of Paragraph 1.3 (Submittals):

“Station Battery System”

On Page 152, Insert the following into SD-10 (Operations and Maintenance Data) of Paragraph 1.3 (Submittals):

“Station Battery System”

On Page 162, Insert the following paragraph:

2.3.4 Station Battery System

A station battery system shall be provided to include lead-acid batteries, battery support rack, and battery charger as shown on the drawings. The batteries shall have a rated life of at least 15 years.

2.3.4.1 Lead-Acid Batteries

The battery shall be lead acid and conform to the requirements of IEEE 484. Valve regulated lead acid (VRLA) or sealed batteries are not acceptable. Battery cells shall be

of the pasted plate construction. Battery containers shall be heat and impact resistant, high quality S.A.N (Styrene Acrylonitrile), with electrolyte level lines permanently marked on all four sides. Permanent leak proof seal shall be provided between cover and container and around cell posts. Flame arresting vents shall be provided in the covers. Capacity of the bank shall be based on a sixteen (16) hour discharge to 1.75 Volts after being fully charged per IEEE 485 recommendations; provide calculation with the shop drawing submittal. Provide the battery bank with the number of cells required to obtain a maximum system voltage of 140.00 volts, a nominal system voltage of 125.00 volts, and a minimum system voltage of 105.00 volts at a constant discharge rate of approximately 33 amperes, at a cell temperature of 20 degrees C. Number each battery with a number with "1" being positive and the last number in the string being the negative. Provide custom manufactured and sealed battery acid spill kit and locate at the battery equipment rack.

2.3.4.2 Station Battery Charger

Battery charger shall be constant voltage, current limited, SCR controlled and designed to float charge all types of stationary nickel cadmium and lead acid batteries. Charger shall have a nominal MTBF rating of 30,000 hours. The charger shall meet the following operating requirements.

AC Input - 208 VAC, single phase.

DC Output –125 VDC.

Output Regulation - Plus/Minus 0.5 percent of DC voltage setting maintained with plus/minus 10 percent input voltage variation. Output ripple voltage shall be less than 50mVrms.

Current Limit - Adjustable output current limit range of 90 percent to 120 percent of rated load.

Circuit Breakers - Charger shall be provided with circuit breakers for AC input and DC output.

Current Rating - Charger shall be rated for a nominal output current of 35 amperes.

Metering - Charger shall be supplied with a front panel mounted DC output ammeter and voltmeter.

Manual Float/Equalize Switch - Provide manual float/equalize switch.

Float and Equalization Adjustment Potentiometer - Provide float and equalization adjustment potentiometer.

Current Limit - Provide internally mounted current limit adjustment potentiometer.

Charger Accessories - Charger to include DC output blocking diode to prevent the battery bank from discharging through the charger due to failure.

Charger shall be supplied with relays for remote indication of the following conditions:

- AC power failure.
- DC ground detection.
- High/Low DC voltage.
- Charger failure
- Common summary alarm

Equalize Timer - Provide charger with a 0-72 hour line failure auto-equalize timer with float equalize indicating lights. Charger shall switch to equalize for a set time interval after input power is interrupted for 10 seconds or more.

2.3.4.3 Battery Support Rack

Provide a steel battery support rack, painted with two coats of acid resistant paint for mounting batteries. Provide insulated lead-plated copper inter-rack connectors and cell numbers with each rack. Battery support rack shall have provisions to guard exposed battery terminals from contact; provide DANGER HIGH VOLTAGE sign on the rack.

On Page 163, Insert the following paragraph:

“3.3.4 Station Battery System

Install the station battery system in accordance with the battery, battery rack, and charger installation instructions. Anchor battery rack securely to floor or structure. Connect battery charger and battery rack to earth ground as required by the manufacturer. Fill batteries in accordance with the manufacturer’s requirements to the top electrolyte line and clean any corrosion. Equalize batteries in accordance with the manufacturer’s instructions prior to placing into service.

On Page 165, Insert the following paragraph:

“3.6.1.6 Station Battery System

Test each battery with a specially designed battery voltage and resistance tester prior to placing the string into service. Additionally determine the electrolyte specific gravity for each cell. Provide test report showing voltage and resistance of each battery, electrolyte specific gravity of each cell, and indicated if the results are in accordance with the manufacturer’s specifications.

End of Answer to Question E7.

Question #E8 – The drawings refer to a station 1001. Neither drawing indicates the ratings on the breakers. Can the Government Supply these.

Reference – 78K29550, E3 and E14

Answer #E8 – The drawing number referenced in the question is assumed to be 79K38550 not 78K29550.

All vacuum breakers are rated 15kV, 3 phase, 60Hz, 1200 amp, 500 MVA per Specification 79K38549, Section 16361, Paragraph 2.1.2.1.

Question #E9 – This note refers to a drawing E-64. There is no such drawing in this set of drawings. Can you provide this?

Reference – Drawing 78K29550, E12

Answer #E9 – The drawing number referenced in the question is assumed to be 79K38550 not 78K29550.

Delete Specific Note L – Drawing references are not applicable.

F.

Question #F10 – The specifications indicate that after we pull out the old 15KV cable on site, the Government will test it for PCB's, and if the oil contains PCB's, we will have to cut the cable into 8 foot sections, cap both ends and transport the cable to a disposal site on KSC for disposal. We have no way of knowing at bid time whether or not the cable is contaminated. If it is, this requirement will cost a lot of added labor plus the lost salvage value for the old cable. Is the Government going to treat this as a change order or can a unit price be added to the bid form for this?

Reference – Specification 79K38549, section Attachment J-1 "Project Specific Requirements" para. J-C-18 "PCB Management"

Answer #F10 – Based on historical data, PCB contaminated cable is rare; therefore, none is expected on this project. If encountered PCB contaminated cable will be handled in accordance with FAR Clause 52.236-2, Differing Site Conditions.

Question #F11 – The specifications indicate that IF we have to rod out any Orangeburg ducts, we have to containerize any chips that come out and any water used to flush the ducts and dispose of it as directed. We have no way of knowing at bid time if any ducts will have to be rodded, or perhaps even dug up and replaced. If we run into this situation, will the Government treat this as a change order or can a unit price be added to the bid form for this?

Reference – Specification 79K38549, section Attachment J-1 "Project Specific Requirements" para. J-35 "Orangeburg Duct Work"

Answer #F11 - Some Orangeburg duct is expected on this project, particularly at Launch Complex 39A.

Revise Note F on Sheet E5 of 79K36517 to read: Where Orangeburg fiber conduit is encountered notify the Contracting Officer.

Unit pricing per Orangeburg duct requiring rodding and subsequent clean-up will be included as a new and separate CLIN 005 in the solicitation. Installation of new ducts, if required and not indicated in the spec and drawings will be handled in accordance with FAR Clause 52.236-2 Differing Site Conditions. The longest distance between manholes is approximately 630-feet.

For Orangeburg duct requiring rodding and subsequent clean-up requirements, refer to Project Specific Requirements, Attachment J-1, paragraph J-C-35, Orangeburg Duct Work.

Question #F12 – The above specifications deal with handling and disposal of asbestos containing materials. AS noted in previous questions, there are note on various drawings for this section that indicate that there may be asbestos in some of the manholes and other locations. The drawings do not indicate how much asbestos there may be and we were not able to see into manholes and switch gear and such on our site visit. If we run into asbestos on this project, will the Government treat this as a changed condition, or can a unit be added to the bid form to cover this?

Reference – KNPR 8715.7. Section Attachment 1, para. J1-3.11.1 and J1-3.11.2

Answer #F12 – ***All fiber type fireproofing tape indicated below or encountered elsewhere by work within manholes must be treated as and disposed of as asbestos containing material by a licensed Asbestos Contractor:***

- ***Specific Note E on Sheet E7 of 79K38608.***
- ***Specific Note C on Sheet E9 of 79K38608.***
- ***Specific Note C on Sheet E10 of 79K38608.***
- ***Specific Note B on Sheet E11 of 79K38608.***
- ***Specific Note B on Sheet E12 of 79K38608.***

Asbestos workers shall have Florida state approved Asbestos Worker and Supervisor/Competent Person training equivalent to the EPA Model accreditation Plan (MAP). Additionally asbestos workers shall be provided Hazard Communication notification and instructions regarding proper procedures for and hazards of working in electrical power manholes including those with energized cables. This training shall include general electrical safety, electrical PPE, lockout / tag-out, confined space, and electrical manhole job hazard analysis. Prior to two trained/qualified asbestos workers entering a manhole, they shall be given a pre-task briefing by a qualified electrical worker who shall enter the manhole prior to work to determine the work to be performed, determine and advise of any site specific manhole issues, verify the correct cables are to be worked, and that all safety provisions are in place. Once the qualified electrical worker has completed the briefing he shall exit the manhole until the asbestos abatement work is completed.

Unit pricing for asbestos abatement of all fireproofing tape encountered during this project shall be priced in CLIN 006.

For asbestos abatement requirements, refer to Project Specific Requirements, Attachment J-1, paragraph J-C-29, Asbestos Containing Building Materials, and KNRP 8715.7 Sections 3.11.1 and 3.11.2.

G.

1. REFERENCE: Specification Section 16472. Page 93 of 109 Sub Section 2.1.2.6 a

QUESTION G1: 115kV Breaker Control Cabinet calls for the control cabinet to be manufactured out of 316 Stainless Steel. Industry standard material is 304 Stainless Steel. Would 304 Stainless Steel be acceptable for the application?

Answer G1: *The 115 KV Breaker Control Cabinet shall be fabricated from type 316 stainless steel as called for in Specification 79K38613, Section 16472, paragraph 2.1.2.6.a.*

QUESTION G2: We respectfully request another site walk-down for the VAB duct bank addition modification.

Answer G2: *Another site walk-down for the Replace 15 KV Feeders and Ducts VAB Area North portion of the project will not be conducted.*

The major portion of the VAB North project is to replace underground 15 KV cable, and these cables are installed in the underground duct banks through a series of electric manholes. The cable and manholes information are clearly defined in the contract drawing. The remaining electrical equipment such as: transformers, LBS (Load Break Switch) and VFI (Vacuum Fault Interrupter) are widely installed throughout the Space Center and are also indicated on the drawings.

QUESTION G3: RFI deadline date is April 28, 2010. Due to the magnitude of the project, we respectfully request an extension.

Answer G3: *The RFI deadline date identified in Section L.4(b) of the Solicitation will not be extended. Late questions will be considered but may not be answered.*

H.

Reference: Kennedy NASA Procedural Requirements KNPR 8715.7, Paragraphs 3.5.5 Shock Hazard Analyses and 3.5.6 Flash Hazard Analyses and Arc Flash PPE.

Question #H1: Is this requirement to be provided by a Florida Registered Professional Engineer?

Answer #H1: *Yes; refer to additional information in the answer to Question D6.*

Question #H2: Should this requirement be provided for both Task #1 and Task #5 where confined space work is required?

Answer #H2: *Yes; refer to additional information in the answer to Question D6.*

Question #H3: Are there other places that this requirement is needed?

Answer #H3: *Yes; refer to additional information in the answer to Question D6.*

Reference: J-C-19 Recycling and Salvaging Materials

Question #H4: Is the contractor to assume that all Electrical Equipment that is removed is to remain the property of the Government and to be salvaged by the Government?

Answer #H4: *No, disposition of electrical equipment will be in accordance J-1, article J-C-45, Electrical Equipment Demolition/Salvage.*

Question #H5: Is the contractor to assume that all cable that is removed is to remain the property of the Government and to be salvaged by the Government?

Answer #H5: *No, unless PCB contaminated. Disposition of removed property will be in accordance with Attachment J-1, Article J-C-37 DEMOLITION. Refer to the answer to Question F10 for PCB contaminated cable which is considered hazardous waste.*

Question H6: will this be the case for Tasks 1 through 5?

Answer #H6: *Disposition of removed property in Tasks 1 through 5 will be in accordance with Attachment J-1, Article J-C-37 DEMOLITION.*

Reference: J-C-18 PCB Management

Question #H7: Who is to provide the PCB containers?

Answer #H7: *A 55 gallon drum will be provided by the Government, The Contractor shall provide a roll-off dumpster to accommodate situations where the size or quantity of material will not fit in a 55 gallon drum. The contents of the dumpster must be continually protected from the elements.*

Reference: J-C-39 Solid Waste Management Unit (SWMU) Paragraph D references a Process Waste Questionnaire/Technical Response Package process.

Question #H8: Could NASA provide this document?

Answer #H8: Refer to KNPR 8500.1, Chapter 13, Section 5. The Process Waste Questionnaires/ Technical Response Package process will be provided at the pre-work conference. The Contractor is required to determine and then submit Material Safety Data Sheets (MSDS's) for anticipated waste streams. The Government will fill out the questionnaire with the Contractor's support and return the response package to the Contractor on how to handle, label, and prepare wastes to be disposed of by the Government.

Question #H9: Could NASA provide the language referenced in J-C-39 paragraph G (3.a.2)?

Answer #H9: All references to 3.a.2 in article J-C-39 are deleted.

Question #H10: In article J-C-39, Paragraph F states "Except as noted for SWMU #44 and #101 below", Could NASA provide the language for SWMU #44?

Answer #H10: The information for SWMU #44 is listed below:

There is shallow groundwater contamination at the West Crawler Park Site (SWMU #44). If dewatering is necessary in these areas, the groundwater must be containerized and managed through the PWQ/TRP process. Dewatering from this area must be placed in tanks or tanker trucks and disposed of properly.

The PWQ/TRP Process requires sampling/analysis of a waste stream by the Government in order to characterize the generated waste for proper management, containerization, and disposal of the waste stream. Containerized water will be sampled/analyzed by the Government before disposal and, if contaminated, will be disposed of by the Government. Therefore, the tank or tanker provided by the Contractor will need to stay on site until analysis and water disposal is complete. The sample/analysis can take up to 4 weeks for total processing, so the tank/tanker will need to stay on site until the wastewater is properly characterized for disposal.

Question #H11: Who is to provide tanks or tanker trucks for the groundwater as stated in Article J-C-39, Paragraph G?

Answer #H11: The tanker truck(s) will be provided by the Contractor.

Due to shallow groundwater contamination, if any dewatering is to occur at this site, the water shall be containerized by a tank or tanker truck supplied by the contractor. The tank or tanker truck shall remain on site until the PWQ/TRP process is completed on the contaminated water. Once the PWQ/TRP process is completed, the Government will drain the tank and properly dispose of the waste. The Contractor shall ensure his rented tank(s) are decontaminated after emptying by the Government.

Baker tanks or other tanks can be rented by the Contractor to containerize water on site. These can be rented from vendors for a mobilization fee/demobilization fee, decontamination fee and monthly rental fee. The Contractor shall ensure his rented tank(s) are decontaminated after emptying by the Government. Example of a 10K gallon tank can be found at <http://www.bakercorp.com/tanks-steel-10k-roll-off.asp>.

Reference: J-C-35 Orangeburg Ductwork

Question #H12: Are there any known Orangeburg ductwork in the work area of the project?

Answer #H12: *Refer to the answer for Question F11.*

Reference: 79K38551 sheet E1 General Note 5 Spot Repair and Corrosion Control

Question #H13: Does the paint on the existing structural steel contain PCB'S?

Answer #H13: *The existing structural steel is unpainted, has a galvanized coating and contains no PCB's.*

Reference: 79K38612 sheet E3 Specific Note C appears 2 times

Question #H14: What should specific note C state?

Answer #H14: *Note C is not applicable. The two references are deleted.*

Reference: 79K38550 sheet E5 Specific Note U

Question #H15: Is this note required, it is not shown?

Answer #H15: *Note U is not applicable. The reference is deleted.*

Reference: 79K38550 sheet E10 Specific Note D

Question #H16: Is this note required, it is not shown?

Answer #H16: *Specific Note D is applied for Cables D, E and F in Drawing Zones E4 and E5. See C.2(b) Addenda section of the conformed solicitation; specifically number xiii.*

Reference: 79K38550 sheet E12 Specific Note K

Question #H17: Is this note required, it is not shown?

Answer #H17: *Specific Note K is applicable to cable risers and cable tray. The reference is found in drawing zone F8.*

Reference: 79K38550 sheet E12 Specific Note L

Question #H18: Is this note required, it is not shown?

Answer #H18: *Delete Specific Note L on Sheet E12 of 79K38550.*

Question #H19: Specific Note L references drawing E64 and E36. Could NASA provide the referenced drawings?

Answer #H19: *Delete Specific Note L on Sheet E12 of 79K38550.*

Reference: 79K38550 sheet E12 Specific Note M

Question #H20: Is this note required, it is not shown?

Answer #H20: *Delete Specific Note M on Sheet E12 of 79K38550*

Reference: 79K38550 sheet E12 zone G/F – 2/3 shows Panel “DC”, Breaker Test Set, Battery Charger, DC Disc Switch, and Batteries and Battery Charger Wiring Diagram

Question #H21: We have found no Specification or Basis of Design for this equipment, could NASA provide this information?

Answer #H21: *Refer to the answer for Question E7.*

Question #H22: While this system is being replaced will a temporary system be required?

Answer #H22: *A temporary system is not required.*

Question #H23: Who is responsible for disposing of the batteries?

Answer #H23: *Batteries are hazardous waste and are to be recycled by the Government in accordance with Attachment J-1, Article J-C-24 HAZARDOUS WASTES.*

Question #H24: What is the procedure for battery disposal?

Answer #H24: *Contractor shall make the batteries ready for shipment by installing shipping caps (in lieu of flame arrester caps), installing insulating tape over battery terminals, palletizing no higher than one level, and shrink wrapping the pallet such the batteries are secured to the pallet. Battery pallets are to be delivered to KSC's Ransom Road facility (RRMF).*

Reference: 79K38550 sheet E17 Specific Note B

Question #H25: Please clarify this note and provide the location of this note?

Answer #H25: *Specific Note B is not required and is deleted.*

Reference: 79K38550 existing Panelboards that will require new breakers

Question #H26: Please provide schedules for existing panelboards to include manufacturer, panel type, breaker type and A.I.C. rating. This is for Panelboards; ECSUPS, LN, and B1-A.

Answer #H26: *The following data is applicable for panels LN and ECSUPS. No modification is required for panel B1-A.*

Panel LN: 120/208, 3phase, 4 wire, 225Amp, GE type NLAB, breaker type TE, 10K AIC minimum. The calculated available fault current is 7422 Amps.

Panel UPSECS: 120/208, 3phase, 4 wire 100Amp, Square D panel with breaker type QOD, 10K AIC. The calculated available fault current is 800 Amps.

Change Specific Note H on Sheet E12 of 79K38550 to read as indicated:

“Provide 2 pole 50A circuit breaker in Panel LN, CKT #31”.

Reference: Spec 79K38649 section 16445 Relay Settings and Tests

Question #H27: Who provides the relay settings?

Answer #H27: Both the Government and the Contractor, See new specification section 16960, Coordinated Power System Protection.

Question #H28: Who provides the Coordination Study?

Answer #H28: Both the Government and the Contractor, See specification in answer H27.

Question #H29: Is an Arc Flash Study required?

Answer #H29: Yes; see specification in answer H27.

Question #H30: Who provides the Arc Flash Labels?

Answer #H30: The contractor will provide the Arc Flash Labels per new specification section 16960. Specification Section 16960 is incorporated into Specification 79K38549.

Question #H31: What is the depth of the bottom layer of the crawlerway material (at the bottom)?

Reference: 79K38608 sheet E19 Specific Note D

Answer #H31: The depth of the top layer (river-run gravel) is 0.2 meters, 2nd layer (compacted lime rock) is 0.914 meters, 3rd layer (hydraulically placed sand) varies between 0.9144-1.22 meters. Below the 3rd layer are natural soils. Total crawlerway depth: approximately 2.03-2.34 meters.

Reference: 79K38608 sheet E7 Specific Note E references Spec Section 13285

Question #H32: Please provide this spec section.

Answer #H32: Delete the specification section reference from the note. Refer to the answer for question F12.

Reference: 79K38608 sheet E9 Specific Note C references Spec Section 02 82 13.00 98

Question #H33: Please provide this spec section.

Answer #H33: Delete the specification section reference from the note. Refer to the answer for question F12.

J.

Reference: Specification 79K38613 Section 01780 Project Record Drawings Paragraph 1.5.2 calls for a Utility As-Constructed Survey. Specification 79K8549 Section 01780 Project Record Drawings does not call for a Survey. Specification 79K38609 Section 01 78 00 Closeout Submittals does not call for a Survey.

Question J34: Will an As-Built Survey be required for each all drawings?

Answer J34: Provide (add) a Utility As-Constructed Survey for work specified in Specifications 79K8549 and 79K38609 in accordance with Paragraph 1.5.2 of Specification 79K38613.

Reference: Specification 79K3849 has a Section 02220 Demolition. The other Specifications do not have this section.

Question J35: Is the Contractor to apply this section to all Tasks and all Specifications?

Answer J35: The section is not applicable to the other specifications. Demolition provisions in solicitation Attachment J-1, Article J-C-37 DEMOLITION, apply to all work tasks..

K.

Question #K1: Within the solicitation documents, it calls for the following Schweitzer-Engineering Laboratory items:

43 – SEL 751A Feeder Overcurrent Relays
3-SEL 587Z High Impedance Differential Relay
1-SEL 2407 Satellite Clock
4-SEL 2032 Communications Processor

5-EGX 100MG Ethernet Gateway

After reviewing the drawings and completing our takeoff of the required material for the project, we believe the following Schweitzer material will be required:

(Detailed list of 12 items included)

Is it the contractors responsibility to provide all items required or does the material list described in the solicitation include these items.

Answer #K1:

The types and quantities of Schweitzer- Engineering Laboratory listed in the Justification For Other Than Full and Open Competition (JOFOC) reflects the Governments minimum brand name requirements. The JOFOC is not a materials requirements document. The contractor shall supply all items not provided in Article J-C-31, GOVERNMENT PROPERTY TO BE INSTALLED BY THE CONTRACTOR.

Additionally, the offerors are advised that the ESTIMATED TOTAL VALUE OF PROCUREMENT identified on the JOFOC of \$7,226,000 includes work on additional projects associated with the overall effort. Furthermore, the aforementioned dollar amount is not an accurate value and should not be considered as a baseline for NNK10331276R.

L.

Question #L2: New cable is called out to be furnished and installed on drawing 79K38550 (E20), 79K36517-E16 and others.

We have reviewed the specifications provided with the solicitation and cannot find any cable specifications.

Would you please provide cable specifications for all of the contractor furnished cable.

Answer #L2: ***600V cable specifications are in Section 16145 of Specification 79K38549. 15 kV cable specifications are in Section 16124 of Specification 79K38549.***

Question #L3: Drawing 79K36517-E1 shows an existing feeder designated as "AC" from the existing PV-2 vault to the existing man hole P35 to be abandoned ("A" designation).

Drawing 79K36517-E16, cable I.D. No. AC, calls for this cable to be removed from SS902 to MH P35.

Do we need to remove this existing cable "AC" from PV-2 vault (as called out on E1) or from SS902 (as called out on drawing E16)?

Answer #L3: 79K36517- Sheet E1 is correct as shown. Cable AC shall be disconnected from SS 902, cut & removed from PCV-2 & abandoned from PCV-2 to manhole P35.