



City of Grand Island

Tuesday, January 14, 2020

Council Session

Item G-6

#2020-4 - Approving Bid Award - Substation Transformer

Staff Contact: Tim Luchsinger, Stacy Nonhof

Council Agenda Memo

From: Tim Luchsinger, Utilities Director
Stacy Nonhof, Interim City Attorney

Meeting: January 14, 2020

Subject: Contract for Substation Power Transformer

Presenter(s): Tim Luchsinger, Utilities Director

Background

The Grand Island electric system utilizes large power transformers in each of the substations around the City. Routine monitoring and analysis is performed on each one to ensure they are operating correctly. During the past couple of years, the south transformer at Substation F on Capital Ave started showing signs of problems. Based upon manufacturer recommendations, the transformer was taken out of service and replaced with a spare unit. The failed transformer was then sent to a repair facility in Jordan, MN for analysis and inspection. The inspection didn't reveal an easily identifiable problem and a total rebuild of the unit was recommended. Due to the cost of a complete rebuild, a bid package was developed that gave potential bidders the choice of rebuilding the existing unit or quoting the price of a brand-new unit.

Discussion

The request for bids was advertised in accordance with City procurement requirements. Specifications were sent to ten regional distributors. Bids were publicly opened at 2:00 pm on December 31, 2019. The estimate for this project is \$1,000,000. Listed below is a tabulation of the bids received:

<u>Bidder</u>	<u>Exceptions</u>	<u>Bid Price</u>
Jordan Transformer (Rebuild)	Noted	\$739,980.55*
SPX Transformer Solutions, Inc. (New)	Noted	\$885,276.48*
WEG Transformers USA (New)	None	\$885,276.48*
Wesco Distribution, Inc. (New)	None	\$1,001,900.00*
Delta Star, Inc. (New)	None	\$1,020,105.13*

* Original bid did not include sales tax. This price includes sales tax.

All bids were evaluated by city personnel. The Jordan Transformer bid was the only bid for a rebuild of the existing transformer. The difference between the rebuild price and lowest priced

new transformer from SPX Transformer Solutions, Inc., is approximately 15%. There are several benefits of purchasing new versus a rebuild including better warranty, all new components and faster lead time. SPX included a couple of minor exceptions that aren't considered a problem.

Alternatives

It appears that the Council that the following alternatives concerning the issue at hand. The Council may:

1. Move to approve
2. Refer the issue to a Committee
3. Postpone the issue to a future date
4. Take no action on the issue

Recommendation

City Administration recommends that the Council approve the Contract for Substation Power Transformer with SPX Transformer Solutions, Inc., for \$885,276.48.

Sample Motion

Move to approve the Contract for Substation Power Transformer with SPX Transformer Solutions, Inc., for \$885,276.48



Stacy Nonhof, Purchasing Agent

*Working Together for a
Better Tomorrow, Today*

BID OPENING

BID OPENING DATE: December 31, 2019 at 2:00 p.m.
FOR: Substation Transformer – Phelps Control Center
DEPARTMENT: Utilities
ESTIMATE: \$1,000,000.00
FUND/ACCOUNT: 520
PUBLICATION DATE: November 20, 2019
NO. POTENTIAL BIDDERS: 10

SUMMARY

Bidder:	<u>Delta Star, Inc.</u> Lynchburg, VA	<u>WEG Transformers USA</u> Washington, MO
Bid Security:	Fidelity & Deposit Co.	The Hanover Insurance Co.
Exceptions:	None	None
Bid Price:		
Rewind/Rebuild:	N/A	N/A
New Transformer:	\$948,395.00	\$824,000.00
Bidder:	<u>Jordan Transformer</u> Jordan, MN	<u>SPX Transformer Solutions, Inc.</u> Waukesha, WI
Bid Security:	Farmington Casualty Co.	Western Surety Co.
Exceptions:	Noted	Noted
Bid Price:		
Rewind/Rebuild:	\$688,354.00	N/A
New Transformer:	N/A	\$823,513.00

Bidder: WESCO Distribution, Inc.
Des Moines, IA
Bid Security: **Liberty Mutual Ins. Co.**
Exceptions: **None**

Bid Price:
Rewind/Rebuild: N/A
New Transformer: \$932,000.00

cc: Tim Luchsinger, Utilities Director
Jerry Janulewicz, City Administrator
Stacy Nonhof, Purchasing Agent

Pat Gericke, Utilities Admin. Assist.
Patrick Brown, Finance Director
Travis Burdett, Assist. Utilities Director

P2166

CONTRACT AGREEMENT

THIS AGREEMENT made and entered into by and between SPX Transformer Solutions Inc. hereinafter called the Contractor, and the City of Grand Island, Nebraska, hereinafter called the City.

WITNESSETH:

THAT, WHEREAS, in accordance with law, the City has caused contract documents to be prepared and an advertisement calling for bids to be published, for construction of SUBSTATION TRANSFORMER; and

WHEREAS, the City, in the manner prescribed by law, has publicly opened, examined, and canvassed the bids submitted, and has determined the aforesaid Contractor to be the lowest responsive and responsible bidder, and has duly awarded to the said Contractor a contract therefore, for the sum or sums named in the Contractor's bid, a copy thereof being attached to and made a part of this contract;

NOW, THEREFORE, in consideration of the compensation to be paid to the Contractor and of the mutual agreements herein contained, the parties have agreed and hereby agree, the City for itself and its successors, and the Contractor for itself, himself, or themselves, and its, his, or their successors, as follows:

ARTICLE I. That the Contractor shall (a) furnish all tools, equipment, superintendence, transportation, and other construction materials, services and facilities; (b) furnish, as agent for the City, all materials, supplies and equipment specified and required to be incorporated in and form a permanent part of the completed work; (c) provide and perform all necessary labor; and (d) in a good substantial and workmanlike manner and in accordance with the requirements, stipulations, provisions, and conditions of the contract documents as listed in the attached General Specifications, said documents forming the contract and being as fully a part thereof as if repeated verbatim herein, perform, execute, construct and complete all work included in and covered by the City's official award of this contract to the said Contractor, such award being based on the acceptance by the City of the Contractor's bid;

ARTICLE II. That the City shall pay to the contractor for the performance of the work embraced in this contract and the contractor will accept as full compensation therefore the sum (subject to adjustment as provided by the contract) of Eight Hundred Eighty-Five Thousand, Two Hundred Seventy-Six Dollars \$ 885,276.48 for all services, materials, and work covered by and included in the contract award and designated in the foregoing Article I; payments thereof to be made in cash or its equivalent in the manner provided in the General Specifications.

ARTICLE III. The contractor hereby agrees to act as agent for the City in purchasing materials and supplies for the City for this project. The City shall be obligated to the vendor of the materials and supplies for the purchase price, but the contractor shall handle all payments hereunder on behalf of the City. The vendor shall make demand or claim for payment of the purchase price from the City by submitting an invoice to the contractor. Title to all materials and supplies purchased hereunder shall vest in the City directly from the vendor. Regardless of the method of payment, title shall vest immediately in the City. The contractor shall not acquire title to any materials and supplies incorporated into the project. All invoices shall bear the contractor's name as agent for the City. This paragraph will apply only to these materials and supplies actually incorporated into and becoming a part of the finished product of SUBSTATION TRANSFORMER.

ARTICLE IV. That the contractor shall start work as soon as possible after the contract is signed and the required bonds and insurance are approved, and that the Contractor shall complete the work on or before December 1, 2020. It is understood and agreed that time is the essence of the contract.

CONTRACT AGREEMENT (Continued)

ARTICLE V. The Contractor agrees to comply with all applicable State fair labor standards in the execution of this contract as required by Section 73-102, R.R.S. 1943. The Contractor further agrees to comply with the provisions of Section 48-657, R.R.S. 1943, pertaining to contributions to the Unemployment Compensation Fund of the State of Nebraska. During the performance of this contract, the contractor and all subcontractors agree not to discriminate in hiring or any other employment practice on the basis of race, color, religion, sex, national origin, age or disability. The Contractor agrees to comply with all applicable Local, State and Federal rules and regulations.

IN WITNESS WHEREOF, the parties hereto have executed this Contract Agreement.

Contractor _____

By _____

Date _____

Title _____

CITY OF GRAND ISLAND, NEBRASKA,

By _____
Mayor

Date _____

Attest: _____
City Clerk

The contract, insurance, and any required bonds are in due form according to law and are hereby approved.

Attorney for the City

Date _____



SUBSTATION TRANSFORMER

Phelps Control Center
700 E. Bischeld Street
Grand Island, NE

Contact
City of Grand Island Utilities Department
Travis Burdett, Assistant Utilities Director
(308) 385-5466
travis.burdett@giud.com

Date Issued: November 13, 2019
Date Bid Due: December 31, 2019

INSTRUCTIONS TO BIDDERS

EXCEPTIONS TO SPECIFICATIONS: Each bidder shall carefully check all requirements herein set forth and shall offer items which fully comply with these requirements or shall plainly set forth all points, features, conditions, specifications, etc., wherein their items offered do not meet these specifications. Such exceptions as are made shall be listed by page number in the following blanks and shall be marked in ink on the pages of these specifications. If additional space is required for exception explanation, please reference and attach a letter to bid. Reference shall not be made to other attachments for exceptions and supplementary terms. Failure to outline such exceptions as specifically stated herein will require the successful bidder to comply with these specifications. In case of conflict between the bid and these specifications, these specifications shall govern unless specific exceptions are listed by the bidder.

Exceptions to specifications, pages See attached SPX Transformer Solutions quotation 70009896 for details
1. Spec section 7.0 - 8% impedance will not limit the three phase fault current to 10,000 amperes @ 110% voltage as specified. To limit the max three phase fault current to 10,000 amps @ 110% voltage, the impedance would have to be 10.3% or larger @ 22.5 MVA.

SUBMISSION OF BIDS: All bids shall be submitted using the City's bid form. Bids shall **be addressed to the City Clerk** and plainly marked, "**BID FOR SUBSTATION TRANSFORMER**".

INSURANCE COVERAGE: The Contractor shall purchase and maintain at their expense as a minimum insurance coverage of such types and in such amounts as are specified herein to protect Contractor and the interest of Owner and others from claims which may arise out of or result from Contractor's operations under the Contract Documents, whether such operations be by Contractor or by any subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. Failure of Contractor to maintain proper insurance coverage shall not relieve them of any contractual responsibility or obligation.

BASE BID: The bidder is expected to base their bids on materials and items complying fully with these specifications. In the event they name in their bid materials or items which do not conform, they will be responsible for furnishing materials and items which fully conform at no change in the bid price.

ALTERNATE BIDS: It is the desire of the Owner that the bidder base their bid price for this project on the written specifications. If an alternate bid or bids are submitted by a bidder, it is desired that they first submit a bid price as above described and then describe the alternate bid. Failure to do so may be reason for not extending any consideration to alternate bids.

BIDDER QUALIFICATION: Bids will be received only from qualified bidders. A bidder will be considered qualified if they are a recognized electric utility contractor and have experience in the construction of projects of equal or greater size than that specified herein. If requested, the bidder shall supply experience data. Such data will be used to assist in determining the qualifications of the bidder. Bidder must comply with all applicable Federal, State and Local rules and regulations.

CHECKS OR BID BONDS: Checks or bid bonds of the unsuccessful bidders will be returned when their bids have been rejected and not to exceed sixty (60) days from the date bids are opened. All bids shall remain in force for this 60-day period. The check or bid bond of the successful bidder will be returned when the Contracts are signed by both parties and necessary bonds supplied. Should the Purchaser make an award to a bidder who refuses to enter into Contract and furnish the required bonds within twenty (20) days after notification of acceptance, then the bid security which has been deposited with the Purchaser will be forfeited to the Purchaser as liquidated damages.

PERFORMANCE BOND: On award of the Contract, the successful Contractor shall furnish a Performance Bond which shall be in an amount equal to the full Contract price, guaranteeing faithful compliance with all requirements of the Contract Documents and complete fulfillment of the Contract, and payment of all labor, material and other bills incurred in carrying out this Contract. According to Nebraska

Law, the surety company executing the Performance Bond must be authorized to do business in the State of Nebraska.

PAYMENT BOND: On award of the Contract, the successful Contractor shall furnish a Payment Bond which shall be in an amount equal to the full Contract price, guaranteeing protection of all persons supplying labor and materials to the Contractor or its subcontractors for the performance of the work provided for in the Contract. In accordance with Nebraska Law, the surety company executing the Payment Bond must be authorized to do business in the State of Nebraska.

TAXES: The City Utilities Department pays sales tax amounting to 5.5% State and 2.0% City; payment of 7.5% sales tax must be in the Contractor's bid. Contractor must pay any other tax which might be applicable.

REQUESTS FOR PAYMENT: The City of Grand Island will make payments only after approval at regularly scheduled City Council meetings. These meetings typically occur the second and fourth Tuesday each month. Requests for payment must be received no less than ten (10) working days prior to the designated meeting to allow time for proper review and consideration. Payments will only be made after final completion of the project to City's satisfaction unless otherwise stated in bidding documents.

REQUEST FOR INTERPRETATION: If any person contemplating submitting a bid for this Contract is in doubt as to the true meaning of any part of the specifications or other proposed Contract documents, they may submit to the Purchasing Department a written request for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed documents will be made only by addendum duly issued and/or delivered to each person receiving a set of such documents. The addenda upon closing shall become a part of the Contract. The City will not be responsible for any other explanation or interpretation of the proposed documents.

ADDENDA: Any addendum to the specifications issued during the time allowed for preparation of bids shall be covered in the bid and shall become a part of the specifications. One copy of each addendum issued before the date of the letting will be sent to all bidders. One signed copy is to be returned immediately to the sender as acknowledgment of receipt.

TIME OF COMPLETION: Time of completion is the essence of this Contract, and all work shall be completed no later than December 1, 2020.

MODIFICATION OF BIDS: Bids may be modified or withdrawn by an appropriate document duly executed in the manner that a bid must be executed and delivered to the place where bids are to be submitted at any time prior to the final time set for receiving bids. Bidders may modify or withdraw bids by Fax communication at any time prior to the time set for receiving bids provided this instruction is positively identified. Any Fax modification should not reveal the amended bid price but should provide only the addition, subtraction or other modifications. A duly-executed document confirming the Fax modification shall be submitted within three (3) days after bids are opened.

BID DATA: Bidders shall submit bid documents and data, in triplicate, by filling in the document and data sheets supplied by the Purchasing Department. The bid sheets shall be filled out legibly in ink to permit reproduction.

BIDDER SECURITY: Bidder security shall be enclosed in a separate envelope marked, "**BIDDER SECURITY / BID FOR SUBSTATION TRANSFORMER**," the envelope shall contain only a cashier's check, certified check or bidder's bond.

This separate envelope shall be attached to a sealed envelope containing the bid and any other bid materials. This second envelope shall be marked "**BID FOR SUBSTATION TRANSFORMER**" and be addressed to the "City Clerk." Bids of an incomplete nature or subject to multiple interpretations may, at the option of the Purchaser, be rejected as being irregular.

FINANCIAL STATEMENT: The bidder shall furnish upon request a complete financial statement signed by the bidder, if an individual, by all partners if the bidder is a partnership or, by the President or Secretary, if the bidder is a corporation.

EQUAL EMPLOYMENT OPPORTUNITY: The Contractor agrees that during the performance of this Contract not to discriminate in hiring or any other employment practice on the basis of race, color, religion, sex, disability, age or national origin, and to comply with Executive Order 11,246 of September 24, 1965, and the rules, regulations and relevant orders of the Secretary of Labor, and Chapter 20 of the Reissue Revised Statutes of the State of Nebraska.

GRATUITIES AND KICKBACKS: City Code states that it is unethical for any person to offer, give, or agree to give any City employee or former City employee, or for any City employee or former City employee to solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, or preparation of any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter, pertaining to any program requirement or a contract or subcontract, or to any solicitation or proposal therefore. It shall be unethical for any payment, gratuity, or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor or any person associated there within, as an inducement for the award of a subcontract or order.

LOCAL CONDITIONS: Each bidder shall have an authorized representative visit the site of the work and thoroughly inform themselves of all conditions and factors which would affect the work and the cost thereof, including the arrangement and conditions of existing or proposed structures affecting or affected by the proposed work; the procedure necessary for maintenance of uninterrupted operation; the availability and cost of labor and facilities for transportation, handling, and storage of materials and equipment.

It must be understood and agreed that all such factors have been investigated and considered in the preparation of every bid submitted. No claims for financial adjustment to any Contract awarded for the work under these Specifications and documents will be permitted by the City, which are based on lack of such prior information or its effect on the cost of the work.

CORRESPONDENCE: Correspondence regarding drawings, instruction manuals, and other engineering data shall be sent to:

Attn: Travis W. Burdett P.E.
City of Grand Island
Utility Department
P.O. Box 1968
Grand Island, NE 68802-1968
(308) 385-5466

LOCAL BIDDER PREFERENCE: In case of tied low bids, all other things being equal, preference shall be given in the following order:

1. To those bidders who manufacture their products within the limits of the City of Grand Island.
2. To those bidders who manufacture their products within the limits of the County of Hall.
3. To those bidders who package, process, or through some other substantial operation have employees and facilities for these purposes in the City of Grand Island.
4. To those bidders who package, process, or through some other substantial operation have employees and facilities for these purposes in the County of Hall.

5. To those bidders who maintain a bona fide business office in the City of Grand Island, whose products may be made outside the confines of the City of Grand Island.
6. To those bidders who maintain a bona fide business office in the County of Hall, whose products may be made outside the confines of the County of Hall.
7. To those bidders whose commodities are manufactured, mined, produced, or grown within the state of Nebraska and to all firms, corporations, or individuals doing business as Nebraska firms, corporations or individuals, when quality is equal or better and delivered price is the same or less than the other bids received.
8. To those bidders whose commodities are manufactured, mined, produced, or grown within the United States of America and to all firms, corporations, or individuals doing business as firms registered in states other than Nebraska when quality is equal or better and delivered price is the same or less than the other bids received.

**SUBSTATION TRANSFORMER
CITY OF GRAND ISLAND, NEBRASKA**

CONTRACTOR'S BID

TO THE MEMBERS OF THE COUNCIL
CITY OF GRAND ISLAND
GRAND ISLAND, NEBRASKA

THE UNDERSIGNED BIDDER, having examined the plans, specifications, general and special conditions, other proposed contract documents, and all addenda thereto and being acquainted with and fully understanding (a) the extent and character of the work covered by this Bid, (b) the location, arrangement, and specified requirements for the proposed work, (c) the location, character, and condition of existing streets, roads, highways, railroad, pavements, surfacing, walks, driveways, curbs, gutters, trees, sewers, utilities, drainage courses and structures, and other installations, both surface and underground which may affect or be affected by the proposed work, (d) the nature and extent of the excavations to be made and the handling and re-handling of excavated materials, (e) the location and extent of necessary or probable dewatering requirements, (f) the difficulties and hazards to the work which might be caused by storm and flood water, (g) local conditions relative to labor, transportation, hauling and rail delivery facilities, and (h) all other factors and conditions affecting or which may be affected by the work.

HEREBY PROPOSES to furnish all required materials, supplies, equipment, tools and plans, to perform all necessary labor and supervision, and to construct, install, erect, equip and complete all work stipulated in, required by and in accordance with the contract documents and the plans, specifications and other documents referred to therein (as altered, amended or modified by all addenda thereto) for and in consideration of the following prices:

BID OPTION: The bidder can bid one option or both options. The City will choose the option after bids are opened that the City believes is in the best interest of the City. The bidder proposes to provide the following (check the appropriate option):

- ☐ Rewind/Rebuild of existing transformer (See Transformer Rewind/Rebuild Detailed Specifications)
- ☒ New transformer (See New Transformer Detailed Specifications)

EXPERIENCE DATA:

Each bidder shall supply the following data on his experience:

Name of Bidder: SPX Transformer Solutions, Inc.

Project Owner	Contact	Phone No.	Project Location	Completion Date
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Please see the included "37MVA References and Examples" document.

Additional Data: N/A

INSURANCE: Bidder acknowledges that bid includes compliance with the attached insurance requirements.

ADDENDA: Bidder acknowledges that Addenda Number(s) 1 were received and considered in Bid preparation.

INSURANCE AND BONDS: The undersigned bidder agrees to furnish the certificate of insurance and bonds, and to enter into a contract within twenty (20) days after acceptance of this Bid, and further agrees to complete all work covered by the foregoing bid in accordance with specified requirements. The proposed work will commence as soon as possible after the contract execution with completion of the total contract to be no later than December 1, 2020. **No work shall commence until the certificate of insurance and bonds are approved by the City and the contract is executed.**

Enclosed herewith is the bid security in the amount of:

Five percent of the attached bid price Dollars

(\$ 41,175.65)

which the undersigned bidder agrees is to be forfeited to and become the property of the City of Grand Island, Nebraska, as liquidated damages should this Bid be accepted and a contract be awarded to them and they fail to enter into a contract in the form

prescribed and to furnish the required bond within twenty (20) days, but otherwise the aforesaid bid guarantee will be returned upon their signing the contract and delivering the approved bond.

It is understood and agreed that time is the essence of the contract.

In submitting this bid it is understood that the right is reserved by the City to reject any and all bids; to waive irregularities therein and to accept whichever bid that may be in the best interest of the City, at its sole discretion. It is understood that this bid may not be withdrawn until after sixty (60) days from bid opening.

In submitting this bid, the bidder states that bidder fully complies with, and will continue to comply with, applicable State fair labor standards as required by section 73-102 RRS, 1943 and also complies with, and will continue to comply with, section 48-657 RRS, 1943 pertaining to contributions to the Unemployment Compensation Fund of the State of Nebraska.

The undersigned bidder hereby certifies (a) that this bid is genuine and is not made in the interest of or in the behalf of any undisclosed person, firm or corporation, and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation, (b) that he has not directly or indirectly induced or solicited any person, firm or corporation to refrain from bidding, (c) that he has not sought, by collusion or otherwise, to obtain for himself an advantage over any other bidder or over the City of Grand Island, and (d) that he has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid.

DATED 12/31/19

SIGNATURE OF BIDDER:

If an Individual: N/A doing business

as N/A

If a Partnership: N/A

by N/A, member of firm.

If a Corporation: SPX Transformer Solutions, Inc.

by Tina Chacon *Tina M. Chacon* (Seal)

Title Application Engineer

BUSINESS ADDRESS OF BIDDER 400 S. Prairie Ave, Waukesha, WI 53186

TELEPHONE NUMBER OF BIDDER 262-446-8425

FAX NUMBER OF BIDDER 262-521-0198

LIST ALL SUBCONTRACTORS:

<u>Company Name</u>	<u>Work Subcontracted</u>	<u>Business Address</u>	<u>Business Telephone Number</u>
Weldall MFG, Inc.	Tank Shell	2001 South Prairie Ave., Waukesha, WI	262-544-1155

MINIMUM INSURANCE REQUIREMENTS

CITY OF GRAND ISLAND, NEBRASKA

The Contractor shall purchase and maintain at their expense as a minimum insurance coverage of such types and in such amounts as are specified herein to protect Contractor and the interest of Owner and others from claims which may arise out of or result from Contractor's operations under the Contract Documents, whether such operations be by Contractor or by any subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. Failure of Contractor to maintain proper insurance coverage shall not relieve him of any contractual responsibility or obligation.

1. WORKERS COMPENSATION AND EMPLOYER'S LIABILITY

This insurance shall protect the Bidder against all claims under applicable State workers compensation laws. This insurance shall provide coverage in every state in which work for this project might be conducted. The liability limits shall not be less than the following:

Workers Compensation	Statutory Limits
Employers Liability	\$100,000 each accident
\$100,000 each employee	
\$500,000 policy limit	

2. BUSINESS AUTOMOBILE LIABILITY

This insurance shall be written in comprehensive form and shall protect the Bidder, Bidder's employees, or subcontractors from claims due to the ownership, maintenance, or use of a motor vehicle. The liability limits shall be not less than the following:

Bodily Injury & Property Damage	\$ 500,000 Combined Single Limit
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3. COMPREHENSIVE GENERAL LIABILITY

The comprehensive general liability coverage shall contain no exclusion relative to explosion, collapse, or underground property. The liability limits shall be not less than the following:

Bodily Injury & Property Damage	\$ 500,000 each occurrence
\$1,000,000 aggregate	

4. UMBRELLA LIABILITY INSURANCE

This insurance shall protect the Bidder against claims in excess of the limits provided under employer's liability, comprehensive automobile liability, and commercial general liability policies. The umbrella policy shall follow the form of the primary insurance, including the application of the primary limits. The liability limits shall not be less than the following:

Bodily Injury & Property Damage	\$1,000,000 each occurrence
\$1,000,000 general aggregate	

5. ADDITIONAL REQUIREMENTS

The City may require insurance covering a Bidder or subcontractor more or less than the standard requirements set forth herein depending upon the character and extent of the work to be performed by such Bidder or subcontractor.

Insurance as herein required shall be maintained in force until the City releases the Bidder of all obligations under the Contract.

The Bidder shall provide and carry any additional insurance as may be required by special provisions of

these specifications.

6. CERTIFICATE OF INSURANCE

Satisfactory certificates of insurance shall be filed with the City prior to starting any work on this Contract. The certificates shall show the City as an additional insured on all coverage except Workers Compensation. The certificate shall state that thirty (30) days written notice shall be given to the City before any policy is cancelled (strike the "endeavor to" wording often shown on certificate forms). If the bidder cannot have the "endeavor to" language stricken, the bidder may elect to provide a new certificate of insurance every 30 days during the contract. Bidder shall immediately notify the City if there is any reduction of coverage because of revised limits or claims paid which affect the aggregate of any policy.

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WITNESSETH:

THAT, WHEREAS, in accordance with law, the City has caused contract documents to be prepared and an advertisement calling for bids to be published, for construction of SUBSTATION TRANSFORMER; and

WHEREAS, the City, in the manner prescribed by law, has publicly opened, examined, and canvassed the bids submitted, and has determined the aforesaid Contractor to be the lowest responsive and responsible bidder, and has duly awarded to the said Contractor a contract therefore, for the sum or sums named in the Contractor's bid, a copy thereof being attached to and made a part of this contract;

NOW, THEREFORE, in consideration of the compensation to be paid to the Contractor and of the mutual agreements herein contained, the parties have agreed and hereby agree, the City for itself and its successors, and the Contractor for itself, himself, or themselves, and its, his, or their successors, as follows:

ARTICLE I. That the Contractor shall (a) furnish all tools, equipment, superintendence, transportation, and other construction materials, services and facilities; (b) furnish, as agent for the City, all materials, supplies and equipment specified and required to be incorporated in and form a permanent part of the completed work; (c) provide and perform all necessary labor; and (d) in a good substantial and workmanlike manner and in accordance with the requirements, stipulations, provisions, and conditions of the contract documents as listed in the attached General Specifications, said documents forming the contract and being as fully a part thereof as if repeated verbatim herein, perform, execute, construct and complete all work included in and covered by the City's official award of this contract to the said Contractor, such award being based on the acceptance by the City of the Contractor's bid;

ARTICLE II. That the City shall pay to the contractor for the performance of the work embraced in this contract and the contractor will accept as full compensation therefore the sum (subject to adjustment as provided by the contract) of Eight hundred twenty three thousand five hundred thirteen Dollars \$ 823,513.00

for all services, materials, and work covered by and included in the contract award and designated in the foregoing Article I; payments thereof to be made in cash or its equivalent in the manner provided in the General Specifications.

ARTICLE III. The contractor hereby agrees to act as agent for the City in purchasing materials and supplies for the City for this project. The City shall be obligated to the vendor of the materials and supplies for the purchase price, but the contractor shall handle all payments hereunder on behalf of the City. The vendor shall make demand or claim for payment of the purchase price from the City by submitting an invoice to the contractor. Title to all materials and supplies purchased hereunder shall vest in the City directly from the vendor. Regardless of the method of payment, title shall vest immediately in the City. The contractor shall not acquire title to any materials and supplies incorporated into the project. All invoices shall bear the contractor's name as agent for the City. This paragraph will apply only to these materials and supplies actually incorporated into and becoming a part of the finished product of SUBSTATION TRANSFORMER.

ARTICLE IV. That the contractor shall start work as soon as possible after the contract is signed and the required bonds and insurance are approved, and that the Contractor shall complete the work on or before December 1, 2020. It is understood and agreed that time is the essence of the contract.

CONTRACT AGREEMENT (Continued)

ARTICLE V. The Contractor agrees to comply with all applicable State fair labor standards in the execution of this contract as required by Section 73-102, R.R.S. 1943. The Contractor further agrees to comply with the provisions of Section 48-657, R.R.S. 1943, pertaining to contributions to the Unemployment Compensation Fund of the State of Nebraska. During the performance of this contract, the contractor and all subcontractors agree not to discriminate in hiring or any other employment practice on the basis of race, color, religion, sex, national origin, age or disability. The Contractor agrees to comply with all applicable Local, State and Federal rules and regulations.

IN WITNESS WHEREOF, the parties hereto have executed this Contract Agreement.

Contractor SPX Transformer Solutions, Inc.

By Tina Chacon

Date 12/31/19

Title Application Engineer

CITY OF GRAND ISLAND, NEBRASKA,

By _____
Mayor

Date _____

Attest: _____
City Clerk

The contract, insurance, and any required bonds are in due form according to law and are hereby approved.

Attorney for the City

Date _____

City of Grand Island, NE - Similar Project List - Quote 70009896

Sales Order #	PLT	Cust. no	Customer	% Z	BASE HV MVA	Max HV MVA	HV_Bil	HV_CON NECTION	HV_VOLT AGE	HV2_Bil	HV2_CO NNECTIO	HV2_VOL TAGE	LV1_Bil	LV_CON NECTION	LV1_VOLTA GE	OADBLVL	LTC	LTC Type
GT-01031	1020	1186	Customer Confidential	9.50	22.40	37.33	550	Grd Y	115.00	350	Grd Y	69.00	110	WYE	13.80	69	Yes	UZD
GT-01033	1020	1186	Customer Confidential	9.50	22.40	37.33	550	Grd Y	115.00	350	Grd Y	69.00	110	WYE	13.80	69	Yes	UZD
WT-01319	1010	439	Customer Confidential	9.80	22.56	37.60	550	Delta	115.00				150	Grd Y	13.20	68	Yes	RMV
GT-02081	1020	1687	Customer Confidential	9.00	22.50	37.50	450	Delta	115.00				200	WYE	34.50	74	Yes	RMV
GT-02152	1020	1687	Customer Confidential	9.00	22.50	37.50	450	Delta	115.00				200	WYE	34.50	74	Yes	RMV
WT-02297	1010	439	Customer Confidential	9.80	22.56	37.60	550	Delta	115.00				150	WYE	13.20	68	Yes	RMV
GT-02797	1020	1687	Customer Confidential	9.00	22.50	37.50	450	Delta	115.00				200	WYE	34.50	74	Yes	RMV
GT-02947	1020	1687	Customer Confidential	9.00	22.50	37.50	450	Delta	115.00				200	WYE	34.50	74	Yes	RMV
GT-03137	1020	1687	Customer Confidential	9.00	22.50	37.50	450	WYE	115.00				200	Delta	34.50	74	Yes	RMV
GT-03148	1020	1687	Customer Confidential	9.00	22.50	37.50	450	Delta	115.00				200	WYE	34.50	74	Yes	RMV
GT-03265	1020	1687	Customer Confidential	9.00	22.50	37.50	450	Delta	115.00				200	WYE	34.50	74	Yes	RMV
GT-03523	1020	1687	Customer Confidential	9.00	22.50	37.50	450	WYE	115.00				200	Delta	34.50	74	Yes	RMV
GT-03663	1020	1687	Customer Confidential	9.00	22.50	37.50	450	WYE	115.00				200	Delta	34.50	74	Yes	RMV
GT-03838	1020	1687	Customer Confidential	9.00	22.50	37.50	450	WYE	115.00				200	Delta	34.50	74	Yes	RMV
GT-04355	1020	1687	Customer Confidential	9.00	22.50	37.50	450	Delta	115.00				200	WYE	34.50	74	Yes	RMV
WT-04560	1010	439	Customer Confidential	9.80	22.56	37.60	550	Delta	115.00				150	WYE	13.20	68	Yes	RMV
GT-04667	1020	1687	Customer Confidential	9.00	22.50	37.50	450	Delta	115.00				200	WYE	34.50	74	Yes	RMV
WT-04732	1020	1687	Customer Confidential	9.00	22.50	37.50	450	WYE	115.00				200	Delta	34.50	74	Yes	RMV

SPX Transformer Solutions, Inc. (SPXTS) has over 50 years of manufacturing experience in the USA. Transformers range from 5MVA all the way up to 1200MVA and 345kV. The information noted above are similar units to the unit being requested from City of Grand Island, NE.

Our Waukesha facility is 421,000 square feet of medium and large power manufacturing capabilities; Coil winding, 14 Horizontal 9 Vertical. Test Floor: 2 Passoni Villa impulse generators. Within the Service Group; Several mobile vacuum oil purification units, multiple pieces of auxiliary equipment and semi-tractor/crane combination vehicles. Additionally, SPX Transformer Solutions designs, builds and tests its transformers according to IEEE, ANSI, NEMA and ISO 9001:2008 technical and quality standards.

COMPANY REFERENCES					
References for each of the major material categories that we manufacture	Transformer Size	Contact	Phone number	TGM	Email
Entergy	7.5-180MVA	Andy Speegle	(601) 985-2602	Jorge Guerra	aspeegl@entergy.com
El Paso Electric	10-60MVA	Daniel Esparza	(915) 543-2014	Jorge Guerra	daniel.esparza@epelectric.com
Oncor Electric Delivery	8.4-90MVA	Russell Smith	(817) 215-6672	Jorge Guerra	russell.smith@oncor.com





CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)
01/07/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Aon Risk Services Central, Inc. Grand Rapids MI Office 50 Louis Street NW Suite 200 Grand Rapids MI 49503 USA	CONTACT NAME:		
	PHONE (A/C, No. Ext): (616) 456-5366	FAX (A/C, No.): (616) 456-7451	
	E-MAIL ADDRESS:		
INSURED SPX Transformer Solutions, Inc. SPX Corporation 13320-A Ballantyne Corporate Place Charlotte NC 28277 USA	INSURER(S) AFFORDING COVERAGE		NAIC #
	INSURER A: ACE American Insurance Company		22667
	INSURER B: ACE Fire Underwriters Insurance Co.		20702
	INSURER C:		
	INSURER D:		
	INSURER E:		
	INSURER F:		

COVERAGES**CERTIFICATE NUMBER:** 570074684343**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liability GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:			XSLG71213225 General Liability - SPX SIR applies per policy terms & conditions	01/01/2019	01/01/2020	EACH OCCURRENCE \$4,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$4,000,000 MED EXP (Any one person) PERSONAL & ADV INJURY \$4,000,000 GENERAL AGGREGATE \$25,000,000 PRODUCTS - COMP/OP AGG \$10,000,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY			ISAH25274519 Automobile Liability	01/01/2019	01/01/2020	COMBINED SINGLE LIMIT (Ea accident) \$2,000,000 BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input type="checkbox"/> RETENTION						EACH OCCURRENCE AGGREGATE
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	N/A	WLRC6543815A Workers Comp - All Other SCFC65438197 Workers Comp - Retro - WI	01/01/2019	01/01/2020	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE-EA EMPLOYEE \$1,000,000 E.L. DISEASE-POLICY LIMIT \$1,000,000
A	Excess WC			WCUC65438239 Workers Comp Excess - MI SIR applies per policy terms & conditions	01/01/2019	01/01/2020	EL Each Accident \$1,000,000 EL Disease - Policy \$1,000,000 EL Disease - Ea Emp \$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Limits of Liability shown for General Liability policy #XSLG71213225 are in excess of a Self Insured Retention of \$250,000 per occurrence.

Limits of Liability shown for Workers' Compensation policy #WCUC65438239 are in excess of a Self Insured Retention of \$1,000,000 per occurrence.

CERTIFICATE HOLDER**CANCELLATION**

SPX Transformer Solutions, Inc. SPX Corporation 13320-A Ballantyne Corporate Place Charlotte NC 28277 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE <i>Aon Risk Services Central, Inc.</i>

ACORD 25 (2016/03)

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GRAND ISLAND UTILITIES

SPX Transformer Solutions Quotation 70009896

12/31/2019



SPX Transformer Solutions Quotation

12/31/2019

GRAND ISLAND UTILITIES
208 NORTH PINE
GRAND ISLAND, NE 68802

Inquiry	Phelps Control Center
Quote Number	70009896
Specification Document(s)	SUBSTATION TRANSFORMER dated November 13, 2019

CONTACT INFORMATION

Channel Partner
Brad Cahoon
Cahoon Sales, Inc.
TEL 319-351-4989
FAX 319-351-8520
brad@cahoonsales.com

Application Engineer
Tina Chacon
SPX Transformer Solutions, Inc.
TEL 262-446-8425
FAX 262-521-0198
tina.chacon@spx.com

Territory General Manager
Jorge Guerra
SPX Transformer Solutions, Inc.
TEL 850-865-3559
FAX
jorge.guerra@spx.com

QUOTE SUMMARY

Item Number	10
Price Per Unit	\$823,513.00
Quantity	1
Warranty	SPX Transformer Solution's 5 Year Power Transformer Warranty
Rating Information	22.5/30/37.5/42 MVA, ONAN/ONAF/ONAF 3 Phase, 60 Hz., 55/65 Degree C rise 115 kV DELTA To 13.8 kV WYE with UZD Reduced Capacity LTC
Shipment Lead Time	38-42 weeks after SPX TS Order Acknowledgment issue date, subject to plant loading at the time of receipt of order. If required, alternate shipment may be available. Please consult the Channel Partner, Application Engineer or Territory General Manager identified in the CONTACT INFORMATION shown in this quotation.

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PRICE POLICY

Firm Pricing. If transformer(s) are shipped by 12/1/2020.

PAYMENT MILESTONES

Payment milestones, subject to credit approval, are as follows:

- 10% to be invoiced at time of Order Acknowledgement
- 40% to be invoiced at Approval Drawing Submittal
- 40% to be invoiced at time of Release to Manufacturing
- 10% to be invoiced at Delivery to pad/site

Note: All payments are Due Net 30 days from date of invoice.

PAYMENT TERMS

Quoted Prices do not include sales, use, excise or any other taxes. Any taxes imposed shall be the responsibility of customer and will be invoiced accordingly.

PRICE POLICY

Above quoted prices are for shipment shown in Section "Quote Summary", subject to the following conditions:

- Factory acceptance of a written purchase order or contract, within the validity period of this quotation.
- Charge of 1-½% per month of the unpaid balance will be assessed beginning 15 days after the due date of the invoice.



DRAWINGS

Approval drawings will be provided within **16 weeks** after issue date of SPX TS Order Acknowledgment. Quoted Shipment Lead Time includes **1 week** for customer to review and return approval drawings.

For orders requiring drawing approval, a release to immediately proceed with production must be returned to SPX TS within **1 week** after drawing submittal to maintain scheduled date(s).



MINERAL OIL

Mineral Oil is included in the quoted transformer price. If mineral oil is shipped separately, pricing includes shipment/delivery of the oil within sixty (60) days of shipment of the transformer. After that date, any additional costs will be charged to the customer.



SHIPMENT

The above quoted transformer will be **shipped oil filled by truck** to your specified pad.

Quoted freight and rigging prices are based on the delivery location and site conditions known as of the bid issue date and based on the free access required for SPX TS to unload the equipment without obstruction. Prices are subject to adjustment to the extent that there are changes to the delivery location, the delivery location's transportation route, or the site conditions ("Conditions") that would complicate the movement of the transformer(s).

Such Conditions that would complicate the movement of the transformer(s), include, but are not limited to: lack of existing roads; impassable conditions; extreme grade or any other condition that would prevent SPX TS from delivering to the specified site with a single crane lift; if clearance is not available due to highway construction; changes in state regulations; changes in bridge limitations; needed repairs to, but not limited to, roadway, delivery site access, or railways (customer or non-customer owned); obstructions such as existing fencing, or removal or reinstallation of any overhead or adjacent structures; insufficiently compacted soil (necessitating matting); oil containment pits or dikes around pad; debris or other condition beyond SPX TS's control or unknown at the time of bid.

Any additional costs associated with such Conditions will be charged to the customer.

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FIELD SERVICE

Services for **Assembly & Testing** ("Field Services") as identified in this quotation are included in the quoted transformer price. Other Field Services may be identified as an adder. Field Services standard work scope is included as an attachment. Quoted Field Service prices are based on free access to the site required to perform the field services and on the anticipated schedule with a single trip to the site. Quoted Field Service prices do not include any site specific or customer required access and/or safety training, any special and/or site-specific safety, PPE or environmental requirements, use of union labor or any local Sales or Use tax. Any additional direct costs associated with deviations from the proposed field service schedule will be charged to the Customer on a time and material basis.

Any Field Service offered in this quote, either as part of the quoted price or which can be elected as an adder, shall be subject to the terms of purchase of the transformer. In no event shall SPX TS have any obligation to identify, correct, abate, clean up, control, or remove from customer's premises any toxic or hazardous material.



TERMS & CONDITIONS

The enclosed SPX Transformer Solution's **Transformer Terms and Conditions of Sale** are an integral part of this offer, and shall apply except as otherwise agreed to in writing by an authorized employee of SPX TS. **Alternate Terms and Conditions are subject to negotiation.**

Seller shall in no event be liable for any indirect, special or consequential damages whatsoever, whether grounded in tort (including negligence), strict liability, or contract. Under no circumstances shall Seller's liability to Buyer exceed the contract price for the specific goods and services upon which the claim is based. Any action for breach of contract or otherwise must be commenced within one year after the cause of action has accrued.

SPX Transformer Solutions reserves the right to correct clerical and administrative errors in this quotation, and other related documents.



WARRANTY

The above transformer is quoted with the **SPX Transformer Solutions' Five Year Power Transformer Warranty** in lieu of all others specified, expressed or implied. To qualify for the SPX TS Five Year Warranty, a SPX TS Service representative **must be** present at the time the transformer is dressed out, and both the primary and secondary must be protected from surges with arresters mounted on the transformer tank.

In addition to the above, full compliance to the SPX TS Instruction Manual is required to validate the warranty. A complete Instruction Manual is provided in the control box of every SPX TS Power Transformer.



COMMERCIAL EXCEPTIONS

SPX Transformer Solutions takes exception to the Customer's commercial terms and offers this bid subject to the enclosed SPX Transformer Solution's Transformer Terms and Conditions of Sale. In the event that SPX Transformer Solutions is being considered for an award, Customer's commercial terms are subject to negotiation.



TECHNICAL NOTES & COMMENTS

1. Spec section 32.1 – The following spare parts are included in the bid price of the transformer:
 - a. One (1) high side and one (1) low side bushing with gaskets.
 - b. Two (2) manhole gaskets.
 - c. Two (2) cooling fan motors.
2. Spec section 29.7.5 – Per Addendum 1 dated 12/23/2019, the bid price includes an SFRA test prior to disassembly and shipping to allow a comparison to the SFRA test after shipping and reassembly.

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TECHNICAL EXCEPTIONS

1. Spec section 7.0 – 8% impedance will not limit the three phase fault current to 10,000 amperes @ 110% voltage as specified. To limit the max three phase fault current to 10,000 amps @ 110% voltage, the impedance would have to be 10.3% or larger @ 22.5 MVA.



LOSS GUARANTEE

In accordance with IEEE Standard C57.12.00-2015 Section 5.9, No-load (core) loss guarantee on the enclosed performance specification(s) is based on the standard reference temperature of 20°C. Load (winding) loss guarantee is at the standard reference temperature of 85°C on 65°C rise rated transformers (or 75°C on 55/65°C rise rated transformers).

SPX TS tests no-load and load losses with less than 1.0% measurement error. These measurement errors are determined by a calibration system that is traceable to the National Institute of Standards and Technology (formerly the National Bureau of Standards) using methods described in NIST's Technical Note 1204.



AWARD OF CONTRACT

In the event that the transformer contract is awarded to SPX Transformer Solutions, please provide the following text on the purchase order to help expedite order processing: **Unit(s) will be Designed, Manufactured, Tested, Shipped, Sold and Invoiced in accordance with SPX Transformer Solutions' Quotation 70009896, dated 12/31/2019.**



VALIDITY

Due to the rapid change in the cost of commodities required to manufacture power transformers, this proposal will remain in effect for 30 days, unless changed in the interim by written notice. Extensions to the 30-day validity will be considered, as required, to facilitate the order process.

Sincerely,
SPX Transformer Solutions, Inc.



Tina Chacon
Application Engineer

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Enclosures

Performance Specification(s)

Transformers Term & Conditions of Sale

SPX Waukesha Five Year Power Transformer Warranty

Assembly & Testing: Units Shipped With Oil

Cancellation/Delay Policy

Transformer Storage Policy

Request for Storage Form

Transformer Oil Specification

Transformer Paint Systems

Paint Systems Test Results

Short Circuit Test Results

SPX Service Solutions

SPX/Waukesha UZD

Load Tap Changer Filtration Systems

SPX TS Customer Survey Results

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Performance Specification

TRANSFORMER RATINGS									
Phase	3	Cooling Class	HV Volts		XV Volts		YV Volts		ZV (TV) Volts
Frequency	60		115,000	--	13,800	--	--	--	--
Temp Rise °C	55 / 65		Delta	--	Wye	--	--	--	--
Insulating	Oil	ONAN	22.50	/	25.20	22.50	/	25.20	--
		ONAF	30.00	/	33.60	30.00	/	33.60	--
		ONAF	37.50	/	42.00	37.50	/	42.00	--

ADDITIONAL TAP VOLTAGES			
Terminal	Style	Taps or KV	Capacity
HV	DETC	+ 2 / - 2 @ 2.500 %	FULL
XV	UZD	+ 16 / - 16 @ 0.625 %	REDUCED

PERCENT IMPEDANCE VOLTS		
%	Windings	At MVA
8.00	H-X	22.5
--	H-Y	--
--	X-Y	--

INSULATION LEVELS (KV)			
Terminal	Winding		Bushing
HV Line	550	--	550
HV Neutral	--	--	--
XV Line	110	--	150
XV Neutral	110	--	150
YV Line	--	--	--
YV Neutral	--	--	--
ZV (TV) Line	--	--	--
ZV (TV) Neutral	--	--	--

AUXILIARY LOSSES AND SOUND LEVEL			
MVA	Class	Cooling	Sound Level dB
22.50	ONAN	--	64
30.00	ONAF	1,800	66
37.50	ONAF	4,200	67
The above values for cooling loss do not include ancillary equipment (heaters, control devices, etc.) losses of 3,000 watts			

PERFORMANCE BASED ON A LOADING OF				
HV Winding	115,000	Volts @	22.50	MVA
XV Winding	13,800	Volts @	22.50	MVA
YV Winding	--	Volts @	--	MVA
ZV (TV) Winding	--	Volts @	--	MVA

EFFICIENCIES				
Base MVA (ONAN) = 100%				
Load	100%	75%	50%	25%
Percent	99.59	99.65	99.69	99.64

REGULATION	
Power Factor	Percent Regulation
1.0	0.66
0.9	4.03
0.8	5.25

PERFORMANCE DATA No Load Temp: 20 °C/ Load Loss Temp: 75 °C				
Exciting Current (Percent) and Loss (Watts)				
Excitation	Exciting Current(%)	No Load Loss	Load Loss	Total Loss
100%	.500	15,400	77,400	92,800

MECHANICAL DATA - Not for Construction				Dimensions are in inches & weights are in pounds (approx.values)	
Outline Drawing Number:				Shipping: Filled by Truck	
	Base	Assembled	Shipping	Weight (lbs)	
Height (A)	--	194	161	Core and Coils	65,894
Width (B)	171	222	210	Tank and Fittings	40,748
Depth (C)	76	189	134	Liquid (5,942 gallons)	44,614
Height Over Cover (D)	--	161	161	Total Weight	151,256
				Shipping Weight, Heaviest Piece	134,695

Transformer Terms and Conditions of Sale

1. **ACCEPTANCE, GOVERNING PROVISIONS, AND CANCELLATIONS.** No orders shall be binding upon Seller until accepted in writing by Seller at its headquarters office or at its plant handling and processing such orders. Seller's acceptance of Buyer's order is conditioned upon Buyer's assent that the terms and conditions set forth herein shall be deemed as part of such order. No modified or other conditions will be recognized by Seller unless specifically agreed to in writing, and failure of Seller to object to provisions contained in any purchase order or other communication from Buyer shall not be construed as a waiver of these conditions nor an acceptance of any such provisions. No order accepted by Seller may be altered or modified by Buyer unless agreed to in writing by Seller, and no such order may be canceled or terminated by Buyer except with the written consent of Seller and upon payment of Seller's loss, damage and expense arising from such cancellation or termination as defined in Seller's Cancellation and/or Delay Policy. Any agreement of purchase or sale shall be construed in accordance with the laws of Wisconsin, without reference to principles of conflicts of law.
2. **PRICE POLICY.** Prices shall be as stated in Seller's quotation, prices shall be valid for the duration of the quotation and only for shipment within the quoted leadtime.
3. **TERMS OF PAYMENT.** Terms of payment are specified in Seller's quotation, and payments are due net thirty (30) days from date of invoice. Seller shall charge 1-1/2% per month of the unpaid invoice amount beginning thirty-one (31) days after date of invoice, but the amount shall not exceed any rate prohibited by applicable law. In the event there are any negotiated changes made to the order that result in a negotiated change in price that is (a) greater than or equal to ten percent (10%) of the price of the affected unit, excluding applicable taxes, freight, rigging or other ancillary charges, or (b) greater than or equal to one-hundred thousand dollars (\$100,000.00), then Customer shall be invoiced for the lesser of such amount at the time of the agreed-upon change, and payment shall be due upon receipt of said invoice. Any other negotiated changes made to the order that result in a negotiated change in price shall be debited or credited on the final invoice. Buyer shall provide Seller with any Buyer-specific invoice requests at the time the order is placed.
4. **TAXES.** Price does not include sales, use, excise or other taxes, for which Buyer assumes liability wherever applicable to the order, unless otherwise agreed in writing. Buyer shall provide any tax exemption certificate(s) or direct pay permit(s) at the time the order is placed.
5. **FREIGHT.** Except as otherwise stated in Seller's quotation, prices for freight shall be F.O.B. jobsite or nearest railyard, freight prepaid and allowed, to the jobsite or nearest railyard. Buyer shall be responsible for providing a readily accessible shipping destination without obstructions at or to the jobsite. Title and risk of loss shall transfer to Buyer when equipment is delivered to the shipping destination. Buyer shall advise Seller and carrier of any observable damage or irregularity pursuant to Seller's Receiving Instructions. Defects and non-conformances reported after delivery shall be corrected in accordance with Seller's warranty. Any detention charges by the carrier are Buyer's responsibility.
6. **DELIVERY.** Seller shall not be liable for any loss or damage as a result of any delay in shipment, delivery or installation due to any cause, whether at Seller's operations or at the operations of a supplier or subcontractor to Seller, beyond Seller's reasonable control, including, without limitation: flood, hurricane, or other act of God; act of Buyer; embargo or other governmental act, regulation, order or request; fire; theft; accident; strike, slowdown, or labor dispute; war; riot; delay in transportation; inability to obtain necessary labor, materials or manufacturing facilities. In the event of any such delay, the date of performance shall be extended for a period equal to the time lost by reason of delay, plus a reasonable time for resuming performance. If shipping or progress of work is delayed or interrupted for any cause for which Buyer is directly, or indirectly responsible and additional costs (including storage costs) are incurred by Seller due to such delays, Buyer shall reimburse Seller for such added costs.
7. **INSTALLATION.** All equipment shall be installed by and at the expense of Buyer unless otherwise agreed in writing. Assistance in initial operation of certain equipment and instruction of operators may be given as normally required. Additional assistance requested by Buyer shall be chargeable at standard rates plus living and travel expenses, unless otherwise agreed in writing.
8. **WARRANTIES.** Seller warrants the equipment to be free from defects in material and workmanship for a period of one (1) year after delivery by Seller. If within such period any such equipment or parts shall be proved to Seller's satisfaction to be defective, such equipment or parts shall be repaired or replaced at Seller's option, with all removal and installation to be at Buyer's expense. Seller's obligation hereunder shall be limited to such repair or replacement, F.O.B. its factory, and shall be conditioned upon Seller's receiving written notice of any alleged defect within ten (10) days after its discovery and at Seller's option, return of such equipment or parts prepaid to its factory.

This warranty shall not apply to equipment or parts that have been subjected to negligence, accident, damage by circumstances beyond Seller's reasonable control, or improper operation, maintenance or storage, or modification by Buyer.

For this warranty to be valid, Seller requires that all windings be protected from surges with arresters mounted on the transformer tank. Any other location must be approved by Seller.

Under no circumstances will Seller be responsible for damage in excess of the sale price to Buyer for the goods and/or services for which damages are claimed.

THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES (EXCEPT TITLE) INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PURPOSE, AND STATE SELLER'S ENTIRE AND EXCLUSIVE LIABILITY AND BUYER'S EXCLUSIVE REMEDY.

SELLER SHALL NOT BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES WHATSOEVER.

9. **LIMITATION OF LIABILITY.** Except as specifically provided in Article 10, Seller shall in no event be liable to Buyer or Buyer's customer for any indirect, incidental, special or consequential damages whatsoever, under any theory of relief, including, without limitation, breach of warranty, breach of contract, tort (including negligence), and strict liability, arising out of or related to Seller's acts or omissions. Under no circumstances shall Seller's liability to Buyer exceed the contract price for the specific goods and services upon which such liability is based. Any action for breach of contract or otherwise must be commenced within one (1) year after the cause of action has accrued.
 10. **PATENTS AND COPYRIGHTS.** If Buyer receives a claim that any equipment or part thereof (herein called "Product") manufactured by Seller infringes a U.S. Patent or Copyright, Buyer shall promptly notify Seller in writing and give Seller information, assistance and exclusive authority to evaluate, defend, and settle such claim. Seller shall then at its own expense and option (a) settle such claim; (b) procure for Buyer the right to use such Product; (c) replace or modify it to avoid infringement; (d) remove it and refund the purchase price less accrued depreciation; or (e) defend against such claim. Provided such timely notice, information, assistance and authority have been given by Buyer to Seller, should any court of competent jurisdiction hold such Product to constitute infringement, Seller shall pay any costs and damages finally awarded on account of such infringement and, if the use of such Product is enjoined, Seller shall take at its option one or more of the actions under (b), (c) or (d) above. With respect to any product not manufactured by Seller, the patent indemnity, if any, given by the manufacturer thereof shall apply in place of the foregoing indemnity.
- The foregoing indemnity shall not apply to (i) any claim that arises out of Seller's compliance with the specification, design or instructions of Buyer or (ii) any claim of infringement resulting from Buyer's use of Product in combination with other equipment and materials not furnished by Seller. Buyer shall hold Seller harmless and indemnified against all such claims. The rights and obligations of the parties with respect to Patents and Copyrights are solely and exclusively as stated herein.
11. **SUBSTITUTES, CHANGES AND IMPROVEMENTS.** Factors beyond Seller's control and the need for continuing improvement of its goods may require changes in its goods from time to time. Seller reserves the right to make reasonable changes of goods of any kind without notice, and to deliver revised designs or models of goods against any order, unless the right is specifically waived in writing. Seller shall have no responsibility whatever with respect to changes made by the manufacturer of goods sold but not manufactured by Seller. Buyer's requested order changes are subject to Seller's prior written approval and to adjustments in price, scheduling and other affected terms and conditions, which shall be documented in a writing signed by both parties before such change order shall be implemented by Seller.
 12. **RETURNS.** Goods may not be returned for credit until and unless Seller has given consent in writing to accept them. Materials not normally stocked by Seller will not be accepted for credit allowance except at Seller's option. Materials returned without Seller's approval will be credited at Seller's evaluation. A minimum 15% restocking charge, plus freight charge, will be imposed on the return of stock items when such returns are authorized by Seller.
 13. **CANCELLATION AND DELAY.** Any delay, suspension or cancellation of an order by Buyer shall be subject to Seller's Cancellation and Delay Policy.

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TD06-1211E

Five Year Power Transformer Warranty

SPX Transformer Solutions, Inc. warrants to the original purchaser that the complete transformer, together with all parts included in the original purchase (the "Transformer"), has been designed in accordance with the specifications of the original purchaser and that the Transformer will be free from defects in material and workmanship under normal use and service for a period of five (5) years from the date of arrival of the Transformer at its destination from the factory. SPX Transformer Solutions' liability under this warranty does not extend to defects caused by vandalism, improper installation, improper maintenance, alterations by purchaser, purchaser-furnished materials, or improper operation. For this warranty to be valid, SPX Transformer Solutions requires that all transformer windings shall be protected from surges with arresters mounted on the transformer tank or an insulation coordination study may be required.

A Customer Service Representative must be present during field assembly, vacuum filling (if required) and inspection of the installation prior to energization. In the event that the Transformer is relocated, a Customer Service Representative must be present during field re-assembly, vacuum-filling (if required) and inspection of the re-installation prior to re-energization.

Purchaser forfeits the provisions of the Five Year Warranty if either of these service requirements is not followed.

If any part is found to contain defects in material and/or workmanship during the five year warranty period, SPX Transformer Solutions' liability and Purchaser's remedies under this warranty shall be limited solely to repair or replacement, at SPX Transformer Solutions' option, of the defective part. Decision on the method and extent of repairs rests solely with SPX Transformer Solutions. Purchaser shall give SPX Transformer Solutions prompt written notice of any claim hereunder. SPX Transformer Solutions shall be given a reasonable opportunity to investigate all claims, and no parts may be returned to SPX Transformer Solutions without authorization and instructions from the Customer Service Department.

During the first year, this warranty covers any freight within the 48 contiguous states by common carrier in full. This warranty also covers the cost of removal from the site and reinstallation after repair, subject to a limit of 10% of the original selling price. Costs of moving structures or associated equipment are excluded. During the last four years, transportation, moving and reinstallation costs are excluded from this warranty.

Under no circumstances will SPX Transformer Solutions be responsible for damage in excess of the sale price to Purchaser for the goods and/or services for which damages are claimed.

THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SPX TRANSFORMER SOLUTIONS SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OR EXPENSES OF ANY KIND, INCLUDING LOSS OF PROFITS.

In the event a performance bond is provided as part of the contract to which this warranty applies, the Surety's liability shall be limited to one (1) year from the date of delivery of the Transformer. The remaining four (4) year warranty period is solely the obligation of SPX Transformer Solutions.

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TC04-0615F

Assembly & Testing: Oil-Filled Units

applicable for transformers < 60 MVA base rating and < 230kV

If included in the quoted price or selected as an "add-on" as outlined in the proposal, Waukesha® Service crews and equipment will perform the transformer installation once the transformer has been placed on the pad. The assembly and testing work will be composed of the following:

ASSEMBLY

- Drain and store in SPX Transformer Solutions'-supplied storage tanks any oil required to access bottom terminations of bushings
- Install, connect and tape, as necessary, all bushings
- Hang and brace radiators and/or fans
- Mount oil preservation system, if required
- Mount lightning arresters, if required
- Mount control cabinet, if required
- Mount any miscellaneous items removed for shipment
- Hang any conduit removed for shipment; pull and terminate associated wiring



OIL FILLING

- Add top off oil in accordance with SPX Transformer Solutions' Instruction Leaflet Document No. 2011

TESTING

As specified in SPX Transformer Solutions' Pre-operational Testing Instruction Booklet No. 2012, the minimum acceptance tests include the following:

- Bushing power factor and capacitance
- Core megger
- Transformer turns ratio
- Insulation power factor
- Insulation resistance
- Functional check of unit control cabinet
- Oil test after filling
 1. Moisture content
 2. Power factor
 3. Dielectric strength
 4. Flash and fire point (natural ester fluid units only)

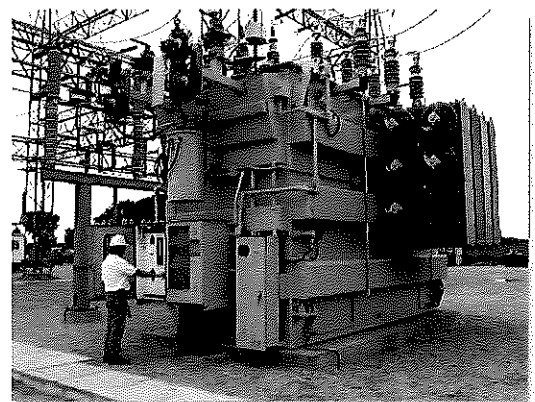


See next page for Scope Clarifications.

SCOPE CLARIFICATIONS

For all transformer installations, the following apply:

- Purchaser shall be responsible for switching, lock out and grounding of any equipment necessary to establish safe work area.
- Purchaser shall provide suitable, free, clear, unlimited and compacted access route, roads and area around work location for access of service equipment.
- Purchaser shall connect all external protection, control and relay wiring, as required.
- Purchaser shall connect all external bushing terminations or bus work, as required.
- Purchaser shall assemble any deluge systems, as required.
- SPX Transformer Solutions will compile all crating and waste material in designated area; however, purchaser shall be responsible for disposal of solid wastes.
- Purchaser shall provide drum and dispose of all waste, flush and scrap oil generated in execution of work.
- Purchaser shall provide communication and sanitation facilities.
- No provisions have been included for secondary oil containment as may be required for compliance to local site SPCC programs.
- No provisions have been included for Union Labor requirements.
- Any site specific or customer required access and/or safety training is not included in pricing and would be billed at applicable field service rates.
- If a natural ester fluid is included in this quotation, acceptance test results of that fluid will differ from the typical values of transformers filled with mineral oil. Insulation power factor values are expected to increase and insulation resistance values are expected to decrease when compared to test values with mineral oil insulation system.
- If a natural ester fluid is included in this quotation, Purchaser shall be responsible for disposal of all totes/drums utilized for make-up and flush oil that is generated during course of project. SPX Transformer Solutions can arrange for disposal upon request at additional cost.



Should additional requirements, tests and/or processing procedures apply, please contact SPX Transformer Solutions' Service group for pricing at 800.758.4384.

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TC08-0518C

Cancellation / Delay Policy

1. Cancellation of an order will be accepted after the purchaser has given written notice. If the cancellation occurs during the period from the date of order entry to twelve (12) weeks after order acknowledgement, the cancellation charges will be the actual work hours expended on the job performed at a rate of \$250 per hour or a minimum of five percent (5%) of the purchase price, whichever is greater.
2. If the cancellation occurs after approval drawings have been issued by SPX Transformer Solutions, the termination charge will be thirty percent (30%) of the purchase price.
3. Notwithstanding items 1 and 2 above, if the order is cancelled twenty six (26) weeks or less prior to shipment, the cancellation charge shall be one hundred percent (100%) of the purchase price.
4. If the order is suspended or shipment is delayed twenty six (26) weeks or less prior to the scheduled ship date, the equipment will be completed, invoiced, and stored at the customer's expense in accordance with the terms of SPX Transformer Solutions' Storage Policy and Customer shall issue the required storage documentation.
5. If a request to delay shipment changes the scheduled ship date, a mutually agreed upon adjustment to the base price may be necessary.

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TC11-0407B

Transformer Storage Policy

Purchaser - Company Name

SPX Transformer Solutions Order / Transformer Unit No.

SPX Transformer Solutions, Inc. has limited facilities for storing new transformers and any related equipment (collectively the "Transformer") in the event that the customer cannot accept delivery upon completion of manufacture. The facilities are intended only for short-term outdoor storage. Therefore, increased rates apply for storage exceeding three months.

- 1) In order to comply with SPX Corporation's company-wide accounting policy for bill-and-hold transactions, **SPX Transformer Solutions must receive from the customer a signed Request for Storage, per the attached form, submitted on the customer's letterhead, prior to placing any equipment into storage.** Notification to SPX Transformer Solutions is defined as receipt of the signed Request for Storage at our offices.
- 2) The Request for Storage must state that title and risk of ownership of the Transformer transfer to the customer at the time the Transformer is placed into storage. The warranty period for any Transformer placed in storage starts upon arrival at the destination or six months after completion of manufacture, whichever occurs first.
- 3) Storage by SPX Transformer Solutions is contingent upon the availability of storage space at the facility. SPX Transformer Solutions may require the customer to accept shipment from storage after 3 months in storage, upon 30 days prior notice.
- 4) The charge to move the Transformer into and out of storage is **\$4,000 in / \$4,000 out.**
- 5) Storage periods greater than 30 days will result in monthly storage fees. One-half percent of the Transformer price shall be charged for each month, or portion of a month, of storage. The minimum charge for storage shall be **\$1,500 per month.** After three months in storage, the monthly rate increases to one percent of the Transformer price (**\$3,000 per month minimum**). The Request for Storage also grants SPX Transformer Solutions a security interest in the Transformer to secure payment of the purchase price and storage fees.
- 6) The above noted storage fees include open cargo and storage insurance coverage, purchased in the customer's name for the customer-owned Transformer. A certificate of insurance can be provided upon request.
- 7) The Transformer will be invoiced to the customer when the Transformer is placed into storage. Storage fees will also be invoiced to the customer on a monthly basis.
- 8) Terms of payment are Net 30 Days from date of invoice.
- 9) For storage periods greater than 90 days, the delivery charges are subject to review at the time of shipment from storage. If there are any increases in freight or rigging rates or oil-filling costs from the time the equipment is invoiced to the time it is actually shipped out of storage, customer will be invoiced and required to pay the additional costs.
- 10) SPX Transformer Solutions requests four weeks advance notification for shipping out of storage to ensure that shipping preparations are completed in time to meet the designated ship date. If the anticipated date for removing a Transformer from storage changes, the customer shall request in writing that SPX Transformer Solutions grant an extension to the new anticipated removal date and provide the reasons for requesting an extension.

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TC03-215C

Request for Storage

(this request must be submitted on purchaser's letterhead)

Purchaser - Company Name _____

Purchaser Address _____

Purchaser Address _____

Date: _____

CHECK APPLICABLE MANUFACTURING/STORAGE LOCATION:

☐ **SPX Transformer Solutions, Inc.**
400 S. Prairie Ave.
Waukesha, WI 53186

☐ **SPX Transformer Solutions, Inc.**
2701 US Highway 117 South
Goldsboro, NC 27530

ATTN: _____
Sales Operations

REF: Purchase Order No. _____

SPX Transformer Solutions Order / Transformer Unit No. _____

[Insert Customer name], located in [insert customer location] is not ready to use power transformer purchased on the above referenced purchase order and, therefore, requests that SPX Transformer Solutions, Inc. store the transformer at its location.

Please bill and store the transformer for us as of [insert date, 20__]. We accept title and risks of ownership of the listed transformer as of the related invoice date and normal payment terms begin on that date. We expect shipment will be required by [insert anticipated shipment date].

We have received the SPX Transformer Solutions Storage Policy and agree to the terms of the policy. Please invoice us for the applicable storage fees on a monthly basis.

Sincerely yours,

Signature

Type or Print Name

Title

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TC03-215C

Transformer Oil Specification

(as received from refiner)

SPX Transformer Solutions' standard is inhibited mineral oil with 0.3% DBPC (oxidation inhibitor). Oil meeting other specific customer requirements may be available upon request.

Oil is purchased only from approved domestic sources, and for each approved source, oil has been tested and proven to meet the following specification values:

KEY PROPERTIES	ASTM TEST METHOD	IEEE / ASTM D-3487 LIMITS
Physical Properties		
Color	D1500	0.5 max
Flash point, °C	D92	145 min
Interfacial tension @ 25°C (dynes/centimeter)	D971	40 min
Pour point, °C	D97	-40 max
Specific gravity @ 15°C/15°C	D1298	0.91 max
Viscosity, SSU/cSt @	D88 / D445	
100°C		36 / 3.0 max
40°C		60 / 11 max
0°C		350 / 76.0 max
Polychlorinated Biphenyls (PCBs) ppm	D-4059	Not Detectable
Visual appearance	D1524	Clear and Bright
Chemical Properties		
Aniline point, °C	D611	63 min
Approved antioxidant content, wt %	D2668, D1473	0.30 max
Corrosive sulfur ¹ Test to be run for 48 hours @ 150°C	D1275	Non-Corrosive
Moisture, ppm	D1533	35 max*
Neutralization number, mg KOH/g of oil	D974	0.03 max
Oxidation stability Method A (acid / sludge test)	D2440	
72 hours sludge, wt %		0.10 max
Neutralization value, mg KOH/g		0.30 max
164 hours sludge, wt %		0.20 max
Neutralization value, mg KOH/g		0.40 max

*35 ppm max as received from refiner; SPX Transformer Solutions dehumidifies to lower value for installation in transformer.

Continued on next page...

KEY PROPERTIES	ASTM TEST METHOD	IEEE / ASTM D-3487 LIMITS
Electrical Properties		
Dielectric breakdown voltage at 60 hertz Disc electrodes, kV VDE electrodes, kV @ 0.040-in. gap or @ 0.080-in. gap	D877 D1816* D1816*	30 min 28 min 56 min
Dielectric breakdown voltage 25°C impulse conditions, kV Needle (negative)-to-sphere (grounded) @ 1-in gap	D3300	145 min
Power factor at 60 hertz, % at: 25°C 100°C	D924 D924	0.05 max 0.30 max
Gassing Tendency @ 80°C (µL/min)	D-2300 B	+ 30 max

*D1816 only applies to new oil that has been filtered, dehumidified and degassified.

Oil shall be PCB-free to existing current law. Properties as listed are only attainable on new oil as received from the refinery. It is expected that oil contained in equipment as received from the manufacturer when properly sampled from such equipment usually exhibits characteristics slightly different from those obtained from new oil, which has not been in contact with apparatus constructional materials. In such cases, the oil, as drawn from the transformer, should be evaluated per IEEE C57.106 latest revision for acceptance and maintenance of insulating oil in equipment.

IN-PLANT QUALITY CONTROL

In addition to extensive testing by an independent testing laboratory to determine approved sources of supply, SPX Transformer Solutions performs acceptance tests on each shipment of oil received.

SPX Transformer Solutions receives oil at its plants in dedicated tank cars and trucks. Upon arrival, acceptance testing is performed before the oil is unloaded into an SPX Transformer Solutions storage tank. Prior to filling a transformer, oil is degassified and dehumidified, passed through Fullers Earth and re-filtered at various points in the process.

Transformer Paint Systems

SPX Transformer Solutions, Inc. provides as standard a coating system that exceeds the requirements of ANSI C57 12.28, "Enclosure Integrity—Above-Ground Pad-Mounted Enclosures" Specification (the specification for pad mounted equipment). The coating system consists of an epoxy primer with a polyurethane topcoat. This process has been both lab tested and field evaluated.

Coating system processes used for the transformer are as follows:

SUBSTRATE

Hot rolled low alloy steel.

SURFACE PREPARATION

The performance of a coating system is highly dependent upon the condition of the surface to which the coating is applied. All sharp edges, scale, weld spatter and surface irregularities shall be removed by shot blasting, hand grinding, sanding or other appropriate manufacturing procedures.

Shot blasted per SSPC-SP6 (Commercial Blast Cleaning) then detergent washed with an iron phosphate conversion coating and a non-chrome seal.

-or-

Blast to SSPC-SP10 (near white) condition and apply paint within 24 hours.

COATING PROCEDURE

Interior of tank and tank cover are coated using a white, two-part, oil-resistant epoxy enamel. The exterior surfaces are first painted using a two-part epoxy primer then top coated using a two-part urethane enamel. All coating materials are applied using plural component equipment that automatically measures and mixes the paint systems to eliminate operator error. The coatings are then force cured to produce a uniform cured coating.

COATING RESULT

Interior coating compatible with transformer oil per ASTM 3455; 3 mil exterior coating capable of meeting ANSI C57.12.28

The two-component coatings used for painted surfaces have a high crosslink density and an exceptional barrier property characteristic. Two-component systems develop full corrosion resistance at a 2 mil total film thickness (primer and topcoat); in fact, the mechanical properties of any organic coating will deteriorate as the thickness approaches 5 mils. For these reasons, the SPX Transformer Solutions paint system exhibits optimal performance at a nominal 3 mil thickness (range 3–5 mils).

NOTE: Radiators are purchased from an outside supplier and are hot dip galvanized or painted to meet the customer's specification.

See next page for paint system test results.

EXTERIOR PAINT SYSTEM PERFORMANCE

TEST	ASTM TEST METHOD	RESULTS
Adhesion	D-3359-B	No Removal
Salt Spray	B-117	1500 Hrs, 1/32" Loss of Adhesion
Humidity	D2247	1000 Hrs @ 40°C; No Blisters
Impact	D-2794	160 in/lbs., No Chipping
U-V Resistance	G-53	500 Hrs, Less than 15% Gloss Change
Taber Abrasion	D-4060	More than 3,000 Cycles @ 3 Mils
Oil Resistance	72 Hrs @ 100°C	No Effect
Thermal Aging	1,000 Hrs @ 120°C	No Effect
Pencil Hardness	D-3363	2-H After 2 Weeks
VOCs	D-2369	3.5 #/gal.

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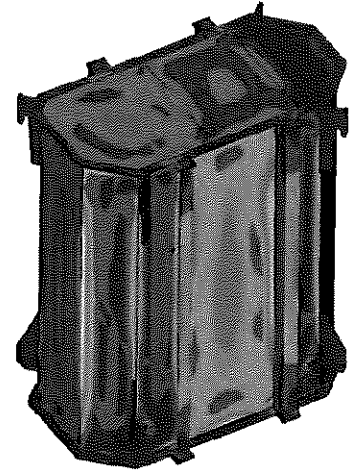
TC02-0812C

Transformer Tank Design and Construction

Tank integrity is essential for reliability and long transformer life. To help ensure a perfect fit to the application, SPX Transformer Solutions designs all transformer tanks to high internal standards while taking customer specifications into account.

All Waukesha® transformer tanks feature the following:

- Hot-rolled, low carbon steel plates plasma cut to critical tolerances then joined via submerged arc welding to ensure against cracked seams and irregularities
- Formed tank corners which eliminates high stress corner welds
- Jack pads and lifting hooks for lifting, jacking or pulling, meeting the criteria of C57.12.10
- Guides used to solidly "fit" and brace the completed core and coil assembly inside the tank to prevent shifting during shipment
- Slightly domed covers to help prevent water accumulation
- Raised flanges with machined gasket grooves in cover openings
- Conveniently located hand holes and/or manholes for easy access to the lower end of bushings, terminal boards and upper portion of core and coil assembly



Finite Element Analysis

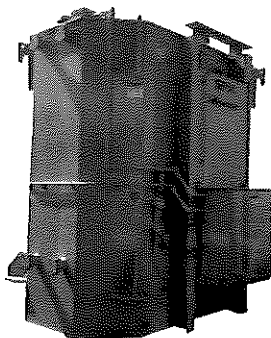
Additionally, SPX Transformer Solutions' standard coating system exceeds the requirements of ANSI C57.12.28, the specification for pad-mounted equipment.

TANK DESIGN STYLES

SPX Transformer Solutions uses several tank design styles to optimize the use of tank steel, transformer oil and lead time. All are designed to withstand full vacuum and pressures 25% greater than achieved during normal operation. The tank design shown on the preliminary bid outline is an initial estimate and *subject to change based on the optimum design criteria*. The best tank design is chosen based on unit specifications, including overall dimensions, equipment location, cooling requirements and shipping profile.

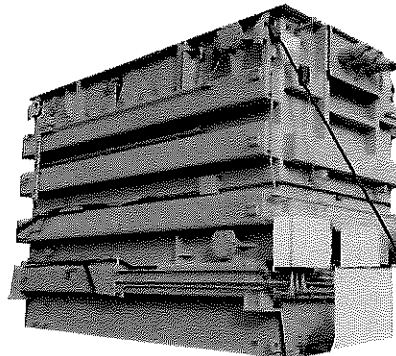
Octagonal Tank Design

Octagonal end walls are used when possible to optimize total oil volume and installed transformer weight, resulting in lower overall footprint.



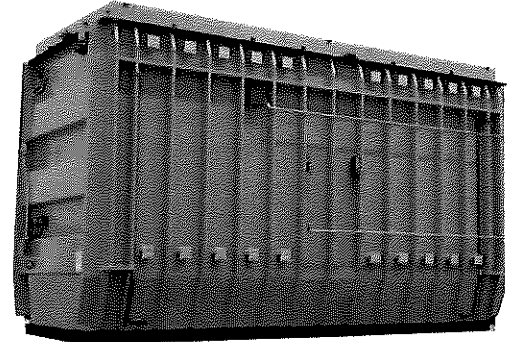
Rectangular Tank Design

Horizontal stiffener designs can be used where full length walls are necessary for mounting various accessories. This configuration can also be used for air expansion on N2 and sealed tank designs to reduce tank height for improved shipping clearances.



Vertical Stiffener Design

Vertical stiffeners are used on larger units when necessary to reduce shipping profile width by using multiple vertical stiffeners. This design is also used on some longer units to produce an optimum tank design with minimal tank wall deflection.



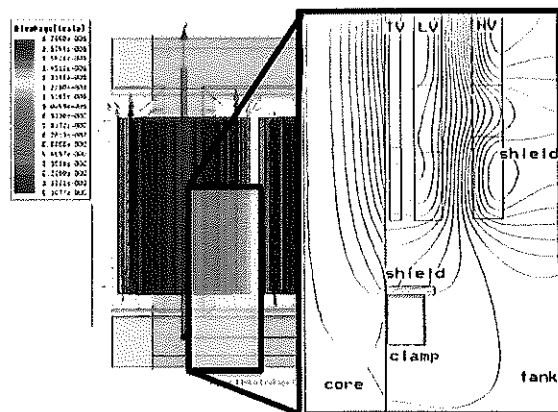
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TC15-1014A

Short Circuit Testing

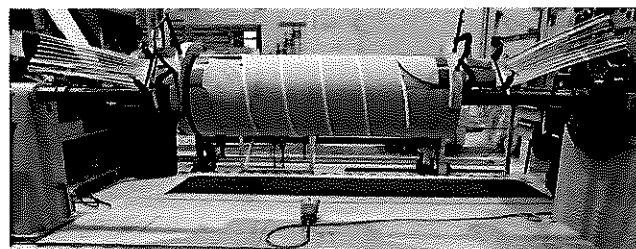
DESIGN

All SPX Transformer Solutions transformers are designed with state-of-the-art tools and manufactured in our factories per strict quality assurance plans to ensure survival through even the worst-case faults. To start, worst-case fault currents are determined assuming infinite bus supply (zero system impedance) for single line to ground as well as three phase faults at the transformer terminals. Using this fault current, all designs are analyzed with detailed stress calculations for worst case combinations of tap positions (LTC and DETC) for all known failure modes. These stresses are then compared to known strengths for each of the failure modes and must have acceptable design margins as set by SPX Transformer Solutions.



MANUFACTURING

All windings are manufactured with rectangular, electrolytic-grade copper conductor or epoxy-bonded, continuously transposed cable (CTC). Radial spacers are locked to strips fastened to the winding cylinders. These radial spacers and other support blocks in the pressure column are manufactured from high density, pre-compressed pressboard or laminated wood. Other specialized components—angle/cap rings, coil collars and static ring insulation—are manufactured from molded grade, soft pressboard as required.



Fully Distributed Regulating Voltage Winding

After the windings are completed, they are thoroughly dried using hot air. After removal from the dryout chamber, coils are hydraulically pressed successively using a predetermined force then pressed again using the clamping force they will experience when fully assembled. When required, radial spacers are adjusted to achieve the required design height, maintaining the design's "electrical center" of the windings for ampere-turn balance, stray flux and axial force mitigation.

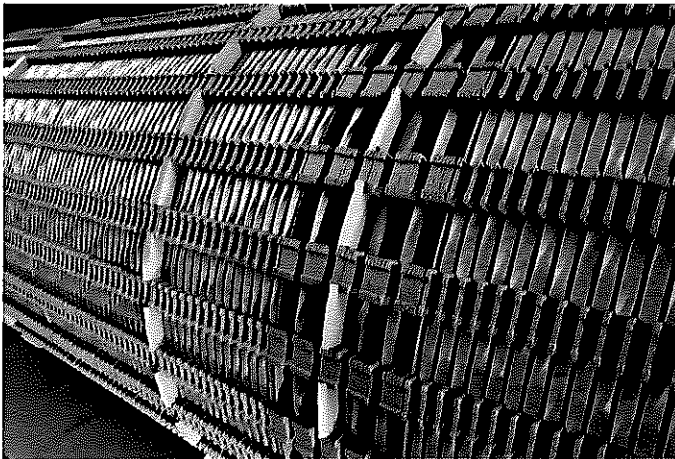
The coils are clamped in place by first applying a precise, hydraulic force which compresses the windings to the design height as verified in the coil sizing operation (as described in the paragraph above). In this condition, the coils are fastened in place to maintain a compressive force as specified by SPX Transformer Solutions engineering. Verifying exact clamping pressure and winding height in this manner helps guarantee a finished product that conforms to what was designed in engineering.

The entire clamping technique and underlying scientific principles on which it is based are major contributors to the outstanding SPX Transformer Solutions service record.

See next page for a list of transformers tested for short-circuit at high power laboratories.

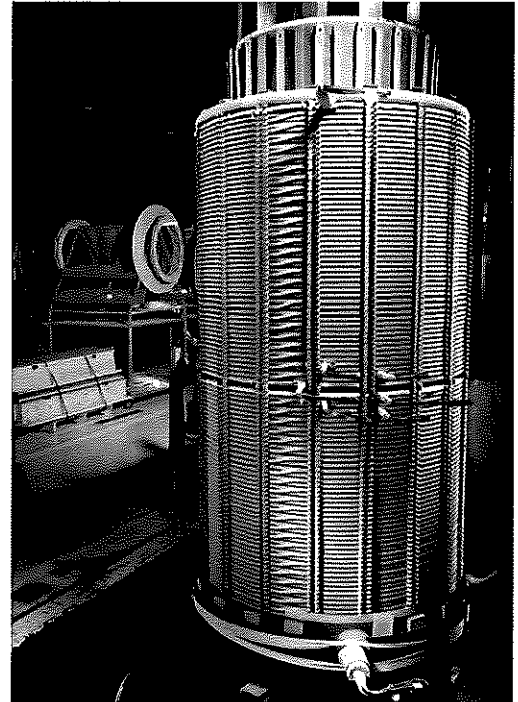
SPX TRANSFORMER SOLUTIONS SHORT CIRCUIT TEST LIST:

MVA RATING	HV RATING	LV RATING	MANUFACTURING PLANT LOCATION
0.833	67 kV Delta	12.47 kV Wye	Wisconsin
5 / 6.25	24.4 kV Delta	4.16 kV Wye	Wisconsin
5 / 6.25	26.4 kV Delta	4.16 kV Wye	Wisconsin
5 / 6.25	59.58 kV Wye	10.66 kV Wye	Wisconsin
5 / 6.25	67 kV Delta	12.47 kV Wye	Wisconsin
7.5 / 9.375	69 kV Delta	12.47 kV Wye	Wisconsin
7.5 / 9.375	138 x 69 kV Delta	26.4 X 13.2 kV Wye	Wisconsin
12 / 16 / 20	66 kV Delta	14.4 kV Wye	Wisconsin
15 / 20	67 kV Delta	12.47 kV Wye	Wisconsin
15 / 20 / 25	69 kV Delta	12.47 kV Wye	Wisconsin
1.0	12.47 kV Delta	4.8 kV Wye	North Carolina
3.75	23 kV Delta	4.8 kV Wye	North Carolina
5.0	34.4 kV Delta	12.47 kV Delta	North Carolina
5.0	69 kV Delta	12.47 kV Delta	North Carolina
7.5	23 kV Delta	12.47 kV Wye	North Carolina
7.5	115 kV Delta	13.2 kV Wye	North Carolina
10.0	43.8 kV Delta	24.9 X 12.47 kV Wye	North Carolina
5 / 6.2	34.5 kV Delta	12.47 kV Wye	California
15 / 20	67 kV Delta	12.5 kV Wye	California
15 / 20	67 kV Delta	12.5 kV Wye	California
15 / 20 / 25	120 kV Delta	13.2 kV Wye	California
15 / 20 / 25	120 kV Delta	13.2 kV Wye	California
18	39.5 kV Delta	4.8 kV Delta	California
30	230 kV Delta	55.2 kV Delta	California



Helical Winding with CTC

Continuous
Disk
Winding
with
Copper
Magnet
Wire

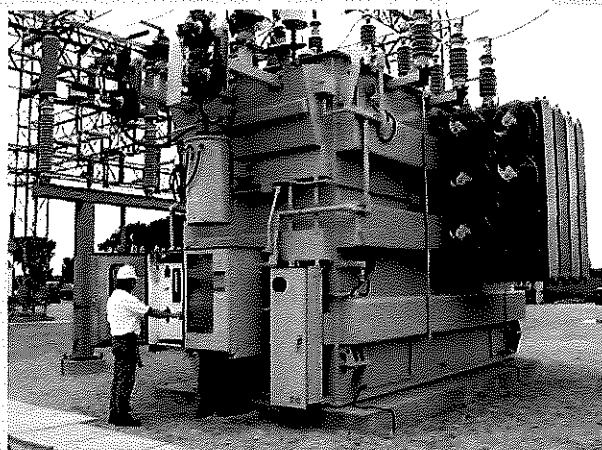


Goldsboro, NC 800.758.4384 | Waukesha, WI 800.835.2732 | www.spxtransformersolutions.com

TC07-1008A

Transformer Service Solutions to 765kV

AVAILABLE FOR ALL MANUFACTURERS' UNITS



SPX Transformer Solutions' service team focuses on maintaining performance quality, reliability and life of transformers and load tap changers throughout your electric power system — whether manufactured by SPX Transformer Solutions or other suppliers. Our mission is simple: to keep your transformers up and running with responsive and cost-effective service and maintenance support 24 / 7 / 365.

TRANSFORMER INSTALLATION & LOGISTICS

- Heavy Hauling
- Rigging
- Assembly
- Oil Filling
- Acceptance Testing
- Relocation



TRANSFORMER TESTING SERVICES

- Insulation Resistance
- Power Factor
- Transformer Turns Ratio
- Winding Resistance
- CT Testing
- Leakage Reactance
- Winding Excitation & Alarm Checks
- Gauge Calibration
- Sweep Frequency Response Analysis
- Dissolved Gas Analysis & General Chemistry Test
- Materials Analysis

TRANSFORMER MAINTENANCE

- Inspections
- Component Addition & Replacement
- Regasketing
- Leak Repairs
- Life Extension
- Oil Preservation System Upgrades
- Control Upgrades
- Retrofits
- Removal, Sourcing and Installation of Conservator Aircells, Regardless of Original Manufacturer

TRANSFORMER OIL PROCESSING

- Field Dry Out
- Vacuum Filling
- Hot Oil Processing
- Cryogenic Drying (Cold Traps)
- Fullers Earth Reclamation
- Natural Ester Retrofills

SPARE PARTS

- Bushings / Arresters
- Cooling Equipment
- Gauges / Controls
- Gaskets
- Transformer Health Products®
- LTC Parts

TRAINING SERVICES

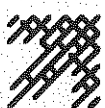
- LTC Training
- Maintenance Training
- Testing Training
- Print Reading
- Oil Processing Training

LTC MAINTENANCE

- All Manufacturers
- Inspections
- Overhauls
- Upgrade Kits
- Filtration Installation
- Core Replacement
- Vacuum Retrofits

TECHNICAL SERVICES

- Condition Assessment Studies
- Life Assessment Studies
- Thermal Uprate Studies
- Component Retrofits
- Failure Analysis
- Feasibility Studies
- Technical Supervision



SPX

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VISIT www.waukeshaservice.com

SPX TRANSFORMER SOLUTIONS

2701 US Hwy 117 South | Goldsboro, North Carolina 27530

Emergency Service Available 24/7/365: 888-365-24x7

Waukesha® UZD®

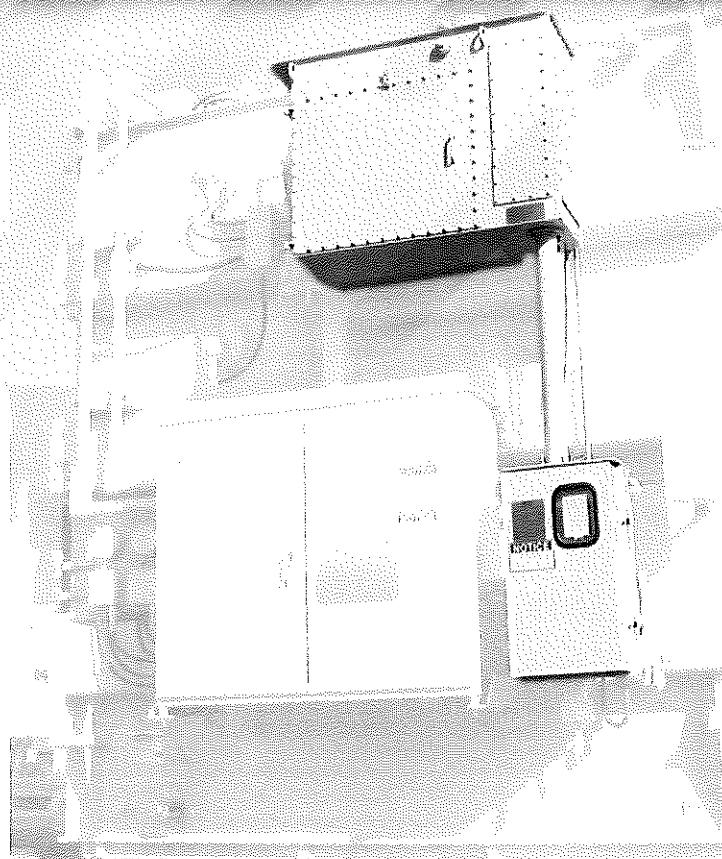
THE SERVICE-PROVEN LOAD TAP CHANGER!

With more than 6,500 units installed, Waukesha's UZD Load Tap Changers boast an excellent field performance record. Design improvements made in the 1990s reduced the already low failure rate to one of the lowest in our industry, reduced maintenance costs and increased maintenance intervals. When compared to the cost of downtime, out-of-service operation and costly repairs, the UZD LTC system is a cost-effective way to keep your transformer operating as smoothly as the day it was installed!

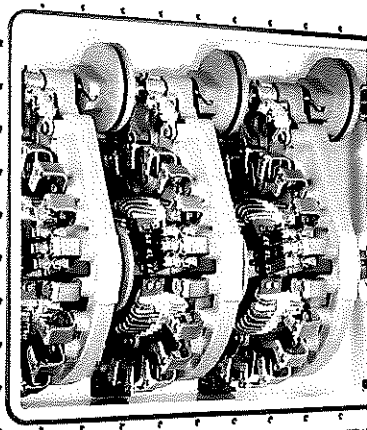
A load tap changer, regardless of manufacturer, is a complex engineered device with numerous moving parts requiring precise engineering, correct material selection and controlled manufacturing to operate reliably for a long period of time.

In many cases, the true reliability of a load tap changer becomes evident only when a transformer has been in service for several years and the load tap changer accumulates 100,000 plus mechanical operations.

Since the UZD's initial introduction in 1970, it has accumulated in excess of 110,000 YEARS of operational service and an estimated 550 MILLION switching operations. Ongoing continuous improvement programs, in coordination with our customers, resulted in several design enhancements that help increase overall operational life as well as virtually eliminate the need to perform maintenance inside the oil.



KEY ADVANTAGES OF THE WAUKESHA® UZD® LOAD TAP CHANGER



Re-Engineered Reversing Switch and Current Collector ("Bow-tie") System

Since the re-engineered reversing switch and current collector system were introduced in 1997, no known failures due to coking have occurred.

Silver-Plated Copper Contacts with Tungsten Copper Inserts

Stationary contacts for long life and low temperature rise.

Resistive Bridging

High-speed operation results in extremely low contact wear and manageable levels of arcing by-products. For optimal results, we recommend applying an oil filtration system.

LTC and Series Transformer System

For applications with greater than 600 ampere current ratings, a series transformer is recommended to allow for an optimal volts/turn design of the main transformer windings, even step regulation and smaller leads, while facilitating a reduction in current through the LTC contacts for less contact wear and longer life; a power-class series transformer design is recommended for high reliability.

Spring Drive Mechanism

Stored energy system delivers split-second operation for minimum arcing time; in addition, each tap change is uniform and unaffected by possible auxiliary voltage fluctuations.

OTHER NOTABLE FEATURES OF THE WAUKESHA® UZD® LTC

Single Set of Spare Contact Parts

Due to the design flexibility of the series transformer, we utilize a single model LTC across a wide range of transformer voltage and power ratings.

Easy to Maintain with Few Moving Parts

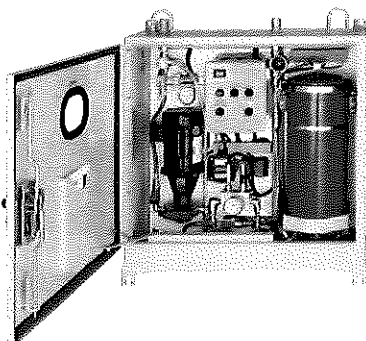
A single collector arm incorporates both the arcing contacts and tap selector contacts which reduces linkages, wear points and potential maintenance.

RECOMMENDED ACCESSORIES

Clean, dry oil increases dielectric strength, thereby reducing arcing time. The accessories below help keep carbon particles, metal particles and moisture out of tap changer oil:

OF2 Oil Filtration System

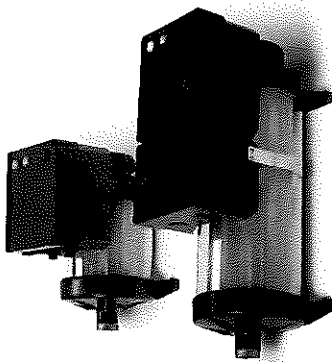
Designed to remove carbon and metallic particles produced during normal LTC operation. The system includes an adjustable timer for customized configuration and a 1/2 HP, fully enclosed, continuous run rated, auto-thermal resetting motor.



Another feature of the OF2 is a tilt-out, tool-free filter replacement system which allows the filter cartridge to be changed without disconnecting oil lines or reversing the pump—dirty oil stays in the filter while LTC compartment oil stays clean. Additionally, our OF2 ships standard with a unique, high-efficiency, depth-type filter that offers long element life and provides the capability to filter more efficiently than pleated-type models. The system is also adaptable to a variety of industry standard filters. Other features include low flow and high pressure alarms, anti-condensation cabinet heater and remote system shut down relay.

ARDB2 Auto-Recharging Dehydrating Breather

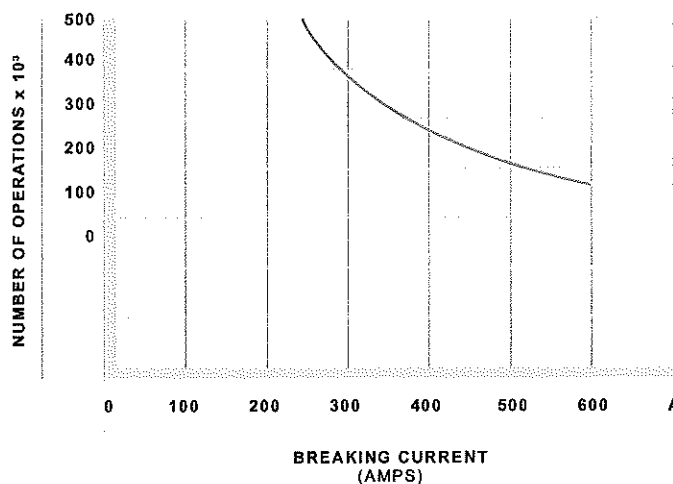
Automatic recharging of silica gel maintains peak drying performance and reduces maintenance costs by eliminating the need for periodic replacement/disposal of saturated silica gel.



CONTACT LIFE

Predicted contact life of the selector switches' fixed and moving contacts is shown below. Since most transformers are not consistently operated at maximum nameplate rating, some tap changes will be made at lower currents. These lower currents allow for less contact erosion due to arcing, so contact life may be longer than what is illustrated on this curve.

PREDICTED CONTACT LIFE WITH BREAKING CURRENTS



WAUKESHA® UZD® LOAD TAP CHANGER SYSTEM DESIGNED FOR HIGH RELIABILITY AND LOW TOTAL OPERATING COST

- Economical LTC solution to total transformer cost
- Well accepted in the US market
- Now available for sale to transformer manufacturers

Contact us for more information. To download an order form, technical manual, field maintenance manual and/or technical paper, visit our website.



SPX

CALL 800-338-5526

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Load Tap Changer Oil Filtration Systems

REDUCE OIL-RELATED MAINTENANCE COSTS AND IMPROVE RELIABILITY

Second generation oil filtration systems are designed to be installed on most LTC models to remove carbon and metallic particles produced during normal LTC operation, keeping oil in peak condition with minimal maintenance.

For flexible operation, the system includes an adjustable timer which allows customers to configure the system to their specifications — daily, every other day, weekly or every other week in intervals of two, four, eight and 24 hours. Since filter replacement does not require pump reversal OR any disconnection of oil lines, the dirty oil stays in the filter while system oil stays clean and in peak condition (a convenient filter canister drain valve is included).

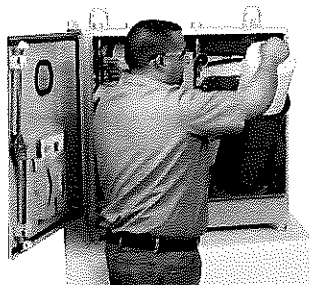
2ND GENERATION OIL FILTRATION SYSTEM: OF2

Easier to Install and Maintain

Our standard OF2 system's design allows for easy installation and is equipped with a swing-out filter canister that makes filter replacements a quicker task.

Unique High-Efficiency Filter Design with Tilt-Out Easy Filter Change System

Our depth-type filter uses a flow path parallel with the center tube instead of the conventional outside-to-inside flow. This flow path forces oil through a greater depth of filter material for more efficient filtration. *See back side for more information on this unique filter design and photo to the right demonstrating easy filter change-out process.*



Minimum Turbulence in Reservoir

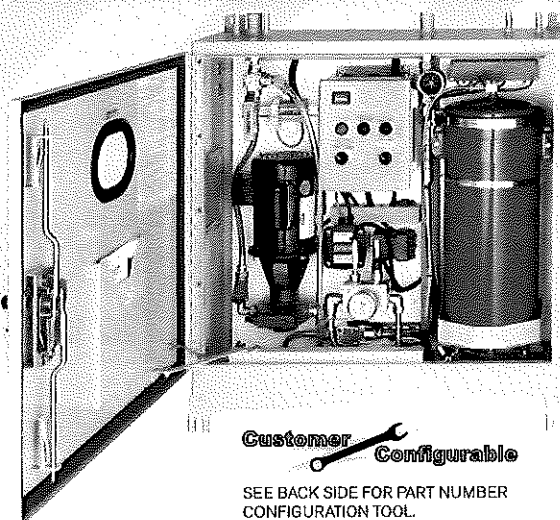
Pump maintains a flow rate of 1.0 GPM to minimize turbulence in the tank.

Filter Adapter Kit Available for Alternate Style Manufacturer Cartridges

More Economical

High efficiency filter reduces LTC mechanical wear which can minimize equipment failure and downtime. Economical purchase price combined with less frequent filter replacement can save you money.*

* Actual filter life varies depending on transformer loading and frequency of LTC operations and tap changer model.



Customizable
2nd Generation
Oil Filtration
System: OF2

Customer Configurable

SEE BACK SIDE FOR PART NUMBER CONFIGURATION TOOL.

CUSTOMIZE YOUR OWN SYSTEM

OF2 oil filtration systems have been designed to meet the filtration demands of higher oil volume load tap changers while providing customization flexibility to meet individual customer specifications. The system is adaptable to a variety of industry standard filters and always ships complete with the following:

- 1/2 HP, fully enclosed, continuous run rated, auto-thermal, resetting motor
- High performance depth filter
- 5+ gallon leak-catch sump with sump alarm
- Low flow alarm
- High pressure alarm
- Anti-condensation cabinet heater
- Tilt-out, tool-free filter change system
- Visual flow indicator which can be monitored without opening the cabinet
- 0-160 psi, oil-filled pressure gage
- Customer selectable run-time and interval timer
- Run-time bypass switch
- Remote system shut down relay
- Heavy duty circuit breaker on incoming power
- 120 VAC operation

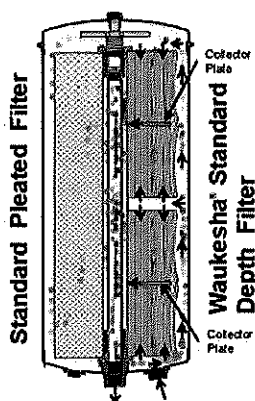
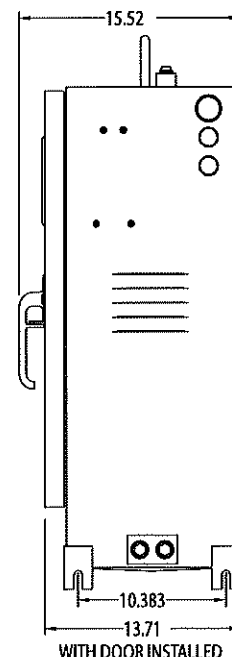
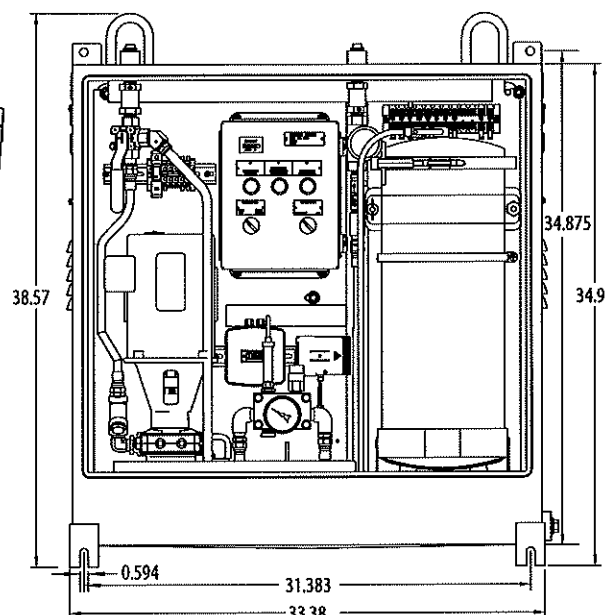
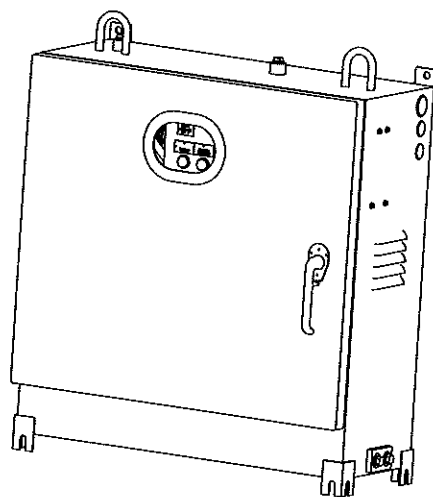
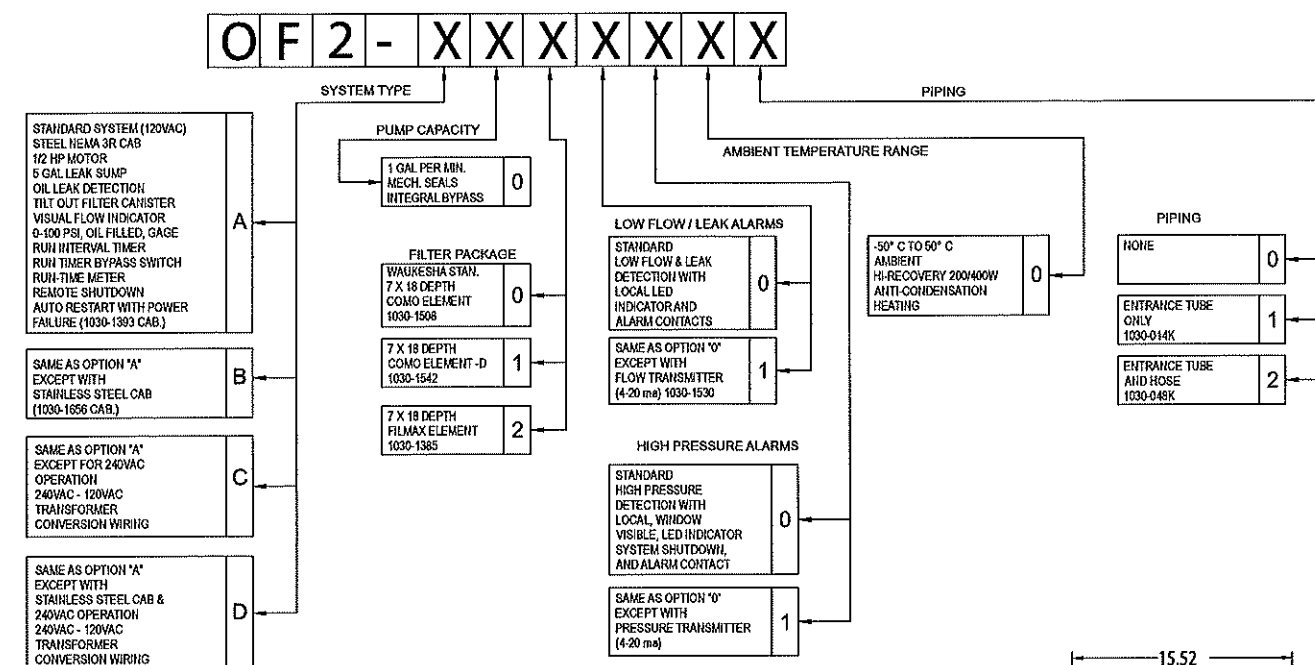
Particle/Moisture removal performance is dependent on make/model of customer-specified oil filter cartridge.

With the appropriate filter installed, the OF2 system can remove dissolved water, extremely fine carbon and metallic particles to maintain peak performance of LTC oil, extend the life of your equipment and lengthen the period between maintenance intervals.

OPTIONAL FEATURES

- 240 VAC Operation
- Alternate Filter Selection
- Additional 4-20 mA Flow Transmitter
- Additional 4-20 mA Pressure Transmitter
- Filter Canister Heater System
- LTC Entrance Tube with or without Hose
- Stainless Steel Cabinet

Build Your Own Part Number Using Configuration Below



WAUKESHA® STANDARD FILTER OFFERS LONG FILTER ELEMENT LIFE

SPX Transformer Solutions' depth-type filter element (in Standard OF2 System) features a unique fluid flow path: fluid runs parallel with the center tube (axial flow) rather than the conventional outside-to-inside flow (radial flow) of most pleated-type filters. The depth of fluid flow is optimized and provides the capability to filter more efficiently than pleated-type filters. Filter media is constructed as four rolls of filter paper. Oil flows between the layers of media until it reaches one of two collector plates. The collector plates route oil to the center of the element where it is discharged out of the element. The depth filter media has a much greater resistance to flow from outside to center (radial flow) than it does between the layers (axial flow) of filter material. Integrity of the filter element is maintained even as it accumulates contaminants and the Delta-p (pressure across the filter) goes up. Hydraulic pressure of the fluid compressing the layers of media together prevents a channel from forming that could allow oil to pass through the element unfiltered.

REMOVES BOTH DIRT AND MOISTURE

- Filter material is dried cellulose fiber
- Optional -D filter can decrease water to under 5 PPM with multiple passes
- Micron rating: 1.0
- Rated for particles as well as free and emulsified water
- Total water holding capacity: 0.5 kg
- Beta X rating: >25 at 3 microns
- High rate of absorption enables oil to be reduced from 200 to less than 25 PPM in one pass using the optional -D filter element



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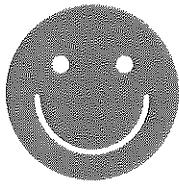
SPX TRANSFORMER SOLUTIONS

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To continually improve its products and services, SPX Transformer Solutions, Inc. reserves the right to change specifications and features without notice. Please contact us for certified dimensions and drawings.

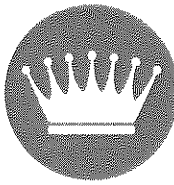
CUSTOMER SURVEY RESULTS

In July 2018, the SPX Transformer Solutions Marketing & Sales department developed and distributed a customer survey to gain an honest assessment of how customers perceive the company, the Waukesha® brand and our associated products and services as well as an evaluation of the customer experience at our transformer plants. Breaking down the survey ratings into quantifiable findings, the results reflected well on our continuous efforts to provide a high quality, high value product for which the Waukesha® brand is known. Additionally, a sizable survey participation rate resulted in donations totaling almost \$1000 to selected charitable organizations.



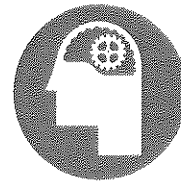
97%

SATISFIED WITH
PRODUCTS &
SERVICES



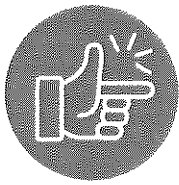
96%

FEEL LIKE
A VALUED
CUSTOMER



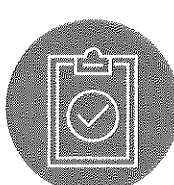
96%

BELIEVE SPXTS
HAS TECHNICAL
EXPERTS



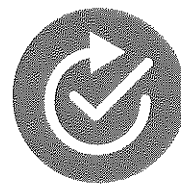
92%

SAY DOING
BUSINESS WITH
SPXTS IS EASY



96%

SAY WAUKESHA®
TRANSFORMERS
ARE BUILT TO THE
HIGHEST QUALITY
& INDUSTRY
STANDARDS



99%

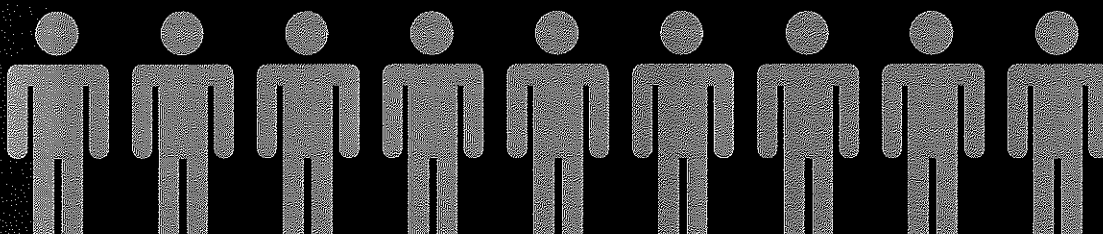
SAY WAUKESHA®
TRANSFORMERS
ARE RELIABLE

\$630

FALLEN LINEMAN
ORGANIZATION

\$300

UNITED WAY
WORLDWIDE



RESOLUTION 2020-4

WHEREAS, the City of Grand Island invited sealed bids for a Substation Transformer, according to plans and specifications on file with the Utilities Department; and

WHEREAS, on December 31, 2019, bids were received, opened and reviewed; and

WHEREAS, SPX Transformer Solution, Inc., of Waukesha, Wisconsin, submitted a bid in accordance with the terms of the advertisement of bids and plans and specifications and all other statutory requirements contained therein, such bid being in the amount of \$885,276.48; and

WHEREAS, the bid of SPX Transformer Solutions, Inc., is less than the estimate for the Substation Transformer.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF GRAND ISLAND, NEBRASKA, that the bid of SPX Transformer Solutions, Inc., in the amount of \$885,276.48 for a Substation Transformer, is hereby approved as the lowest responsible bid.

- - -

Adopted by the City Council of the City of Grand Island, Nebraska, January 14, 2020.

Roger G. Steele, Mayor

Attest:

RaNae Edwards, City Clerk

Approved as to Form	☐ _____
January 10, 2020	☐ City Attorney