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February 07, 2023

MEMO TO: Prospective Vendors

FROM: Candice Kirtz
Director Supply Chain Management

**SUBJECT: INVITATION TO BID: PWC2223036 - EXCITATION SYSTEM IN
STEAM TURBINE GENERATOR AT THE BUTLER WARNER
GENERATION PLANT**

Pursuant to N.C.G.S. 143-129, Fayetteville Public Works Commission (“PWC”), is seeking competitive bids for the purchase of **Excitation System In Steam Turbine Generator At The Butler Warner Generation Plant**. Bid must be received on and no later than Thursday, March 23, 2023, at 2:00 PM, for the following:

Attached please find the solicitation documents, which may include some or all of the following: Notice To Vendors, Invitation To Bid, Instructions to Vendors, General Terms and Conditions, Definitions, Technical Specifications, Bid Bond, and Addenda, as more specifically identified in the solicitations documents. Please submit your bid on the form provided herein, or an exact copy thereof, and return one copy of the entire bid packet along with any descriptive literature covering the equipment you are bidding.

Bids should be addressed to PWC Procurement Department, Attn: Carla Wint, Procurement Advisor, P.O. Box 1089, Fayetteville, NC 28302 (955 Old Wilmington Road, Fayetteville, NC 28301).

Only sealed responses will be accepted for this solicitation.

Should you have any questions regarding the bid process, please contact the PWC Procurement Department by phone at (910) 223-4429 or by e-mail to carla.wint@faypwc.com

PWC NOTICE TO VENDORS

Pursuant to N.C.G.S. 143-129, sealed proposals will be accepted by the Fayetteville Public Works Commission (“PWC”) until **2:00 pm March 23, 2023**, for the following goods and ancillary services, at which time bids will be publicly opened and read aloud inside of conference room 107 of the PWC Administration Building, located at 955 Old Wilmington Road, Fayetteville, North Carolina 28301:

PWC2223036 - EXCITATION SYSTEM IN STEAM TURBINE GENERATOR AT THE BUTLER WARNER GENERATION PLANT

The solicitation documents are attached and/or may be obtained in the Procurement Office of the Public Works Commission, 1st floor, PWC Administration Building, 955 Old Wilmington Road, Fayetteville, North Carolina, between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday, or by email request to carla.wint@faypwc.com.

Vendors are cautioned that this is a request for offers, not an offer or request to contract, and PWC reserves the unqualified right to reject any or all bids and/or waive all informalities concerning bids when PWC deems it to be in its best interest, or to award a contract to the responsible, responsive bid offering the lowest price, taking into consideration, among other things, quality, performance and the time specified in the proposals for the performance of the contract to be awarded.

It shall be Vendor’s responsibility to read the entirety of the solicitation documents, review all enclosures and attachments, and any addenda, and comply with all requirements specified, regardless of whether appearing in the Instructions to Vendors or elsewhere in the solicitation documents.

By submitting your bid or proposal, you are offering to enter into a contract with PWC that represents Vendor’s and PWC’s entire agreement. If your bid is accepted and results in an award of a contract, you will be expected to accept PWC 's GENERAL TERMS AND CONDITIONS as part of the contract. Dependent upon the product or service being offered, other terms and conditions may apply.

By submitting a bid, you represent that you have read and understand the solicitation documents and that your offer shall be made in compliance with the solicitation documents. Vendors are expected to examine the solicitation documents thoroughly and should request an explanation of any ambiguities, discrepancies, errors, omissions, or conflicting statements in the solicitation documents. Failure to do so will be at Vendor’s risk. All ambiguities, discrepancies, errors, omissions, or conflicting statements in the solicitation documents shall be interpreted to require the better quality or greater quantity of work and/or materials, unless otherwise directed by amendment. Vendor assumes responsibility for any patent ambiguity in the solicitation documents that Vendor does not bring to the attention of PWC.



FAYETTEVILLE PUBLIC WORKS - INVITATION TO BID:

PWC2223036 - EXCITATION SYSTEM IN STEAM TURBINE GENERATOR AT THE BUTLER WARNER GENERATION PLANT

This solicitation for bids (“SFB”) Fayetteville Public Works Commission (“PWC”) is comprised of the Notice To Vendors, Invitation To Bid, Vendor’s Information Page, Instructions to Vendors, General Terms and Conditions, and the following addenda (collectively):

- Bid Proposal Form – Excitation System In Steam Turbine Generator At The Butler Warner Generation Plant
- Attachment – Excitation Scope and Specifications

In compliance with this SFB from PWC and subject to all the conditions herein, the undersigned Vendor offers and agrees to furnish and deliver any or all items upon which prices are bid, at the prices set opposite each item and within the time specified in the applicable SFB document.

By executing a bid, the undersigned Vendor understands and certifies that:

- this bid is submitted competitively and without collusion,
- that none of its officers, directors, or owners of an unincorporated business entity has been convicted of any violations of Chapter 78A of the North Carolina General Statutes, the Securities Act of 1933, or the Securities Exchange Act of 1934, and
- it is not an ineligible Vendor as set forth in G.S. 143-59.1.

Furthermore, by executing this bid, the undersigned certifies to the best of Vendor’s knowledge and belief, that it and its principals are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal or State department or agency.

The undersigned Vendor certifies that it, and each of its sub-contractors for any contract awarded as a result of this SFB, complies with the requirements of Article 2 of Chapter 64 of the NC General Statutes, including the requirement to verify the work authorization of employees through the federal E-Verify system, to the extent applicable.

G.S. 133-32 and North Carolina Executive Order 24 (2009) prohibit the offer to, or acceptance by, any employee of PWC associated with the preparing plans, specifications, estimates for public contract; or awarding or administering public contracts; or inspecting or supervising delivery of the public contract of any gift from anyone with a contract with PWC, or from any person seeking to do business with PWC. By execution of this bid response to the SFB, the undersigned certifies, for Vendor’s entire organization and its employees or agents, that Vendor are not aware

that any such gift has been offered, accepted, or promised by any employees or agents of Vendor's organization.

By executing this bid, Vendor certifies that it has read and agreed to the SFB including without limitation the attached INSTRUCTIONS TO VENDORS and the GENERAL TERMS AND CONDITIONS. Depending upon the goods and ancillary services being offered, other terms and conditions may apply, as mutually agreed.

Failure to execute a bid prior to submittal may render the bid invalid and it MAY BE REJECTED. Late bids will not be accepted.

Vendor's offer shall be valid for at least sixty (60) days from date of bid opening, unless otherwise stated here: _____ days, or if extended by mutual agreement of the parties. Any withdrawal of this offer shall be made in writing as further provided in the GENERAL TERMS AND CONDITIONS.

If your bid is accepted, all documents comprising the SFB, along with the written results of any negotiations, shall constitute the written agreement between the parties ("Contract").

By executing this bid, Vendor certifies that it has read and agreed to all of the solicitation documents comprising the SFB, including without limitation the INSTRUCTIONS TO VENDORS and the GENERAL TERMS AND CONDITIONS.

NAME OF VENDOR:

By:
Title:
Its duly authorized signatory

VENDOR'S INFORMATION PAGE FOLLOWS

VENDOR'S INFORMATION PAGE

DATE _____

NAME OF COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

PHONE NUMBER _____ FAX NUMBER _____

E-MAIL ADDRESS _____

FEDERAL ID NUMBER _____

MINORITY OR WOMAN OWNED BUSINESS ENTERPRISE _____ YES _____ NO

CONTACT NAME (If different from above) _____

TITLE _____

DATE _____

OTHER COMPANY CONTACTS _____

INSTRUCTIONS TO VENDORS

- 1) The SFB serves to advise potential Vendors of the parameters of the solution being sought by PWC. The use of phrases such as “shall,” “must,” and “requirements” are intended to create enforceable contract conditions.
- 2) **A MANDATORY pre-bid conference will be held at 1:30 p.m., February 28, 2023, at the Butler Warner Generation Plant (BWGP), 2274 Custer Avenue, Fayetteville, NC 28312.** Bidders may also attend the mandatory pre-bid conference via web conference. Prospective bidders will be allowed to inspect the project site as part of the pre-bid conference. All potential bidders must email Carla Wint, PWC Procurement Advisor, at carla.wint@faypwc.com notifying PWC of their intent to attend, and to be added to the web conference.
- 3) **Bids must be received no later than 2:00 p.m. on Thursday, March 23, 2023.** Late bids, regardless of cause, will be disqualified from further consideration and will be returned to Vendor unopened. Subject to the terms of the General Terms and Conditions, Vendors may submit bids for any or all items shown on the applicable bid proposal form. Do not submit alternate bids unless specifically authorized in the SFB, and then only if each bid has significant differences other than price. Regardless of error or omission, and except as provided in the Instructions to Vendors, a Vendor shall not be permitted to increase its pricing after the deadline for submitting bids.
- 4) Vendors must submit bids only on the Invitation to Bid form(s) provided herein. All bids must be signed by a duly authorized official of Vendor with actual authority to bind Vendor. Bids must be submitted in a sealed opaque envelope providing the bid title, date, and time of opening on the front of the envelope. Bids may be delivered in person or by express mail to Fayetteville Public Works Commission, Procurement Department, **Excitation System In Steam Turbine Generator At The Butler Warner Generation Plant**, Attn: Carla Wint, 955 Old Wilmington Road, Fayetteville, NC 28301, or may be mailed to Fayetteville Public Works Commission, Attn: Carla Wint, P.O. Box 1089, Fayetteville, NC 28302. Except as contemplated in the terms of the General Terms and Conditions, no changes, additions, or deletions will be allowed after a bid is opened.
- 5) Bids should be complete and carefully worded and should convey all of the information requested in the SFB. Bids must be made in the unit of measurement indicated in the Instructions to Vendors. Bids should be prepared simply and economically, providing a straightforward, concise description of Vendor’s capabilities to satisfy the requirements of the SFB. Emphasis should be on completeness and clarity of content. If the bid includes any comment over and above the specific information requested in the SFB, Vendor should include this information as a separate appendix to its bid. Bids which include clarifications or modifications to any of the SFB’s contractual requirements, or a Vendor’s standard terms and conditions, may be deemed non-responsive and not considered for award at PWC’s discretion. Unsolicited bid samples or descriptive literature will not be examined or tested, will not be used to determine responsiveness, and will not be deemed to vary any of the provisions of the SFB. Failure to comply with these requirements shall constitute sufficient cause to reject a bid without further consideration. PWC reserves the right to request additional information from Vendors to aid in the evaluation process. This information may include, but shall not be limited to, sketches, descriptive literature, complete specifications covering the goods and ancillary services offered, financial statements, reference lists

showing companies currently utilizing the proposed equipment, and the like. PWC reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to award of a Contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders the reasons for PWC's action.

- 6) All questions regarding the Invitation to Bid must be submitted to Carla Wint, Procurement Advisor, by e-mail to carla.wint@faypwc.com, no later than 5:00 p.m., Thursday, March 13, 2023. Vendors are expressly prohibited from contacting any other PWC official or employee regarding the Invitation to Bid. Violation of the foregoing prohibition may be grounds for the immediate disqualification of Vendor at the discretion of PWC. Any responses to such inquiries will be provided by PWC in writing. Oral statements or representations by any employee or representative of PWC regarding the Invitation to Bid shall not be binding on PWC.
- 7) Bids may be withdrawn by Vendor only in writing and if receipt of such withdrawal is acknowledged by PWC prior to the time for the opening of bids identified on Notice to Vendors (or such later date included in an Addendum). Written withdrawal requests shall be submitted on Vendor's letterhead and signed by an official of Vendor duly authorized to make such request. Any withdrawal request made after bid opening shall be allowed only if the price bid was based upon a mistake which constituted a substantial error, provided the bid was submitted in good faith, and then only pursuant to the terms of N.C.G.S. § 143-129.1.
- 8) Bids will be publicly opened and read aloud in Conference Room 107 of the PWC Administration Building located at 955 Old Wilmington Road, Fayetteville, North Carolina 28301. Bids will be examined promptly after opening and an award(s) will be made within a reasonable time thereafter.
- 9) An award of a Contract is subject to the approval by the Board of Commissioners of PWC and the Fayetteville, North Carolina City Council. PWC reserves the right to inspect, at a reasonable time, the equipment, item, plant, or other facilities of a prospective Vendor prior to Contract award, and during the Contract term, as PWC deems necessary to determine that such equipment, item, plant, or other facilities conform with the specifications/requirements and are adequate and suitable for the proper and effective performance of the Contract.
- 10) No award shall be made except to a qualified vendor pursuant to the responsive, responsible bid offering the lowest price that meets the specifications set out in the SFB. PWC reserves the right to award one or more Contracts when it is in the best interest of PWC.
- 11) PWC reserves the right to reject any and all bids, in whole or in part, for any reason permitted by applicable law, including without limitation, for failure to comply with any single requirement, or by deeming a bid unsatisfactory as to quality or quantity, delivery, price or service offered, non-compliance with the requirements or intent of this SFB, incompatibility with PWC's existing system lack of competitiveness, error(s) in specifications or indications that revision would be advantageous to PWC, cancellation or other changes in the intended project or any other determination that the proposed requirement is no longer needed, limitation or lack of available funds, circumstances that prevent determination of the best offer, and Vendor's past performance.
- 12) PWC reserves the right to award any combination of bids, or any part of any one bid, to one or more Vendors.

SPECIFIC BID TERMS:

- 13) Any changes or clarifications to the Addenda or other documents comprising the SFB will be made by PWC in writing in the form of an Addendum. No verbal changes or clarifications to any of the solicitation documents comprising the SFB shall be binding on PWC.
- 14) Vendors shall provide a written description of how Vendor intends to meet and implement the exciter specifications.
- 15) The excitation system shall be designed, manufactured, and tested in accordance with written specifications set forth in the Addenda.
- 16) The term of the Contract shall extend from the date of execution and delivery of the Contract by all parties through completion of the installation of the components comprising the excitation system and completion of all of Vendor's obligations under the Contract, as more particularly provided in the Contract.

BID PROPOSAL FORM

PROJECT: Excitation System In Steam Turbine Generator At The Butler Warner Generation Plant

Vendor has examined and carefully studied the entirety of the SFB, including without limitation, the General Terms and Conditions and the following Addenda, receipt of which is hereby acknowledged:

Bid Proposal Form – Excitation System In Steam Turbine Generator At The Butler Warner Generation Plant
Attachment – Excitation Scope and Specification

Vendor will complete the work contemplated in the SFB and in accordance with the SFB for the following price(s):

BASE BID

The Total Base Bid shall consist of Items 1 through 5. Vendor shall include in Items 1 through 5 the Total Base Bid Amount for all work contemplated in the SFB to make a complete and operable system. Submission of a bid that is determined by PWC to be unbalanced among the components shall be cause for determining a bid to be unresponsive.

BASE BID ITEMS SCHEDULE

ITEM DESCRIPTION	TOTAL AMOUNT
1. Delivery and Installation of Excitation System as described in the SFB.	\$
2. Training for BWGP personnel	\$
3. Remote Operator Panel to be mounted at generator panel	\$
4. Replacement of current electromechanical generator protective relays with digital relays specifically “Schweitzer relays” (SEL)	\$
5. Spare Parts	\$
TOTAL OF BID ITEMS 1, 2, 3, 4, 5 AMOUNT	\$

TOTAL BASE BID AMOUNT (in words): _____

THE TOTAL BASE BID AMOUNT OF THE BID SUMMARY ABOVE SHALL BE SHOWN IN BOTH WORDS AND NUMBERS. IN CASE OF DISCREPANCY, THE AMOUNT SHOWN IN WORDS WILL GOVERN. IN THE EVENT OF A DISCREPANCY BETWEEN THE SUM OF THE EXTENDED AMOUNTS AND THE BASE BID TOTAL, THE SUM OF THE EXTENDED AMOUNTS SHALL GOVERN.

ATTACHMENT

EXCITATION SYSTEM SCOPE AND SPECIFICATIONS

Vendor shall furnish all labor, materials, plans and equipment to perform the supply of components and installation of such components within existing enclosures at Butler Warner in strict accordance with these specifications, all the work necessary to prepare drawings, data, and installation with instructions, to manufacture, shop test, prepare and load for shipment DDP destination of One (1) automatic voltage regulator (Excitation Systems).

The digital Automatic Voltage Regulator shall include, but not be limited to, excitation cubicles including rectifier bridges, voltage regulator, field suppression circuit including discharge resistor, DC overvoltage protection circuit, and all miscellaneous equipment and supplies required for satisfactory operation of the system.

APPLICABLE STANDARDS

All materials pertinent to these specifications shall be in accordance with the publications listed below:

General Excitation System Standards

IEEE 421.1 (2021)	Criteria and Definitions
IEEE 421.2 (2014)	Guide for Identification of Dynamic Performance
IEEE 421.3 (2016)	High-Potential-Test Requirements
IEEE 421.4 (2014)	Guide - preparation of Excitation System Specifications
IEEE 421.5 (2016)	Excitation System Models for PSS-Studies

Related Standards

IEC 60146-1-1 (2009)	Semiconductor converters IEC
60726 (1982)	Dry type power transformers
IEC 60664-1 (2020)	Insulation co-ordination
IEC/EN 61439 (2009)	Low voltage switchgear and control gear assemblies EN
50178 (1997)	Installation of electronic devices in heavy-current Plants

Environmental Standards

IEC 60068-1 (1988)	Basic environmental testing procedures IEC
60068-2-1 (1990)	Test - Cold
IEC 60068-2-2 (1974)	Test - Dry
IEC 60068-2-30 (1980)	Test - Damp heat
IEC 60068-2-13 (1983)	Altitude
EN 60529 (1989)	Enclosure Protection Classes (DIN IP Code) IEC
60255-21-1 (1988)	Vibration
IEEE 344 (1987)	Seismic Qualification

EMC Standards	Emission
IEC/EN 61000-6-4 (2001)	Generic Emission Standard
IEC/EN 61800-3,	Product Standard
EMC Standards	Immunity
IEC/EN 61000-6-2 (2001)	Generic Immunity Standard
IEC/EN 61000-4-2 (2001)	Electrostatic Discharge requirements
IEC/EN 61000-4-3 (2002)	Radiated radio frequency: electromagnetic field
IEC/EN 61000-4-4 (1995)	Electrical fast transient burst requirements IEC/EN
61000-4-5 (1995)	Surge immunity requirements
IEC/EN 61000-4-6 (2003)	Conducted disturbances induced by RF-fields [current injection]
IEC/EN 61000-4-11 (2001)	Voltage dips, short interruptions, and voltage variations immunity
IEC/EN 61000-4-12 (2001)	Oscillatory test wave [SWC]
IEC 60255-22-1 (1998)	Oscillatory test wave [SWC]

Quality Standard

ISO 9001 (2000)	Quality Management – System Requirements
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CSA Standards

C22.2.0	General Requirements
C22.2.27	Busbars
C22.2.47	Dry type transformers
C22.2.107	general use power supplies.
C9	Dry type transformers
C13	Measuring transformers
C108.1	Electromagnetic Noise (0.15 to 30 MHz)

NFPA 70	National Fire Protection, National Electric Code
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Should a conflict occur between codes and standards and the contents of these specifications, the most stringent requirements shall govern.

Should the listed standards be outdated the newest standards shall apply.

DRAWINGS

The following drawings shall be supplied for the approval of PWC:

<u>Document:</u>	<u># copies</u>	<u>Date</u>
General Layout	3	4 weeks after contract award
Block diagram	3	8 weeks after contract award
Detailed schematics	3	8 weeks after contract award
Bill of material	3	8 weeks after contract award
Instruction manuals	3	4 weeks prior to shipment
Test reports	3	2 weeks after factory test

No later than 10 days after submittal, PWC will return one copy of the drawings with either "Approved", "Approved Except as Noted", or "Not Approved." Vendor shall revise and resubmit for approval within 14 days each drawing marked "Approved Except as Noted" or "Not Approved." Drawings approval is required prior to commencement of fabrication, unless waived by PWC in writing. In addition to the above drawings, Vendor shall supply drawings in a digital format on an agreed device, i.e.. CD, USB drive etc. Printed drawings shall be 8½ x 11 inches, suitable for 2, 3 or 4-ring binders.

All drawings shall be per ANSI standards. General layouts, single line diagrams, I/O's must be sufficiently customized to reflect the interface requirements with PWC's system. Standard layouts with shaded triangular blocks are not permitted. The details of drawings shall illustrate:

- I- The mechanical construction (front and side view).
- II- A symbols table.
- III- Electrical connections between printed circuit boards.
- IV- Local display panel with list functions.
- V- Interconnection between the excitation transformer, thyristor converter and field suppression equipment.
- VI- Connection to existing PTs and CTs.
- VII- AC & DC supply circuits.
- VIII- List of terminals with signal description and data, and list of alarms.

An electrical diagram of each printed circuit board is not required; however, Vendor shall include in the detail of drawings a block diagram of each board identifying functions, connections, and power supplies. Where the component illustrated in the drawing is identified as a box, or electrical terminations are limited from the page size, numerical references shall be made.

OPERATION & MAINTENANCE MANUALS

Vendor shall provide a minimum of three operation and maintenance manuals. The manuals shall include the following items:

- I. Functional description of the system
- II. Operating instructions
- III. Software description
- IV. Parameter and signal list
- V. Functional block drawings of the AVR application software

Vendor shall include in the proposal a sample Table of Contents of the Operation & Maintenance Manual. The manuals shall be assembled in hard cover three-ring binders with all documentation on 8½" x 11 paper.

FACTORY TESTING

The excitation system shall be tested at the Vendor's factory. PWC reserves the right to witness the tests and will notify Vendor six weeks in advance prior to testing. Vendor will notify PWC no less the three weeks in advance of the actual date of the factory test. The witnessing of such tests shall not constitute a waiver by PWC of any warranties concerning the equipment nor relieve Vendor of any warranties concerning the said equipment. Shipment of the excitation system from factory prior to a written release from PWC is not permitted. The excitation system shall be subjected to routine tests, including the following:

- Dielectric Tests, in accordance with ANSI C34.2.
- Ceiling voltage at reduced current.
- Functional sequencing check of circuit components for proper operation.
- Tests for the excitation transformer as follows:
 - I. Resistance
 - II. Turns Ratio
 - III. Polarity
 - IV. Phase Relation
 - V. No-Load Loss
 - VI. Full-Load Loss
 - VII. Excitation Current
 - VIII. Impedance
 - IX. Applied Potential
 - X. Induced Potential

A certified test report shall be submitted to PWC for review within two weeks of such tests.

SPARE PARTS

All parts furnished shall be interchangeable with and shall be of the same material and workmanship as the corresponding original parts. Spare parts to be furnished should include the recommended spare parts by Contractor and be a separate line price option. Prices corresponding to each item shall be shown.

PACKAGING AND SHIPPING

Vendor shall design and prepare the equipment for shipment in such a manner as to protect it from damage in transit, and to facilitate off-loading, handling, and erection on-site. Where necessary, heavy parts or equipment shall be mounted on skids or crated and any articles that might otherwise be lost, shall be boxed, or wired in bundles and plainly marked for identification.

TECHNICAL SPECIFICATIONS

These specifications cover the design, manufacture, testing and delivery DDP destination of one (1) Automatic Voltage Regulator for use with the Plant generation station. Supply to the Automatic Voltage Regulator shall be derived from the generator terminals/PMG/Auxiliary.

The Vendor shall supply a single line diagram and general layout for the new equipment in the proposal.

GENERATOR DATA

DESIGN NO. E245T15

CUSTOMER: FAYETTEVILLE, PWC

GENERATOR NO. 316X719

FIELD NO. 316X719 D.L. NO. 319X719

NAMEPLATE DATA

2 Poles, 3 Phase, WYE Connected, 60 Hertz, 3600 RPM

Total Temp. at Rating Guaranteed not to Exceed:

110 C on Armature by Detector

Maximum Cold Gas/Air Temperature 40C.

110C on Field by Resistance

	Rating:
KVA(0 Ft.)	<u>85,882</u>
Armature Amps Armature	<u>3,593</u>
Volts	<u>13,800</u>
Field Amps Exciter Volts	<u>563</u>
Power Factor	<u>375</u>
	<u>0.85</u>

DESIGN DATA

Voltage Range at 60Hertz

± 5 Percent

COLLECTOR AND BRUSH DATA

Collector Brushes, 22 Per Set Recommended Grade, NATIONAL CARBON 634

Collector Minimum Safe Operating Diameter, 12.5 inches

Shaft Grounding Brushes, 2 Per Set Recommended Grade, NATIONAL CARBON 634

**GAS COOLER
DATA**

Inlet Water Temperature Water Flow
at Rated Load Head Loss Through
Cooler Gas Flow Through Generator
Gas Space in Generator

95 F.
1200 GPM
12 Ft.
56000 CFM
1400 Cu. Ft

GEN. NO. 316X719

ESTIMATED GENERATOR DATA

<u>REACTANCE DATA:(PER UNIT)</u>	<u>DIRECT AXIS</u>		<u>QUADRATURE AXIS</u>	
Saturated Synchronous	(X _{dv})	<u>1.799</u>	(X _{qv})	<u>1.702</u>
Unsaturated Synchronous	(X _{di})	<u>1.799</u>	(X _{qi})	<u>1.702</u>
Saturated Transient	(X' _{dv})	<u>0.163</u>	(X' q)	<u>0.3911</u>
Unsaturated Transient	(X' _{di})	<u>0.227</u>		
Saturated Sub transient	(X' 'dv)	<u>0.107</u>	(X' 'qv)	<u>0.104</u>
Unsaturated Sub transient	(X' 'di)	<u>0.155</u>	(X' ''qi)	<u>0.154</u>
Saturated Negative Sequence	(X _{2v})	<u>0.101</u>		
Unsaturated Negative Sequence	(X _{2i})	<u>0.147</u>		
Saturated Zero Sequence.	(X _{ov})	<u>0.069</u>		
Unsaturated Zero Sequence	(X _{oi})	<u>0.089</u>		
Leakage Reactance	(X _{LM} , OEX)	<u>0.128</u>		
Leakage Reactance	(X _{LM} , UEX)	<u>0.128</u>		

FIELD TIME CONSTANT DATA: (Sec at 125 C)

Open Circuit (T'do) 5.115 (T'qo) 0.430
Three Phase Short Circuit Transient (T'd3) 0.464 (Tl q) 0.430 Line
to Line Short Circuit Transient (T'd2) 0.711
Line to Neutral Short Circuit Transient (T'dl) 0.865
Short Circuit Sub transient (T' Id) 0.015 (T'q) 0.015
Open Circuit Sub transient (T'do) 0.023 (T'qo) 0.057

ARMATURE DC COMPONENT TIME CONSTANT DATA: (Sec. at 100C)

Three Phase Short Circuit	(Ta3)	<u>0.163</u>
Line to Line Short Circuit	(Ta2)	<u>0.163</u>
Line to Neutral Short Circuit	(Ta1)	<u>0.146</u>

ARMATURE WINDING SEQUENCE RESISTANCE DATA -(Per Unit)

Positive	(R1) <u>0.004</u>
Negative	(R2) <u>0.014</u>
Zero	(R0) <u>0.007</u>

Rotor Short Time Thermal Capacity, $(I_2)^2 T = \underline{30}$

Three Phase Armature Winding Capacitance= 0.806 Microfarads

Armature Winding DC Resistance (Per Phase) = 0.00365 Ohms at 100C

Field Winding DC Resistance = 0.531 Ohms at 125C

Field Current at Rated KVA, Armature Voltage and PF= 563.1 Amps

Field Current at Rated KVA and Armature Voltage, 0 PF Lagging = 664.0 Amps (FOR
SYSTEMS STUDY ONLY - NOT ALLOWABLE OPERATING POINT)

RECTIFIER ASSEMBLY

The rectifiers shall be fully controlled in order to supply both positive and negative output DC voltage. Negative field current is not a requirement. Thyristors shall have a minimum PIV (peak inverse voltage) rating of 300% of the rectifier nameplate RMS voltage rating.

The system shall be furnished with a redundant rectifier bridge. Upon failure of one (1) thyristor bridge the load shall be transferred to the redundant bridge seamlessly without compromising the rated generator voltage and power factor output. Any failure in a thyristor bridge assembly shall be alarmed at the local operator panel as well as over the serial communication to the plant DCS system.

The bridges shall be protected against excessive voltage surges.

The only links to the bridge from the automatic voltage regulator shall be properly isolated.

VOLTAGE REGULATOR

A redundant microprocessor and power supply shall be provided. The redundant microprocessor will serve as a hot back-up. Upon failure in either the microprocessor or the power supply of the running system an alarm shall be initiated and an automatic transfer to the stand-by microprocessor shall occur. It shall be possible to replace the defective channel on-line.

The voltage regulator shall consist of automatic and manual controls and shall be microprocessor based, fully digital.

The following controls shall be provided as a minimum:

Automatic Control

The automatic control shall regulate the generator voltage with $\pm 0.5\%$ from no-load to full load, with a voltage control of -15% to 10% rated voltage. The temperature drift shall not exceed $\pm 0.5\%$ for slow changes in ambient temperature from 15°C to 50°C. The droop setting shall be adjustable from 0 to 5% at rated power factor load.

Manual Control

The manual regulator shall include an adjuster which shall provide adjustment of excitation voltage or current from 25% to 115% of rated excitation current or voltage. Adjustable limiting functions shall be provided to stop the adjuster at extreme limits and to issue both local

and remote signals. Provision shall be made for smooth transfer from automatic to manual control and from manual to automatic control.

Automatic Voltage Regulator Features

The following functions shall be provided as a minimum in the automatic voltage regulator:

Voltage adjuster

The excitation system shall include an auto follower function. The manual control shall track the automatic control and visa-versa. Upon failure of the automatic control, the excitation system shall initiate a bump-less transfer to the back-up control.

A single voltage adjuster shall be provided suitable for operation in any control modes (Auto, manual). The voltage adjuster shall be suitable for remote 125 VDC operation. Adjustable limiting functions shall be provided to stop the adjuster at extreme limits and to issue local and remote signals. A preset function shall be provided to automatically bring the generator voltage to rated no-load voltage when the excitation system receives a start command. A soft- start capability shall be incorporated to continuously increase the reference value during excitation build-up to the present value to avoid overshoot of the generator voltage.

VAR/pf control

A superimposed regulator for the automatic control of the power factor or the reactive power of the machine shall be provided. The VAR/pf regulator shall maintain constant reactive power current or power factor to ensure sufficient excitation on the field.

Maximum excitation limiter

A maximum current limiter shall protect the rotor from overload by preventing the excitation current limit from being continuously exceeded in the over excited range of the machine. The limiter shall first act to instantaneously limit the maximum field current from rotor field heating, and after an adjustable time delay, limit the field current to a further reduced operating level. The time delay shall be of the inverse type and adjustable.

Minimum limiter

The minimum current (or load angle) limiter shall prevent the stability limit being exceeded in the under excited range of the machine. The

limiter shall restrict the generator from operating in the low excitation range beyond the stability limit of the machine, preventing a loss of generator synchronism. The limiter shall be capable of adjustment with the generator capability curve.

Volt per Hertz limiter

A V/Hz limiter shall be provided to prevent excessive heating in windings of the supply and measuring transformers. At frequencies below normal operating range, the limiter shall act to reduce voltage and prevent excessive AC current in windings of transformers.

Power System Stabilizer (PSS)

A redundant (one in each of the AVR channels), dual input type capable of utilizing both internal frequency and electrical power inputs simultaneously. Its design shall be similar in structure to IEEE Type PSS2A/2B shown in IEEE Standard 421.5-1992, with at least one washout, one filter time constant, and independent gain control for each input signal. It shall be possible to condition each input signal with at least two lead and two lag time constants.

MONITORING FUNCTIONS

The following monitoring functions shall be provided as a minimum in the excitation system:

PT: detect loss of PT voltage back to the voltage regulator.

Field Flashing: monitor for incorrect field current, failure to build generator voltage.

Rotor Temperature Monitoring (RTM)

A temperature monitoring function shall be provided to monitor the generator field winding temperature. The RTM value shall be available on the local operator panel as well as on Modbus to the DCS system.

COMMUNICATION

The following devices & tools shall be provided to facilitate interfacing and communication with the excitation system. The local panel can be a combination operator/service panel. PWC would desire

a remote operator panel to be located at the current generator panel and priced as an option:

Remote operator panel

As an option PWC_would desire a remote operator panel to be located at the current generator panel connected via Ethernet and priced as an option.

Local operator/service panel

A local operator/service panel shall be provided for use by the company's operators/technician personnel. The panel shall be mounted inside the AVR cabinet and shall provide access to local control and display of faults. In the event of a fault in the excitation system, the local display panel shall announce the failure with a real time stamp.

Controls, metering, and annunciation

The excitation system shall provide at the minimum PWC's current hard-wired signals:

Generator Control Panel Inputs to DCS:

- S1_025A ST Synchronize close breaker
- S1_025B ST Voltage for synch.
- S1_072 ST Watt-hour meter
- S1_33 ST Voltage reg. manual
- S1_41A ST Gen. field breaker Open
- S1_41B ST Gen. field breaker Closed
- S1_41FX ST Field flashing & voltage selector
- S1_52GX ST Gen. breaker Closed
- S1_52SX ST Auto. synch. permissive
- S1_52Z1 ST Auto. synch. Permissive
- S1_59E ST Exciter overvoltage
- S1_59VH2 ST Volts/Hertz trip
- S1_60 ST Gen. volt unbalance
- S1_64B ST Gen. bus ground alarm
- S1_70 ST Lower/raise speed IND to gen. panel
- S1_70CS ST Load target lower/raise
- S1_823 ST Low RPMBKR trips
- S1_83LRV ST Lower/raise volts IND to gen. panel
- S1_83SRX ST Voltage regulator transfer

- S1_86 ST Gen. ½ & XMFR lockout trips
- S1_94XI ST Runback on turbine stop
- S1_96FC ST Gen. field current
- S1_96FV ST Gen. field volts
- S1_96GA ST Gen. current
- S1_96GR ST Gen. VARS
- S1_96GV ST Gen. volts
- S1_96GW ST Gen. watts

FIELD SUPPRESSION

A field suppression circuit with the elements described below shall be furnished:

AC/DC breaker

Contractor will use Owners existing field breaker/contactors.

Field discharge resistor

Field discharge resistors shall be supplied in parallel with the generator field for rapid de-excitation and shall be controlled by the “Crowbar” circuit.

Overvoltage protection

A “Crowbar” circuit for positive and negative DC over voltages shall be furnished to protect the machine from a flashover. The circuit detection threshold shall be set below the insulation voltage of the rotor as well as below the PIV of the thyristor bridge. Means to discharge the generator during normal and emergency conditions shall occur by activating the “Crowbar” and discharging the generator field current through the field discharge resistor circuit.

Field flashing

Vendor shall furnish automatic field flashing for generator startup from the 125 VDC supply. The field flashing circuit shall consist of a limiting resistor, blocking diode bridge for the prevention of back feed, and a DC contactor. Field flashing shall be triggered by the excitation on external command and produce sufficient generator terminal voltage to enable the excitation system to supply field current. If after an adjustable time delay the field flashing sequence is unsuccessful, then an alarm signal shall be issued

PROTECTION

Field ground detector (64F)

A solid-state relay shall be furnished for detection of rotor ground faults. The relay must be able to operate for the highest field voltage available from the system without any damage caused to the system.

V/Hz protection

A V/Hz protection function shall be provided either as a solid-state relay or as a software function additional to the V/Hz limiter function.

Over current protection

An over current protection shall be provided either as a solid-state relay or as a software function additional to the over current limiter function.

CUBICLE CONSTRUCTION

The cabinets are located in a designated area with limited space. Vendor will be required to visit the site at the pre-bid meeting in order to design the system so that installation cost will be minimal.

The excitation system shall be furnished in metal enclosed cubicles of NEMA1A construction, or Vendor could choose to use the current cubicles and insert their panels in them. The cubicles shall be free-standing, dead front type built on structural steel. Each cabinet shall have full length doors with lock.

The locks shall be keyed alike. All doors and panels shall not be less than No. 14 gauge steel. The excitation cubicle shall contain a copper ground bus to which the housing, framework, cable, and bus supports shall be grounded as long as practical. Grounding shall conform to ANSI C37.20.1, except that the ground bus bar shall not be less than 1 x 1/4" in size. Openings necessary for adequate ventilation shall be provided where required.

Buses shall be of high-conductivity copper with tin-plated copper slabs for external connections, sized for the rated continuous current of the excitation system, as well as momentary currents within allowable temperature rise. Bolts shall be stainless steel corrosion-resistant material.

Convenience receptacle and light fixtures shall be provided in the control cabinet. The light shall be interlocked with the enclosure door. Space heaters

shall be provided in each cabinet for prevention of condensation when the excitation system is de-energized.

WIRING

Control wiring size shall be minimum #18 AWG for all non-electric circuits and controls. Wires shall be copper tinned, stranded SIS non-PVC, flame retardant insulation, rated 600 V, with a maximum operating temperature of 90°C. All wires shall be marked at each end by a number. Wiring markers shall be heat shrinkable tubing with black print on white background. Wiring which is flexed by the openings of cabinet doors or swinging panels shall be covered with a plastic protector to avoid wiring damage.

All remote connections are to be adjacent to each other and brought to a terminal strip for owner's connection. A minimum of 10% spare terminal points shall be provided.

Terminals shall be rated 600V. Current transformer secondary leads shall terminate on short-circuit type terminals.

GENERATION PROTECTION PANEL

(Optional Item)

Vendor shall upgrade the existing generator protective relay devices on the inner door of the current Generator Control Panel 21,32,54,64F electromechanical relays with digital relays specifically “Schweitzer relays” (SEL). These relays shall be installed in the current Generator Control Panel. A new inner door may be manufactured to complete this installation. Any blank spaces left or created with this change out shall be covered with a blank.

Vendor shall provide all engineering and installation with this optional upgrade. This shall include layout drawings, AC and DC elementary drawings and wiring diagrams. Functionally test the new relays to verify wiring, develop settings and set and test the new relays. Provide startup support to insure proper operation. (turnkey)



GENERAL TERMS & CONDITIONS

1. **PERFORMANCE:**

- a) It is anticipated that the tasks and duties undertaken by Vendor under the contract which results from the SFB in this matter ("Contract") shall include ancillary services, and/or the manufacturing, furnishing, or development of goods and other tangible features or components, as deliverables.
- b) Except as provided herein, and unless otherwise mutually agreed in writing prior to award, any deliverables not subject to an agreed Vendor license and provided by Vendor in performance of this Contract shall be and remain property of PWC. During performance, Vendor may provide proprietary components as part of the deliverables that are identified in this Contract. Vendor grants PWC a personal, permanent, non-transferable license to use such proprietary components of the deliverables and other functionalities, as provided under this Contract. Any technical and business information owned by Vendor or its suppliers or licensors made accessible or furnished to PWC shall be and remain the property of Vendor or such other party, respectively. Vendor agrees to perform under the Contract in at least the same or similar manner provided to comparable users and customers. PWC shall notify Vendor of any defects or deficiencies in performance or failure of deliverables to conform to the standards and specifications provided in this Contract. Vendor agrees to timely remedy defective performance or any nonconforming deliverables on its own or upon such notice provided by PWC.
- c) Vendor has a limited, non-exclusive license to access and use PWC data provided to Vendor, but solely for performing its obligations under and during this Agreement and in confidence as further provided for herein or by law.
- d) Vendor or its suppliers, as specified and agreed in the Contract, shall provide support assistance to PWC related to all ancillary services performed or other deliverables procured hereunder during PWC's normal business hours. Vendor warrants that its support, customer service, and assistance will be performed at a minimum in accordance with generally accepted and applicable industry standards.
- e) PWC may document and take into account in awarding or renewing future procurement contracts the general reputation, performance and performance capabilities of Vendor under this Contract.

2. **DELIVERY AND ACCEPTANCE:**

- a) Delivery of the purchased Goods shall be F.O.B. Destination - PWC Warehouse Facility, 1097 Public Works Drive, Fayetteville, NC 28301, or such other location as may be designated by PWC in the SFB (the "Delivery Point"), with all transportation costs and fees included in the bid price. Time is of the essence as to the timely delivery of the Goods. Vendor bears all risk of loss or damage to the Goods until delivery of the Goods to the Delivery Point.
- b) Performance shall be considered complete when the Goods and ancillary services are approved as acceptable by PWC. PWC has the right to inspect the Goods on or after the delivery date. PWC, at its sole option, may inspect all or a sample of the Goods, and may reject all or any portion of the Goods if it determines the Goods are nonconforming or

defective. If PWC rejects any portion of the Goods, PWC has the right, effective upon written notice to Vendor, to: (a) terminate this Agreement in its entirety and require Vendor to remove the Goods in a commercially reasonable time period or pay the full cost and expense to have the rejected Goods returned to Vendor; or (b) reject the Goods and require replacement of the rejected Goods at Vendor's sole expense. If PWC requires replacement of the Goods, Vendor shall, at its sole expense and in the lesser of ninety (90) days or the number of days between any applicable Purchase Order of PWC and the Delivery Date, replace the nonconforming Goods and pay for all related expenses, including, but not limited to, transportation charges for the return of the defective Goods and the delivery of replacement Goods. Any inspection or other action by PWC under this section shall not reduce or otherwise affect Vendor's obligations under the Contract, including Vendor's warranties, and PWC shall have the right to conduct further inspections after Vendor has carried out its remedial actions. In addition to the foregoing, PWC shall have all other rights and remedies available under North Carolina law and the applicable provisions of the North Carolina Uniform Commercial Code.

3. DEFAULT AND TERMINATION:

- a) In the event of default by Vendor, PWC may, as provided by North Carolina law, procure Goods and ancillary services necessary to complete performance hereunder from other sources and hold Vendor responsible for any excess cost occasioned thereby. In addition, and in the event of default by Vendor under the Contract, Vendor's violation of any applicable laws or regulations, Vendor's disregard of the authority of PWC or any public body having jurisdiction over PWC, or upon Vendor filing a petition for bankruptcy or the entering of a judgment of bankruptcy by or against Vendor, PWC may immediately cease doing business with Vendor, terminate the Contract for cause, and take action to recover relevant damages, and if permitted by applicable law, debar Vendor from doing future business with PWC.
- b) If, through any cause, Vendor shall fail to fulfill in a timely and proper manner the obligations under the Contract, including, without limitation, in these General Terms and Conditions, PWC shall have the right to terminate the Contract by giving thirty days written notice to Vendor and specifying the effective date thereof. In that event, any or all finished or unfinished deliverables that are prepared by Vendor under the Contract shall, at the option of PWC, become the property of PWC (and under any applicable Vendor license to the extent necessary for PWC to use such property), and Vendor shall be entitled to receive just and equitable compensation for any acceptable deliverable completed (or partially completed at PWC's option) as to which such option is exercised. Notwithstanding, Vendor shall not be relieved of liability to PWC for damages sustained by PWC by virtue of any breach of the Contract, and PWC may withhold any payment due Vendor for the purpose of setoff until such time as the exact amount of damages due PWC from such breach can be determined. PWC, if insecure as to receiving proper performance or provision of Goods deliverables, or if documented Vendor ancillary services performance issues exist, under this Contract, may require at any time a performance bond or other alternative performance guarantees from a Vendor without expense to PWC as provided by applicable law.
- c) If this Contract contemplates deliveries or performance over a period of time, PWC may terminate this Contract for convenience at any time by providing thirty (30) days' notice in writing from PWC to Vendor. In that event, any or all finished or unfinished deliverables prepared by Vendor under this Contract shall, at the option of PWC, become its property, and under any applicable Vendor license to the extent necessary for PWC to use such property. If the Contract is terminated by PWC for convenience, PWC shall pay for those items or ancillary services for which such option is exercised, less any payment or compensation previously made.

4. INTERPRETATION, CONFLICT OF TERMS:

- a) Definitions in the SFB are specifically incorporated herein..
- b) If federal funds are involved in the transactions under this Contract, Vendor shall comply with all applicable state and federal requirements and laws, except where State requirements are more restrictive. See the additional federal requirements included in the "Federal Funds Provisions" section below.

- c) Contracts made in contravention of the applicable provisions of General Statutes, Chapter 143, are void.
 - d) In cases of conflict between specific provisions in this Contract and any other referenced documents, the Order of Precedence shall be (high to low) (1) any special terms and conditions specific to this Contract, including any negotiated terms; (2) requirements, specifications and administrative terms; (3) these GENERAL TERMS AND CONDITIONS; (4) Definitions and other provisions in INSTRUCTIONS TO VENDORS in this solicitation, which is specifically incorporated in this Contract; (5) PRICING, and (6) Vendor's Bid, to the extent specifically and mutually incorporated into this Contract.
5. **GOVERNMENTAL RESTRICTIONS:** In the event any Governmental restrictions are imposed which necessitate alteration of the Goods, material, quality, workmanship, or performance of the ancillary services offered, prior to acceptance, it shall be the responsibility of Vendor to notify PWC at once, in writing, indicating the specific regulation which requires such alterations. PWC reserves the right to accept any such alterations, including any price adjustments occasioned thereby, or to cancel the Contract.
6. **TAXES:** Any applicable taxes shall be invoiced as a separate item. Prices offered are not to include any personal property taxes, nor any sales or use tax (or fees) unless required by the North Carolina Department of Revenue.
7. **SITUS AND GOVERNING LAWS:**
- a) This Contract is made under and shall be governed by and construed in accordance with the laws of the State of North Carolina, without regard to its conflict of laws rules, and within which State all matters, whether sounding in contract, tort or otherwise, relating to its validity, construction, interpretation and enforcement shall be determined.
 - b) The exclusive venue for all mediations and litigation and any other legal proceedings regarding the Agreement shall be the State and Federal Courts serving Cumberland County, North Carolina, and Vendor consents to personal jurisdiction in such courts. Vendor irrevocably waives, to the fullest extent permitted by law, and objection that it may now or hereafter have to the laying of the venue of any such suit, action or proceeding in any such court serving Cumberland County or that any such suit, action or proceeding brought in any such court serving Cumberland County has been brought in an inconvenient forum.
 - c) Vendor shall comply with all laws, ordinances, codes, rules, regulations, and licensing requirements that are applicable to the conduct of its business and its performance in accordance with the Contract, including those of federal, state, and local agencies having jurisdiction and/or authority.
8. **NON-DISCRIMINATION COMPLIANCE:** PWC has an equal opportunity purchasing policy. PWC seeks to ensure that all segments of the business community have access to supplying the Goods and **ancillary services** needed by PWC. PWC encourages utilization of small and minority business enterprises in its procurements. PWC provides opportunities for all businesses and does not discriminate regardless of race, color, religion, age, national origin or disability.
9. **PAYMENT TERMS:** Vendor shall invoice PWC within thirty (30) days after acceptance of the of the Goods. PWC shall pay the undisputed portion of a correct invoice within forty-five (45) calendar days after PWC's receipt of the invoice. All payments from PWC to Vendor shall be transferred electronically to Vendor's designated financial institution, and Vendor shall, prior to delivery of its invoice to PWC, supply the name of Vendor's financial institution, routing number, and account number on the form available from PWC and provide to PWC a completed and signed IRS Form W-9. Vendor has the right to impose a late payment charge of one percent (1%) per month for amounts unpaid by PWC by the date due.

- 10. CONDITION AND PACKAGING:** Unless otherwise expressly provided by special terms and conditions or specifications in the Contract or by express, specific federal law or rule, it is understood and agreed that any item offered or shipped has not been sold or used for any purpose, is newly manufactured, and shall be in first class condition. All containers/packaging shall be suitable for handling, storage or shipment. Vendor shall properly pack, mark, and ship the Goods as instructed by PWC and otherwise in accordance with applicable law and industry standards and shall provide PWC with all shipment documentation showing the quantity of pieces in shipment, the number of cartons or containers in shipment, Vendor's name, the airway bill or bill of lading number, and the state of origin.
- 11. INTELLECTUAL PROPERTY WARRANTY AND INDEMNITY:** Vendor shall hold and save PWC, its officers, agents and employees, harmless from liability of any kind, including costs and expenses, resulting from infringement of the rights of any third party in any ancillary services or copyrighted material, patented or patent-pending invention, article, device or appliance delivered in connection with the Contract.
- 12. WARRANTIES:** Vendor warrants to PWC that for a period of twenty-four (24) months from the Delivery Date, all Goods will: (a) be free from any defects in workmanship, material and design; (b) conform to applicable specifications, drawings, designs, samples and other requirements set forth in the Contract or as specified by PWC and agreed to by Vendor; (c) be fit for their intended purpose and operate as intended; (d) be free and clear of all liens, security interests, or other encumbrances; and (e) not infringe or misappropriate any third party's patent or other intellectual property rights. These warranties survive any delivery, inspection, acceptance or payment of or for the Goods by PWC. These warranties are cumulative and in addition to any other warranty provided by law or equity. Any applicable statute of limitations runs from the date of PWC's discovery of the noncompliance of the Goods with the foregoing warranties. If PWC gives Vendor notice of noncompliance with this Section 9, Vendor shall, at its own cost and expense, within thirty (30) days replace or repair the defective or nonconforming Goods and pay for all related expenses, including, but not limited to, transportation charges for the return of the defective or nonconforming Goods to Vendor and the delivery of repaired or replacement Goods to PWC.
- 13. ADVERTISING:** Vendor agrees not to use the existence of the Contract or the name of Fayetteville Public Works Commission as part of any commercial advertising or marketing of products or ancillary services unless otherwise provided in the SFB.
- 14. ASSIGNMENT OR DELEGATION OF DUTIES:**
- a) As a convenience to Vendor, PWC may include any person or entity designated by Vendor in writing as a joint payee on Vendor's payment check. In no event shall such approval and action obligate PWC to anyone other than Vendor.
 - b) If Vendor requests any assignment, or delegation of duties, Vendor shall remain responsible for fulfillment of all Contract obligations. Upon written request, PWC may, in its unfettered discretion, approve an assignment or delegation to another responsible entity acceptable to PWC, such as the surviving entity of a merger, acquisition or a corporate reorganization if made as part of the transfer of all or substantially all of Vendor's assets. Any purported assignment or delegation made in violation of this provision shall be void and a material breach of the Contract.
- 15. INSURANCE:** During the term of this Agreement and for a period of three (3) years after the date of this Agreement, Vendor shall, at its own expense, maintain and carry insurance in full force and effect that includes, but is not limited to, commercial general liability (including product liability) with limits no less than \$1,000,000 for each occurrence and \$3,000,000 in the aggregate and umbrella liability in a sum no less than \$5,000,000, which insurance shall be placed with insurance companies authorized to do business in the State of North Carolina and rated A minus VII or better by the current edition of Best's Key Rating Guide or otherwise approved in writing by PWC. Prior to delivering any Goods, Vendor shall deliver to PWC certificates of insurance confirming each such coverage, and Vendor shall

direct its insurers to provide annually to PWC certificates confirming each such coverage during the coverage period. PWC shall be named as an additional insured in the insurance policy. Vendor shall not reduce or allow the required insurance coverages to lapse without PWC's prior written approval. All policies for insurance must be endorsed to contain a provision giving PWC a thirty (30) calendar day prior written notice by certified mail of any cancellation of that policy or material reduction in coverage. Should a notice of cancellation be issued for non-payment of premiums or any part thereof, or should Vendor fail to provide and maintain certificates as set forth herein, PWC shall have the right, but not the obligation, to pay such premium to the insurance company or to obtain such coverage and to deduct such payment from any sums that may be due or become due to Vendor, or to seek reimbursement for said payments from Vendor. Any such sums paid by PWC shall be due and payable immediately by Vendor upon notice from PWC. The insurance provisions of this Agreement shall not be construed as a limitation on Vendor's responsibilities and liabilities pursuant to the terms and conditions of this Agreement.

16. GENERAL INDEMNITY:

- a) Vendor shall indemnify, defend and hold and save PWC, its officers, agents, and employees, harmless from liability of any kind, including all claims and losses accruing or resulting to any other person, firm, or corporation furnishing or supplying work, ancillary services, materials, or supplies in connection with the performance of the Contract, and also from any and all claims and losses accruing or resulting to any person, firm, or corporation that may be injured or damaged by Vendor in the performance of the Contract that are attributable to the negligence or intentionally tortious acts of Vendor, provided that Vendor is notified in writing within 30 days from the date that PWC has knowledge of such claims.
- b) Vendor, at its own expense shall defend any action brought against PWC, under this section. Vendor shall have the sole control of the defense of any action on such claim and all negotiations for its settlement or compromise, provided, however, that PWC shall have the option to participate in such action at its own expense.
- c) Vendor represents and warrants that it shall make no claim of any kind or nature against PWC's agents who are involved in the delivery or processing of Vendor deliverables or ancillary services as part of this Contract with PWC.
- d) As part of this provision for General indemnity, if federal funds are involved in this procurement, Vendor warrants that it will comply with all relevant and applicable federal requirements and laws, and will indemnify, defend and hold and save PWC harmless from any claims or losses resulting to PWC from Vendor's noncompliance with such federal requirements or law in the performance of this Contract. The representations and warranties in the preceding two sentences shall survive the termination or expiration of the Contract.
- e) PWC does not participate in indemnification due to Constitutional restrictions, or arbitration, which effectively and unacceptably waives jury trial.

17. SUBCONTRACTING: Performance under the Contract by Vendor shall not be subcontracted without prior written approval of PWC, except to those subcontractors specifically identified by Vendor in its bid. PWC reserves the right, in its discretion, to reject any proposed subcontractor. Unless otherwise agreed in writing, acceptance of a Vendor's proposal shall include approval to use the subcontractor(s) that have been specified therein.

18. CONFIDENTIALITY: Vendor acknowledges and agrees that all Vendor information submitted to PWC in connection with a bid shall be subject to public disclosure unless such information is specifically identified and labeled as a trade secret or confidential information by Vendor, and Vendor provides a written basis for requesting such exemption from disclosure, which shall be acceptable to PWC in its discretion. Blanket assertions of confidentiality will not be honored. Vendors hereby agrees to indemnify and defend PWC for honoring any designation of Vendor information designated as a trade secret or confidential. The failure to identify and label any Vendor information that is released by PWC shall constitute a complete waiver of any and all claims for damages caused by any release of such information.

19. **CARE OF PWC DATA AND PROPERTY:** Any PWC property, information, data, instruments, documents, studies or reports given to or prepared or assembled by or provided to Vendor under the Contract shall be kept as confidential, used only for the purpose(s) required to perform the Contract and not divulged or made available to any individual or organization without the prior written approval of PWC.

PWC's data and property in the hands of Vendor shall be protected from unauthorized disclosure, loss, damage, destruction by a natural event or another eventuality. Vendor agrees to reimburse PWC for loss or damage of PWC property while in Vendor's custody. Such PWC data shall be returned to PWC in a form acceptable to PWC upon the termination or expiration of this Agreement.

Vendor shall notify PWC of any security breaches within 24 hours. For further information, notice is given to Vendor that the NC Department of Information Technology (DIT) has requirements relating to the security of PWC network, and rules relating to the use of PWC network, IT software and equipment, that Vendor must comply with such requirements, as well as PWC standards.

20. **ENTIRE AGREEMENT:** The Contract (including any documents mutually incorporated specifically therein) resulting from a relevant solicitation represents the entire agreement between the parties and supersedes all prior oral or written statements or agreements. All promises, requirements, terms, conditions, provisions, representations, guarantees, and warranties contained herein shall survive the Contract expiration or termination date unless specifically provided otherwise herein, or unless superseded by applicable Federal or State statutes of limitation.
21. **AMENDMENTS:** This Contract may be amended only by a written amendment duly executed by PWC and Vendor.
22. **NO WAIVER:** Notwithstanding any other language or provision in the Contract or in any Vendor-supplied material, nothing herein is intended nor shall be interpreted as a waiver of any right or remedy otherwise available to PWC under applicable law. The waiver by PWC of any right or remedy on any one occasion or instance shall not constitute or be interpreted as a waiver of that or any other right or remedy on any other occasion or instance.
23. **FORCE MAJEURE:** Neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations as a result of events beyond its reasonable control, including, without limitation, fire, power failures, any act of war, hostile foreign action, nuclear explosion, riot, strikes, civil insurrection, earthquake, hurricane, tornado, other catastrophic epidemic or pandemic, natural event or Act of God.
24. **SOVEREIGN IMMUNITY:** Notwithstanding any other term or provision in the Contract, nothing herein is intended nor shall be interpreted as waiving any claim or defense based on the principle of sovereign immunity or other state or federal constitutional provision or principle that otherwise would be available to PWC under applicable law.
25. **COMPLIANCE:** Vendor hereby acknowledges that "E-Verify" is the federal E-Verify program operated by the US Department of Homeland Security and other federal agencies which is used to verify the work authorization of newly hired employees pursuant to federal law and in accordance with Article 2, Chapter 64 of the North Carolina General Statutes. Vendor further acknowledges that all employers, as defined by Article 2, Chapter 64 of the North Carolina General Statutes, must use E-Verify and after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with NCGS §64-26(a). Vendor hereby pledges, attests, and warrants through execution of this Agreement that Vendor complies with the requirements of Article 2, Chapter 64 of the North Carolina General Statutes and further pledges, attests, and warrants that all subcontractors currently employed by or subsequently hired by Vendor to provide services for PWC shall comply with all E-Verify requirements. Failure to comply with the above requirements shall be considered a breach of this Agreement. Vendor hereby further acknowledges that the execution and delivery of this Agreement constitutes Vendor's certification to PWC and to the North Carolina State Treasurer that, as of the Effective Date, Vendor is not listed on (a) the Final Divestment List created and maintained by the North Carolina Department of State Treasurer pursuant to the Iran Divestment Act of 2015, Chapter 147, Article 6E of the General Statutes of North

Carolina (the "Iran Divestment Act"); or (b) the list of companies that the North Carolina State Treasurer determines to be engaged in a boycott of Israel in accordance with Article 6G of Chapter 147 of the General Statutes of North Carolina. Vendor represents and warrants to PWC that Vendor, and all persons and entities owning (directly or indirectly) an ownership interest in it: (i) are not, and will not become, a person or entity with whom a party is restricted from doing business with under regulations of the Office of Foreign Asset Control ("OFAC") of the Department of the Treasury (including, but not limited to, those named on OFAC's Specially Designated and Blocked Persons list) or under any statute, executive order (including, but not limited to, the September 24, 2001, Executive Order 13224 Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit, or Support Terrorism), or other governmental action; and (ii) are not knowingly engaged in, and will not knowingly engage in, any dealings or transactions or be otherwise associated with such persons or entities described in clause (i) above. Vendor also shall at all times during the term of this Agreement comply with Executive Order 11246, including but not limited to the Equal Opportunity Clause requirements set forth in 41 C.F.R. § 60-1.4. Vendor shall abide by the requirements of 41 CFR 60-300.5(a) and 60-741.5(a) prohibiting discrimination against qualified individuals on the basis of protected veteran status or disability and requiring affirmative action by covered prime contractors and subcontractors to employ and advance in employment qualified protected veterans and individuals with disabilities.